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The 1995/1996 Household Income, Expenditure and Consumption Survey

Final Analysis Report

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and

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"To Mansour Shousha."

Executive Summary

Project Background

The Central Agency for Public Mobilization and Statistics (CAPMAS) of the Arab Republic of Egypt undertook the 1995/1996 Household Income, Expenditure and Consumption Survey (HIECS) from October 1, 1995 to September 30, 1996. The principle aims of the survey were to produce new consumer budget weights for measuring price inflation in the country, and to characterize economic conditions of Egyptian households, for both spatial and temporal comparisons.

The final sample is 14,805 households from 25 urban and rural governorates in the country, representing 73,939 persons. Data on household demographics, housing characteristics, diary expenditures and income components are annualized sums of multiple enumerator visits lasting one month for each household.

Overview and Procedural History

Overall, the quality of HIECS data is very high - the spirit of the analysis is to account for variability as much as bias in estimates.

Survey weights were not produced for the 1990/1991 HIECS, but were produced for the 1995/1996 HIECS.

Self-weighting is assumed for both periods for most estimates. Country-wide estimation over time is not emphasized. Urban representation in the 1990/1991 HIECS was 57.7%. In the 1995/1996 HIECS, urban representation is only 44.7%.

Characteristics of Egyptian Households

Average Household Size - 4.96 members - Egypt has a very broad population pyramid - half the population is less than 20 years old. The dependency ratio is nearly 75%.

Average Household Expenditures - 6,658.60 £E - Food, clothing and shelter are the biggest household budget items. Food share has decreased as a percentage of the average household budget over time.

Average Household Incomes - 7,570.05 £E - Wages and salaries, and non-agricultural/agricultural projects are the biggest income generators.

Home production, and multiple jobs, are more common in rural areas. The chapter reviews income/expenditure relationships, elasticities of groups, remittances, and per capita magnitudes (Upper Rural Egypt still lags behind). Subsidized goods are empirically inferior, lending support for subsidization policies.

Data are adjusted for household equivalence. All temporal comparisons of estimates are sensitive to adjustment for inflation. See Table II.10 for critical household income and expenditure estimates for two surveys.

Poverty and Inequality - poverty rankings over time are robust. Upper and Lower Rural Egypt have had the highest rates of poverty. Poverty rates are a declining function of educational attainment. Self-employed individuals have higher poverty rates than wage earners. The poorest households have very

old, and very young, household heads. Poverty increases near-monotonically with the number of children in the household, and decreases with the number of household earners. Overall, the incidence of poverty has risen from 21% to 44%; while the deterioration is supported by other sources, the magnitude of the overall effect is sensitive to the cost of the diet and to the fact that more households from the rural areas are represented in the latter sample.

Human Capital - Official (un)employment figures are measured with error.

Being young, married, and having lower household income levels makes an employee more likely to be a wage earner.

Standard human capital regressions show that wages are higher for married males with higher educations. The self-employed with employees are presumably the lowest paid category, but measurement error appears obvious. Employees find the highest paid jobs in primary industrial activities.

Workers' remuneration continues to be discounted.

The Consumer Price Index - the mismeasurement of inflation is the greatest barrier to evaluating Egyptian levels of living. This chapter is a blueprint for fixing the CPI.

Housing - A synopsis of rent control, and present-day costs of housing amenities. In 1990/1991, hedonic quality adjustment for maintenance, repair and improvement removes all the benefits of rent control. In 1995/1996 the free market/controlled market comparison is impossible because of the scarcity of contracts, but hedonic analysis is still possible: renters perceive themselves better off than owners.

Education - The implied literacy rate is approximately 60%.
Despite the beneficial effects of education, in higher household income and expenditure levels, and especially in lowering fertility, girls education is not being emphasized. This is shown in female-to-male enrollment ratios, and in the probability of being enrolled. The reason for low enrollment probability is linked to higher household expenditures (unexpected), a lower education level of the head of the household (expected), and the geographic location of households (lower probabilities of being enrolled if the household is from Upper Rural Egypt, or the Frontier governorates).
Education expenditures and budget shares have increased over time.

Medical - Household size is negatively associated with level and per capita medical expenditures. Over time, shares of medical goods and services have risen in rural areas but declined in urban areas.

The Use of HIECS Data - it is difficult to argue against full disclosure of economic information.

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CHAPTER I. OVERVIEW AND PROCEDURAL HISTORY

I.A. The HIECS Sample Design

The Egyptian Central Agency for Public Mobilization and Statistics (CAPMAS) conducted the 1995/96 Household Income, Expenditures and Consumption Survey (HIECS) over a one year period beginning October, 1995. The organization designed the sample to compare yearly results[1] from this survey to the previous household survey - the 1990/1991 HIECS. In addition, both surveys employed sample designs to allow for estimation at sub-national levels. The regular character of household survey data collection, and the detailed sample design, would assure the representation of households over time and across space.

CAPMAS used a stratified, multistage cluster design for the 1995/1996 HIECS sample, which is typical of many household surveys. First areas were systematically selected, probabilities proportional to size, from a list of areas that made up the 1986 population census "master" sample.[2] Using maps, these areas were further subdivided into a number of "chunks" of about 1500 households each, the information listed and compiled in 1993. These household listings of chosen areas were then stratified geographically, depending on how they were dispersed in the 1986 preliminary census file. Finally, 30 households were selected from each chunk, using a sampling interval and a random start.

The main geographic distinction is the *muhaafza* (**governorate**), and most of these governorates are divided into rural and urban sections.[3] The governorate/rural and governorate/urban are the most detailed geographic domains in most CAPMAS publications, and shall remain so for the present report.

Another geographical grouping used extensively in analysis of HIECS data for this report is the **region**. This is not exactly the same as CAPMAS's usual classification. Instead, Cairo and Alexandria are considered separate regions, the remaining two solely urban governorates are one region, and the rural and urban parts of the four smallest governorates (the "Frontier") are also combined into one region. The "Upper Egypt" and "Lower Egypt"

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[1] The emphasis on annualizing data is a standard based on the recognition that household expenditures and incomes are lumpy. For an individual household, income will vary over the month. Some purchases are seasonal, or rare ("big-ticket" items fall into this latter category).

[2] These areas are called *shiakhaat* in the urban areas, and *qurah* in the rural areas.

[3] The distinction between "rural" and "urban" has become somewhat arbitrary over time for some governorates, especially with the development of the Egyptian countryside, in the absence of reapportionment. The reader is cautioned against investing too much sociological meaning to the terms. Discriminant analysis using sample characteristics information might result in a better geographical classification, but that would be obsolete by the completion of the next census (around 1999).

regions, with their rural and urban counterparts, remain as specified by CAPMAS. This regional grouping retains its administrative meaning and its historical validity:

(1) Cairo
(2) Alexandria
(3) Other Urban - Port Said and Suez
(4) Lower Egypt, Rural
(5) Lower Egypt, Urban
(6) Upper Egypt, Rural
(7) Upper Egypt, Urban
(8) Frontier

Table 1.1 shows the sample breakdown for these areas. Information richness in the sample comes from characteristics differences, and is best represented by the number of chunks. In terms of correct representation, a chunk is a definitely distinct area, households from one chunk probably live (and consume and earn income) "differently" than those from another chunk. The 30 households chosen to represent that chunk would not be expected to differ much from one another. Therefore the more detailed the level of result, the more cautious the reader should be in inferring a similar result for a higher aggregation. In the estimation of macro statistics such as the Gini coefficient, disposable income, poverty rates, etc., the degrees of freedom for inference should be considered the number of chunks in the analysis class. In most cases classification by region should permit estimation at an acceptable level of statistical significance.

Table 1.2 presents the actual household counts of questionnaires received for two surveys, the 1990/1991 HIECS and the 1995/1996 HIECS. One of the first things to note when comparing the two samples is that the recent survey appears more "rural." Less should be made of this distinction than the levels suggest, however, given that most of Egypt's population is concentrated along the Nile, and that population growth has continued to outpace the growth of arable land. We shall return to the issue of demand pressure on scarce real estate in Chapter 6.

Careful sampling entails calculating a product of selection probabilities at each stage of selection, and "weighting" a household to reflect representation from those probabilities. If the product of probabilities differs little over the sample, weighting makes little real difference to results because the approximation to self-representation is equal in the limit. On average, one household in the survey represents 833.74 households with a 95% confidence bound of plus or minus 2.39 households - there is not much sampling variance (noise) in the probability distribution. Because population census information is almost ten years old, and census data are lacking in some cases, maps are outdated, boundaries shifted, size estimates for certain chunks are lacking,[4] listing methods were variable, and makeshift housing arrangements are common, the exact probability of selection for any one household is only an approximation. The only available sources for making a reasonable estimate for the target total weight count, and thus to account for population and housing change over the ten year period before the survey, are the 1986 population census results and projections:

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[4] See Megill (1995) for a careful exposition of this issue.

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Population Data for Target Sample Totals

In (,000)	1986[a]	1991	1996
Urban, # of Households	4571.433	-	-
Urban population	21215.504	23589[b]	26514[b]
Rural, # of Households	5147.230	-	-
Rural population	27038.734	30328[b]	34089[b]
Total # of Households	9718.663	10641[c]	12238[c]

[a] Source for 1986 figures: Table: The Number of Buildings, House Units, Households, and the Number of Population by Sex, p. 4, in Public Census, 1986: Number of Buildings, Housing Units and Population, Shiakha/Village, Manual 6, CAPMAS, ARE, 1993.

[b] Source for 1991 and 1996 population figures: Table 14. Population Distribution in Egypt According to Urban and Rural in Mid-Year from 1986 to 2001, based on Data from Table 2. (Note, this assumes fixed urban percentage from 1986 Census publication final.) in National Documents for Basic Data for Population and Labor Force and its Estimates to the Year 2001, CAPMAS and the Cairo Demographic Center, 1 September 1992.

[c] Source for 1991 and 1996 Total # of Households: Tables 3 and 4. Household Projections Under the First Assumption (Constant Headship Rates), Males (1991-2026) and (Table 4) Females (1991-2026), p. 190, in Demographic Analysis of 1986 Census Data, Enlarged Sample, Volume #3, CAPMAS, 1992.

The number of households for 1991 and 1996 was not available separately for rural and urban, only the total. Given such sparse overall information, detailed corrective weighting loses salience. Even post-enumeration weighting to correct for non-response is hardly necessary given such a small incidence of rejected questionnaires. In most cases of proportion estimates, weights affect only the one-hundredth's decimal place. The data in this report are therefore presented unweighted, except where specified. The survey team calculated final weights, used them in CAPMAS publication tables, and attached them to the raw data files as standard deliverables for survey results. Appendix A. provides the mathematics of weighting procedures used in the HIECS, and the reader is referred to Megill (1995) for further explanation.

The variable FINLWT in the first record type contains the sample weight for each final sample case (N = 14805) in the HIECS data set. This weight essentially means that this sample case represents that many units within the total population of units. HIECS management did not reweight the data sets. When sample weights are used to "inflate" the results of the sample in order to obtain estimates for the entire population and its subgroups in the publication tables, CAPMAS usually gives the actual number in thousands.

If the weights are attached to individual households, the distribution of the final adjusted weights (FINLWT) for the 1995/1996 HIECS have the following summary statistics:

SAMPLE SIZE UNWEIGHTED: 14,805 HOUSEHOLDS
SAMPLE SIZE WEIGHTED: 12,343,579.65 HOUSEHOLDS

FINLWT DESCRIPTIONS:

MEAN:	833.74
STD:	148.47
MIN:	73.08
MAX:	1536.66

If the weight distribution is broken down by urban and rural areas, we have:

Summary Statistics for Survey Weights by Rural and Urban

	Urban	Rural
Mean Weight	894.05	784.95
Standard Deviation	137.63	138.68
Minimum Weight	284.40	73.08
Maximum Weight	1328.41	1536.66

The mean weight for the rural areas is about 12% lower than the mean weight for urban areas. The unweighted sample is 55.3% rural, but the weighted sample is 52.0% rural. These differences have important implications to the extent that the domain of estimation is the entire country; however, creating national estimates is not the focus of the HIECS. For some statistics, such as a figure for "disposable income" to compare with the national accounts, or overall unemployment levels, approximation produces acceptable comparisons. To show the effect of weighting, Megill (1997) produced the following estimates from the 1995/96 HIECS data, weighted and unweighted:

(1) Weighted Estimates

Characteristic	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Avg. Household Income	7,710.716	159.925	2.07	7,397.263	8,024.168	3.36
Avg. Hh. Expenditure	6,763.196	104.580	1.55	6,558.220	6,968.173	6.59
Avg. Persons per Hh.	4.883	0.029	0.59	4.826	4.939	2.26

(2) Unweighted Estimates

Characteristic	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Avg. Household Income	7,570.050	135.854	1.79	7,303.775	7,836.325	2.89
Avg. Hh. Expenditure	6,658.604	92.057	1.38	6,478.174	6,839.035	5.45
Avg. Persons per Hh.	4.963	0.028	0.57	4.908	5.018	2.08

Weighting tends to increase the income and expenditure estimates but

decreases average household sizes. Note also that the unweighted estimates produce a smaller design effect, meaning that weights raise the sampling error due to the use of a more complex and less statistically efficient design.[5] Weighting changes estimate magnitudes in ways small enough to forego weighting itself, especially given the imprecision of the components which went into the construction of the weights.

Some of the reluctance to "inflate the sample to national estimates" for the present study comes from a concern for aggregation bias. For example, people should not be led to believe that *each* household's income rises 10% when GNP rises 10%. Similarly one cannot predict consumption patterns as national income rises using cross-section Engel curves. Non-linearities enter into distributions with temporal change. Without complex simulation of the entire system, microeconomic statistics remain outside the purview of macroeconomic dynamics.

There is a problem of making comparisons over time. The 1990/1991 HIECS sample was only 42.3% rural. CAPMAS sampling staff oversampled in urban areas in an effort to reduce field costs, and because they believed that rural areas were "more homogeneous." Oversampling is a fairly common practice and justified for those reasons, but only if it is followed up by representative weighting. Unfortunately there is little to be done about this now because no weights were constructed for the 1990/1991 survey. Inferences are sensitive to this change in representation. Readers are strongly cautioned that the effect of different sampling percentages for the two survey periods becomes more marked the larger the domain of estimation.

One interesting characteristic of the sample selection method for the 1995/1996 HIECS comes from the third stage of sampling, the systematic selection of 30 households within the sample "chunk." These 30 sample households are randomly halved so that 15 of the households are enumerated in the first half of the survey year, then the remaining 15 households are interviewed in the second half of the year. In other words, all areas are represented in the first half of the year as well as the second half of the year. Besides controlling for seasonal effects, such an "interpenetrating" division permits comparison by half-samples, and any number of sampling and non-sampling comparisons might be made to detect changes in variability and bias over the year.

The actual target of the enumeration was not the household itself but the "dwelling unit," the physical space which the household occupied based on the 1993 listing. The enumerator interviewed the present and usual occupants of the dwelling units, and updated the information about the household head if the listing was different from the facts on the ground.

I.B. Survey Instruments

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[5] The design effect for an estimate is the ratio of the variance of the estimate given a complex design and the variance of the estimate under a simple random sample design. In many cases the standard error reported in these pages assumes a simple random sample, and should be inflated by the square root of the design effect to obtain the standard error based on the stratified cluster sample (i.e., complex) design.

Two survey forms were used in the HIECS, a diary and a main questionnaire. Each household was visited ten times over the course of one month. The enumerator gave the household a diary at the first visit and told the respondent to be diligent in recording any and all expenditures which the household makes for one month. The sums from the household diary were transferred to the main questionnaire at the end of the interview cycle. The enumerator retained the main questionnaire, and compiled the resulting household information over the course of the month following the schedule of questions. Interviewers took down household demographic information at the first interview and household income at the last two interviews. In between, enumerators made visits scheduled three days apart to check on the household's progress in recording diary expenditures, and to ask additional questions about infrequent expenditures.

I.C. The Survey Schedule

The HIECS survey milestone dates appear were the following:

	From:	To:
1. Appointing Project Staff	3/1/95	3/31/95
2. Pre-test Questionnaires, Design Interview Manual	4/1/95	6/15/95
3. Pre-test Fieldwork	6/30/95	8/1/95
4. Pre-test Coding and Editing	8/2/95	8/12/95
5. Pre-test Data Entry	8/9/95	8/23/95
6. Pre-test Final Evaluation	8/24/95	8/31/95
7. Production Sample Design	5/1/95	7/31/95
8. Production sample Selection	8/1/95	9/15/95
9. Questionnaire, Manual Printing	8/16/95	9/3/95
10. Appointing Fieldwork Staff Notes for Field Revisions	9/2/95	9/5/95
11. Central Training for Supervisors and Editors	9/9/95	9/14/95
12. Appointing Interviewers	9/16/95	9/20/95
13. Local Training	9/23/95	9/28/95
14. Field Data Collection	9/29/95	10/7/96
15. Office Editing	11/11/95	12/31/96
16. Data Processing		1/31/97
Data Entry	11/25/95	
Verification	11/28/95	
Validation	11/30/95	
Manual Edit	12/1/95	
17. Quarterly Tabulation	3/1/96	2/12/97
18. Annual Tabulation	2/16/97	3/15/97
19. Analysis of Final Results	11/22/96	4/30/97
20. Printing of Tables and Analyses	4/15/97	5/15/97
21. Results Presentation Conference	5/28/97	

The above schedule was finalized according to what were considered "workable" time elements, based on conservative estimates from the previous

HIECS as well as international technical experience. The Census Bureau and the survey manager settled on an initial procurement list in May 1995, hoping that the material could be received in-country for testing with all the pre-test components and requirements. Due to circumstances beyond the control of CAPMAS, the procurement material did not arrive until October. The delay in procuring and shipping the computer hardware for the project caused grave concerns that the survey would not stick to the schedule. CAPMAS-owned hardware was memory deficient, so even the data dictionary could not be revised. Training data entry operators for the pre-test stretched computing resources to the limit, and the team had to abandon programming CENTS tables to present pre-test results. Ultimately the delay in receiving hardware and software for the project was one reason for not employing bar-code reading technology for data processing.

Difficulties in securing and retaining manpower for the project continually dogged efforts to stay on schedule, especially in the beginning. Renewal of the main programmers' part time work contract authorization from the CAPMAS data processing sector was only assured after considerable bureaucratic delay. Adequate staff were not allocated to the coding, editing, and totalling task, nor was a team leader appointed for data validation until production launch. Despite these setbacks, the final data set and analysis were completed on schedule. Moreover, the 1995/1996 HIECS data, which was declared final and validated on November 23, 1996, proved to be of exceptional quality.

I.D. Evaluation as an On-going Practice

The continual evaluation of tasks is essential to the application of large-scale surveys. This is so because the final result should be data of high quality, and many activities associated with survey work have the potential to affect data quality. Indeed quality control is so ingrained in the use of best practices for survey operations that evaluation should be understood as an integrated component, not separated from its context. There are certain identifiable practices and stages which, when singled out for refinement, tend to complement and enhance data quality.

Proper (meaning comprehensive) evaluation requires full information, which in turn assumes a great deal of communication among and between actors. In general the conditions for such an information-rich control of data quality are poor within CAPMAS headquarters, and the links between headquarters and governorate offices are tenuous. There are many reasons for this, but few readily identifiable solutions. Decisions are overly centralized. The incentive structure does not reward flexibility and initiative.

The last chapter returns to the matter of institutional rigidity in the context of data dissemination, but a short statement about headquarters' experience with formal evaluation should be mentioned here to illustrate the difficulties HIECS survey management faced in controlling error. The former resident advisor from the US Bureau of the Census assisted CAPMAS in developing a program of statistical quality control and provided formal and informal training in quality control to CAPMAS staff as part of the 1986 population census. The Quality Control Unit (QCU) was established in CAPMAS, at one time with 30 staff members. In May of 1995, the QCU even released a report evaluating the 1990/91 HIECS, "with coverage errors, nonresponse errors, statistical content errors, and interviewer and respondent errors,"

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with recommendations for improvement.[6] The HIECS had intended to make full use of this quality control team but by survey launch the head of the unit had retired, and the unit's staff had dwindled to less than 10 part-timers. The responsibility for controlling common and recurrent errors therefore passed to the core processing team, which was already burdened with analysis and tabulation plans. Quality control through valuative investigation and operations research have never been standardized for production surveys at CAPMAS.

The following outlines the main HIECS processing phases exposed to evaluation, roughly in production schedule order.

I.D.1 Evaluation of the Pre-test (July-August, 1995)[7]

During the month of July 1995, CAPMAS pre-tested the HIECS questionnaire for its ability to elicit relevant, timely and accurate responses from a sample of 100 households in three *shiakhaat*/villages in Cairo and Giza. The pilot questionnaire was expected to uncover inconsistencies in all phases of HIECS survey operations; to permit estimates of costs and components of sampling variance;[8] and to provide opportunities to test data processing, different versions of questions and questionnaire formats, and the feasibility of certain questions. This experience was documented in a paper concentrating on the sources of potential inaccuracies in the practice of survey data collection. The intention of the paper was to make mid-level management aware of potential data collection problems before they became entrenched. Given the benefit of hindsight, we may now evaluate the accuracy of expectations about potential bias which the pre-test revealed.

As a result of the pre-test, a new primary instrument was discussed and designed, formatted, finalized and printed. This new questionnaire was easier to follow schematically, and it incorporated critical changes to cognitive data capture procedures. The demographic section was changed to be much more attentive to Egyptian and international standard employment and labor force definitions; the information in the education section was expanded to incorporate a number of USAID-collaborative research concerns; the housing section was changed to allow for housing services cost imputation and comprehensive housing services quality correlates; the income sections were streamlined; many of the expenditure sections were changed to reflect up-to-date subsidies policies, market conditions, and experience with the statistical significance of detailed classifications by cells.

The pretest provided evidence that the production survey data quality would vary due to common sources of nonsampling error: variable local conditions, variable interviewer performance, and varying degrees of

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[6] Rowland (1996), p. 12. The report's actual findings were hardly as ambitious.

[7] This is a distillation of Cardiff (1995).

[8] In the sense of providing a benchmark to maximize the accuracy and minimize the cost of the total survey design by optimizing the balance between sampling and non-sampling error.

respondent acceptance. These are inevitable factors of large-scale survey work, subject to only relative control, not elimination. Perhaps there was not enough time for training enumerators, maybe headquarters should have followed enumerators more closely in an effort to standardize interviewing styles, or it is possible that the administrative aspects (questionnaire transmittal and return, salary payments for the field, and the like) should have been accorded special attention.

The pretest survey faced unanticipated problems due to incomplete correspondence between the enumerator's manual (essentially the same manual used in the 1990/1991 survey) and the pretest enumerator training. During questionnaire revision, the primary team rewrote sections of the manual for the production survey to standardize working definitions, to clarify contentious passages, and to emphasize strict adherence to certain enumeration norms. However, one question remained unanswered at survey launch: Which person or persons in the household would provide the best estimates? We expected that the best *respondents* to questions about income and economic activity would probably be given by a male household head, and that a spouse would probably provide the best information for household demographics and for some types of consumption expenditures. It was left to enumerator discretion to determine when to replace respondents and relax respondent rules if the target became sick or left for vacation. One respondent often provided information for many household members. After training and launch, the responsibility of enumerator standardization passed from headquarters to the field; one consequence of the decentralization of tasks was the accumulation of variability and bias. Based on theory, we expected the situation to improve to the extent that enumeration became more experiential and less dogmatic.

Another concern was how the month of Ramadhan would affect enumeration. Two times of day were associated with higher probabilities of successful interviews - very early morning, or after the evening meal - and transportation schedules were changed to optimize contact. As far as response goes, it was believed that people were more cooperative during that time of year.

All of the data collection for the HIECS depended on face-to-face interviewing. This mode, as opposed to mailing or telephoning, for example, was not associated with any apparent, systematic, or general bias described in the survey research literature. In Egypt, personal interviews have always been the preferred way to gather information. Indeed, the Arab culture's hospitality may be more amenable to this style than any other. On the other hand, there is a well-known superstition in Egypt of the "evil eye," the idea that identifying something (or someone) as yours may cause you to lose it. Such beliefs may have biased responses regarding the number of children, household income, expenditure, purchase of durable goods, ownership of amenities, savings outstanding. Even CAPMAS has admitted this.[9] On a more mundane level, there were respondents who avoided revealing information about income sources, fearing tax collectors or prosecution if their income was obtained illegally. Some respondents failed to recall, and could not accurately

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[9] See the interview with Mustapha Gaafar in "Census Stresses Development", Al Ahram Weekly, 8-14 August, 1996, # 285, p. 2.

measure expenditures, because the use of receipts and vouchers is not common in market transactions. Maybe "income" meant different things to different interviewers at different times. Finally, the extent of telescoping (compressing events into shorter time periods when asked to recall purchases) will never be known but certainly exists.

Enumerators were instructed to obtain information from the household currently occupying the dwelling on their assignment list: if the household head on that list differed from the household head they found on site, the list was updated with the new household head's name and the current household was interviewed. Since the sample target for the enumerator was the household and not the household head, it was statistically neutral and innocuous to update this information. Table I.3 reports that instances in which household head information was updated represented 7% of the households interviewed in the production survey, but these could have occurred more often than reported because enumerators may have been ignorant of instructions, at least at the beginning of the survey year. Table I.3 makes it clear that changes to list information given de facto occupancy were common in the large urban-only governorates and in the Frontier governorates of Matrouh and Red Sea. This is an unexpected result for the urban areas because rent control constrains dwelling turnover more in those areas, meaning that urban area survey lists would remain functionally "stable" over a longer period. That stability is different from the loss of coverage from new construction, of course. Updating in the urban areas might therefore represent actual updating of dwelling units in some cases. On the other hand, it is still possible to characterize the cities as places of flux and vitality, and higher mobility.

There may be a connection between the need for updating household head information and cases of actual noninterviews. The noninterview codes themselves may be biased against the response "misidentification - household not found," which was expected to be the main reason for questionnaire non-response.

Given past experience with large-scale survey data collection at CAPMAS, in which responses were and remain mandatory by law, very few cases of non-response were expected, and, indeed, very few cases were encountered in the production survey. Only 285 households from the total sample of 15090 households failed to be interviewed, making for a response rate higher than 98%. The largest reported cause of questionnaire non-response was the inability to locate household members after repeated attempts, either because the members were "away from the household for the entire month," or because the household was "empty." In practice, due to the need to save transportation costs, the number of callbacks to empty households usually did not exceed two, so that proof of the important distinction between a vacancy (considered ineligible for weighting purposes) and a temporary absence (an eligible non-interview) was not always established.

Sources of Noninterviews in the 1995/1996 HIECS

Reason	Frequency	Pct	Cumulative Frequency	Cumulative Percent
Household not found	12	4.2	12	4.2
Building torn down	31	10.9	43	15.1
Household changed to establishment	11	3.9	54	18.9
Household empty	58	20.4	112	39.3
Household inhabited, but absent entire month	147	51.6	259	90.9
Questionnaire partly completed	4	1.4	263	92.3
Out of scope household	2	0.7	265	93.0
Other, with reason	20	7.0	285	100.0

With so few noninterviews, randomizing interview assignments to avoid bias due to specific interviewers would not have made data collection more cost-efficient, in other words. The limited number of interviewers in the less populous governorates, and the coverage area in the larger governorates, would have made the resulting increase in precision and accuracy too costly. Without further information, one can only speculate on how respondents differ from non-respondents. Thus, the reader should not assume that the characteristics of non-responding households are missing at random.

The future will probably be less accommodating for the survey interviewer from CAPMAS. General survey practice indicates that cooperation diminishes with visibly relaxed enforcement and followup. As the Egyptian state withdraws from private business transactions, outright household refusal to participate in survey exercises may result. CAPMAS management will have to consider more efficient and randomized interviewing schedules, and will have to rely more on the technicalities of sampling, as opposed to the blunt instrument of census-taking.

The loss of information on certain items confounds the issue of noninterviews. There was systematic item non-response in the pretest which continued in production. These were of two types, ignorable and non-ignorable. Ignorable non-response was witnessed on the "sensitive" items; the HIECS will never permit reasonable estimates for alcohol and drug consumption, or contraceptive expenditures. On the other hand, total household income, to the extent that income will ever be given the measurement attention it deserves through further research into imputation, is a case of non-ignorable biased response. A figure for total income itself is always given, but its components are under- or over-reported in most cases. The prescription for dealing with differential non-response on HIECS income magnitudes is to assume that certain income components are missing at random in the sample, then the distributions can be smoothed using proxy "wealth" or

expenditure information. Yet the bias might be serious enough to effect the general inferences drawn about income and its derivatives if these proxy variables themselves are biased.

The allocation of enumerator manpower followed past experience. The full production survey involved 145 enumerators, 45 editors, and 36 supervisors. There were an extra 25% "stand-by" enumerators to cover attrition. The editors and supervisors were local CAPMAS employees of the governorate statistical bureaus. The demographic profile of CAPMAS interviewers (Table 1.4) remained essentially unchanged between the pretest and production surveys, mainly women aged 30-35 of relatively high educational status. The numbers in this table are totals of enumerators ever employed in that governorate field. A "Medium Degree of Education" is associated with an Institute Degree, higher than a secondary degree. "High Degree" means a University degree, at least 5 years of post-secondary education. The totals are interesting both from a standpoint of government labor-use practices as well as from "acceptable cultural norms." Almost three-quarters of the enumerators were women. Women interviewers were more common in the field because the probability of a successful encounter with a respondent - invariably the spouse of the household head - was higher. However, administrative constraints and social constraints, such as great distances to interview sites or traditional religious norms, often called for male interviewers.

On the respondent side, social background, education level and recall ability most affected estimates. The will to preserve prestige probably resulted in upward bias in income or expenditure estimates, at least in some cases. Still, for selected items, expected mismeasurement is not borne out. For example, there is not much evidence that rural respondents wanted to appear as cultured as their urban neighbors by exaggerating the amounts spent on newspapers, books, and theater tickets:

1995/1996 Average Annual Household Expenditures on 3 Items, in £E

Item	Rural	Urban
Newspapers, Magazines	71.61	113.12
Books	65.14	113.38
Cinema & Theater Tickets	33.25	87.32

Whether an "upward bias" in occupation codes (administrative assistants become project managers, tellers become bank examiners, truck drivers become foremen, etc.) exists, or whether education status is generally inflated is difficult to tell. The majority of income earners have less than a secondary education level. Illiterate people may have said that they can read and write with little regard to enumerators' perceptions. Women, especially, were selective about the range they would provide for their age, and children, especially working children, probably wanted to appear more mature. Older

mothers were expected to be more sure about the age of their youngest child.[10] In rural areas the ages of girls were probably inflated toward the legal marriage bound, 16.

Respondents may not have been capable of understanding the gist of many of the questions. Terms which enumerators use in survey contexts every day, such as "net" and "gross," are not part of common vocabulary usage. Respondents may also have had trouble with "marital status" unless the enumerator clarified the meaning of the categories involved. There were other problems with terminology. References to ages in the MARSTAT item (the questionnaire says "for males 18+ or females 16+") should have been deleted; doctors, especially in the rural areas, have been known to misrepresent ages on marriage certificates so that couples can be married earlier than 16 and 18.

The characteristic recall length for individual items probably produced expenditure report bias to the extent that recall ability was variable. The recall length was based on frequency of purchase, and institutional interview experience; in effect, "logical guesses" replaced empirical investigation. The assumption must be that events were displaced at random among respondents and over the survey year. The implication is that, even after a year of interview experience, it cannot be said definitively that "three months" was the proper recall length for furniture purchases, for example. People "telescope" events. Because bias increases with the length of the recall period, some expenditures were larger than they should have been because the recall periods were shorter than they should have been.

Timing and recall issues almost certainly affected salaried workers. This group tends to plan its expenditures over a monthly cycle, and event displacement is common, especially when members are interviewed in the middle of a cycle. Interviewers, aware that certain payments are lumped at the beginning of the month in Egypt, readily understood the importance of coaxing respondents to remember those recurrent, cyclical expenditures. Yet there was bound to be information lost due to the timing of interviews. The problem is more pronounced for casual, common, and piece-rate laborers, who are used to irregular wage payments, but whose income interviews occurred only during the last visits of the month. The effect on income measurement is unavoidable.

One of the more beneficial changes to the sampling scheme for the 1995/1996 HIECS was in the use of interpenetrating samples. Each *shiakha*/village was represented by a sample of 30 households, 15 to be interviewed in the first half of the year, and 15 in the second half. Thus, any conceivable result comparison for gauging survey operation performance, data quality, completion rates or non-respondent bias, and the like, could be made between the first and second halves of the year. A simple example appears in the beginning of the appendix to this chapter, in which the number of persons per household in the first half is compared with the number of persons per household in the second half.

I.D.2 Pretest evidence of processing requirements

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[10] Some mothers literally may not remember how many children they've borne. See U.N. (1982), p. 105.

Programming expertise for the HIECS was limited to two part-time individuals from the computer sector, and technical assistance from the US Census Bureau. Once the programmers had developed the main components of the data editing software, and had set up the data entry screens, the keyers were able to concentrate on speed and accuracy. Since the pace of processing would dictate the timeliness of the data, the goal was to eventually reduce the time-in-process, from receipt of the questionnaire to final data validation, to less than two months. Critical interventions were made during the pretest and during initial production processing to achieve this goal without sacrificing data quality.

IMPS ("Integrated Microcomputer Processing System") was the software of choice for the pretest and production processing of raw HIECS data. An explanation of the functions of its six primary software modules appears in the appendix.

The pretest involved all phases of data processing, from tracking to entry, verification, interaction of a simplified ID check file, the Nafitha arabic interface, the CONCOR statements files, up to and including simple tabulation. It took nine weeks to process only 100 questionnaires, and there were serious concerns, even with the expected increase in efficiency through routine, that the production survey monthly allotment of 1200 questionnaires could not be processed by even 12 full-time data entry operators. As shown below, these concerns proved to be unfounded; the pretest proved to be a very poor predictor of actual needs.

The pretest revealed that field editing was potentially a serious problem. More than 80% of the inconsistencies showing up in the validation phase were due to arithmetic errors, such as incorrect summations of row and column totals. These errors passed down from the field could only be corrected by the keyers in the validation phase. While these inconsistencies provided good opportunities to test CONCOR output, the keyers were already overburdened by the sheer volume of questionnaires without having to recalculate all of the totals. Thus the optimal plan for production was to prevent these errors from reaching headquarters. Clearly, attention to detail in field editing would have spread the error burden, but there were limited ways to control the actions of governorate field offices. Instead of concentrating on field editing procedures,[11] CAPMAS management assigned the coding, editing, and totalling (CET) department first responsibility for the condition of questionnaires. The statistical sector established the CET office as a pseudo quality control group, making assignments informally at first, but independently and separately from the primary HIECS team. Unfortunately the CET group was never integrated with processing functions, nor was its evaluation fully in the hands of HIECS survey management. The decision to reject a questionnaire, or to return a batch to the field, was never standardized. The lack of CET evaluation must be considered the weakest link in the chain of data quality for the 1995/1996 HIECS.

Independence of decision rules at any survey processing stage is

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[11] Speed, as opposed to accuracy, has often been the aim of field process intervention, as in, for example, Forster and Snow (1995). CAPMAS experience with field data entry using laptops has been unsuccessful in the past, as the World Bank found during its "SDA Priority Survey."

improper; communication and agreement are rewarded with greater precision and less bias. Cooperation is called for when it is not obvious how to correct a validation error. For example, when parents pay for school fees, the cost of books and tuition often appear together on one receipt, not separately. Respondents are sometimes not able to separate these expenses. Editors would likely let the loss of detail slip by. But the computer would produce error output suggesting that the household has children in school but no expenditure on books. Similarly, a secondary school student taking extra classes at a university might include all tuition expenses under the total for secondary education. In both instances the expenditure totals are measured with error. Should these variables be used as right-hand side explanatory variables in a regression, their coefficients will be biased toward zero to the extent of the error.[12]

The field operations manual was not changed quickly enough to clarify the role of field editors in production. Most of the survey errors would have been avoided had the governorate editors been proficient with a simple hand-held calculator. Edit reviews at headquarters should have been limited to the corroboration of main-group totals, and gross errors and omissions.

I.D.3. Evaluation of Headquarters Training of Trainers (9-14 September, 1995)

Training of governorate office supervisors, assistants and editors took the form of lectures which followed the enumerators' manual, and incorporated specific items of the main questionnaire. These lectures were spirited, with much give-and-take, seldom boring, often boisterous, and generally effective. Overall the participants rated the training "good" to "excellent."

To the question "What did you find not good about the lectures?" eight participants referred to the noisiness of the proceedings. Negative comments were made about the length of the lectures, the timing of the training itself, and the "needless repetition of simple points." Some complained about the poor ventilation of the room.

The following suggestions were offered for future improvement of central training of supervisors and editors:

a. Change the format of the lecture proceedings. When there are questions, they should be written down and submitted to the trainers, who should address them at a later time.

b. Before training actually begins, there should be meetings between trainers and supervisors to address practical, applied survey matters.

c. Before the training begins, also, editors and supervisors should use their own families as test cases for completing a questionnaire (this teaches application and practice, while highlighting the potential difficulties which enumerators might face).

d. Some supervisors should be chosen as guest lecturers to expose problems specific to governorate locales.

e. There should be complete treatment of administrative, especially financial, aspects of survey operations.

f. It would be better to concentrate on the new data collection procedures, and changes to the questionnaires, instead of repeating the same

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[12] Measurement error on the dependent variable, on the other hand, does not bias the estimates but will reduce their precision.

material. There should be a classroom environment more conducive to paying attention, with more formal time limits on lectures.

g. Lengthen the period of local training.

h. Teach the lectures with already completed sample questionnaires.

Survey management also asked the training participants to comment on what problems could be anticipated in the field for the production survey. Most of the responses turned out to be prescient. Female field enumerators would be inappropriate for some field conditions and travel, especially in Upper Egypt. The distance between governorate headquarters and the respondent households would cause contact problems. At times, too much effort would be needed to "convert" respondents to the HIECS cause, for reasons which go beyond ignorance of statistics or wariness about the reasons for the survey. Based on past experience, financing governorate headquarters for survey operations would not be adequate or on time.

There were other suggestions. Given the importance of the survey, some thought that more attention should be paid to media outreach in advance of launch. Some resisted the notion of decentralized authority, suggesting that CAPMAS headquarters rather than the governorate offices should be responsible for the transport of enumerators, as well as questionnaires.[13] Finally, a number of governorate supervisors recommended that training of trainers should be continued locally in recognition of the specific conditions and problems (political, geographic, or economic) faced within the governorates.

I.D.4 Field Training of Enumerators (15-21 September, 1995)

Governorate supervisors and editors who attended central training were tasked with disseminating the information they had gained at CAPMAS headquarters to their teams of enumerators in the field. The survey was read in its entirety keeping to the detail of the enumerator's manual; trainers outlined the enumeration schedule; and enumerators ran through a number of mock interviews.

I had the opportunity to attend parts of this training in Qena and Aswan. I found, with very few exceptions, high levels of commitment, interest, and problem-solving ability among the enumerators. All of the governorate offices were visited by a CAPMAS headquarters representative during the week of September 15-21, and the reports of their visits were similar. It was expected that excellence in interviewing was both a matter of practice, and trial and error. Enumeration techniques would stand to gain from a female Egyptian anthropologist. Under oath for confidentiality and preferably independent of CAPMAS, such a person would be well placed to observe interviews and make recommendations for the next large-scale survey. Moreover, a sample of site interview observations by a qualified professional would be no more disruptive of the respondents' time than the fact of the data collection itself, and would provide excellent opportunities to understand the dynamics of the error generating process. It is highly recommended.

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[13] This was probably a relic of military management style. Not more than 30% of governorate supervisors have backgrounds in statistics. The "Public Mobilization" part of CAPMAS is essentially an anachronism outside of Cairo, in any event.

Some of the follow-on efforts by CAPMAS in the field proved to be counterproductive. Every month about twelve representatives from headquarters would visit two governorate offices each, taking on average four days. They carried with them source error information pertinent to the governorate which the CET department had assembled for the visit. However, they seldom left Cairo with enough detailed knowledge about specific governorate errors to improve on the efficiency of data collection or individual enumerator performance. Field visits were never directly associated with decreased errors from the field. In fact they were probably disruptive of governorate office routine and the absence of critical staff certainly did not increase primary team productivity. Over time, the field visits degenerated into little more than perquisites, a chance to escape the monotony of the city. There was clear indication of institutional anxiety about changing this practice when its merit was questioned. Field visits eventually did cease, not from recognition of their limited effect, or from favorable reports of alternative forms of communication, but from the additional pressure put on field offices due to activities associated with the Egyptian population census.

I.D.5 Production Evaluation and Monitoring of Data Collection and Processing

To reiterate, there are a host of survey processing tasks which require full team communication and cooperation. The subject matter specialist, for example, may not be familiar enough with data entry or validation operations to properly allocate the responsibilities of item checking to editors and coders. All of the HIECS computer processing phases - coding - editing - totalling, receipt, entry, verification, validation, correction, tabulation, and reformatting - are extremely detailed and complicated. The learning curves for processing tasks are rather flat in the beginning, and individual roles become defined, distinct, and integrated, only with practice.

It is instructive to view the magnitude of the processing task from the system parameters of the production survey. An average of 170 records, or lines of data, per household were entered and reentered from a potential total of 681 data items, the latter of which were all pre-coded onto the questionnaire. Thirty-four separate CENTRY screens were developed to accommodate an entire questionnaire of 67 pages in length. The entire survey takes up about 120 megabytes, half a Bernoulli© disk.

The entire primary processing team encountered few serious computer problems once the twelve keyers got used to the screens, their three direct supervisors began using spreadsheet software (EXCEL©) to summarize keyer performance, and the primary programmers finished coding the edit routine for the LAN system. The primary programmers had to produce very little original material: the CONCOR routine and the CENTS tabulation programs were merely improved versions of the original 1990/1991 HIECS source code. However, storage, maintenance and retrieval were labor intensive. Tasks were lumpy at times: since the sample was divided into halves, the second half processing required recreating and rationalizing the ID check file and the CENTRACK system. Management encouraged the processing team to experiment with their computers, to learn DOS commands and Windows™, to produce graphs in EXCEL©, and the like. Perhaps the biggest problem the processing team faced was their fear of making mistakes. This stemmed from an educational background which emphasized rote learning and the passing of exams. However, as computer technologies become more widely accepted and

relied upon, resistance to analytical tasks should lessen.

I.D.6 On-going Headquarters/Field Communication

The front line in the war against survey errors is the cultured vigilance produced by the relationship between the enumerator and field management. Ideally, enumerators make interview reports to the field editor, coder and supervisor after every few household visits. Such interventions provide the earliest opportunities for clearing up inconsistencies in survey data. The primary headquarter's management team, in turn, should make every effort to stay involved with the enumeration process in the field, generally encouraging actions which enhance data quality, and discouraging nonstandard practices.

I.D.7 Coding, Editing, and Totalling (CET)

It has been suggested that HIECS management access to the CET department's activities and methods was sub-optimal. The resistance to share information about data collection and field enumeration reports with the survey manager and processing team meant the loss of the ability to identify, ameliorate and evaluate field source error. One example should suffice to clarify this perception. Enumerators received 15 £E for each "perfectly clean questionnaire," plus travel costs. Incentive payments were also given, apparently, for exceptional enumerator work. But which, when, and where certain enumerators received salary supplements from better than average interview work was considered secret, and therefore a potentially excellent covariate for measuring data quality was lost. The ultimate goal was to decrease errors at the source, so to decrease the need for correction throughout the processing stages further from the source.

Realizing that there would be no open access to information about the original state of questionnaires coming from the field, and lacking valuative information, HIECS management eventually requested and received monthly summaries of errors. This request came after the first quarter of data collection. CET agreed to employ a type of acceptance sampling, loosely defined. That is, the CET department was asked to summarize the errors from 10% of the batches arriving at headquarters. All errors would be removed, but management required information about how corrective intervention could occur before the questionnaires came to the CET department. Table 1.6 makes it clear that calculation errors, which made up 42% of all errors, continued to pass from the field to CET throughout the survey collection period. Despite repeated field trips and much communication from headquarters about attention to detail in field editing, field operations did not become more efficient at reducing calculation error. The CET group was too willing to accept questionnaires with calculation errors, and was not strict enough about returning unacceptable forms to the field. In short, CET should have been a less passive, more informed, stage in the survey process.

I.D.8 Field Supervisors' Experience

The team formalized supervisor and editor reports and made the digesting and editing of suggestions part of the routine designed to fill additional gaps in information. Front-line survey workers submitted their own

ideas about quality control to headquarters beginning November of 1995. These were summarized, commented on, and returned to governorate offices in the form of quarterly "Notes to the Field." In the long-term, final reports about survey operations from the supervisor's standpoint, to the extent these are given the hearing they deserve and are heeded, should be helpful for future surveys.

Supervisors reported that targeted households often did not understand the reasons for the survey, especially in the beginning. Households had to be approached cautiously until the enumerators gained respect through confidence and composure. There were consistently negative statements made about the length and the sequencing of the questionnaire itself, and about the diary being unhelpful or irrelevant, especially for illiterate households. Supervisors made no negative comments about the enumerator's manual. Regarding field operations, certain recurrent problems were obvious from the governorate office summaries: i) locating the household was difficult because the census number of the building was unclear, or it differed from the one on the frame listing, or because the physical distance to it was too great; ii) cooperation of respondents was a problem in about 20% of the sample, and usually among the urban, higher status households (but cooperation did improve over time, at least if that can be inferred from the decrease in complaints); ultimately the enumerators obtained cooperation in the majority of these cases, because the final refusal rate for the survey was less than 2%; iii) field management never characterized enumerator turnover or staffing as problems for survey operations; iv) transport was too expensive, in the sense of being too far from the governorate office to the target interview site, and often too crowded when public transport was necessary. At times transport was not even available; v) administratively, most of the supervisors complaints dealt with the lack of timely financing ("too little money, and too late"), and the lack of time to properly edit questionnaires in the field. Finally the national population census did interfere with many of the administrative activities of the HIECS, with supervisors complaining about conflicting and competing uses of their time.

The problem of distance to interview site and cost of transportation was partly unavoidable, as the need to assure randomness in sampling necessitated turning a blind eye to geography, but in other respects more precise and current maps would have facilitated the logistical aspects of enumeration. There was, and is, no excuse for not keeping enumeration operations financially liquid; foresight in fiscal planning - securing funds on time from the primary local currency source (USAID/Egypt), earmarking and allocating these funds on time - would have eliminated many of the obstacles to smooth field operations.

I.D.9 The Processing Cycle

The first figure, Figure 1, is a graph of the frequency of receipt, entry, verification, and validation of the HIECS survey questionnaires over the 52-week data collection period beginning November 25, 1995. The information used to produce this graph came from the processing phase counts of CENTRACK. Processing did have its peaks and troughs, noticeably weeks 13 and 23 were idle, corresponding to the last week of Ramadhan, and the Kurban Bairam, respectively. Eventually it took less than two months to complete an entire cycle from receipt to final validation, representing a great improvement

in the speed of processing of any survey at CAPMAS.

I.D.10 Keyer Productivity

Table 1.5 is an annualized summary of keyer productivity measures for the data entry operators. "Production" is the number of questionnaires for which operators were ultimately responsible. "Speed" is the average number of keystrokes per hour, timed by CENTRY. "Error" is the average error rate - the number of times they made an invalid keystroke per 1000 keystrokes. The intention of this table is to show the evaluation detail that good data entry software provides, as well as the heterogeneous nature of skills, but overall the high degree of professional capability in the core of the processing team.

There were 9 full-time operators, and 6 part-timers, overseen by three managers intimately connected with the allocation of work flow. Data entry must be considered the bright spot in the 1995/1996 HIECS, not simply because speed rates were above the international standard of 8000 keystrokes per hour. The job was a very big one, often tedious, and all of the data was double-keyed (verified - entered twice for accuracy). Yet turnover was not a serious problem. In short the success of the Egyptian HIECS owes much to the computer operators who entered the data.

I.D.11 Edit Routine

The CONCOR edit routine produced error reports about lack of consistency between items from verified data. These reports were then used to correct the raw data. It is possible to summarize annually what the common sources of error were, given the monthly batch samples. Usually approximately 82 PSUs were represented per month, so the edit manager selected one random questionnaire from each of the 82 monthly PSU batches, and annualized this, to produce the table of common frequency errors for the year. Assuming that this sample was representative, two-thirds of all CONCOR errors were typical of the ones in Table 1.7.

The main sources of inconsistency in the verified (and prevalidated) HIECS data remained row and column summary errors. The computer was much more efficient at catching enumerator summation errors than were the editors and coders in the field, or the workers in the CET department.

I.D.12 LAN

Fifteen computers comprised the HIECS local area network (LAN), two primary servers, three analysis computers, and ten computers for data entry. The LAN setup initially permitted the linking of only the ten data entry terminals due to incompatible components. The two primary servers were rotated and used for backup on a scheduled basis, but this sequence, too, was derailed a number of times by difficulties restoring the system. Despite having two uninterruptible power supply (UPS) units, electricity supply was problematic. CAPMAS would not permit electricity to remain on after hours, necessitating booting up the system every day. When power outages occurred, approximately three days per month, the raw batch files were corrupted by CENTRY screen characters, requiring later correction by editing.

In October of 1995, management spent a good deal of downtime

eradicating a boot sector virus which infected CAPMAS computers. This virus spread to computers outside of CAPMAS before being detected and eradicated by F-PROT software.

Other simple hardware problems were recurrent and avoidable, such as dirty tape heads (and no access to cleaner cartridges), overheating of the servers from piling materials on them, communication cables being too close to electrical wires, and people tinkering with PC settings in Windows, or accidently kicking plugs out of sockets. Eventually we kept the LAN free of major problems with climate controlled air conditioning, and simple rules against the entry and exit of copied electronic data.

The procurement contract did not include technical support for LAN maintenance, and CAPMAS was ill-prepared to address LAN difficulties.

I.D.13 Evaluation Recommendations

Efficiency and productivity in large-scale survey data collection come about from standardization, agreement and coordination of survey aspects; sample selection, data processing, and subject-matter concerns. The institution avoids duplication and omission of functions by encouraging open and full communication among and between all partners in the chain of survey responsibility. Problems confound, aggregate, and accumulate when one section is not aware about what another section is doing.

Documentation is an integral aspect in the development of a program of household surveys. For the long-run administrative and institutional development of CAPMAS, HIECS staff should have formalized much more their contributions and experiences in writing. Tangible survey materials, especially sample selection procedures and worksheets, camera-ready questionnaire pages, data entry screens, training manuals, catalogues of specific problems encountered, information about geographic differences in Egypt (languages, access problems, nomadic ethnic groups), were surprisingly sparse given the number of surveys CAPMAS undertakes. It is strongly recommended that CAPMAS make every effort to save copies of related survey material from the 1995/1996 HIECS, and it is hoped that this paper, with its associated appendix, will contribute to the overall documentation effort.

One great opportunity for survey development within CAPMAS which did not attain the full measure of its potential was the development of an analysis round-table. Such a group was proposed and met in December, 1995, to brainstorm, to propose various analysis hypotheses which would address the data user requirements of the Egyptian Ministries, to suggest longer-term analysis plans and nurture a capacity to undertake local research into household expenditures and incomes. This initiative was proposed by the survey manager, who believed that the final measure of institutional success would be the eventual removal of the need for technical assistance from outside of the organization. The analysis plan was usually responsive to Egypt's policy context generally, but the explicit mechanisms for supporting uniquely Egyptian policy change were never truly voiced. It was felt that if a local research capacity were to take root, the host country would have to be responsible initially for preparing the questions which analysis would address. The one time the group met resulted in valuable suggestions for HIECS tabulation, but a host of factors conspired against following up.

I.E Global Edits

In late November of 1996 headquarters validated the final batch of questionnaires for the year. After rationalizing the sample (accounting for all the received batches against the sample batches) and reformatting and backing up the data, management programmed some initial tests of data quality for the full sample files.

Occupation and economic activity codes were the first focus (CAPMAS (1979) and CAPMAS (1993)). In many cases these codes did not match those from the primary code books, and the questionnaires had to be reexamined. Rather than make changes to the raw data, a special program was written in SAS which would correct the invalid code for each case whenever the references were made to the codes. Similarly, a software "patch" was created for the use of weights, as 19 cases were found in which batch code changes had been made to area identifiers in the second half of data collection. These issues are, of course, transparent to users of the final validated data (see "Programmer's Reference" below).

Another focus was variability in the data. Did estimates change wildly from month to month, or from governorate to governorate? A simple one-way analysis of variance (ANOVA) using average household annual expenditures and incomes as analysis variables indicates this. Under the regression framework (Kmenta (1971)) group characteristics such as month and governorate might be used as binary regressors to describe the same phenomena and lead to the same test results, as a one-way ANOVA. Appendix I.C provides the mathematical formulation for that framework.

Tables 1.8 and 1.9 present the group means and variances of the natural logs of income and expenditure, as well as sources of variation in the data. Level mean incomes and expenditures are transformed into their natural logs merely for computational convenience. The question is, is there statistical evidence that the means differ, and do they differ greatly? Once again, the null hypothesis is equality of the means:

$$H_0 : \alpha_1 = \alpha_2 = \ldots \alpha_G = 0$$

and the alternative is that the means are not all equal. "Model Sum of Squares" corresponds to the variation *among* class means, "Error Sum of Squares" represents variation *within* class means, and "Total Sum of Squares" is the sum of Model and Error. The F ratio test can be thought of as a comparison of the variation *among* to variation *within* class means. The larger the value for F the stronger the statistical evidence that the means are not the same. The "Prob > F" is the probability value, the probability of obtaining, by chance alone, an F statistic greater than the computed F statistic when the null hypothesis is true. All of the probability values support the inference, at greater than a 99% level of confidence, that at least one of the month means (and at least one of the governorate means) is different. This result of a statistically significant difference in variance is akin to the difference between household sizes from two half samples (see above). The differences between the estimates are slight, *any* difference would tend to be significant with such large case counts and such small variances. There was simply higher variability one month, or within one

governorate. *Insignificance*, on the other hand, would be an unexpected result for this experiment. The "sameness" of the estimates characterizes a fluid data generating process, and high quality data.

I.F The Programmer's Reference

What appears below are guidelines for the user of 1995/1996 HIECS data. These guidelines are not intended to be definitive, and some extra effort may be needed to prepare the data for analysis. However, the intention is also to aid the user/ researcher enough to permit relatively care-free programming.

The first document required is the HIECS data dictionary. The dictionary appears in the supporting appendix. This gives the length, position, and attribute (numeric, character, or logical) of all variables in the 1995/1996 HIECS data set. The full data set is called **HIECS.DAT**. The data are in ASCII format based on the dictionary's specifications. They are stored *by household*, and since each household might have contributed data for each record type (questionnaire cover, demographic data, housing attributes, etc.), the length of data lines are variable.

The raw data were transformed in a number of ways, but the user need not follow the exact method presented here. (S)he may prefer a different software package than IMPS or SAS to reformat the data, and by making the minimum patches (see below) could use HIECS.DAT without the loss of information.

The raw data was reformatted into output files *by record type* using a COBOL write statement in IMPS CONCOR. Again, these 34 files produced, named with the extension ".OUT," are ASCII, and the sum total of bytes will be very near exact the sum total of bytes in HIECS.DAT.

The SAS program REFRMT.SAS was run on the .OUT files to create 34 permanent files in SAS PC format files (with extensions ".SD2") corresponding to the same record types as the .OUT files. These primary SAS files can be accessed individually, or merged. When merging is needed, the unique identifier variables (the "code") at a household-level merge is ROUND MONTH GOV URBRUR KM SV NUMSV. In other words, one and only one household will have that unique code sequence. When merging at the individual level, the code is ROUND MONTH GOV URBRUR KM SV NUMSV EARNER, only in the case of the DEM.SD2 file, the code for earner is INDNO, and should be renamed. Below are the names and sizes (in bytes) of the original SAS files, and the designation of whether the file is at the level of household (h) or individual (i) or both (ih)

Name, Size, and Level of HIECS Raw SAS Data Files, by Record Type

COV.SD2	2,073,856	h	EDUC.SD2	5,484,800	h
DEM.SD2	69,059,328	i	ENT.SD2	508,160	h
HOUS.SD2	12,157,184	h	CULT.SD2	3,215,616	h
INV.SD2	3,801,856	h	REST.SD2	1,286,400	h
EXP.SD2	55,578,880	h	ACC.SD2	1,986,816	h
FOOD.SD2	106,463,488	h	PER.SD2	9,343,232	h
CIGS.SD2	2,642,176	h	SVC.SD2	4,366,592	h
CLO.SD2	29,364,480	h	NET.SD2	5,316,864	h
FOOT.SD2	7,479,552	h	WAGE.SD2	3,198,208	ih
UTIL.SD2	5,300,480	h	AG.SD2	1,974,528	h
LF.SD2	9,253,120	h	ADIS.SD2	1,421,568	i
FURN.SD2	6,009,088	h	NAG.SD2	733,440	h
MAIN.SD2	9,552,128	h	NDIS.SD2	811,264	i
MED.SD2	7,680,256	h	LAND.SD2	3,804,416	ih
EQPT.SD2	37,120	h	FIN.SD2	164,096	ih
TRAN.SD2	3,391,744	h	INCO.SD2	1,801,984	ih
COMM.SD2	1,052,928	h	SAVE.SD2	491,776	h

Certain changes to the data **must** be made should the researcher wish to use weights and/or the occupation and economic activity codes. Copies of these minimum patches can be found in the supporting appendix.

a. The user of HIECS Survey weights should merge the relevant analysis file with the file **WGTDCOV.SD2**, a permanent SAS file with the weights attached to the COV.SD2 data set. Another way to properly use the weights would be to run the SAS program **WTCALC.SAS** on the reformatted data, or, refusing SAS, retranslate the WTCALC.SAS program into their database software of choice. Any reference to weights must include the lines in WTCALC.SAS which correct weight codes for 14 changed cluster codes.[14] Without this patch, the weights will not be properly attached to the clusters.

b. Any researcher using the coded variables occupation (OCCU) or economic activity (ECONACT) must run the SAS program **HKFIX.SAS** (or similar, for another software) to correct errant codes for these variables.

The final programmer's reference concerns the construction of separate files for the creation of variances using CENVAR. The three source files are found in the supporting appendix.

a. MAKEVAR.SAS and then MAKEVAR2.SAS create HIES.DAT, the data file for critical household-level variance estimates using CENVAR.

b. MAKEVARI.SAS creates HIESINDV.DAT, the data file for critical individual-level variance estimates using CENVAR.

I.G A HIECS Taxonomy

In addition to the use of the HIECS data to advance the interests of

[14] The reason that the codes are different from the original frame is that the governorate supervisors, or members of the CET department, had access to the 1995 (new) area code book.

individual users, a classification of the survey can facilitate comparisons with other household surveys. Garner, et. al., (1993) provide a model for description in the context of eastern European countries in transition, but the basic scheme can be extended to any household survey.

Name:
The Household Income Expenditure and Consumption Survey (HIECS)
Year: 1995/1996 (October 1, 1995 - September 30, 1996)
Frequency: Last survey 1990/1991 (Sept 1, 1990 - August 31,1991), planned every five years
1) Sponsorship: Central Agency for Public Mobilization and Statistics (CAPMAS) of the Arab Republic of Egypt, with long-term technical assistance from the US Census Bureau, and funding from USAID/Egypt;
2) Administration of Data Collection: CAPMAS;
3) Objectives: Provide weights/market basket changes for the measurement of price inflation, and provide indications of changes in socio-economic status of Egyptian individuals and
households under reform since the last HIECS;
4) Data Collection Instruments: Diary filled for one full month, and primary pre-coded questionnaire from personal interviews for demographics, housing, durables, income, and expenditure cross-reference;
5) Sample Size: 15,090 sampled, final sample size 14,805; Persons: 73,939;
6) Recall periods: Month of survey, previous quarter or previous year depending on durability, cost, frequency of purchase of good; income, one month;
7) Coverage: All governorate dwelling units throughout Egypt; includes army, police; omits institutional (prisons, labor camps); nomads poorly represented, new cities poorly represented; urban/rural distinction blurry in some areas;
8) Sample design: Two-stage stratified cluster. First stage area sample of 503 PSUs selected, probability proportional to population size, each PSU having frame of 1500 households, from which 30 are selected in second stage for each PSU, kept constant by stratification on literacy rate. All PSUs interviewed in each half-sample, 15 households interviewed first half of survey year, 15 households second half;
9) Time frame: First survey 1958/1959, then '64/'65, '74/'75, '81/'82;
10) Unit: Household and Individual. Primarily de jure representation: a household is "one or more persons usually living and existing in a dwelling and eating from the same budget when the interview occurs, including any individual living in that dwelling six months or more out of the year ending with the month of the survey visit. Servants who are "fully accommodated" are considered household members;
11) Reference person: Household head;
12) Respondent: "Spouse of the head of the household" or the "household head;"
13) Sampling errors: Based on 1993 preliminary revision of 1986 population census; lowest reliable level of disaggregation: governorate in some cases, region in others;
14) Interview Method: 10 enumerator visits over course of 1 month per surveyed household. Household keeps detailed diary, weekly recall interviews, 2 final interviews to gather income source information matched to household demographics;
15) Interview nonresponse: Less than 2% (a 98+% response rate), response

mandatory by law;
16) Reporting errors: Underreported incomes from illegal sources, underreported expenditures for "sensitive items", especially in rural areas, but see Cardiff (1995);
17) Other nonsampling errors: Confidentiality assured, but enumerator trust impeded by "evil eye;"
18) Deletions/replacement: Cases of "building torn down," "household changed to establishment," "household empty" (not merely away the entire month), and "out of scope" removed from eligible sample; No sample replacement of dwellings, only update of list information if household head occupying dwelling different from frame;
19) Item nonresponse: Mainly ignorable, notorious for alcohol and contraceptives;
20) Variance estimation: Standard errors of means, totals, ratios and proportions for critical household estimates accounting for particular sample design calculated, weighted and unweighted; for calculation convenience, analysis presents se's in many cases assuming self-weighting;
21) Weighting: Weights calculated for unique PSUs. Location and scale of weight distribution biased (based on outdated population data);
22) Definitions: Annualized after-tax income and expenditures (market value of home agricultural production);
23) Income sources/variables: Wages and salaries, ag. and non-ag. "projects," financial, real estate, other. Wages are individual sums of net-of-tax basic wages, net overtime and allowances, bonuses and incentives, imputed in-kind wages, other (unemployment compensation, disability); agriculture project income from crops, many sources of animal husbandry; non-agricultural project income is sum of commercial, industrial, and service-type activity; real estate income is sum of agricultural land rent, empty land rent, sharing revenue, building rents, estimate of rent received from owned dwelling, other properties; financial income is the sum of income from shares, stocks, deposit interest, current account interest, post office savings interest, CD interest, investment sharing and other; other regular returns total made up of pensions, foreign exchange returns, domestic money exchange income, legal alimony, others (welfare agency receipts included);
24) Definition of assets: Not standardized, but see 25);
25) Definition of liabilities: Not standardized, but Section on changes in saving and ownership of the household over the survey year including accounting for agricultural and non-agricultural land, buildings, equipment, vehicles, furniture, animals, cash, stocks, savings, investments, durable goods, jewelry, and net loans;
26) Liability variables: Not standardized, see 25);
27) Definition of Expenditures: Anything and everything purchased by the household during the survey month, imputed value of the good(s) consumed in cases of non-market transaction
28) Expenditures: Food and Beverages composed of cereals and starches, dried pulses, fresh preserved and dried vegetables, fresh preserved and dried fruits, meat and poultry, fish, eggs, milk and dairy products, edible oils and fats, sugar and sugary materials, other foodstuffs, beverages (alcoholic and non-alcoholic); Tobacco products; Apparel, footwear and yarn; Housing and Utilities; Furnishing and Appliances; Cleaning Materials; Out of Household services; Health Care and Medical; Transport and Communication; Education; Culture, Sport and Entertainment; Hotels, Cafes and Restaurants; Personal

Materials;
Personal care and Cosmetics; Other NEC;
29) Additional variables of interest: "Key rent," distance to market and work for household head, number of people on subsidy ration card, whether household gets remittances and amount;
30) Scope of Tables: Annual;
31) Frequency of Tabulation: Once, within 6 months of collection;
32) Basic measures in tabulation: Rural/Urban dichotomous, follows primary questionnaire format. 527 expenditure items and totals (37 sub-group totals and 13 main group totals), detailed source information for 6 household and individual income sources;
33) File structure: Database is a set of 34 record types with variable characteristics, lengths and positions;
34) Criteria for inclusion in database: Complete Demographic, Housing, Income, and Expenditure sections;
35) Imputation: None presently. Planned for key rent, and possibly, household total income;

Chapter II turns from a description of the HIECS to present an overview of the structure of Egyptian households along with critical household estimates and their asymptotic properties. Chapter III is devoted to a temporal and spatial analysis of poverty and inequality. Using the information on wages and the demographic characteristics of the labor force, Chapter IV brings to light some issues and inferences about human capital. Chapter V deals with the demand for items, and presents research results on the CPI. Housing attributes and the demand for scarce shelter are the foci of Chapter VI. Chapter VII takes up the role of education in the country, and provides some evidence of the characteristics which keep children enrolled. 1995/1996 medical expenditures are compared with those of the 1990/1991 in Chapter VIII. Finally, the conclusion presents a conception of the author's expectations for data sharing, institutional change, and research development in Egypt.

Appendix I.A Comparing Estimates from Interpenetrating Samples

To illustrate the use of half sample comparison, consider the number of persons per household in the first half versus the number of persons per household in the second half. The null hypothesis is a significant difference between these means, and the t values for a paired difference experiment allows us to draw confidence bounds around the alternative.

Average Household Size Estimates:

1. First half-sample: 5.04954, N = 7347, STD = 2.53449
2. Second half-sample: 4.93966, N = 7458, STD = 2.45973

$$H_0 : \overline{x}_1 = \overline{x}_2$$

$$H_a : \overline{x}_1 \neq \overline{x}_2$$

$$t = \frac{(5.04954 - 4.93966)}{\sqrt{\frac{(2.53449)^2}{7347} + \frac{(2.45973)^2}{7458}}}$$

The calculated t value is 2.68 and we may reject the null hypothesis of equality of the two means at a 95% level of confidence. The inference is that average household size in the second half sample is statistically smaller, but not by much, because the difference between the two means is very small.

A different point to note, not merely illustrative of the use of interpenetrating samples to test hypotheses, is in the use of the standard deviation for the means, as created by SAS. SAS assumes that the estimate comes from a simple random sample design. For the full sample of 14805 households from the recent survey, SAS produces an estimate of 4.9942 as the mean household size, with standard deviation 2.4976. The implied 95% confidence interval is therefore ± .0402. However, as mentioned, the HIECS households are sampled under a stratified, two stage sampling scheme with probability proportional to size without replacement in the first stage and simple random sampling without replacement in the second stage. Technically, this means that the between- and within-PSU components of the variance of any estimate must be accounted for. In most cases, then, estimates which account for this component of the total variance will be higher than those which assume a simple random sample design. CENVAR software (see below), which does take into account both variance components, produces an (unweighted) estimate of 4.963 for the mean household size ± .055. Cochran (1977) is a good source for this issue. In cases of critical household estimates, where possible, the asymptotic measures reported here will be the more conservative ones produced by CENVAR.

Appendix I.B Functions of IMPS Components

1) CENTRACK handled the movement and transmittal of survey forms between the various processing phases - receipt, entry, verification (or

"double-keying") and validation - by storing phase completion dates. It also permitted the comparison of manual receipt counts of households, males and females, for each surveyed *shiakha*/village from the frame with those same counts after data verification.

2) CENTRY was the data entry software. The CENTRY screens which the data entry operators used were written in Arabic and activated by loading Nafitha.™ This was transparent to the user and presented no technical problem. Ranges of individual items and skip sequences were preprogrammed into CENTRY. In addition, we programmed CENTRY to interact with the file of unique geographical codes (the "ID check file") during data entry sessions in order to avoid missing, or entering twice, any given questionnaire. CENTRY also produced operator efficiency statistics by keyer: length of entry session, the number of records processed over time, and data entry errors per thousand keystrokes. Data verification was also undertaken in CENTRY, whereby 100% of the data was re-entered by a different keyer; the computer sounded a unique "error tone" when the data item value being verified did not match the data item value entered.

3) CONCOR - the software for consistency and correction used primarily during the validation stage - resembles COBOL programming language. Given "edit rules" for consistency between items within one questionnaire's data, CONCOR generated formatted error reports of inconsistencies in the data. Although automatic correction could have been programmed, the data was revalidated manually using CENTRY. CONCOR was essentially maintenance-free after it was debugged initially, and it provided excellent service for editing information and data quality control.

4) CENTS was the table production software for CAPMAS publication tables. For the first time, the stubs and column headings were written in English as well as Arabic. Because the HIECS is so diverse, there were many tables to program (more than 250), so that the task of programming table formats and writing code occupied most of the programmers' time.

5) The CENVAR module calculates variances for critical survey estimates while accounting for the specific sampling design.

6) Underlying all of the above components is the data dictionary which specifies to the integrated modules the lengths, positions, and types of data values found on the raw data files. The IMPS module for the data dictionary is called DATADICT.

Finally, reformatted data for analysis purposes was described, documented, and prepared for reading into SAS™ (Statistical Analysis Software).

Appendix I.C ANOVA in the Regression Framework

Did income or expenditure estimates change much from month to month, or from governorate to governorate? An analysis of variance would show whether singular influences were causing the estimates to deviate greatly. Mathematically, given a normal distribution for a random variable Y (such as income), we can classify its means into G types (by month, for example). Observations on Y are independent, and the variance of Y is a constant. Then the ANOVA model is

$$Y_{tg} = \mu + \alpha_g + \epsilon_{tg} \qquad (t = 1,2,\ldots,n_g;\ g = 1,2,\ldots,G)$$

The dependent variable is the *t*th observation on Y in the *g*th group, μ is the overall (or "grand") mean, and ϵ_{tg} is a stochastic disturbance term. The sum of the α_g will equal zero. The regression model is

$$Y_{tg} = \beta_1 + \beta_2 X_{t2} + \beta_3 X_{t3} + \ldots + \beta_G X_{tG} + \epsilon_{tg}$$

where X_{tg} = 1 if the observation belongs in the gth group and = 0 otherwise. (g = 2,3,...,G)

The intercept in the regression model (β_1) will equal $\mu + \alpha_1$ of the ANOVA model, $\beta_1 + \beta_2$ will equal $\mu + \alpha_2$, etc.

Appendix I.D Weighting Procedures and Estimation[15]

Basic Weight

The probability of selection of the households in a particular sample *shiakha* or village is:

$$p_{hij} = \frac{c_h \times N_{hi}}{N_h} \times \frac{1}{C_{hi}} \times \frac{m_{hij}}{M_{hij}} ,$$

where:

p_{hij} = probability of selection for the sample households in the j-th sample "chunk" in the i-th sample PSU (*shiakha*/village) in the h-th stratum (governorate, urban/rural)

c_h = number of sample "chunks" to be selected in the h-th stratum

N_{hi} = total population (measure of size) in the 1986 census frame for the i-th sample PSU in the h-th stratum

N_h = total population in the 1986 census frame for the h-th stratum

C_{hi} = total number of "chunks" into which the i-th PSU in the h-th stratum is divided

m_{hij} = number of in-scope households selected in the j-th sample "chunk" in the i-th sample PSU in the h-th stratum (generally equal to 30, or 15 in the case of the sample for the first 6 months)

M_{hij} = total number of housing units in the updated listing for the

[15] Excerpted from Megill (1995).

j-th sample "chunk" in the i-th sample PSU in the h-th stratum

(Due to household listing anomalies) (M_{hij}) is unknown, and it is not possible to calculate the exact probabilities specified previously. An approximate probability is:

$$C_{hi} \approx \frac{M_{hi}}{1500}$$

$$M_{hij} \approx 1500$$

where:

M_{hi} = total number of households in the 1986 census frame for the i-th PSU *(shiakha*/village) in the h-th stratum

After substituting these values, the probability of selection reduces to the following expression:

$$p_{hij} = \frac{C_h \times N_{hi}}{N_h} \times \frac{m_{hij}}{M_{hi}}$$

The basic sampling weight, or expansion factor, is calculated as the inverse of this probability of selection. Given the probability specified above, the basic weight can be expressed as follows:

$$W_{hij} = \frac{N_h \times M_{hi}}{C_h \times N_{hi} \times m_{hij}} ,$$

where:

W_{hij} = basic weight for the sample households in the j-th sample "chunk" in the i-th sample PSU in the h-th stratum

<u>First Phase Weight Adjustment for Noninterviews</u>

The first phase weight adjustment factor can be defined as follows:

$$F_{1hij} = \frac{m_{hij}}{m'_{hij}} ,$$

where:

F_{1hij} = first phase weight adjustment factor for the sample

households in the
j-th sample "chunk" in the i-th sample PSU in the h-th stratum

m_{hij} = total number of valid (occupied) sample households selected in the j-th sample "chunk" in the i-th sample PSU in the h-th stratum (that is, the number of interviews plus the number of in-scope noninterviews in the sample)

m'_{hij} = total number of completed household interviews in the j-th sample "chunk" in the i-th sample PSU in the h-th stratum

The numerator of this adjustment factor includes the households with completed interviews and the following categories of noninterviews:

(1) Misidentification (not found)
(5) Not-at-home (temporary absence)
(6) Questionnaire partially completed (and unusable)
(8) Refusal

The denominator includes only the households with completed interviews.

The first phase adjustment factor excludes the records of questionnaires with the following categories of noninterviews, which are considered ineligible:

(2) Demolished
(3) Household changed to establishment
(4) Vacant
(7) Out-of-scope

The first-phase adjusted weight can be expressed as follows:

$$W'_{hij} = W_{hij} \times F_{1hij}$$

Second Phase Weight Adjustment for Population Changes

The second-phase weight adjustment factor (CAPMAS, Table 2: "Population Projections for Governorates Second Assumption (1991-2006)", p. 113.) can be calculated as follows:

$$F_{2g} = \frac{N'_g}{\sum_{h \in g} \sum_i \sum_j \sum_k W'_{hij} \times n_{hijk}} ,$$

where:

F_{2g} = second-phase adjustment factor for the weights in governorate g

N'_g = projected population for the governorate g, excluding the out-of-scope subpopulation

n_{hijk} = total number of persons in the k-th sample household in the j-th sample "chunk" in the i-th sample *shiakha*/village in the h-th stratum

The final adjusted weight (W''_{hij}) for the sample households in the j-th sample "chunk" in the i-th sample PSU in the h-th stratum in governorate g is defined as follows:

$$W''_{ghij} = W_{hij} \times F_{1hij} \times F_{2g} = W'_{hij} \times F_{2g}$$

Weights for Monthly and Quarterly Subsamples

For the estimates based on a monthly or quarterly subsample, the first-phase adjusted weight (W'_{hij}) would be multiplied by the following factor for each stratum:

$$F_{Sh} = \frac{c_h}{c'_h} ,$$

where:

F_{Sh} = weight adjustment factor for subsample S (for a particular month or quarter) in the h-th stratum

c_h = number of sample "chunks" in the original sample for the h-th stratum

c'_h = number of "chunks" in subsample S (for the month or quarter) in the h-th stratum

Survey Estimates

The survey estimate of a total can be expressed as follows:

$$\hat{Y} = \sum_h \sum_i \sum_j \sum_k W''_{ghij}\, y_{hijk} ,$$

where:

y_{hijk} = value of variable y for the k-th sample household in the j-th sample "chunk" within the i-th sample PSU in the h-th stratum

The survey estimate of a ratio is defined as follows:

$$\hat{R} = \frac{\hat{Y}}{\hat{X}} ,$$

where

$$\hat{Y}$$

and

$$\hat{X}$$

are estimates of totals for variables y and x, respectively, calculated as specified previously.

Variance Estimation Procedures

The ultimate cluster variance estimator for a total can be expressed as follows:

Variance Estimator of a Total

$$V(\hat{Y}) = \sum_{h} \left[\frac{C_h}{C_h - 1} \sum_{i} \sum_{j} \left(\hat{Y}_{hij} - \frac{\hat{Y}_h}{C_h} \right)^2 \right] ,$$

where:

$$\hat{Y}_{hij} = \sum_{k=1}^{m_{hij}} W''_{ghij} \, y_{hijk}$$

$$\hat{Y}_h = \sum_{i} \sum_{j} \hat{Y}_{hij}$$

The variance estimator of a ratio can be expressed as follows:

Variance Estimator of a Ratio

$$V(\hat{R}) = \frac{1}{\hat{X}^2} \left[V(\hat{Y}) + \hat{R}^2 \, V(\hat{X}) - 2 \, \hat{R} \, COV(\hat{X}, \hat{Y}) \right] ,$$

where:

$$COV(\hat{X}, \hat{Y}) = \sum_{h=1}^{L} \left[\frac{C_h}{C_h - 1} \sum_{i=1}^{C_h} \left(\hat{X}_{hi} - \frac{\hat{X}_h}{C_h} \right) \left(\hat{Y}_{hi} - \frac{\hat{Y}_h}{C_h} \right) \right]$$

$$V(\hat{Y}),\ V(\hat{X})$$

are calculated according to the formula for the variance of a total.

Table I.1 1995/1996 HIECS Sample Size and Allocation by Governorate, Urban/Rural

Governorate	Urban		Rural		Total	
	Sampled Chunks	Sampled Households	Sampled Chunks	Sampled Households	Sampled Chunks	Sampled Households
Cairo	66	1980			66	1980
Alexandria	31	930			31	930
Port Said	4	120			4	120
Suez	4	120			4	120
Damietta	3	90	6	180	9	270
Darahlia	10	300	26	780	36	1080
Sharkia	7	210	28	840	35	1050
Kalyoubia	11	330	15	450	26	780
Kafer-el-Sheikh	4	120	14	420	18	540
Gharbia	10	300	20	600	30	900
Menoufia	5	150	18	540	23	690
Behera	7	210	24	720	31	930
Ismailia	4	120	3	90	7	210
Giza	23	690	16	480	39	1170
Beni-Suef	4	120	11	330	15	450
Fayoum	4	120	12	360	16	480
Menia	5	150	22	660	27	810
Assyout	6	180	16	480	22	660
Souhag	6	180	18	540	24	720
Qena	6	180	18	540	24	720
Aswan	3	90	5	150	8	240
Frontier (4)	4	120	4	120	8	240
Total	227	6810	276	8280	503	15090

Table I.2 1990/1991 and 1995/1996 HIECS Household Sample Compositions

	1990/1991 HIECS				1995/1996 HIECS			
	Designed		Responded		Designed		Responded	
Governorate	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Cairo	2520		2309		1980		1962	
Alexandria	1200		1088		930		895	
Port Said	150		122		120		118	
Suez	120		111		120		120	
Damietta	90	120	80	115	90	180	88	177
Darahlia	390	600	381	592	300	780	297	776
Sharkia	300	600	282	596	209	841	205	835
Kalyoubia	540	330	504	316	330	450	320	442
Kafer-el-Sheikh	180	270	180	267	120	420	118	417
Gharbia	390	480	377	436	300	600	275	590
Menoufia	210	420	199	404	150	540	139	527
Behera	300	510	293	505	210	720	210	718
Ismailia	90	90	78	56	120	90	114	88
Giza	960	330	876	322	690	480	671	477
Beni-Suef	150	240	138	229	120	330	114	328
Fayoum	150	240	146	240	120	360	116	360
Menia	270	420	257	476	150	660	140	647
Assyout	270	360	251	361	180	480	172	472
Souhag	240	390	237	388	180	540	166	534
Qena	240	360	222	352	180	540	175	536
Aswan	120	120	115	115	90	150	89	150
Frontier (4)	120	120	106	110	120	120	118	109
Total	9000	6000	8352	5880	6809	8281	6622	8183

Table I.3 Update Rate ({Sampled-Original}/Sampled) for the 1995/1996 HIECS

Governorate	Sampled	Original	% Updated
Quena	711	696	2.11
Menoufia	666	649	2.55
Assyout	644	625	2.95
Beni-suff	442	428	3.17
Sharkia	1040	1006	3.27
Gharbia	865	831	3.93
Fayoum	476	456	4.20
Damietta	265	253	4.53
Sohag	700	667	4.71
Wadi-Gadiid	58	55	5.17
Darahlia	1073	1014	5.50
Behera	928	875	5.71
Aswan	239	225	5.86
Kafr-el-Sheikh	535	503	5.98
Menia	787	738	6.23
Kalyoubia	762	703	7.74
North Sinai	60	54	10.00
Giza	1148	1025	10.71
Ismailia	202	180	10.89
Alexandria	895	781	12.74
Port Said	118	101	14.41
Cairo	1962	1662	15.29
Suez	120	101	15.83
Red Sea	49	41	16.33
Matrouh	60	44	26.67
Total	14805	13713	0.07

Table 1.4 Number and Characteristics of Enumerators in the Field over Entire 1995/1996 HIECS Collection Period

Governorate	Number			Age < 35		Age > 35		Medium Degree Education		High Degree Education	
	M	F	Total	M	F	M	F	M	F	M	F
Cairo	2	195	197	-	144	2	51	2	173	-	22
Alexandria	1	116	117	-	88	1	28	-	90	1	26
Port Said	-	17	17	-	15	-	2	-	13	-	4
Suez	2	14	16	-	11	2	3	2	13	-	1
Damietta	-	29	29	-	15	-	14	-	22	-	7
Darahlia	-	108	108	-	87	-	21	-	89	-	19
Sharkia	87	28	115	50	22	37	6	49	24	38	4
Kalyoubia	2	78	80	-	66	2	12	2	58	-	20
Kafer-el-Sheikh	41	31	72	22	27	19	4	33	25	8	6
Gharbia	-	118	118	-	96	-	22	-	66	-	52
Menoufia	3	77	80	-	46	3	31	-	50	3	27
Behera	7	99	106	2	74	5	25	6	80	1	19
Ismailia	16	20	36	9	18	7	2	11	17	5	3
Giza	62	66	128	43	51	19	15	51	38	11	28
Beni-Suef	7	55	62	1	39	6	13	5	42	2	13
Fayoum	-	67	67	-	47	-	20	-	31	-	36
Menia	-	105	105	-	78	-	27	-	94	-	11
Assyout	65	-	65	22	-	43	-	61	-	4	-
Souhag	70	2	72	23	2	47	-	53	2	17	-
Qena	66	8	74	32	8	34	-	48	5	18	3
Aswan	6	19	25	3	18	3	1	5	15	1	4
Red Sea	2	1	3	-	1	2	-	2	1	-	-
Wadi-Gadiid	2	2	4	-	2	2	-	2	2	-	-
North Sinai	8	-	8	2	-	6	-	-	-	8	-
Matrouh	-	6	6	-	6	-	-	-	6	-	-
Total	449	1261	1710	209	961	240	297	332	956	117	305

Figure I.1 Graph of the Frequency of Receipt, Entry, Verification, and Validation of 1995/1996 HIECS Questionnaires, 52-Week Period Beginning November 25, 1995

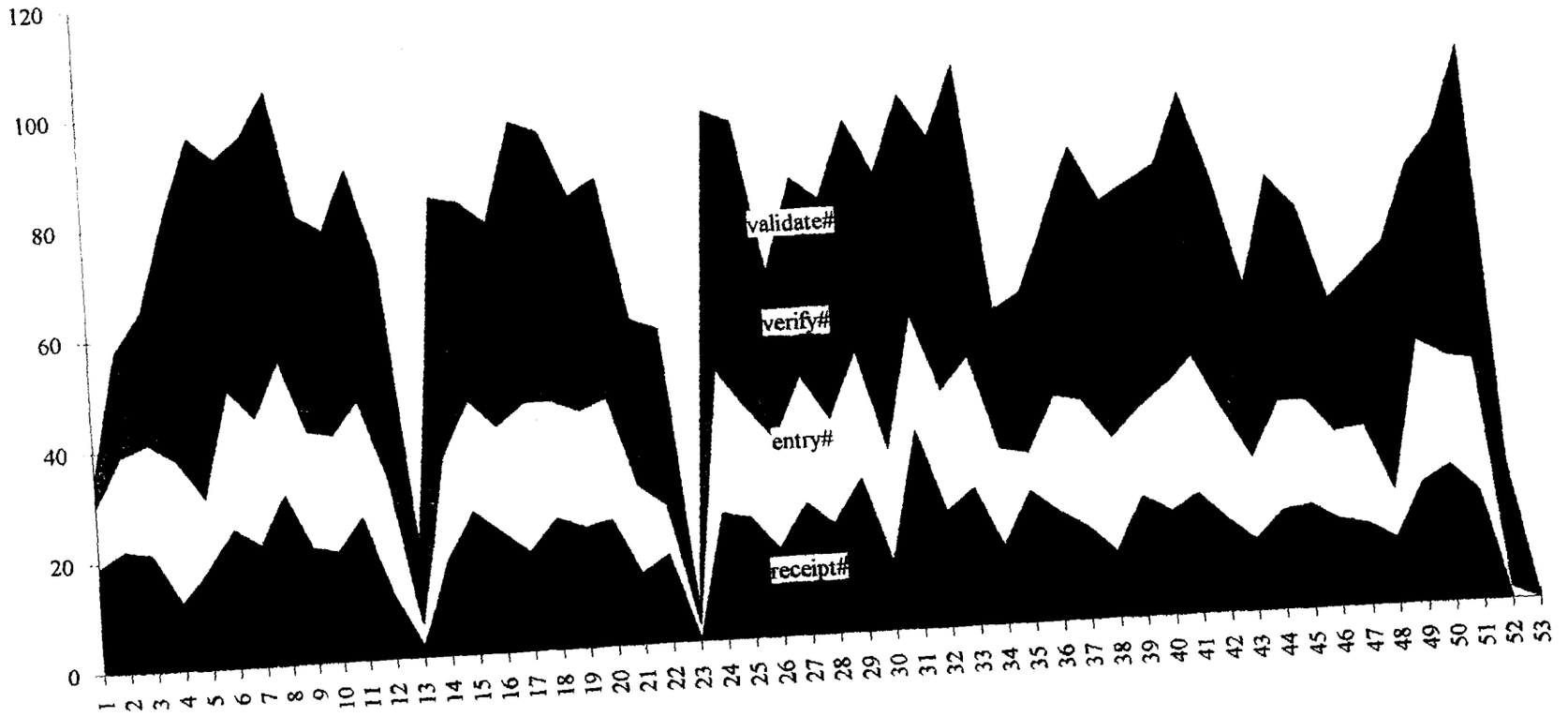

Table I.5 Average Annualized Data Entry Productivity in the 1995/1996 HIECS

Keyer	Production	Months	Speed	Error
1	339	12	11118	1.46
2	344	12	10830	1.32
3	309	12	7446	2.46
4	324	12	8706	1.21
5	335	12	9209	1.12
6	215	12	9869	2.21
7	257	3	6270	3.32
8	325	5	9863	2.62
9	328	12	11231	1.68
10	341	12	11950	1.12
11	288	12	11825	1.24
12	153	4	6326	2.59
13	279	9	11841	3.75
14	287	8	9688	2.22
15	283	8	10056	2.27

Table I.6 CET Monthly Error Characteristics from 10% Samples, 1996

Month	Total	Incomplete	Net	Examined	Errors due to:				
					Calculation	Consistency	Logic	Missing	Field
Jan	1275	28	1247	123	49	3	3	4	10
Feb	1245	13	1232	120	40	3	1	5	10
Mar	1260	28	1232	127	39	2	3	1	12
Apr	1260	14	1246	127	50	1	1	3	11
May	1260	16	1244	127	58	6	1	3	8
Jun	1245	22	1223	126	49	6	1	5	9
Jul	1275	30	1245	128	58	-	1	2	7
Aug	1245	15	1230	128	52	-	-	2	14
Sep	1290	19	1271	132	83	2	3	2	14
Total	11355	185	11170	1138	478	23	14	27	95

Table I.7 Annualized Error Characteristics from CONCOR Output, Two-thirds of Sample

Message	Frequency	Percent
Annual Value <> Monthly Value × 12	483	25%
Annual Quantity <> Monthly Quantity × 12	279	15%
Total Value of Main Group Items <> Rec Sum Main Groups	126	7%
Annual Value <> Quarterly Value × 4	107	6%
Annual Value of Tot Rec (99) <> Comp Annual Values	106	6%
HH has Lands Net Inc Rec Code but no Lands Inc	91	5%
Tot Val of Tot Rec (99) <> Comp Tot Val	35	2%

Table I.8 One-Way Analysis of Variance by Month, Log Expenditure and Log Income

Month	N	Variance Log (Exp)	Variance Log(Inc)	Mean Exp	Mean Inc
Oct 95	1194	0.3864	0.4389	8.7750	8.7656
Nov 95	1226	0.3898	0.4655	8.7117	8.7883
Dec 95	1217	0.3802	0.4054	8.6540	8.7377
Jan 96	1247	0.3556	0.4138	8.6661	8.7347
Feb 96	1232	0.3070	0.3484	8.6399	8.7306
Mar 96	1231	0.3354	0.4035	8.5617	8.6735
Apr 96	1246	0.3411	0.4004	8.6639	8.7511
May 96	1244	0.3183	0.3797	8.6228	8.7058
Jun 96	1223	0.3615	0.4248	8.5435	8.6573
Jul 96	1245	0.3028	0.3658	8.6035	8.7005
Aug 96	1230	0.3115	0.3826	8.5138	8.6167
Sep 96	1270	0.3256	0.3735	8.5741	8.7105
Full Sample	14805	0.3474	0.4018	8.6270	8.7143
Model Sum of Squares				73.4589	31.1238
Error Sum of Squares				5068.9487	5916.5330
Total Sum of Squares				5142.4076	5947.6568
F Value				19.4890	7.0740
Prob > F				0.0001	0.0001

Table I.9 One-Way Analysis of Variance by Governorate, Log Expenditure and Log Income

Governorate	N	Variance Log (Exp)	Variance Log(Inc)	Mean Exp	Mean Inc
Cairo	1962	0.3796	0.4188	8.8989	8.9984
Alexandria	895	0.3747	0.4237	8.7009	8.7541
Port Said	118	0.1928	0.2793	9.2268	9.2634
Suez	120	0.4162	0.5181	9.2273	9.2337
Damietta	265	0.2443	0.2868	8.6801	8.7270
Darahlia	1073	0.2212	0.2538	8.7037	8.8591
Sharkia	1040	0.2005	0.2551	8.4989	8.6131
Kalyoubia	762	0.2296	0.2586	8.4804	8.5247
Kafer-el-Sheikh	535	0.2928	0.4176	8.6963	8.6202
Gharbia	865	0.2968	0.3801	8.7443	8.7563
Menoufia	666	0.3294	0.3802	8.6004	8.5478
Behera	928	0.2263	0.2820	8.5821	8.7161
Ismailia	202	0.2372	0.3140	8.9184	8.9357
Giza	1148	0.3358	0.4100	8.7807	8.8524
Beni-Suef	442	0.4193	0.4532	8.4892	8.5829
Fayoum	476	0.2539	0.2780	8.5764	8.6507
Menia	787	0.2333	0.2996	8.4821	8.5812
Assyout	644	0.3876	0.4452	8.1919	8.3415
Souhag	700	0.3146	0.4002	8.2439	8.3995
Qena	711	0.3530	0.5107	8.3257	8.5003
Aswan	239	0.2434	0.2743	8.5383	8.7266
Red Sea	49	0.3504	0.2033	8.9497	8.8132
Wadi-Gadiid	58	0.3930	0.3897	8.9212	9.1005
Matrouh	60	0.4084	0.5119	9.3425	9.5399
North Sinai	60	0.1132	0.1138	8.6186	8.9842
Total	14805	0.3474	0.4018	8.6270	8.7143
Model Sum of Squares				695.2851	614.2360
Error Sum of Squares				4447.1225	5333.4208
Total Sum of Squares				5142.4076	5947.6568
F Value				96.2820	70.9240
Prob > F				0.0001	0.0001

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Chapter II. Characteristics of Egyptian Households

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CHAPTER II. CHARACTERISTICS OF EGYPTIAN HOUSEHOLDS

II.A Introduction

The demographic characteristics of the 73,939 persons in the HIECS sample provide a broad framework for the economic activities of Egyptians. Individual traits are excellent predictors of consumption and earnings. This chapter begins by presenting the basic structure of households and the characteristics of their members, then moves to consider how the HIECS population compares with the rest of Egypt, then refocuses on production and income potential of individuals within the household context.

II.B Basic Demographic Characteristics

On average, there are 4.963 individuals per household in the HIECS sample.[1] Other researchers have found different household sizes for Egypt's population. The most recent Demographic and Health Survey (DHS) produced an estimate of 5.6 persons per household, and Moreland, *et. al.* (1996), following the same sample design, reports 5.675 persons. Kemprecos and Oldham (1992) reported a figure of 4.85 for 1992. The HIECS was designed to represent a larger population of Egypt than other surveys, and different definitions of "household" cloud the comparison. The point to be made is this: it may be a good estimate, it may even be the best current estimate, but it is still only an estimate. There was speculation about household size results even from the previous HIECS (Korayem, (1992)). How precise the estimate 4.963 is depends on the standard error,[2] but we can be 95% certain that the

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[1] The first statement to make is a word of caution: 4.963 is an *estimate* from 14,805 households, as produced by CENVAR (US Census Bureau (1994)) software, given the two stage stratified cluster sample design. SAS will produce a more precise estimate of 4.99 persons per household because it is capable of storing more decimal places (i.e., the difference is due to rounding).

[2] The standard error of the estimate is the square root of the variance. This is the same variance which appeared in the Appendix of Chapter I, namely the estimator for the variance of a ratio (means are ratios when cluster designs are involved; the denominator is defined to equal 1 for each element, and the weights - a column vector of 14805 1's in this case - are summed for the entire subpopulation). The C.V. is the coefficient of variation, the standard error × 100 divided by the mean estimate; it provides a unit-free measure of precision. Because it is expressed in terms of a percentage, the C.V. makes the level of precision from different samples comparable. C.V's higher than 20, as a general rule, point to poor estimates. C.V.'s can be very helpful for determining the sample sizes required for future surveys (US Bureau of the Census (1994), p. 46) given the formula

$$\textit{required } n = n_{used} \times [\textit{CV obtained/target CV}]^2.$$

A C.V. of .57% is "very low," pointing to extremely high precision. An example could be illustrative here. Perhaps in the next survey, CAPMAS samplers decide that a C.V. of 3.0% would be "precise enough" for the estimate of

true mean falls within the range of 4.908 and 5.018.

Asymptotic Characteristics of One Estimate, Household Size

Category	Estimate	Standard Error	C.V. (%)	95% C.I.	Design Effect	Obs
HH Size	4.963	0.028	0.57	4.908 - 5.018	2.08	14805

The first table of demographic estimates is Table II.1. These are proportions, simply HIECS individuals who either do or do not fall into that row category for the characteristic, i.e. they are "mutually exhaustive." The estimates sum to 1.0 and the Number of Observations sum to 73939. Individual attributes presented here are: relation to the head of the household; sex; educational attainment; marital status; work status; whether the individual "earns income" for the household; and whether that person has or does not have income from wages and salaries, agricultural projects, non-agricultural projects, real estate, financial instruments, and/or other sources.

By definition, there is only one household head per household, so that a figure "14805" appears in the first row under the last column. There are marginally more males than females, which mirrors population projections by age groups (see CAPMAS (1995), Table No. 1-23, p. 35). Regarding the educational status of household members, 14.4% can only read and write, and 27.5% considered themselves illiterate.[3] According to our estimates, 64.33% of individuals 10 years old or more *might be* considered literate, but this relies heavily on subjective notions about reading and writing capabilities. The estimate for individuals who have attained better than a university certification is imprecise, mainly due to the small number of cases of such

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household size at the national level. Instead of 14805 households needed, only

$$\textit{required } n = 14805 \times [0.57/3.0]^2$$

$$\textit{required } n = 534 \text{ households}$$

would be needed. Of course, in a large-scale expenditure survey, the goal is not merely an appropriate measure of household size, and there is always the need to balance expected precision with administrative concerns; other estimates should demand more scrutiny, perhaps, as well as other methods proposed to reduce non-sampling variability.

The 95% C.I. is the confidence bound referred to in the introduction. In repeated sampling under essentially the same survey conditions, the average household size would be in the range of 4.908 to 5.018 persons 95% of the time. The design effect is a measure of the efficiency of the sample design; it is the ratio of the variance produced (in the HIECS case) under a two stage stratified cluster sample design to the variance of a simple random sample design. The design effect estimate 2.08 means that the variance under the complex HIECS sample for the estimate of household size is 2.08 times what it would be if the HIECS sample was picked using a simple random sample.

[3] "Less than age" means that the individual in the household had not reached his or her 10th birthday.

persons. In the work status classification, the inferred labor force size (="Employed" + "Unemployed") is 31% of those aged from 6 to 64 years. However, the work status definition may not have been strictly adhered to in enumeration, given that a larger percent (33.7%) said they "earned income." Regarding income earners, an interesting thing is common sources: real estate income is nearly as common as wages and salaries as an income source; the other income sources are secondary.

The respondent in the HIECS is the interviewee, the enumerator's main contact at the time of the interview (so there are more respondents than households). The typical respondent in the 1995/1996 HIECS is female (72%) in her late 30's or early 40's, and married (79%). 52.8% of respondents are spouses of household heads, 40.8% are household heads. These characteristics are significant in multivariate analysis, especially considering (see below) that females make up less than 30% of income earners. A respondent will respond a certain way given his or her specific demographic characteristics, and these may not produce the "true" response for an item. For instance, in reponse to how much monthly rent the household dwelling could command in the current market, the full sample of female respondents produces an average figure of 73.57 £E. When male respondents are asked the same question, their estimates produce an average of 68.78 £E, almost 5 £E less. It is interesting that males would produce a more conservative estimate when imputing the value of their dwelling, and it is noteworthy that the smaller mean is based on fewer cases. These cognitive factors do, indeed, color income and expenditure estimates in very complex ways.

II.C Population and Age

Figure II.1 is the population pyramid for the 1995/1996 HIECS sample. The HIECS has 39.29% of sampled individuals in the age group less than 15, 57.32% are between 15-64, and 3.39% are 66+ years old. The implied 95/96 HIECS "dependency ratio" (the number of "dependents" as a proportion of "non-dependents" - in the simple case, the end ages divided by the middle) is nearly 75%.

Age distributions are often biased and the HIECS pyramid is no exception. Respondents are often unsure about ages, and it is a well known phenomenon that individuals tend to prefer certain digits, ending in 0 or 5 perhaps, when pressed to provide an answer. If this digit preference exists in the data, these digits will make up a disproportionate part of numeric intervals, and the measure can be made into an index for comparison between groups. The index should center at 1.0 in the absence of digit preference, assuming a generally smooth population distribution. For example, in the interval 18-22, the digit "20" should occur in one-fifth of the cases, and the index for the number 20 should then be the number of times "20" occurs divided by one-fifth of the total cases in the interval 18-22. Following are the indices for digit preferences 0 and 5 for males and females from actual HIECS data:

Digit Preference Indices

Digit	5	10	15	20	25	30	35	40	45
Index	1.379	1.088	1.080	1.114	1.741	1.776	2.456	1.940	2.586
50	55	60	65	70	75	80	85	90	95
2.411	2.766	2.790	2.878	3.156	3.014	3.584	3.111	3.333	2.857

This shows that as respondents get older they were more likely to respond that their age is a digit ending in 0 or 5. Ages for younger individuals are less biased. There is a very sharp decrease in response exactitude from age 20 to age 25.

II.D Consumption Characteristics: Household Group Expenditures

Table II.2 presents estimates for average total household expenditures (in £E) for 11 main groups. Total expenditures include transfers and premiums. Very low coefficients of variation suggest that the group estimates (with the exception of "Premiums") are measured with high precision. Average total expenditure per year is 6658.60 £E and therefore per capita expenditure is 1341.65 £E. In today's exchange rate (3.4 £E = $1.00), that is $394.60.

Note that exactly half of Egyptian household budgets is spent on food and beverages. Food is becoming less important in budgets over time. In the 1990/1991 survey, 53.43% was spent on food. Engel's Laws associate such a phenomenon with an increase in the standard of living.[4]

Housing and Utilities expenditures make up the second most important budget group (after food and beverages). An average of 55 £E per month is spent on housing. Chapter VI will uncover more information about the demand for dwelling space.

Table II.3 follows on Table II.2. It shows the same group expenditures, but breaks these down by region so that comparisons of level averages might be made. It appears at first glance that the Frontier has high food and beverages expenditures compared with the other regions, and it can be seen

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[4] See Houthakker (1957) and Deaton (1989), p. 193):

1. Given households with the same composition, there is an inverse relationship between income and the share devoted to food;

2. Food share is positively correlated with household size.

Assuming that the two laws hold, these are the necessary requirements (not the sufficient requirements) for stating that food share, *in theory*, declines as welfare rises. Engel's approach and focus was cross-sectional: a metric of food can be used (or any other item whose consumption rises and falls with money incomes) when comparing two households of similar size trying to support themselves at a given standard of living. This is the foundation upon which equivalence scales are based (see the next chapter). Before inferring that the standard of living has risen over time in Egypt, additional assumptions have to be made. Empirically, measurement error is a problem. It is not uncommon for respondents to underreport food production by as much as 15%, and to underreport food consumption itself.

by the large C.V. that sampling and non-sampling error around the estimate may be a problem. Precision suffers also in the measurement of Cairo's housing and utilities expenditures - the confidence band around the mean is one-third to one-fourth of the estimate. The "Other Urban" region appears ahead of the other regions in most expenditures, ultimately in total expenditures.

II.E Extent of Self-Sufficiency

Households in the HIECS produce for their own consumption. The amount of home production depends mainly on where the household resides. The importance of home production cannot be understated. The imputed value of home produced items (mainly food) divided by the total (market) value of actual consumption gives a percentage that indicates the extent of household self-sufficiency. This is presented by region in Table II.4. The frequency, the sample percentage, the row percentage, and the column percentage are shown in each cell. Naturally household production is most prevalent in the rural areas, with Lower and Upper Rural Egypt dominating. More than three-quarters of households with a home-produced ratio of greater than 40% are in Lower Rural Egypt.

The System of National Accounts (SNA) of the United Nations considers household "subsistence production," or "production on own account," to be *both* an income and an expenditure (see UN (1982)). By definition, a household which is completely "self-sufficient" has a total expenditure which equals the total income from its production. Intuitively, household production itself is fully income for the household, and that part consumed is clearly consumption expenditure. In practice the distinction sometimes is not so clear-cut, especially with components having "investment value." In training, for example, interviewers were told (erroneously) not to include household expenditures on chicken feed for fear of double-counting (when the household consumed the chicken). The exact accounting for the consumption of that chicken would have the household subtract the overall cost of chicken feed from the total market value of the chicken as an expenditure, then to tally also the total income market value of that chicken. In truth the real values of goods produced at home are the values of those goods in the highest cost alternative market. It is often an unreasonable assumption that the respondent has such detailed knowledge of market conditions to provide a proper valuation of withdrawals from production. Confusion often arises with regard to the final realization of both capital and non-capital commodities, too. Taken to its logical extreme, the valuation of goods can become tautological: What if the household purchases a hoe? How can we assume that the hoe will be used in farm production?

CAPMAS can be accused of having an "expenditure bias" in its surveying, because it has always suspected income measures. The last survey was the first time they tabulated income at all, and then only badly. It is known and expected that respondents have more income sources than they admit, but there seems too much willingness on the part of the survey authorities to accept this situation casually. For a country serious about the proper measurement of incomes, own production and the imputed value of owners' equivalent rent need to be recognized as both incomes and expenditures. The estimation of consumption is really quite difficult without a

proper income variable. There is still room for flexibility, of course, permitting some ambiguity in definitions, acknowledging the difficulties of gathering data on income in kind, and opting for the administratively easy tack. The point to be made is this: mismeasurement of income should be an invitation to improve the interview process.

II.F Earner Characteristics

Earners in the HIECS are those household members which have one or more of six sources of income for which enumerators asked detailed questions (wages and salaries, agricultural, non-agricultural, finance, lands and real estate, and other). If the individual states that (s)he has this income source, (s)he is called an "earner." There are 1.7 earners on average, 52.5% of households have one earner, 32.6% have two, 10.3% have three earners. The previous HIECS had 1.53 earners per household. Females comprised 28.65% of the total of earners in the rural areas and 30.83% of the total of earners in the urban areas in the last quarter of 1995 and the first three quarters of 1996.

Sector and Sex of Earners

SECTOR	SEX		
Frequency Percent Row Pct Col Pct	Female	Male	Total
Rural	3917 15.70 28.65 53.00	9757 39.12 71.35 55.59	13674 54.82
Urban	3474 13.93 30.83 47.00	7796 31.25 69.17 44.41	11270 45.18
Total	7391 29.63	17553 70.37	24944 100.00

When earners are classified by region and sex (Table II.5), male earners outnumber female earners by more than two to one in all regions; in the Frontier governorates the ratio is almost three to one. Governorates contribute an overly large percentage of earners where agriculture predominates.

Income sources are more varied than earners. 9.5% of the sample have one income source, 35.3% have 2, 32.8% have 3, 15.0% have 4, 5.3% have 5, and the rest have more than 5 sources. Sources of income increase with household size, of course, and multiple sources are more common in rural areas.

Frequency (Households) of the Number of Sources of Income

No. OF SOURCES	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	1407	9.5	1407	9.5
2	5227	35.3	6634	44.8
3	4851	32.8	11485	77.6
4	2218	15.0	13703	92.6
5	778	5.3	14481	97.8

II.G Income Characteristics: Household Average Incomes from Sources

Table II.6 categorizes incomes from six sources. The sum of all household income sources is an average annual income total of 7570.05 £E. This means that income is, on average, 911.45 £E higher than total expenditures (Table II.2), indicating that savings are being accumulated. The more important sources of incomes are incomes from wages and salaries, non-agricultural projects (typically these are small scale enterprises operated either from the household or very close to it) and agricultural work. Total income is measured with more error than total expenditures, but, compared to the previous HIECS, the error level is reasonable and acceptable.

In the 1990/1991 HIECS average total household expenditures was 5143.39 £E and average total incomes was 5708.90 £E. The first inquiry therefore suggests itself: How have Egyptian households fared over the last five years? The question is hardly a simple one to answer given changes in the value of the Egyptian pound, errors of measurement, changes in household sizes, and savings ratios, etc. At the very least households should be standardized for their compositions before comparing them, and then critical household estimate levels should be adjusted by some measurement of inflation to produce "real" expenditures and incomes.

The six sources of income are further categorized by region in Table II.7. In a number of cases, the coefficients of variation are unacceptably large, making first-sight comparisons difficult both between areas and within sources. Wages do not seem to be as prone to measurement error as other sources. Household average incomes from all sources are highest in Port Said and Suez (the "Other Urban" region) and Cairo. The confidence bounds for the Frontier is wider than 9000 £E, which casts doubt on the Frontier's high income status.

II.H Regarding Remittances

Private remittances are partly comprised of monies received by the household from persons living abroad. Official remittances are government cash grants and in-kind payments to Egypt. Private and official remittances together represent a large part of Egypt's export income. Al Ahram, July 9, 1996, stated that "remittances (both official and private assumed) were 5 billion £E annually, 12% of GDP." The value given for private remittances in Central Bank of Egypt (1996, Table 1/6, p. 162) is $75 million. In 1993, private remittances were twice the value of merchandise exports (World Bank (1995)).

HIECS results can be compared with private remittances considered as an inflow, i.e., not Egyptian workers remittances to other countries. Only

6.33% of HIECS households said that one or more of their members presently works abroad. Of the households who have members working abroad, the typical number of members employed is 1.07. 80% (745 of 937) of persons working abroad actually "provide income to the household." For the 677 households willing to answer how much income the household receives from abroad as remittances, the average figure is 3428.45 £E annually. The conclusion (without subtracting monies paid to household members outside of Egypt), is that relatively few workers take the risk of leaving Egypt for a job abroad, but that the jobs are highly lucrative, at least for the subset who remit part of their earnings.

II.I Equivalence Scales

In order to adjust the data for household size and sex compositions as they affect consumption (food consumption) and so standardize the data, we determine how much each age/sex group contributes to household food consumption, then allocate that amount to the household given these characteristics. Empirically, the coefficients of equivalence scales for each time period data set are used in predicting food, and thereby overall, consumption. These scales are superior to other international scales for their higher precision and their relevence to the Egyptian context. The equivalence scale regression outputs for the 1990/1991 HIECS and the 1995/1996 HIECS appear in Tables II.8 and II.9 respectively.

Turning first to Table II.8, the "Parameter Estimate" column gives the amount (in £E) of contribution to the dependent variable (total food and beverage expenditures) which the variable makes. The intercept is the place where the line of the regression equation passes through the Y-axis; 616.646225 £E is the initial consumption level of food and beverages. "M0_4" means males from 0-4 years of age. In the 1990/1991 HIECS data, males from 0-4 years of age contributed, on average, per year, 74.368524 £E to household food and beverages expenditures. Females from 0-4 years of age were responsible for only 54.435103 £E per year.[5] The parameter estimate for total expenditures ("EXPTOT") is 0.337246; for every additional Egyptian pound of total expenditures, 33 piasters were spent on food and beverages, all other things being equal. As the column "Prob > |T|" indicates, all of the individual coefficients are significant at greater than a 99% level of confidence; that is, it is highly unlikely that any of the coefficients are zero. The "R-square" value of 0.6842 means that 68.4% of the variation in food and beverages expenditures is captured by the variables used on the right hand side of the equation. All of the coefficients are meaningful when one considers the costliness of staying at home: it makes sense that males older than 60 and females older than 60 consume more food and beverages than the other age/sex groups because they are being cared for; it is conceivable that males 20-59 consume about 20 £E less food than males 5-19, but that females 20-59 consume about the same amount of food as females 5-19. Note that females of prime working age (20-59) consume more than their male cohorts; generally they remain at home and make the food purchasing decisions. Table II.9, the regression results for the 1995/1996 data set, collaborates the same set of

[5] The question of the relative importance of this difference of 20 £E will be revisited in the Chapter 5.

results over time. Females consume more than expected. The intercept is smaller, indicating the decline in budget shares of food and beverages over time. In general, the coefficient values, model fit, and importance of the variables are quite good, pointing to the robustness of the equivalence scale models. The use of a standard equivalence scale would not be appropriate. More will be said about the use of the equivalence scales in the Appendix to the next chapter, but for now it is enough to suggest that any critical household estimate might be adjusted to account for household size, sex and age characteristics using the predictive coefficients.

Another adjustment which really must be made to economic estimates over time is deflating to control for general price increases. It is standard practice to deflate prices by some index of the cost of living, and usually the Consumer Price Index (CPI) serves this function well enough. In Egypt's case, however, the CPI is measured with so much error that "adjustment" of level data merely serves to confound the bias inherent in the statistic itself (CPI measurement error is the subject of Chapter V). Still, some adjustment must be made, and in the absence of an alternative measure of cost of living increases, the official CPI produced by CAPMAS must be used. Table II.10 sets out a comparison of expenditures, incomes, and wages from two periods, adjusted and not adjusted by household equivalence, the official all items CPI, and the food only CPI. Means are presented by SAS-generated standard errors,[6] as well as medians. The official CPI index used is March, 1996, the midpoint of data collection for the 1995/1996 HIECS. Here it is appropriate to explain the existence of two income estimates from the old data. The CAPMAS publication estimates from the 1990/1991 HIECS were from the NEWINC.SD2 data set, produced by an incorrect and non-complete household-level merge of individual number codes with the individual number codes of a separate income source questionnaire. The INDV.SD2 income estimates are based on the merging of individual-level demographic codes and their income sources, summed by household.

The median value of an estimate - half of households have a value less than the median, the other half have a value greater than the median - is a better statistic than the mean for capturing the idea of relativeness. It is much better when the median rises than when the mean rises. Based on the assumptions, the conclusions about median estimates follow from Table II.10:

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[6] The fact that the standard errors are created by SAS and therefore generated under the assumption of a simple random sample design should not detract from their usefulness in making asymptotic inferences. In many cases the standard errors can be inflated by a factor of the design effect shown for the statistic in previous tables.

Percentage Changes in Median Expenditures, Incomes, and Wages, 1990/1991 - 1995/1996

Estimate for Average Household	1990/1991 - 1995/1996 % Increase (+ or -)
Median Expenditures, Unadjusted	+ 27.61%
Median Expenditures, Adjusted by All-items CPI and Equivalence	- 30.03%
Median Incomes, Unadjusted	+ 39.23%
Median Incomes, Adjusted by All-items CPI, and Equivalence	- 23.80%
Median Wages & Salaries, Unadjusted	+ 40.39%
Median Wages & Salaries, Adjusted by All-items CPI	- 22.19%
Female Median Wages, Unadjusted	+ 52.29%
Female Median Wages, Adjusted by All-items CPI	- 15.99%
Male Median Wages, Unadjusted	+ 38.88%
Male Median Wages, Adjusted by All-items CPI	- 23.17%

The reasonable thing to do, and perhaps the minimum thing to do, is to adjust household level magnitudes by equivalence (i.e., using the equivalence scale) and by the all-items CPI. The all-items CPI is appropriate for creating "real wages" as well (wage earners face all prices, not simply food and beverages prices), but it is not relevant to adjust wages for household size and composition. The results above make clear that any comparison of critical household estimates over time in Egypt is extremely sensitive to the inflation rate, and initial conditions affect both the level and the rank of results. Adjustment for household size and demographic makeup affects estimates properly, but adjustment for inflation wildly affects results and confuses comparison, in other words. We know that inflation erodes purchasing power, but by how much is not clear. Neither is it clear which groups suffer more than others (has inflation harmed male wages or female wages more?). The biggest limitation to the understanding of relative economic standing of Egyptian households is the mismeasurement and the misinterpretation of inflation.

II.J More Regarding the Expenditure and Income Distributions

Table II.11 is a two-way classification of income group by expenditure group. The correlation between income and expenditures is highest along the familiar top-left to bottom-right diagonal, even in categorical comparisons with 8 levels each.

To conclude the discussion of overall household statistics, and to inform the view of incomes and expenditures as flow magnitudes with continuous

properties, more should be said about the location, variability and shape of the raw household annual income and expenditure data. Measures of these characteristics appear below, as generated by SAS. In an effort to infom future research into the distributional moments of these main variables, we provide detailed explanations about the calculation of the unweighted univariate statistics.

Univariate Statistics for Raw Household Annual Expenditures and Incomes

Household Annual Expenditures				Household Annual Incomes			
Moments				Moments			
N	14805	Sum Wgts	14805	N	14805	Sum Wgts	14805
Mean	6658.604	Sum	98580640	Mean	7570.05	Sum	1.1207E8
Std Dev	4797.602	Variance	23016985	Std Dev	9731.053	Variance	94693401
Skewness	4.547665	Kurtosis	46.70245	Skewness	34.84574	Kurtosis	1940.308
USS	9.972E11	CSS	3.407E11	USS	2.25E12	CSS	1.402E12
CV	72.05116	Std Mean	39.42939	CV	128.5468	Std Mean	79.97526
T:Mean=0	168.8742	Pr>|T|	0.0001	T:Mean=0	94.6549	Pr>|T|	0.0001
Quantiles				Quantiles			
100% Max	105989.6	99%	24747.8	100% Max	600000	99%	29720
75% Q3	7906.8	95%	14476	75% Q3	8800	95%	16560
50% Med	5637.4	90%	11202.8	50% Med	6126	90%	12840
25% Q1	3988.7	10%	2730.4	25% Q1	4220	10%	2860
0% Min	363.3	5%	2053.4	0% Min	336	5%	2120
1%	1164			1%	1089		
		Range	105626.3			Range	599664
		Q3-Q1	3918.1			Q3-Q1	4580
		Mode	4846.4			Mode	4800

Recall that in terms of variability, SAS does not produce "conservative" estimates, so that the numbers shown above must be treated with a certain degree of caution or adjustment. For example, the "Std Mean" for expenditures is the square root of the variance divided by the number of non-zero cases, the "Standard Error." The value shown above is 39.42939. The standard error as calculated by CENVAR (Table II.2) taking into account the particular sample design of the HIECS was 92.057, or two and one-thirds times as conservative.

The CV above is calculated differently. It is the estimated standard deviation divided by the mean instead of the estimated standard error divided by the mean. USS is the uncorrected sum of squared values, or, where x_i is the ith non-missing observation on the random variable, Σx_i^2. CSS is the corrected sum of squares, equal to (USS - Mean^2 × N).

Skewness is a shape statistic formed by standardizing the observations as z_i = (x_i - Mean)/Std Dev, then calculating $\Sigma\ z_i^3 \times N/(N - 1)(N - 2)$. It measures symmetry, or sidedness; sometimes values are distributed differently below the mean than they are above the mean. It can be that a few "outliers"

(values much larger than the others) exert a disproportionate influence on the calculation of the mean. In the 1995/1996 HIECS, both of the distributions are positively skewed (skewed "to the right"; the tail of values occurs in values larger than the mean). The property is especially pronounced with the income variable. It is not uncommon to see this in household survey data. In empirical work, skewness is dealt with by either transforming the variable, or ignoring the problem altogether. Taking natural logs of income, for example, changes the skewness to -0.03227.

Kurtosis is another shape statistic which indicates how heavy the tails of the distribution are. If the data are normally distributed, kurtosis will be zero. Distributions that are flat with short tails have negative kurtosis. It is defined as

$$\Sigma z_i^4 \times N(N + 1)/(N - 1)(N - 2)(N - 3) - 3(N - 1)^2/(N - 2)(N - 3).$$

Very extreme versions of this characteristic (called "leptokurtosis") can play havoc with Ordinary Least Squares (OLS) estimation, and the extent of kurtosis present in the 1995/1996 HIECS household income distribution is cause for concern. In fact, both incomes and expenditures have positive kurtosis - the tails are heavy. Taking logs of income will result in a kurtosis value of 1.798.

"T:Mean=0" is the t value for the test of the hypothesis that the mean of the distribution is 0.00, and in both cases the null is rejected (see "Pr>|T|") at higher than a 99% level of confidence. The rest of the information is self-explanatory: quantile cut-off values at various points; "Q3-Q1" is the difference between the value below which 75% of the measurements fall and the value below which 25% of the measurements fall; the mode of the distribution is the value at which the density of the distribution is at a maximum.

II.K Two Crude Savings Functions

Table II.12 is output from an OLS regression of expenditures on incomes, including dummy variables indicating region of the country. Cairo is the omitted region, and other regions should be compared to its intercept shown. The model is a very basic savings function not meant for determining the marginal propensity to consume, but rather for showing how different regions spend their incomes in comparison with Cairo.[7] The "Other Urban" region has the highest basic expenditure, other regions equal. The Frontier governorates appear to have a higher initial expenditure than Cairo, but the coefficient is not significant. Given the R-square statistic of 0.4339, more than one half of the variation in total expenditures is not being explained by the right hand side variables. In other words, there is a good deal of error in the estimation. Much of the error is due to income itself being measured with error, which biases the coefficient on total income toward zero.

Another concern in the interpretation of the model as a savings function

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[7] Including regional dummies causes the slope on the variable TOTINC to drop to 0.295259. That is, for all the sampled households, for each Egyptian pound received as income, only about 30 piasters of that is devoted to total expenditures. The interpretation of this coefficient is difficult since the other dummies are picking up extraneous variation in expenditures.

involves the difficulty in defining the extent of investment (saving) inherent in many "consumed" goods. For example, in some sense the purchase of schoolbooks is consumption, but it is partly investment as well, as indirect learning will eventually (it is hoped!) generate income. Housing purchases are another example: it is difficult to separate the investment aspects of the purchase of a house from its consumption (use and depreciation) aspects. So the estimation of savings rates often hinges on categorization of goods as either consumption or savings goods, when in truth many commodities retain continuous properties of both.

A better relationship, therefore, focusses on the residuals of the consumption function. With consumption on the left hand side, and expenditure on the right hand side, parameter estimates for the regions appear in Table II.13. Here 92.0568 piasters of every Egyptian pound of expenditures is consumed. The unexplained variation in consumption (less than 3%) goes to transfers and premiums. To refine this equation for a better savings estimate one would subtract from the left hand side those goods (or components of goods) which clearly are investments. Heteroskedasticity appears to be a feature of the model; the residuals vary with the magnitude of the total expenditures, the means turning positive somewhere above 6000 £E, and the variances growing ever larger:

Evidence of Heteroskedasticity in the Crude Consumption/Expenditure Function

Expenditure Group	Number of Observations	Std Dev of the Residuals
0 - 1500 £E	304	51.761
1501 - 2000 £E	393	63.614
2001 - 2500 £E	478	80.361
2501 - 3500 £E	1563	87.289
3501 - 4500 £E	2059	139.390
4501 - 6000 £E	3361	133.156
6001 - 8000 £E	3041	237.981
8001 + £E	3606	1500.35

The F Statistic computed for the Goldfeld-Quandt test produces a value of 204.19 with {14805 - 4935 - 2 (9)}/2 degrees of freedom for both the numerator and the denominator, indicating easy rejection of the null of homoskedasticity. Although the least squares model still produces unbiased coefficients, the model is not efficient in the sense that it will have a higher variance than a maximum likelihood estimator, *regardless of the sample size.*

II.L Back to the Engel Relationship

This chapter concludes by returning to the Engel relationship, to place some empirical bounds around the expenditure level/food share relationship. It will be extended to group expenditures below using Pearson correlation

coefficients to measure the strength of the association.

The correlation coefficient is a numerical measure that quantifies the strength of numerical relationships. The true Pearson correlation coefficient $Q_{xy} = \text{cov}(x,y)/\{\text{var}(x)\text{var}(y)\}^{1/2}$ is estimated by the sample correlation coefficient as

$r_{xy} = \Sigma(x - \bar{x})(y - \bar{y})/\{(\Sigma(x - \bar{x})^2\ \Sigma(y - \bar{y})^2)\}^{1/2}$. The estimated covariance is the numerator of the sample correlation coefficient. When two variables are closely correlated, their values will fall more or less on a line, and that line will either slope upwards or downwards, depending on whether the one variable is positively or negatively associated with the other variable. Below are those measures of association between two continuous variables, household per capita expenditures and household food shares.

Correlation and Covariance of Per Capita Expenditures and Food Shares

Household Per Capita Expenditures Against Household Food Shares	Correlation Coefficient	Covariance
1990/1991 HIECS	-.38723	-46.64364973
1995/1996 HIECS	-.38567	-71.73320684

In both HIECSs, a 10% rise in per capita expenditures is associated with a fall in food shares of about 3.9%. Tabled at 5% quantile cutoff points for per capita expenditures, this is the relationship:

Per Capita Quantiles and Food Shares for both HIECS

1990/1991 HIECS Quantile Group and Share		1995/1996 HIECS Quantile Group and Share	
0.05	0.64622	0.05	0.61857
0.10	0.63544	0.10	0.60859
0.15	0.62323	0.15	0.59103
0.20	0.61320	0.20	0.58795
0.25	0.60869	0.25	0.58548
0.30	0.60166	0.30	0.57477
0.35	0.59357	0.35	0.56605
0.40	0.58805	0.40	0.56608
0.45	0.58485	0.45	0.55871
0.50	0.57541	0.50	0.55048
0.55	0.57425	0.55	0.54578
0.60	0.57172	0.60	0.54711
0.65	0.56186	0.65	0.53679
0.70	0.55058	0.70	0.52968
0.75	0.53683	0.75	0.52588
0.80	0.53803	0.80	0.51645
0.85	0.52991	0.85	0.49823
0.90	0.50465	0.90	0.49558
0.95	0.49579	0.95	0.45689
1.00	0.43138	1.00	0.37079
Total	0.56827	Total	0.54155

Households in the first 5% quantile for per capita expenditure in 1990/1991 spent, on average, 64.622% of total expenditures on food; households between the 10% quantile per capita expenditure and the 5% quantile per capita expenditure spent, on average, 63.544% on food, etc. In some cases, food shares actually rise with per capita quantile, but the rise is so slight (at the third digit) that it is very near zero. There is no obvious pattern in the magnitudes of food share decreases by quantile, no connotation that certain per capita quantile households plateau at certain food shares.

II.M Elasticities, and Adding Up Tested

Households make expenditures given a limited budget. The sum of expenditures on variously grouped commodities, as in table II.2, cannot surpass that constrained budget. When the relationship between group expenditures and the total budget is linear, the sum of group expenditure intercepts should be 1.00 and the sum of group expenditure elasticities should be 0.00.[8]

The "adding up" restrictions are first tested using the Working-Leser

[8] This is a well-known result and no proof will be provided here. The reader is referred to a standard Micro text, such as Deaten and Muellbauer (1989).

(Working (1943); Leser (1963)) specification. It has budget shares of the group expenditure on the left hand side and the log of total expenditure on the right hand side.
Individual elasticities for the group of goods will be negative for "inferior goods" and positive for "normal goods." Normal goods will either be luxuries (elasticities greater than 1.0) or necessities (elasticities less than 1.0). The recent data do not precisely satisfy adding up based on the Working-Leser specification, as the sum of the intercepts is 1.565 and the sum of the elasticities is -.048. The failure to reject the null of "not adding up" is not due to measurement error, because the sum of the group expenditures are exactly constrained by the sum of the budget. In reporting results, the question becomes "how close" to 1.000 the sum of the intercept should be to prove statistically significant divergence from the null hypothesis.[9] Other forms of specifications for the 1995/1996 data were tested against the adding up requirement. Group share proportions on the left hand side with level expenditures on the right hand side produced an intercept sum of 1.175 and a coefficient sum of -.00000041. The log of shares on the left hand side and the log of expenditures on the right hand side produced an intercept sum of -50.109 and an elasticity sum of .9688.

In the 1990/1991 data, out of the group of thirteen, only food and housing are inferior. In the 1995/1996 data, tobacco, medical, and food away from home are added to the list of inferior goods; the rest of the group data expenditures, notably education, clothing and transport, are empirically normal. In terms of precision, except for the elasticity of tobacco in 1990/1991 and the estimates for the "Premiums" group equation, all of the point estimates are significant at the 99% level or higher. The R-square statistics are expectedly low; these are not deterministic equations.

II.N Per Capita Magnitudes

Table II.15 shows average per capita expenditures and incomes for the regions and overall, data from both the 1990/1991 and 1995/1996 HIECS. The asymptotics of the 1990/1991 data are based on the assumption of simple random sampling because weights were not created for that survey. The third column of the tables gives current US $ weighted estimates, at an exchange rate of 3.4 £E = $1.00. This current dollar valuation is not entirely legitimate for past data - the 1990/1991 period average £E per US Dollar rate varied from 2.708 to 3.296 (World Bank (1997)) - but it serves for expository purposes.

The current figure for household current average per capita incomes is $448.58, less than the often quoted figure of $660 GDP per capita as measured in the national accounts. Certain incomes, perhaps from non-profit organizations, from non-residents, from the informal sector and from gray market activities, are not being captured in the household accounts. $448.58 is 1.23 times the per capita incomes of 1990/1991. All-items prices over the same period rose about 1.8 times, and the immediately apparent result is that

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[9] McCloskey and Ziliak (1996) have some excellent things to say about the difference between statistical and economic significance, arguing that cases for which economic significance is preponderant are more compelling for pure scientific research.

household per capita income did not keep pace with (official) inflation. In 1990/1991, note, household members received, on average, $US 1.00 per day. The crude implied per capita savings rate was 11% in 1990/1991, and is currently about 12%.

II.0 Rationed and Subsidized Goods

This section provides a brief overview of the consumption of rationed and subsidized goods. For a historical background, the reader is referred to Ali and Adams (1996) and Ali, *et al.* (1994).

Balady bread, flour, sugar and cooking oil are currently subsidized.[10] The first two are provided without restriction to all households through the sale of government wheat flour to private bakeries. The latter two are rationed to households with valid ration cards and bought in ration shops within certain private groceries. Ali and Adams (1996) report that from 1981-1989 about 90% of the population held ration books, and that 78.7% owned ration books in 1994 (p. 1779). The recent figure does not equate with 1995/1996 HIECS survey findings: 86.8% of surveyed households owned a food ration card, and, on average, 4.34 persons were enrolled on that card. Whatever the exact scope of access to rationed goods, it is clear that they are widely available and consumed.

There are now two types of cards. Green cards are mainly for the poorer segments of the population (working employees, for example) entitled to full subsidies. Green card holders can get oil, sugar, flour, soap, tea and rice at rates approaching one-third of market prices. Red card holders get partial subsidies, being (arbitrarily, in 1981) identified as well-off and not in need of full subsidies; accordingly the number of red card holders has remained a very small segment of consumers (presently less than 1.5 million persons, Ali and Adams (*ibid.* p. 1780)). Bread and flour are the most highly subsidized (60% of the total cost of food subsidies in 1994/1995, *ibid*).

The subsidy issue presents some very interesting economic and political lessons. Certainly it has created an opportunity for abuse and grey market evasion, but it has also been a very strong symbol of commitment to the needs of the poor. The point is that the commitment is too weak and diffuse to be effective in practice. Theoretically it is a model for inefficient market intervention, and the standard results about deviations from equilibrium values for prices and quantities apply. The government has resorted to a number of creative means to control the extent and cost[11] of subsidies over the years, while limiting collateral political damage. This has involved gradually and unnoticeably changing the weights of subsidized goods, or altering the quality (of cooking oil, especially), and at times actually raising prices (extra rationed sugar costs more than market sugar). There are stiff

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[10] The government withdrew the subsidy for *shami* bread in September of last year.

[11] Minister of Trade and Supply Goweili stated that "the subsidies for bread and ration card goods amounted to 4 billion £E annually," and that "it (sic) doubled three times in the last two years," in Al Ahram, August 27, 1995, p. 1.

penalties for not picking up entitled subsidies.

There are various estimates of the consumption of subsidies and their ultimate effects. In the 1990/1991 HIECS there was no clear separation or categorization of oil and sugar between free-market and subsidized in survey interviewing. It is important to state that the definitions are not strictly comparable for flour either. Balady and shami, though nominally homogeneous commodities, have experienced quality variation. In addition to these issues, there are unacceptably low case counts for sugar and oil. The 1995/1996 survey data are of noticeably higher quality. Table II.16 presents the average expenditures on subsidized goods by expenditure quintile. These data are unweighted, and no account is made for household size and composition. In both periods, the share of all five goods in household budgets ("SHARE") decreased through the expenditure quintiles. Shares never exceed 10% within any one quintile. There does not appear to be a clear distinction between rural and urban shares.

Table II.17 concentrates on the 1995/1996 data and presents the relationship of subsidized goods expenditures to overall monthly expenditure levels. It is expected that monthly expenditures are correlated with annual expenditures by quintile, of course; it is merely a different way to categorize the overall expenditure on the good. In this case, the expenditures on the goods *are* adjusted by the equivalence scale to control for household size, age and sex. Free-market sugar and oil are included for comparison. The point estimates for average expenditure at four expenditure levels provide more information than the arc elasticities of full sample regression coefficients. Flour expenditures exhibit a negative relationship throughout the range of monthly expenditure levels, as do free-market oil and free-market sugar. These are inferior goods (have negative elasticities) over the intervals shown: expenditures decline absolutely, not just proportionately, as total expenditure increases. Balady and shami bread show a fairly constant but decreasing proportion of expenditures at the lower three levels. Subsidized oil and sugar are, interestingly, constant level but declining proportions of monthly expenditures.

In fact, over the full urban and rural sample areas, all the goods (equivalence- adjusted) except oil in the urban areas in 1990/1991 and bread loaves in the 1995/1996 data are inferior - their elasticities are negative in Table II.18. In the 1990/1991 data, balady and shami had positive elasticities before scaling both item and total expenditures for household equivalence, but measurement error may have been a feature of household expenditures on these items from the inability of respondents to distinguish one from the other.[12] General significance is lower for the 1990/1991 data; nevertheless, there are interesting parallels to make between the two periods. Balady is a "more inferior" food than shami. Most of the elasticities in the rural areas are smaller than they are for the urban areas. Both theory and empirical evidence suggests that the more narrowly defined the good is, the further from 0.00 will be its elasticity (Tellis (1988)). For the recent data set, the result that free-market sugar and oil have smaller elasticities than their subsidized counterparts may be an example of this, the free-market versions

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[12] The unadjusted urban balady coefficient, and the rural shami intercept, were not significant at reasonable levels of rejection in the 1990/1991 data.

may be partly subsidized composites. Except for bread loaves and shami in the rural area, all of the estimates are significant at the 95% confidence level or higher.

Ali and Adams, *ibid.*, used a model to calculate elasticities which was less data-dependent because they were unable to obtain the raw individual level data from CAPMAS. They state in their conclusion that "the lack of data for individual households on food consumption and expenditures renders it impossible to estimate food demand elasticities using standard econometric techniques." This is a great shame because they are better placed than this author to analyze the impacts of Egyptian food subsidies on the poor. There is no better example of the need for full data disclosure than this.

What I have presented above is empirical proof that all presently subsidized goods have negative elasticities. This means that if one intends to redistribute, to aid the poor through subsidizing goods, these goods are well-chosen because they are consumed more by the poorer segments. Balady and shami bread are generally decreasing in the lower expenditure brackets, but bread subsidies may be too widely consumed - if they were, indeed, "more inferior," bread subsidies could be targeted even more efficiently to the lowest expenditure brackets. Flour is strongly inferior, and a good item for government efforts to redistribute expenditure opportunities. Subsidized oil and sugar are problematic, and are probably being administered too costly to have their intended fiscal impact. There are reportedly great leakages from the system as well, which only exacerbate the bureaucratic difficulties inherent in monitoring a program of such breadth.

II.P Conclusion

This chapter focussed on the overall characteristics of households, their demographic composition, income and expenditures (overall and per capita), remittances, savings, and subsidized and rationed goods. The findings suggest many possibilities for future research.

The next chapter places these static household conditions in the overall economy, and profiles the level of living of households. After that, household income earners are placed in the labor market context and evaluated from a standpoint of individual human capital.

Table II.1 Asymptotic Properties of Basic Demographic Estimates, 1995/1996 HIECS

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
RELATION							
Head	0.200	0.001	0.59	0.198	0.203	0.65	14805
Spouse	0.156	0.001	0.61	0.154	0.158	0.51	11530
Son/Daughter	0.548	0.002	0.42	0.543	0.552	1.58	40491
In-law	0.016	0.001	3.92	0.015	0.017	1.84	1175
Father/Mother	0.017	0.001	3.29	0.016	0.018	1.38	1253
Grandson/daughter	0.037	0.002	4.31	0.034	0.040	5.23	2707
Brother/Sister	0.015	0.001	4.91	0.014	0.017	2.76	1127
Other relation	0.011	0.001	8.01	0.009	0.013	5.32	820
No relation	0.000	0.000	24.61	0.000	0.001	1.88	31
SEX							
Male	0.507	0.002	0.31	0.504	0.510	0.73	37466
Female	0.493	0.002	0.32	0.490	0.496	0.73	36473
EDUCATION							
Less than age	0.229	0.002	0.99	0.224	0.233	2.16	16923
Illiterate	0.275	0.004	1.29	0.268	0.282	4.70	20339
Reads/writes	0.144	0.002	1.26	0.141	0.148	1.99	10666
Primary < prep	0.167	0.002	1.15	0.163	0.171	1.97	12349
Secondary cert	0.125	0.002	1.75	0.120	0.129	3.22	9219
Post-sec < U	0.018	0.001	3.68	0.016	0.019	1.80	1311
University cert	0.041	0.002	5.14	0.037	0.045	8.36	3039
Post-University	0.001	0.000	15.94	0.001	0.002	2.37	93
MARITAL STATUS							
Below age	0.417	0.003	0.65	0.412	0.423	2.27	30856
Never married	0.170	0.002	1.33	0.165	0.174	2.69	12563
Engaged	0.005	0.000	7.44	0.004	0.005	1.89	340
Married	0.355	0.002	0.46	0.352	0.358	0.84	26240
Divorced	0.005	0.000	5.62	0.005	0.006	1.22	385
Widowed	0.048	0.001	2.01	0.046	0.050	1.50	3555
WORK STATUS							
Employed	0.288	0.002	0.69	0.284	0.292	1.42	21315
Unemployed	0.024	0.001	3.56	0.023	0.026	2.34	1806
Out Labor Force	0.509	0.002	0.45	0.504	0.513	1.58	37623
Out Human Force	0.178	0.002	0.98	0.175	0.182	1.55	13195
INCOME EARNER							
Is	0.337	0.002	0.74	0.332	0.342	2.04	24944
Is not	0.663	0.002	0.37	0.658	0.668	2.04	48995
WAGESAL-INC							
Has	0.171	0.002	1.17	0.167	0.175	2.08	12672
Does not have	0.829	0.002	0.24	0.825	0.833	2.08	61267

Table II.1 Asymptotic Properties of Basic Demographic Estimates, 1995/1996 HIECS (cont.)

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
AG-PROJECT-INC							
Has	0.088	0.002	1.88	0.085	0.091	2.53	6503
Does not have	0.912	0.002	0.18	0.909	0.915	2.53	67436
NONAG-PROJ-INC							
Has	0.050	0.001	2.30	0.047	0.052	2.04	3668
Does not have	0.950	0.001	0.12	0.948	0.953	2.04	70271
REALESTATE-INC							
Has	0.156	0.001	0.88	0.153	0.159	1.05	11544
Does not have	0.844	0.001	0.16	0.841	0.847	1.05	62395
FINANCE-INC							
Has	0.007	0.001	7.87	0.006	0.008	3.07	492
Does not have	0.993	0.001	0.05	0.992	0.994	3.07	73447
OTHER-SRC-INC							
Has	0.086	0.002	1.77	0.083	0.089	2.19	6369
Does not have	0.914	0.002	0.17	0.911	0.917	2.19	67570

Figure II.1 Implied Population Pyramid from the 1995/1996 HIECS Data

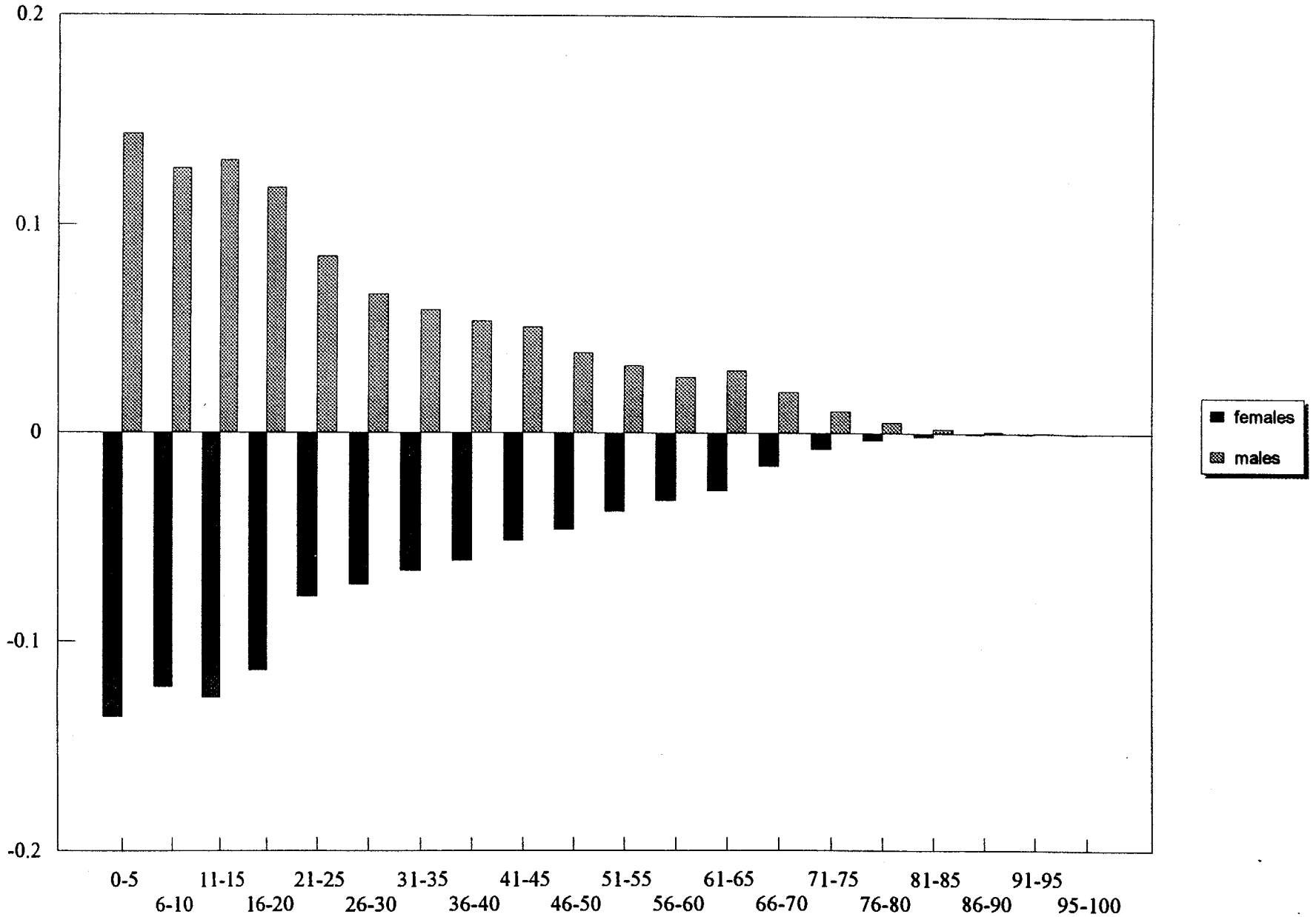

Table II.2 Household Average Annual Expenditures on Main Group Items

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Foods and Beverages	3341.23	32.499	0.97	3277.53	3404.93	4.93
Tobacco, Cigarettes and Drugs	243.75	3.617	1.48	236.66	250.84	1.85
Apparel, Textiles Yarn, Footwear	595.49	10.745	1.80	574.43	616.55	5.23
Housing and Utilities	657.27	9.959	1.52	637.75	676.79	5.58
Household Furnishings and Appliances	295.61	8.083	2.73	279.77	311.45	3.61
Health Care and Medical	248.34	5.357	2.16	237.84	258.84	2.01
Transport and Communication	304.58	15.854	5.21	273.50	335.65	2.62
Education	258.69	8.122	3.14	242.77	274.61	3.36
Culture, Sport and Entertainment	232.28	8.087	3.48	216.43	248.12	4.76
Hotels, Cafes and Restaurant Services	77.34	3.287	4.25	70.90	83.78	3.32
Other Consumption Expenditures	253.82	7.941	3.13	238.25	269.38	2.46
CONSUMPTION	6508.39	87.898	1.35	6336.11	6680.67	5.65
TRANSFERS	136.16	8.018	5.89	120.44	151.87	1.43
PREMIUMS	14.06	1.963	13.97	10.21	17.90	1.31
TOTAL EXPENDITURE	6658.60	92.057	1.38	6478.17	6839.04	5.45

Table II.3 Household Average Annual Expenditures on Main Groups, by Region

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Foods and Beverages						
Cairo	3834.23	127.765	3.33	3583.81	4084.65	7.67
Alexandria	3413.23	198.821	5.82	3023.54	3802.92	9.47
Other Urban	5488.86	324.631	5.91	4852.58	6125.14	3.34
Lower Rural	3295.43	45.285	1.37	3206.67	3384.19	3.91
Lower Urban	3367.43	76.233	2.26	3218.01	3516.84	3.88
Upper Rural	2897.15	38.823	1.34	2821.06	2973.25	2.38
Upper Urban	3220.73	103.051	3.20	3018.75	3422.71	6.23
Frontier	4989.75	656.057	13.15	3703.88	6275.62	8.09
Tobacco, Cigarettes and Drugs						
Cairo	269.88	9.595	3.56	251.07	288.69	1.22
Alexandria	293.20	18.631	6.35	256.68	329.71	1.88
Other Urban	306.88	21.553	7.02	264.64	349.13	0.86
Lower Rural	210.09	5.760	2.74	198.80	221.38	2.01
Lower Urban	227.64	11.369	4.99	205.36	249.93	2.40
Upper Rural	253.90	6.515	2.57	241.13	266.67	1.64
Upper Urban	260.28	13.683	5.26	233.46	287.10	2.36
Frontier	283.56	41.550	14.65	202.12	365.00	3.09
Apparel, Textiles, Yarn, Footwear						
Cairo	833.56	46.409	5.57	742.60	924.52	7.19
Alexandria	624.75	61.721	9.88	503.78	745.72	7.37
Other Urban	1262.43	65.213	5.17	1134.62	1390.25	1.22
Lower Rural	517.45	13.439	2.60	491.11	543.79	5.14
Lower Urban	674.20	25.197	3.74	624.81	723.59	3.44
Upper Rural	414.82	9.829	2.37	395.55	434.08	2.47
Upper Urban	690.73	47.941	6.94	596.77	784.70	7.83
Frontier	781.23	106.758	13.67	571.98	990.47	6.22
Housing and Utilities						
Cairo	715.37	50.671	7.08	616.06	814.69	12.59
Alexandria	577.85	44.828	7.76	489.99	665.71	3.88
Other Urban	950.85	134.323	14.13	687.58	1214.12	4.58
Lower Rural	659.85	11.287	1.71	637.73	681.97	3.23
Lower Urban	730.48	21.667	2.97	688.01	772.95	3.36
Upper Rural	547.22	10.176	1.86	527.28	567.16	2.21
Upper Urban	702.51	34.944	4.97	634.02	771.01	6.93
Frontier	910.37	98.888	10.86	716.55	1104.19	8.13

Table II.3 Household Average Annual Expenditures on Main Groups, by Region (Cont.)

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Household Furnishings and Appliances						
Cairo	429.79	34.616	8.05	361.94	497.64	5.19
Alexandria	311.21	36.428	11.71	239.82	382.61	2.94
Other Urban	759.59	131.969	17.37	500.93	1018.25	3.17
Lower Rural	239.04	6.755	2.83	225.80	252.28	2.00
Lower Urban	328.90	16.615	5.05	296.34	361.47	1.54
Upper Rural	199.88	6.445	3.22	187.24	212.51	1.57
Upper Urban	366.92	43.081	11.74	282.48	451.36	6.03
Frontier	429.39	84.580	19.70	263.61	595.16	5.68
Health Care and Medical						
Cairo	332.12	16.169	4.87	300.43	363.81	3.91
Alexandria	329.05	30.296	9.21	269.67	388.43	2.91
Other Urban	478.37	57.460	12.01	365.75	591.00	2.53
Lower Rural	224.43	8.767	3.91	207.25	241.61	2.21
Lower Urban	310.32	16.154	5.21	278.66	341.98	2.29
Upper Rural	161.28	10.166	6.30	141.36	181.21	1.08
Upper Urban	255.62	15.012	5.87	226.19	285.04	2.96
Frontier	255.41	40.362	15.80	176.30	334.52	3.91
Transport and Communication						
Cairo	715.17	72.199	10.10	573.66	856.68	4.83
Alexandria	536.55	146.247	27.26	249.91	823.20	2.17
Other Urban	644.61	165.642	25.70	319.95	969.27	2.12
Lower Rural	188.39	16.300	8.65	156.44	220.33	1.34
Lower Urban	288.66	29.711	10.29	230.43	346.89	2.83
Upper Rural	126.07	6.250	4.96	113.82	138.32	1.07
Upper Urban	320.05	40.917	12.78	239.86	400.25	4.31
Frontier	591.09	243.874	41.26	113.10	1069.09	3.08
Education						
Cairo	453.08	34.657	7.65	385.16	521.01	3.50
Alexandria	354.99	53.537	15.08	250.06	459.92	2.46
Other Urban	437.65	60.100	13.73	319.85	555.44	1.83
Lower Rural	211.99	5.274	2.49	201.66	222.33	1.44
Lower Urban	259.57	13.086	5.04	233.93	285.22	1.95
Upper Rural	142.32	5.421	3.81	131.70	152.95	1.71
Upper Urban	319.42	45.929	14.38	229.40	409.44	6.56
Frontier	301.33	57.077	18.94	189.46	413.20	5.61

Table II.3 Household Average Annual Expenditures on Main Groups, by Region (Cont.)

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Culture, Sport and Entertainment						
Cairo	494.97	38.260	7.73	419.98	569.96	5.02
Alexandria	285.79	36.532	12.78	214.19	357.40	4.64
Other Urban	322.24	82.421	25.58	160.70	483.79	3.85
Lower Rural	140.22	5.700	4.07	129.04	151.39	3.24
Lower Urban	230.36	20.602	8.94	189.98	270.74	5.66
Upper Rural	136.56	5.658	4.14	125.47	147.65	1.83
Upper Urban	339.36	42.037	12.39	256.96	421.75	7.37
Frontier	227.09	45.078	19.85	138.73	315.44	4.76
Hotels, Cafes and Restaurant Services						
Cairo	138.33	15.693	11.34	107.57	169.09	4.21
Alexandria	153.19	19.043	12.43	115.87	190.52	4.17
Other Urban	259.54	43.370	16.71	174.53	344.54	1.37
Lower Rural	47.38	3.966	8.37	39.61	55.15	4.50
Lower Urban	85.24	8.924	10.47	67.75	102.73	2.45
Upper Rural	31.08	2.896	9.32	25.41	36.76	2.26
Upper Urban	114.64	11.209	9.78	92.67	136.61	4.27
Frontier	45.85	14.061	30.66	18.30	73.41	1.34
Other Consumption Expenditures						
Cairo	453.98	31.302	6.90	392.62	515.33	3.06
Alexandria	359.48	51.222	14.25	259.08	459.87	5.11
Other Urban	768.22	166.319	21.65	442.24	1094.21	2.06
Lower Rural	183.26	6.744	3.68	170.04	196.47	1.42
Lower Urban	290.94	19.974	6.87	251.79	330.09	1.88
Upper Rural	129.76	4.138	3.19	121.65	137.87	1.24
Upper Urban	280.68	31.922	11.37	218.11	343.25	2.11
Frontier	420.15	152.170	36.22	121.90	718.41	6.53
CONSUMPTION						
Cairo	8670.47	399.418	4.61	7887.61	9453.33	8.63
Alexandria	7239.29	571.735	7.90	6118.69	8359.89	7.61
Other Urban	11679.24	1050.808	9.00	9619.66	13738.83	4.90
Lower Rural	5917.52	82.167	1.39	5756.48	6078.57	3.22
Lower Urban	6793.74	171.058	2.52	6458.46	7129.01	3.56
Upper Rural	5040.04	69.263	1.37	4904.29	5175.80	1.84
Upper Urban	6870.94	371.247	5.40	6143.30	7598.59	8.75
Frontier	9235.22	1325.154	14.35	6637.92	11832.52	8.65

Table II.3 Household Average Annual Expenditures on Main Groups, by Region (Cont.)

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
TRANSFERS						
Cairo	209.38	32.409	15.48	145.86	272.90	1.21
Alexandria	118.30	24.564	20.76	70.16	166.45	2.06
Other Urban	139.66	62.929	45.06	16.32	263.00	3.46
Lower Rural	145.14	12.957	8.93	119.75	170.54	2.04
Lower Urban	217.37	32.710	15.05	153.26	281.48	1.14
Upper Rural	57.36	6.299	10.98	45.01	69.70	1.16
Upper Urban	99.88	20.923	20.95	58.87	140.89	1.41
Frontier	236.27	127.063	53.78	-12.78	485.31	3.04
PREMIUMS						
Cairo	5.74	2.196	38.28	1.43	10.04	1.25
Alexandria	23.78	7.025	29.54	10.02	37.55	1.21
Other Urban	63.72	25.440	39.92	13.86	113.59	1.08
Lower Rural	13.47	2.826	20.99	7.93	19.00	1.14
Lower Urban	31.28	10.923	34.92	9.87	52.69	1.55
Upper Rural	3.54	0.813	22.98	1.95	5.13	1.29
Upper Urban	6.71	1.649	24.58	3.48	9.94	1.46
Frontier	88.86	61.740	69.48	-32.16	209.86	1.22
TOTAL EXPENDITURE						
Cairo	8885.59	415.446	4.68	8071.31	9699.86	7.92
Alexandria	7381.38	591.707	8.02	6221.63	8541.12	7.79
Other Urban	11882.62	1098.118	9.24	9730.31	14034.93	4.93
Lower Rural	6076.13	89.067	1.47	5901.56	6250.70	3.29
Lower Urban	7042.39	190.648	2.71	6668.72	7416.06	3.35
Upper Rural	5100.94	70.979	1.39	4961.82	5240.06	1.79
Upper Urban	6977.53	382.305	5.48	6228.21	7726.85	8.58
Frontier	9560.34	1446.052	15.13	6726.08	12394.60	8.28

Table II.4 Table of Region by Extent (%) of Home Production

REGION PCTCLASS

Frequency Percent Row Pct Col Pct	0.00 %	<= 10%	<= 20%	<= 30%	<= 40%	> 40%	Total
CAIRO	1669 11.27 85.07 21.22	262 1.77 13.35 11.56	27 0.18 1.38 1.58	1 0.01 0.05 0.10	3 0.02 0.15 0.37	0 0.00 0.00 0.00	1962 13.25
ALEX- ANDRIA	796 5.38 88.94 10.12	85 0.57 9.50 3.75	8 0.05 0.89 0.47	5 0.03 0.56 0.51	1 0.01 0.11 0.12	0 0.00 0.00 0.00	895 6.05
OTHER URBAN	201 1.36 84.45 2.55	33 0.22 13.87 1.46	2 0.01 0.84 0.12	2 0.01 0.84 0.20	0 0.00 0.00 0.00	0 0.00 0.00 0.00	238 1.61
LOWER RURAL	1280 8.65 28.01 16.27	679 4.59 14.86 29.95	798 5.39 17.46 46.56	492 3.32 10.77 50.10	446 3.01 9.76 54.72	875 5.91 19.15 75.43	4570 30.87
LOWER URBAN	1242 8.39 70.33 15.79	308 2.08 17.44 13.59	130 0.88 7.36 7.58	44 0.30 2.49 4.48	21 0.14 1.19 2.58	21 0.14 1.19 1.81	1766 11.93
UPPER RURAL	1270 8.58 36.24 16.14	613 4.14 17.49 27.04	640 4.32 18.26 37.34	403 2.72 11.50 41.04	328 2.22 9.36 40.25	250 1.69 7.13 21.55	3504 23.67
UPPER URBAN	1309 8.84 79.67 16.64	217 1.47 13.21 9.57	71 0.48 4.32 4.14	27 0.18 1.64 2.75	12 0.08 0.73 1.47	7 0.05 0.43 0.60	1643 11.10
FRONTIER	100 0.68 44.05 1.27	70 0.47 30.84 3.09	38 0.26 16.74 2.22	8 0.05 3.52 0.81	4 0.03 1.76 0.49	7 0.05 3.08 0.60	227 1.53
Total	7867 53.14	2267 15.31	1714 11.58	982 6.63	815 5.50	1160 7.84	14805 100.00

Table II.5 Earners Classified by Region and Sex

REGION	SEX		
Frequency Percent Row Pct Col Pct	Female	Male	Total
CAIRO	1000 4.01 30.34 13.53	2296 9.20 69.66 13.08	3296 13.21
ALEX- ANDRIA	515 2.06 30.75 6.97	1160 4.65 69.25 6.61	1675 6.72
OTHER URBAN	120 0.48 30.00 1.62	280 1.12 70.00 1.60	400 1.60
LOWER RURAL	2426 9.73 30.11 32.82	5632 22.58 69.89 32.09	8058 32.30
LOWER URBAN	956 3.83 32.08 12.93	2024 8.11 67.92 11.53	2980 11.95
UPPER RURAL	1451 5.82 26.74 19.63	3976 15.94 73.26 22.65	5427 21.76
UPPER URBAN	809 3.24 30.20 10.95	1870 7.50 69.80 10.65	2679 10.74
FRONTIER	114 0.46 26.57 1.54	315 1.26 73.43 1.79	429 1.72
Total	7391 29.63	17553 70.37	24944 100.00

Table II.6 Household Average Annual Incomes (Egyptian pounds) from Sources

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Wages and Salaries	2950.19	49.545	1.68	2853.09	3047.30	2.55
Income from Agricultural Projects	1471.99	49.951	3.39	1374.08	1569.89	2.58
Income from Non-Agricultral Projects	1634.40	80.097	4.90	1477.41	1791.39	1.60
Lands and Real Estate Income	451.96	16.983	3.76	418.68	485.25	2.36
Income from Financial Assets	87.69	10.129	11.55	67.84	107.55	1.43
Other Regular Returns	973.82	25.404	2.61	924.02	1023.61	2.53
Total, All Sources	7570.05	135.854	1.79	7303.775	7836.325	2.89

Table II.7 Household Average Annual Incomes (Egyptian pounds) from Sources, by Region

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
Wages and Salaries							
Cairo	5265.08	234.980	4.46	4804.52	5725.64	3.47	1962
Alexandria	4147.65	233.135	5.62	3690.70	4604.59	2.64	895
Other Urban	5503.02	505.733	9.19	4511.78	6494.26	1.30	238
Lower Rural	2344.57	60.251	2.57	2226.48	2462.66	2.33	4570
Lower Urban	3090.29	111.125	3.60	2872.49	3308.10	1.87	1766
Upper Rural	1598.36	55.577	3.48	1489.43	1707.29	2.41	3504
Upper Urban	3363.61	197.468	5.87	2976.57	3750.64	3.76	1643
Frontier	4522.04	400.936	8.87	3736.20	5307.88	2.71	227
Income from Agricultural Projects							
Cairo	116.45	81.089	69.63	-42.48	275.39	1.00	1962
Alexandria	137.74	107.829	78.28	-73.60	349.09	1.01	895
Other Urban	63.87	63.868	100.00	-61.32	189.05	1.00	238
Lower Rural	2321.95	99.563	4.29	2126.81	2517.10	3.63	4570
Lower Urban	485.44	119.783	24.68	250.67	720.21	1.22	1766
Upper Rural	2464.91	93.458	3.79	2281.73	2648.09	2.47	3504
Upper Urban	380.74	86.396	22.69	211.41	550.08	4.73	1643
Frontier	3059.74	1558.602	50.94	4.88	6114.60	6.63	227
Income from Non-Agricultral Projects							
Cairo	2590.32	283.203	10.93	2035.24	3145.40	1.50	1962
Alexandria	2051.37	312.299	15.22	1439.27	2663.48	2.84	895
Other Urban	4302.90	803.259	18.67	2728.51	5877.28	1.44	238
Lower Rural	890.21	50.176	5.64	791.87	988.56	1.78	4570
Lower Urban	2168.25	151.315	6.98	1871.67	2464.82	1.63	1766
Upper Rural	781.95	55.027	7.04	674.10	889.80	1.98	3504
Upper Urban	3139.14	549.792	17.51	2061.55	4216.73	1.60	1643
Frontier	2026.73	493.079	24.33	1060.30	2993.17	2.59	227
Lands and Real Estate Income							
Cairo	466.46	66.369	14.23	336.37	596.54	2.83	1962
Alexandria	182.11	37.986	20.86	107.65	256.56	2.65	895
Other Urban	471.96	213.382	45.21	53.73	890.19	2.48	238
Lower Rural	449.07	15.194	3.38	419.29	478.85	1.82	4570
Lower Urban	556.16	61.838	11.12	434.96	677.37	2.46	1766
Upper Rural	381.73	14.198	3.72	353.90	409.56	1.29	3504
Upper Urban	523.59	50.379	9.62	424.84	622.33	2.54	1643
Frontier	1182.97	554.210	46.85	96.72	2269.22	2.27	227

Table II.7 Household Average Annual Incomes (Egyptian pounds) from Sources, by Region (cont.)

Category	Estimate	Standard Error	C.V. (%)	nce Interval Lower	Upper	Design Effect	Number of Observations
Income from Financial Assets							
Cairo	183.26	43.443	23.71	98.11	268.41	1.50	1962
Alexandria	107.97	43.165	39.98	23.37	192.58	2.84	895
Other Urban	401.53	74.266	18.50	255.97	547.10	0.47	238
Lower Rural	27.00	4.984	18.46	17.23	36.77	1.14	4570
Lower Urban	172.49	52.169	30.24	70.24	274.74	1.28	1766
Upper Rural	19.09	4.797	25.13	9.69	28.49	1.16	3504
Upper Urban	146.40	39.370	26.89	69.23	223.56	1.87	1643
Frontier	48.98	30.151	61.56	-10.12	108.07	0.91	227
Other Regular Returns							
Cairo	1623.17	113.838	7.01	1400.05	1846.29	3.28	1962
Alexandria	1348.08	146.680	10.88	1060.59	1635.57	3.86	895
Other Urban	1969.56	224.352	11.39	1529.83	2409.28	1.39	238
Lower Rural	691.00	29.438	4.26	633.30	748.70	1.90	4570
Lower Urban	1180.79	76.911	6.51	1030.04	1331.53	2.20	1766
Upper Rural	656.68	30.052	4.58	597.78	715.58	1.80	3504
Upper Urban	1097.42	84.437	7.69	931.92	1262.92	2.72	1643
Frontier	925.96	299.782	32.38	338.38	1513.53	4.66	227
Total, All Sources							
Cairo	10244.73	575.984	5.62	9115.80	11373.66	2.75	1962
Alexandria	7974.92	629.302	7.89	6741.49	9208.35	5.99	895
Other Urban	12712.83	1020.255	8.03	10713.13	14712.53	2.28	238
Lower Rural	6723.80	105.257	1.57	6517.50	6930.10	2.82	4570
Lower Urban	7653.42	266.260	3.48	7131.55	8175.29	2.24	1766
Upper Rural	5902.72	92.332	1.56	5721.75	6083.69	1.78	3504
Upper Urban	8650.89	759.521	8.78	7162.23	10139.55	2.92	1643
Frontier	11766.42	2313.340	19.66	7232.27	16300.57	5.85	227

Table II.8 1990/1991 HIECS Equivalence Scale Regression of Food and Beverages Expenditures on Household Age and Sex Characteristics

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	9	19142534991	2126948332.3	3423.587	0.0001
Error	14225	8837468987.1	621263.19769		
C Total	14234	27980003978			

Root MSE	788.20251	R-square	0.6842
Dep Mean	2748.07175	Adj R-sq	0.6840
C.V.	28.68202		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	616.646225	17.72332003	34.793	0.0001
M0_4	1	74.368524	10.41109802	7.143	0.0001
F0_4	1	54.435103	10.43752702	5.215	0.0001
M5_19	1	76.941788	5.60481277	13.728	0.0001
F5_19	1	69.688714	5.71836623	12.187	0.0001
M20_59	1	56.919644	7.92796785	7.180	0.0001
F20_59	1	70.134763	9.46427594	7.410	0.0001
M60MORE	1	88.375920	16.68005182	5.298	0.0001
F60MORE	1	79.551194	17.66155854	4.504	0.0001
EXPTOT	1	0.337246	0.00203782	165.494	0.0001

Table II.9 1995/1996 HIECS Equivalence Scale Regression of Food and Beverages Expenditures on Household Age and Sex Characteristics

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	9	33362715518	3706968390.9	4027.102	0.0001
Error	14795	13618873947	920505.16707		
C Total	14804	46981589465			

Root MSE	959.42961	R-square	0.7101
Dep Mean	3341.22874	Adj R-sq	0.7099
C.V.	28.71487		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	520.213486	21.16763012	24.576	0.0001
MLESS5	1	153.905912	14.80626111	10.395	0.0001
FLESS5	1	108.167438	14.99877039	7.212	0.0001
M5_19	1	171.481235	7.31264932	23.450	0.0001
F5_19	1	162.972459	7.42828289	21.939	0.0001
M20_59	1	217.638750	10.62229506	20.489	0.0001
F20_59	1	293.235748	13.53785206	21.660	0.0001
M60MORE	1	277.352507	20.68890379	13.406	0.0001
F60MORE	1	265.940820	21.68564680	12.263	0.0001
TOTEXP	1	0.265934	0.00177651	149.695	0.0001

Table II.10 Critical Household Estimates from two Egyptian HIECS
(In £E per year, standard deviations in parentheses)

1990/1991HIECS		1995/1996 HIECS	
EXPENDITURES		EXPENDITURES	
Unadjusted HH Expenditures, N=14232		Unadjusted HH Expenditures, N=14805	
Mean	5144.47	Mean	6658.60
	(3314.73)		(4797.60)
Median	4417.85	Median	5637.40
Equivalence-Adjusted Exps		Equivalence-Adjusted Exps	
Mean	4828.16	Mean	6229.95
	(995.90)		(1460.91)
Median	4863.95	Median	6087.94
		Equivalent Inflation-Adjusted (All Items CPI)	
		Mean	3454.89
			(771.06)
		Median	3403.51
		Equivalent Inflation-Adjusted (Food-only CPI)	
		Mean	3665.57
			(813.32)
		Median	3614.49
HOUSEHOLD INCOMES		HOUSEHOLD INCOMES	
1. USING NEWINC.SD2			
Unadjusted HH Incomes, N=14325		Unadjusted HH Incomes, N=14805	
Mean	5708.90	Mean	7570.05
	(27991.46)		(9731.05)
Median	4400.00	Median, N=14805	6126.00
Equivalence-Adjusted Incs		Equivalence-Adjusted Incs	
Mean	5624.51	Mean	7080.52
	(38281.15)		(3822.62)
Median	4834.42	Median	6612.94
2. USING INDV.SD2		Equivalent Inflation-Adjusted (All Items CPI)	
Unadjusted HH Incomes, N=11664		Mean	3926.49
Mean	5610.64		(2068.14)
	(30824.3254)	Median	3683.91
Median	4273.50	Equivalent Inflation-Adjusted (Food-only CPI)	
Equivalence-Adjusted Incs, N=11669		Mean	4165.92
Mean	5613.80		(2186.94)
	(42252.0783)	Median	3908.69
Median	4780.86		

INDIVIDUAL WAGES AND SALARIES	
Nominal Wages of Earners, N=10292	
Mean	2516.58
	(1978.42)
Median	2030.00
Nominal Wages of Males, N=8480	
Mean	2655.72
	(2060.46)
Median	2160.00
Nominal Wages of Females, N=1812	
Mean	1865.40
	(1360.107)
Median	1484.00

INDIVIDUAL WAGES AND SALARIES	
Nominal Wages of Earners, N=12672	
Mean	3446.78
	(2594.60)
Median	2850.00
Real Wages, All Items CPI	
Mean	1896.09
	(1395.73)
Median	1579.51
Real Wages, Food-only CPI	
Mean	2009.31
	(1474.32)
Median	1675.51
Nominal Wages of Males, N=10224	
Mean	3622.28
	(2709.33)
Median	3000.00
Real Male Wages, All Items CPI	
Mean	1996.01
	(1456.01)
Median	1659.63
Real Male Wages, Food-only CPI	
Mean	2115.73
	(1538.50)
Median	1765.88
Nominal Wages of Females, N=2448	
Mean	2713.83
	(1877.79)
Median	2260.00
Real Female Wages, All Items CPI	
Mean	1478.78
	(1003.74)
Median	1246.74
Real Female Wages, Food-only CPI	
Mean	1564.84
	(1059.17)
Median	1320.60

Inflation adjustment, fiscal 1990/1991 to midpoint 1995/1996 HIECS (March, 1996):
All-items urban fiscal 1990/1991 = 192.4; urban March, 1996 = 358.8
All items rural fiscal 1990/1991 = 190.8; rural March, 1996 = 333.4
Food-only urban fiscal 1990/1991 = 201.6; urban March, 1996 = 339.9
Food-only rural fiscal 1990/1991 = 200.4; urban March, 1996 = 312.8

Table II.11 Frequencies and Percentages of Income Class by Expenditure Class

Frequency Percent Row Pct Col Pct	1 - 1500	1501 - 2000	2001 - 2500	2501 - 3500	3501 - 4500	4501 - 6000	6001 - 8000	8000 +	Total
1 - 1500	239	66	13	14	4	0	3	0	339
	1.61	0.45	0.09	0.09	0.03	0.00	0.02	0.00	2.29
	70.50	19.47	3.83	4.13	1.18	0.00	0.88	0.00	
	78.62	16.79	2.72	0.90	0.19	0.00	0.10	0.00	
1501 - 2000	43	170	45	32	9	6	4	2	311
	0.29	1.15	0.30	0.22	0.06	0.04	0.03	0.01	2.10
	13.83	54.66	14.47	10.29	2.89	1.93	1.29	0.64	
	14.14	43.26	9.41	2.05	0.44	0.18	0.13	0.06	
2001 - 2500	13	85	174	116	23	10	6	4	431
	0.09	0.57	1.18	0.78	0.16	0.07	0.04	0.03	2.91
	3.02	19.72	40.37	26.91	5.34	2.32	1.39	0.93	
	4.28	21.63	36.40	7.42	1.12	0.30	0.20	0.11	
2501 - 3500	5	55	157	707	232	87	23	9	1275
	0.03	0.37	1.06	4.78	1.57	0.59	0.16	0.06	8.61
	0.39	4.31	12.31	55.45	18.20	6.82	1.80	0.71	
	1.64	13.99	32.85	45.23	11.27	2.59	0.76	0.25	
3501 - 4500	3	12	63	453	918	333	82	16	1880
	0.02	0.08	0.43	3.06	6.20	2.25	0.55	0.11	12.70
	0.16	0.64	3.35	24.10	48.83	17.71	4.36	0.85	
	0.99	3.05	13.18	28.98	44.58	9.91	2.70	0.44	
4501 - 6000	1	4	19	177	633	1668	348	75	2925
	0.01	0.03	0.13	1.20	4.28	11.27	2.35	0.51	19.76
	0.03	0.14	0.65	6.05	21.64	57.03	11.90	2.56	
	0.33	1.02	3.97	11.32	30.74	49.63	11.44	2.08	
6001 - 8000	0	1	5	47	182	956	1575	295	3061
	0.00	0.01	0.03	0.32	1.23	6.46	10.64	1.99	20.68
	0.00	0.03	0.16	1.54	5.95	31.23	51.45	9.64	
	0.00	0.25	1.05	3.01	8.84	28.44	51.79	8.18	
8000 +	0	0	2	17	58	301	1000	3205	4583
	0.00	0.00	0.01	0.11	0.39	2.03	6.75	21.65	30.96
	0.00	0.00	0.04	0.37	1.27	6.57	21.82	69.93	
	0.00	0.00	0.42	1.09	2.82	8.96	32.88	88.88	
Total	304	393	478	1563	2059	3361	3041	3606	14805
	2.05	2.65	3.23	10.56	13.91	22.70	20.54	24.36	100.00

Table II.12 Regression of Level Household Total Annual Expenditures on Level Household Total Annual Incomes and Regional Dummies

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	8	147856842171	18482105271	1417.731	0.0001
Error	14796	192886606490	13036402.169		
C Total	14804	340743448661			

Root MSE	3610.59582	R-square	0.4339
Dep Mean	6658.60450	Adj R-sq	0.4336
C.V.	54.22451		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	5860.738835	87.45689437	67.013	0.0001
TOTINC	1	0.295259	0.00309331	95.451	0.0001
ALEX	1	-834.029366	145.80656866	-5.720	0.0001
OTHURB	1	2268.307149	247.94663047	9.148	0.0001
LOWRUR	1	-1769.869994	98.05952669	-18.049	0.0001
LOWURB	1	-1078.092902	118.70374308	-9.082	0.0001
UPRUR	1	-2502.632219	102.69019622	-24.371	0.0001
UPURB	1	-1437.462944	120.84396576	-11.895	0.0001
FRONTIER	1	225.460900	253.17125896	0.891	0.3732

Table II.13 Regression of Level Household Total Annual Consumption on Level Household Total Annual Expenditures and Regional Dummies

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	8	291325259449	36415657431	62491.504	0.0001
Error	14796	8622069127.4	582729.73286		
C Total	14804	299947328576			

Root MSE	763.36736	R-square	0.9713
Dep Mean	6508.39300	Adj R-sq	0.9712
C.V.	11.72897		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob > |T|
INTERCEP	1	490.685415	21.08631569	23.270	0.0001
TOTEXP	1	0.920568	0.00136739	673.228	0.0001
ALEX	1	-46.453075	30.85989809	-1.505	0.1323
OTHURB	1	249.801883	52.55708239	4.753	0.0001
LOWRUR	1	-166.650652	20.95896274	-7.951	0.0001
LOWURB	1	-179.939740	25.16608574	-7.150	0.0001
UPRUR	1	-146.400376	22.13806365	-6.613	0.0001
UPURB	1	-43.029961	25.66104930	-1.677	0.0936
FRONTIER	1	-56.405610	53.52523369	-1.054	0.2920

Table II.14 Parameter Estimates for 13 Engel Curves from the 1990/1991 and 1995/1996 HIECS
(standard errors in parentheses)

Group	1990/1991 HIECS Intercept	Elasticity	Adj-R-sq	1995/1996 HIECS Intercept	Elasticity	Adj-R-sq
Foods and Beverages	1.3275	-0.0905	0.1741	1.3632	-0.0952	0.2239
	(0.0139)	(0.0017)		(0.0126)	(0.0015)	
Tobacco, Cigarettes and Drugs	0.0443	0.0002	-0.0001	0.3458	-0.0310	0.1222
	(0.0070)	(0.0008)		(0.0084)	(0.0010)	
Apparel, Textiles Yarn, Footwear	-0.0950	0.0203	0.0676	-0.0566	0.0164	0.0513
	(0.0053)	(0.0006)		(0.0050)	(0.0006)	
Housing and Utilities	0.3744	-0.0323	0.0898	0.4056	-0.0342	0.1107
	(0.0072)	(0.0009)		(0.0069)	(0.0008)	
Household Furnishing and Appliances	-0.0882	0.0153	0.0451	-0.0312	0.0083	0.0223
	(0.0050)	(0.0006)		(0.0039)	(0.0005)	
Health Care and Medical	0.0169	0.0027	0.0010	0.0958	-0.0065	0.0079
	(0.0058)	(0.0007)		(0.0053)	(0.0006)	
Transport and Communication	-0.2467	0.0336	0.1149	-0.1867	0.0258	0.0889
	(0.0066)	(0.0008)		(0.0063)	(0.0007)	
Education	-0.0835	0.0124	0.0576	-0.1031	0.0175	0.0399
	(0.0035)	(0.0004)		(0.0080)	(0.0009)	
Culture, Sport and Entertainment	-0.0906	0.0134	0.0649	-0.1015	0.0161	0.0557
	(0.0036)	(0.0004)		(0.0058)	(0.0007)	
Hotels, Cafes and Restaurant Services	-0.0478	0.0076	0.0147	0.1011	-0.0074	0.0120
	(0.0044)	(0.0005)		(0.0091)	(0.0010)	
Other Consumption Expenditures	-0.1086	0.0169	0.0645	-0.0952	0.0147	0.0700
	(0.0045)	(0.0005)		(0.0038)	(0.0004)	
Transfers	-0.1187	0.0166	0.0073	-0.1075	0.0145	0.0411
	(0.0136)	(0.0016)		(0.0056)	(0.0006)	
Premiums	-0.0033	0.0007	0.0000	-0.0647	0.0126	0.0073
	(0.0056)	(0.0007)		(0.0534)	(0.0060)	
Model Sums	0.8804	0.0170		1.5648	-0.0485	

Table II.15 Per Capita Expenditures and Incomes, by Region, 1995/1996 HIECS

Category	Estimate	Current $ @ 3.4 / 1.0	Standard Error*	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect
Per Capita Expenditures							
1990/1991 HIECS							
Cairo	1446.55	425.46	1181.45	81.67	1398.37	1494.73	-
Alexandria	1245.79	366.41	1174.45	94.27	1176.03	1315.55	-
Other Urban	1580.22	464.77	1491.15	94.36	1388.75	1771.69	-
Lower Rural	1013.19	298.00	985.51	97.27	979.50	1046.88	-
Lower Urban	1116.77	328.46	793.81	71.08	1084.84	1148.70	-
Upper Rural	783.43	230.42	732.9	93.55	754.60	812.26	-
Upper Urban	1130.44	332.48	938.84	83.05	1091.58	1169.30	-
Frontier	1034.75	304.34	1112.16	107.48	886.43	1183.07	-
TOTAL, All Regions	1106.58	325.46	996.431	90.05	1090.21	1122.95	-
1995/1996 HIECS							
Cairo	2190.42	644.24	116.917	5.34	1961.26	2419.57	9.89
Alexandria	1711.04	503.25	156.395	9.14	1404.51	2017.58	9.77
Other Urban	2848.00	837.65	302.407	10.62	2255.28	3440.72	5.68
Lower Rural	1132.18	333.00	14.961	1.32	1102.86	1161.51	3.35
Lower Urban	1585.12	466.21	47.845	3.02	1491.34	1678.90	4.16
Upper Rural	921.42	271.01	11.131	1.21	899.60	943.24	1.81
Upper Urban	1533.25	450.95	94.570	6.17	1347.89	1718.60	10.00
Frontier	1525.09	448.55	201.185	13.19	1130.76	1919.41	7.69
TOTAL, All Regions	1341.54	394.57	19.639	1.46	1303.05	1380.04	5.77
Per Capita Incomes							
1990/1991 HIECS							
Cairo	1445.53	425.16	1365.83	94.49	1389.83	1501.23	-
Alexandria	1262.16	371.22	1513.81	119.94	1172.25	1352.07	-
Other Urban	1618.7	476.09	1576.14	97.37	1416.32	1821.08	-
Lower Rural	971.4	285.71	969.88	99.84	938.25	1004.55	-
Lower Urban	1895.4	557.47	33599.06	1772.66	543.82	3246.98	-
Upper Rural	763.16	224.46	563.47	73.83	741.00	785.32	-
Upper Urban	1235.68	363.44	1455.85	117.82	1175.42	1295.94	-
Frontier	1008.08	296.49	723.36	71.76	911.61	1104.55	-
TOTAL, All Regions	1241.13	365.04	13764.91	1109.06	1015.00	1467.26	-
1995/1996 HIECS							
Cairo	2525.46	742.78	159.650	6.32	2212.55	2838.38	3.37
Alexandria	1848.63	543.71	167.881	9.08	1519.58	2177.68	7.75
Other Urban	3046.98	896.17	287.082	9.42	2484.30	3609.66	2.90
Lower Rural	1252.87	368.49	18.273	1.46	1217.05	1288.68	2.82
Lower Urban	1722.65	506.66	71.871	4.17	1581.79	1863.52	3.09
Upper Rural	1066.25	313.60	15.547	1.46	1035.78	1096.72	1.85
Upper Urban	1900.95	559.10	177.635	9.34	1552.79	2249.12	3.23
Frontier	1877.00	552.06	326.138	17.38	1237.77	2516.24	4.89
TOTAL, All Regions	1525.18	448.58	28.749	1.88	1468.83	1581.53	3.08

*For the 1990/1991 HIECS estimates, standard deviations assuming SRS; errors are lower bounds.

Table II.16 Average Expenditures for Subsidized and Subsidy-Relevent Free-Market Goods by Expenditure Quintiles, Rural and Urban, 1990/1991 and 1995/1996 HIECS

1990/1991

Quintile	FLOUR	BALADY BREAD	SHAMI BREAD	OIL	SUGAR	ALL	SHARE
1	110.27	64.84	1.79	11.44	1.50	189.83	0.09
2	132.85	84.08	2.02	3.55	1.44	223.93	0.07
3	167.91	81.67	4.33	8.13	1.38	263.41	0.06
4	153.69	100.40	5.29	6.18	1.98	267.53	0.05
5	201.30	115.45	8.55	11.08	0.35	336.72	0.04
All Rural	153.19	89.28	4.40	8.08	1.33	256.27	0.06

Quintile	FLOUR	BALADY BREAD	SHAMI BREAD	OIL	SUGAR	ALL	SHARE
1	46.86	183.69	5.37	4.31	0.37	240.60	0.10
2	59.54	219.52	8.53	7.90	0.39	295.88	0.08
3	45.13	240.10	14.15	11.42	0.22	311.02	0.06
4	43.41	228.74	18.09	18.24	1.11	309.58	0.05
5	32.58	215.23	30.84	53.74	0.80	333.20	0.03
All Urban	45.51	217.45	15.39	19.12	0.58	298.04	0.06

1995/1996

Quintile	FLOUR	BALADY BREAD	SHAMI BREAD	BREAD LOAVES	SUBSIDIZED OIL	FREE MARKET OIL
1	138.85	82.58	2.65	0.80	12.35	25.57
2	160.91	98.05	5.15	2.06	15.80	37.34
3	152.47	99.91	6.72	3.86	17.05	44.07
4	150.89	94.22	10.47	2.78	17.48	53.46
5	166.78	124.38	15.26	12.59	18.35	74.08
All Rural	153.98	99.83	8.05	4.42	16.20	46.90

Quintile	SUBSIDIZED SUGAR	FREE MARKET SUGAR	ALL	SHARE
1	20.93	62.37	258.16	0.09
2	25.83	77.01	307.79	0.07
3	27.47	83.00	307.48	0.06
4	27.82	87.50	303.67	0.05
5	28.96	111.71	366.33	0.04
All Rural	26.20	84.31	308.68	0.06

Quintile	FLOUR	BREAD	BREAD	LOAVES	SUBSIDIZED OIL	FREE MARKET OIL
1	59.70	167.25	7.77	7.77	15.57	37.39
2	62.94	190.47	16.23	19.79	16.82	52.31
3	54.10	188.15	21.12	34.20	17.12	63.99
4	44.59	187.05	25.12	56.70	17.29	71.02
5	36.93	184.37	44.30	107.38	15.02	92.47
All Urban	51.66	183.46	22.91	45.16	16.37	63.43

Quintile	SUBSIDIZED SUGAR	FREE MARKET SUGAR	ALL	SHARE
1	21.04	50.99	279.11	0.08
2	22.16	64.29	328.42	0.06
3	22.63	72.09	337.32	0.05
4	21.71	77.05	352.46	0.04
5	18.41	95.16	406.42	0.03
All Urban	21.19	71.91	340.74	0.05

Table II.17 Monthly Average Expenditure Levels by Annual Average Equivalence-Adjusted Expenditures for Subsidized Goods, £E

Average Household Monthly Total Expenditure Level £E	EQUIVALENT EXPENDITURE	N	FLOUR	BALADY BREAD	SHAMI BREAD
1-132	3392.17	359	270.15	211.12	125.34
133-333	4943.52	3354	248.03	217.97	156.01
334-667	6120.16	7493	200.51	218.33	157.02
668 -	7940.45	3599	118.21	176.23	123.50

£E	BREAD LOAVES	SUBSIDIZED OIL	FREE MARKET OIL	SUBSIDIZED SUGAR	FREE MARKET SUGAR
1-132	82.66	17.27	90.05	24.99	107.03
133-333	83.67	19.31	82.03	29.05	104.97
334-667	104.01	19.73	72.38	29.32	90.20
668 -	115.14	17.59	64.09	24.44	75.07

Table II.18 Elasticities for Subsidized Goods, Urban and Rural, Both Surveys

1990/1991	Urban Areas		Rural Areas	
	Coefficient	Std Error	Coefficient	Std Error
Flour	-2.5289	0.1232	-0.2209	0.0876
Balady	-1.1458	0.0363	-0.1319	0.0736
Shami	-0.4430	0.1437	-0.1749	0.2921
Oil	0.9476	0.3321	-0.6355	0.6789
Sugar	-1.2111	0.6961	-1.3911	0.7705

1995/1996	Urban Areas		Rural Areas	
	Coefficient	Std Error	Coefficient	Std Error
Flour	-1.6072	0.0837	-1.1518	0.0796
Balady	-1.1046	0.0338	-0.5354	0.0665
Shami	-0.9297	0.1162	-0.1110	0.2399
Bread Loaves	0.2467	0.0866	0.2024	0.1900
Subsidized Oil	-0.7134	0.0287	-0.3191	0.0229
Free-market Oil	-0.5184	0.0336	-0.1029	0.0334
Subsidized Sugar	-0.9067	0.0247	-0.3925	0.0211
Free-market sugar	-0.5681	0.0348	-0.2078	0.0341

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Chapter III. Poverty and Inequality

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CHAPTER III. POVERTY AND INEQUALITY

III.A Abstract[1]

Using data from two Egyptian Household Income, Expenditure and Consumption Surveys (HIECS), various profiles of relative economic deprivation and inequality are developed and presented. Because the results are sensitive to the assumptions and adjustments used for spatial and temporal comparison, caveats to statistical methodology and inferences are identified. Expenditure data are used for poverty comparisons and income data for inequality. The nutrition-based poverty line is adjusted for household size, food-to-total expenditures, and food-only inflation. From the perspective of targeting, poverty rates by socioeconomic classifications are rank invariant and stable over time. The findings are interpreted, where appropriate, relevant to policies for alleviating poverty in the context of sectoral reform and stabilization. A slight decline in overall income inequality over the period is suggested, and lower quintile groups have made gains in income shares.

III.B Introduction - The Macro Environment

Some historical observations about the Egyptian macro-economy will provide a framework for current conditions.

The 1980's were particularly difficult years. It is generally agreed that the economy's poor performance was due, in large part, to an inefficient state bureaucracy whose pervasive controls and subsidies persisted in discouraging competitive enterprise, and whose monetary and fiscal policies remained inhospitable to private investment and fueled high inflation rates. By 1985 a decade of economic growth in Egypt had ended. GDP growth fell from 5% per year to near stagnation; inflation remained at about 25%, and budget deficits annually approached 20% of GDP. In the late 1980's the Government of Egypt embarked on a far-reaching program of economic stabilization and reform largely supported by international donors, culminating in financial assistance in the form of a standby agreement signed with the International Monetary Fund (IMF) in May of 1991.[2]

The economic problems, and the policy measures proposed as solutions, were textbook examples for macroeconomic stabilization and reform (see IMF (1985)):

- The budget deficit required a restrictive fiscal policy: cutting expenditures and raising revenue through new taxes. The reduction or elimination of subsidies, especially of food staples, remained a particularly contentious component of the

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[1] A version of this chapter in its entirety is forthcoming in the Middle East Economics Association, ed. Research in Middle East Economics, Second Annual Volume, November, 1997.

[2] See the address by IMF's Managing Director Michel Camdessus in "IMF Lauds Egypt's Economic Program," IMF Survey, 10 June 1991, p. 1.

austerity plan.[3]

- Monetary policy would need to be rigid as well: controlling inflation demanded credit contraction in the form of a ceiling on bank loans; budget deficit financing had to be strictly curtailed; and tighter rules had to be established to keep banks to their required reserve ratios.
- Price distortions were contributing to inefficient resource allocation. A unified exchange rate, and, eventually, a devaluation of the Egyptian pound were considered the cornerstones of price liberalization. By planning to reduce tariffs and eliminate non-tariff barriers to trade, the government signaled its intent to place more emphasis on the market mechanism. Such an environment would be attractive to foreign private investment.
- Long-term private production would be encouraged by weaning public enterprises from government subsidies; by giving more freedom to management, and by privatization.

These measures had an especially adverse impact on the poor population in the late 1980s. A temporary decrease in GDP growth decreased employment, especially among the rural, less skilled segments of the labor force. Prices skyrocketed for those staple goods for which subsidies were removed. Because food shares are larger in poor households' budgets, and because fixed income recipients make up a disproportionately large share of poor households, the poor were doubly harmed by the erosion in real purchasing power. Devaluation contributed to rising costs of imported foodstuffs. The shift in investment incentives toward entrepreneurs who could provide ready collateral favored the more profitable distribution and services sectors to the detriment of commodities-producing sectors.

Since 1991, macroeconomic progress has been mixed.[4] Official GDP growth was 1.1% in 1991, and only .5% in 1993, but the last two years have seen a modest trend increase, to 3.2% in 1995, and 4.2% in 1996. Per capita GNP has increased slowly but steadily, from $610 in 1991 to $690 by the end of 1995. Consumer price inflation is grossly mismeasured,[5] but even with steadily decreasing official rates, real

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[3] For a background to the Egyptian subsidies issue, see Ali, *et. al.* (1994), and Ali and Adams (1996).

[4] There are unresolved controversies about the performance of the Egyptian macroeconomy, and the quality of statistics from primary sources is under review. Recent growth measures are suspect. The source for current data on economic conditions is the IMF, reported in USAID (1997).

[5] The bias in official price indexes is due mainly to outdated, and therefore unrepresentative, budget share weights. As late as December 1995, weights from 1981/1982 were still being used to calculate the official index. In addition the Laspeyres estimator is known to be an upward bound on (i.e., it overestimates) the true cost of living index. This mismeasurement of inflation greatly impedes the evaluation of relative economic standing in Egypt.

wages have hardly kept pace with rising prices. There is some evidence that the role of government in the economy is decreasing (in 1991, the public sector contributed more than 46% of GDP; in 1996, 28.5%), but the wage bill remains a large proportion of government expenditure. The moderate unemployment rate - on average 9.3% since the start of the decade - masks very serious problems of structural underemployment and mis-matched labor supply. For the average Egyptian household, the period from 1990 to late 1996 contained the low points of the macroeconomic stabilization cycle.

The purpose of this paper is to compare poverty profiles from 1991, as the economic reform program got under way, with findings from the 1995/1996 household survey. A set of poverty and inequality outcomes, given various assumptions and adjustments, provides evidence for making limited inferences about the impact of economic policy changes at the endpoints of this bounded interval of economic reform.

III.C Poverty Characteristics and Measurement

Poverty studies are cited to justify government targeting of poor areas for development aid, or to rationalize other types of interventions. These actions are legitimate when a widely accepted standard is used for comparison. A yardstick for measuring poverty should provide explicable results without the need for assumptions which are too weighty or restrictive.

An important concept in measuring poverty is the poverty line, often based on one or more moments of a sampled level of consumption, expenditure or income.[6] Poverty would exist if one individual is not receiving this minimum level. Poverty lines can be "absolute," "relative," or "subjective." Absolute poverty lines are fixed without regard to the present resource endowments among members of the population. A common absolute poverty line is the nutritional standard: the basis for setting a caloric minimum has more to do with the proper functioning of a human body than with the present distribution of caloric intake among the surveyed population. It may be that no members of the population fall below the absolute line. In contrast, there will always be relatively poor individuals or households simply because relative poverty lines are constructed using sample characteristics. Subjective poverty lines are formed by asking respondents to evaluate their present levels of living (or other factors) against what they consider to be "the minimum amount necessary" to make ends meet.

There are essentially two approaches to poverty measurement. The "welfarist" approach, associated with the standard of living, is *individualist*, an attempt to capture and compare the well-being (utility)

[6] Ravallion (1992) cites "half the mean" as a common poverty line for the European countries, for example. But measures around the median, such as below, are perhaps more valuable for capturing "social ranking." The mode of a distribution is rarely used. See also OECD (1982).

attached to private current consumption from an individual perspective.[7] The problem with welfarist measures is that there are an infinite number of utility functions: just because someone acts one way does not mean he or she is demonstrating a certain standard of living. Policy choices should be based on more than the well-being of individuals.

Another approach - the one used in this paper - is to base the measure of well-being on *social* standards (as reflected by the opinion of a social observer), and construct a "needs-based index" of poverty. Assuming that adequate nutrition is the standard, one would set a hypothetical minimum consumption bundle for a given household[8] and determine if the expenditures the household makes suffice to purchase that minimum bundle. Yet this measure suffers because nothing guarantees the household will actually *buy* that bundle, irrespective of the assumption that people are the best judges of their own welfare. Again, controversy arises from conflicting notions about what is "best" for the household or society in general.

Because poverty is specific to areas, the question arises whether, and how, to adjust poverty measures by variable costs of living, non-pecuniary amenities, and different allocation habits associated with living in certain areas.[9] It might be better to construct a multidimensional index[10] which accounts for variable access to fuel, shelter and clean water, health clinics, and schools, and also measures nutrition, life expectancy, literacy, infant mortality and workers' participation. The relative provision of public goods, which has demanded special attention

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[7] Atkinson (1991) notes that measuring poverty in terms of the individual, and comparing "rights" and "opportunities" is more prevalent in First World literature. Indeed the prominence of personal utility is more a Western construct than a Middle Eastern one.

[8] Note that this household's characteristics need not reflect those of the average household, or even the common household. The important point is that this household has certain characteristics which the researcher has determined to use as a reference.

[9] Adjustment of poverty measures to account for interarea costs of living, which would require controlling for heterogeneous product characteristics in pricing (see Kokoski and Cardiff (1992)), is certainly beyond the scope of this paper. For this reason, as well as difficulties such an adjustment would present for inference (the more adjustments made the more limited the scope of interpretation), this is not standard practice even in data rich settings - the US Census Bureau, for example, does not adjust its poverty results for interarea costs of living.

[10] As in Grootaert and Marchant (1991), for example. A living standards survey is aimed at balancing the preciseness of measurement with the heterogeneous nature of economic phenomena, essentially trading off data quality and data quantity.

in the measurement of poverty,[11] is but one characteristic of a complex quality of life unique to each environment. Whether or not an effort is made to include public goods in welfarist or in society-based measurements is beside the point; the linkage between the existence of public goods and their usage (by extension, a higher living standard) is not assured.

The unit of analysis - individual versus household - conditions the measurement of poverty. Individual data may be preferred to household data for their information richness, but sometimes the assumptions required to make inferences using individual data are unreasonable. For example, in comparing the poverty of individuals based on calorie intakes, one assumes that an individual of a certain sex, age, height and weight requires a certain number of complete-nutrition calories per day, and that this requirement (i.e., level of activity), and even metabolic rate, stays constant. However, activity levels themselves can depend on calorie consumption, an interaction which greatly confounds the equation for nutrition requirements. Even after controlling for the higher share of food expenditures typical of the poor, the correlation between food energy consumption and expenditures can be different across areas. The food-energy method alone is deficient for constructing poverty indices because food energy intake also varies with income levels, over time and across areas. The mere fact that a certain diet meets the requirements for a functioning human body is irrelevant to whether such a diverse diet will be sought after, or even less likely, available in the market.

III.D Poverty and Household Expenditure Data

In the empirical section which follows, I use income and expenditure data from Egypt's HIECS to make provisional inferences about poverty and inequality.

Before choosing an indicator to represent economic rank, statistical integrity depends on the proper sampling design. For economic information to characterize households in a valid way: 1) households should be selected randomly, such that each has an equal probability of being sampled;[12] and 2) households should be selected independently of one another. Discounting a number of potential non-sampling errors, these are the minimal measures taken to assure that estimates about the population using sample units will be *unbiased* (i.e., on target within a certain bound) and have smooth, well-defined distributions. Another concern, more a prescription than a rule, is that "enough" households are sampled so that the law of large numbers applies. With *household* expenditure survey sampling, there is always a concern that the sample does not cover every household, that despite

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[11] See Deaton (1988) for an exposition on assigning values to public goods of variable quality.

[12] If stratified random sampling is used, the within-stratum selection should be random.

oversampling, squatters and the homeless are not properly represented. If the household survey is undertaken simply to update the market expenditure "basket," policymakers would likely be content with an underestimate of the poor population.[13] If, however, the survey is also intended for monitoring or measuring development, or worse, for targeting the poor, this nonrepresentation would be a flagrant omission. Finally, the market basket itself should be wholly representative - both to capture the multiplicity of consumer tastes and to account for substitution of home-produced output.

A serious problem with poverty measurement is that household surveys usually do not permit a one-to-one mapping of individual demographic data with *comprehensive* expenditure data. Consequently, the immediate decision to use the household[14] rather than the individual as the unit of analysis for expenditure comparisons is often made by default. If poverty is overwhelmingly an individual phenomenon, then inability to match individuals with expenditures is a major liability of household data. Comparing household per capita expenditures would not be a solution because one would have to assume that resources are allocated equally within the household, and the practice of ignoring inequalities within the family effectively neglects valuable information about poverty risks for women, children, and the aged, in addition to introducing potential bias in the estimation of overall poverty.[15]

There are errors in all survey data, some due to the fact that a sample can never completely represent a population, and others because reported values deviate from "true" values. Along with the normal editing and consistency checks, imputations might be prescribed for missing data. They may also be used to correct for unrepresentative expenditure patterns if there is reason to believe that respondents systematically underreport expenditures.[16] Often data series are weighted by the inverse of the sampling proportion to permit sample values to serve as population values. The data might be adjusted for "adult equivalents," as well, to make tabulation results by households meaningful.

The question of which variable to use to measure poverty, income

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[13] Bias in the overestimation of, say, food expenditure shares results in a market basket that is not wholly representative when poor people's consumption patterns are unique and are not being given the proper weight.

[14] A "household" is defined as "a group of individuals living together in a similar place and sharing a budget."

[15] Jenkins (1991) outlines the problems of measuring poverty when it is assumed that resources are shared equally among family members.

[16] For a thorough inventory of survey errors, see UN (1982) and Rossi, *et. al.* (1983). Cardiff (1995) catalogues these for the 1995/1996 HIECS. Non-sampling errors are hardly trivial. The general belief is that the rich underestimate their expenditures and incomes more than the poor, which is of less consequence for poverty research.

or expenditures, depends on how poverty will ultimately be interpreted. It is acceptable to use income as a proxy for consumption in welfarist measures, more so when household savings are negative. Cash income may represent, in the short-term at least, a "right to participate in society."[17] Expenditures are widely preferred for capturing "realized opportunities," especially when net savings are positive. In addition, because the poor are less flexible with regard to their borrowing options, expenditures better depict their actual level of living. In measuring poverty over time, current expenditures might be a less variable, and thereby more reliable, indicator of the long-term standard of living.[18]

The quality of HIECS survey data from CAPMAS can be judged "better than average." The samples were randomly and independently chosen. However, the exact probability of selection for any one household in either survey could never be recovered due to poorly delineated field maps, and consequently the samples can only be considered "approximately" self-weighted. Certainly the total case counts for both surveys are high enough for making inferences to the region level, with reservations. The extent of undercoverage, especially of the homeless and nomadic populations, cannot be ascertained. Neither can the extent of overestimation of household expenditures by the lower-income households be fully understood without very detailed analyses of the symmetry of the distributions. 95% confidence bounds around the sample mean of total household expenditures for both surveys point to "acceptable" levels of bias and imprecision (see the confidence intervals below). Household size, age, and sex characteristics are measured with enough precision to estimate reasonable equivalence scales from the sample information itself (see the Statistical Appendix).

Throughout this paper households will be associated with making expenditures while individuals will be associated with earning income, and we will assume that current expenditures measure "lifetime incomes" better than current incomes.[19] For the 1990/1991 HIECS, annual expenditure data exist for 5880 rural households and 8352 urban

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[17] Atkinson (1991), *op. cit.*

[18] Note that the current standard of living should not be misconstrued as the "potential for consumption," which would be impossible to measure without accounting for household wealth, including landholdings.

[19] Both surveys are cross-sectional; each household recorded a full month's worth of purchases over a series of ten interviewer visits to represent large, lumpy, and infrequently made expenditures in the annual expenditure total. Income data were collected on the last interview during the survey month. See Blundell and Preston's (1991) discussion of the drawbacks in using cross-sectional data as measures of household welfare.

households actually surveyed.[20] These households are compared with the 1995/1996 HIECS sample, representing 6622 urban households and 8183 rural households. Expenditures include estimates of the consumption value of "own-produced" items where these goods have marketed counterparts; imputation of own-produced food commodities was especially pervasive in the rural areas. Expenditures do not include the cash value of gifts given to people not in the household, or installment debt for purchases made before the surveys began. There are errors in matching income files with expenditure files in the 1990/1991 HIECS, and only approximately 80% (16,700 earners) of the income data can be considered reliable. The 1995/1996 HIECS represents 73,939 individuals, 24,944 of which "earned income." Incomes are defined as inflows from wages and salaries, agricultural and non-agricultural enterprises, real estate and property, finance and interest accruals, and other sources. Wages and salaries provide the most common income source in both surveys, but non-agricultural projects typically generate the highest average incomes. For some assumptions, the household-level expenditure and income data are equivalence-scaled using information specific to each sample (see the Statistical Appendix).[21] Overall income and expenditure averages for the data used in this paper with the 95% confidence limits of the estimates, are shown. In most cases, the result of adjusting for adult equivalence is lower error.

Household Average Income and Expenditure Estimates, Two HIECS

Survey	Household Average Expenditures(£E)		Household Average Incomes (£E)	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Q1-Q4 1990/1991 N = 14232	5144.47 ± 54.5	4828.16 ± 16.4	5610.65 ±559.4 (N = 11664)	5613.80 ±766.7 (N = 11669)
Q1-Q4 1995/1996 N = 14805	6658.60 ± 77.3	6229.95 ± 23.5	7570.05 ±156.8	7080.52 ± 61.6

For temporal comparisons, critical variables and intervals are deflated to real values. It will be noted that overall poverty levels are extremely sensitive to the index used to adjust for inflation.

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[20] The proposed sample was 15,000 households in the 1990/1991 HIECS and 15,090 in the 1995/1996 HIECS. Rates of non-response in Egyptian surveys were extremely low.

[21] See Deaton and Muellbauer (1989), p. 193. The scale used is a modification of Engel's approach whereby two households with the same food and beverages share have the same share of total expenditures irrespective of differences in household composition.

III.E Household Poverty in Egypt

The existence of relative differences in endowment provides the justification for comparing poverty across larger economic divisions. This section is an exercise in presenting poverty rates by classifications and over time using data from the two HIECS surveys. Making two data sets comparable over space and time requires assumptions. One can adjust both the units of measurement as well as the standard measured against. Change across space is partly accommodated by adjusting the data using household equivalence scales. Change over time affects the poverty line itself. The procedure is as follows: assume that total expenditure is the indicator of household economic well-being; fix a poverty line, then rank areas and classifications by the incidence, depth, and severity of poverty over two survey periods. I will follow the tradition of relying on statistical inference when comparing profile rankings of the FGT (Foster, Greer, and Thorbecke (1981)) class of poverty measures. These measures are sums of shortfalls conventionally taken to the power of 0, 1, or 2, evaluated for only those households with expenditures below the poverty line.

The consumption basket used to construct household total expenditures for the two survey years was an annualized sum of monthly or quarterly (depending on the commodity type) expenditures from household diaries kept for one full month. The household respondent was instructed to keep this record for every expenditure transaction made by all household members. The monthly household expenditure totals were then transcribed onto the primary instrument, the questionnaire, which was pre-coded to accommodate all classified, as well as unclassified, goods. Budget shares were calculated for 572 distinct expenditures in the 1990/1991 HIECS. The 1995/1996 HIECS is even more detailed: 635 separate commodities or groupings are represented.

Certain commodities, such as *balady* and *shami* bread, flour, cooking oil, sugar, tea, and soap, were subsidized or rationed during the 1990/1991 HIECS data collection. Bread, flour, cooking oil and sugar were also subsidized and consumed by large proportions of the Egyptian population, poor and rich alike. However, they are decreasing in importance as components of total household budgets, and the proportion of households which chose to consume subsidized goods in the cross section, in both surveys, should not have been biased in selection. Finally, with the exception of flour, they are empirically normal goods.[22]

Earlier studies exist which assess both the spatial and temporal dimensions of poverty. Cardiff (1993) uses the full 1990/1991 HIECS

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[22] That this result directly contradicts the findings of Ali and Adams (1996), *op. cit.*, should in no way detract from their primary thesis, that consumption of subsidized goods falls as income rises, so that these goods are proper candidates for attracting government attention through transfers. However, the focus of the debate has shifted, rightly, to the question of efficient targeting of subsidies - at present subsidized goods are too widely consumed to have their intended fiscal impact on disadvantaged groups.

sample with arbitrary poverty lines set at one-third, one-half, and two-thirds the national mean equivalence-adjusted expenditures. Rates of poverty were 4.41%, 15.11% and 32.16%, respectively, for each of the poverty lines. El-Laithy and Kheir-El-Din (1992) used preliminary 1990/1991 HIECS data for their study but did not document sample sizes. Ali, *et. al.* (1994), *op. cit.*, made both absolute and relative poverty comparisons but did not account for household gender and age compositions. Korayem (1994) used HIECS data to compare household poverty rates over the time period 1982 to 1991 and found the percentage of the population living below the line to have increased from 30 to 57 percent. However, her results relied on improper out-of-sample information, and no standard errors were provided to test the significance of the comparisons. Nevertheless Korayem (1994) established an important precedent for constructing a nutrition-based poverty line for Egypt. Given a safe level of calorie and protein intake by age and sex as defined by the "FAO/WHO/ UNU Expert Consultation Report" (citation not provided) the daily calorie and protein requirements for a household with the specific gender and age compositions of rural and urban Egypt are reported from Sheheen (1993). These are 10440 calories and 245-286 grams of protein in the urban areas, and 11519 calories and 251-293 grams of protein in the rural areas. The cost to obtain such a minimum standard diet in 1990/1991 is reported to be:

1a. 1884.7 £E in the urban areas, given an average household size of 4.6 members
1b. 2030.4 £E in the rural areas, given an average household size of 5.2 members.

However, these average household sizes, chosen from the 1986 Population Census, are inappropriate. Updating the minimum food expenditures to reflect 1990/1991 HIECS household sizes, we have:

2a. 2138.73 £E in the urban areas, for a family of 5.22 and
2b. 2557.52 £E in the rural areas, for a family of 6.55 members.

In order to determine a total expenditure poverty line we need only apply the correct food-share-to-total-expenditures ratio evident in the raw 1990/1991 HIECS data. This ratio is 53.74% for urban households, and 61.21% for rural households. The total expenditure poverty lines for the 1990/1991 sample are, thus:

3979.62 £E ($1173.93) in the urban areas and
4178.28 £E ($1232.53) in the rural areas.

The justification for using household sizes and food expenditure shares from the sample is obvious. It avoids the compounding error of bias from separate sources.

To standardize the poverty lines over time, to compare the 1990/1991 HIECS households with the 1995/1996 HIECS households, the first change should account for a lower share of the food weight in total expenditures in the new data: 50.032% for urban households, and

57.492% for rural households. Therefore, statements 2a) and 2b) are adjusted for the new food shares to become

3a. 4274.72 £E in the urban areas and
3b. 4448.48 £E in the rural areas

But household sizes have also decreased in the new data, to 4.37 members in the urban areas and 5.50 members in the rural areas. Adjusting the above to account for new household sizes:

4a. 3575.29 £E for urban households, with 4.37 members and
4b. 3737.15 £E for rural households, with 5.50 members

Finally the new data must be adjusted for inflation, and because the poverty line is a nutritional standard, the food-only CPI index is an appropriate inflator.[23] The above are approximately fiscal year 1990/1991 Egyptian pounds (fiscal year figures were calculated for July 1990 through June 30, 1991; survey data collection took place from September 1990 through August 31, 1991), when the urban food-only CPI was 201.6 and the rural food-only CPI was 200.4. At the midpoint of field data collection - March 1996 - the food-only urban CPI stood at 339.9 and the rural food-only CPI was 312.8. Therefore, an estimate of the real necessary annual cost to households to secure the same standard protein and calorie intake in 1995/1996 is

6027.98 £E ($1778.17) in the urban areas and
5833.24 £E ($1720.72) in the rural areas.

These are the fixed poverty lines used in this paper. Note that while it is less costly to provide the minimum standard for a rural household these savings may well represent the foregone value of a more diverse, and more readily available, urban diet.

One of the best known, and certainly one of the simplest functional forms for the measurement of poverty is the Foster-Greer-Thorbecke (1981, *op. cit.*) (FGT) class of indices. The P_0 measure describes the incidence of poverty, and is simply the proportion of the total count within that class having an expenditure level less than the defined poverty line. Another measure, for the depth of poverty, is P_1. The P_1 measure tells "how poor" a poor household is rather than simply identifying which households are poor. It takes account of the *size* of the expenditure shortfalls of poor households, not just the fact that certain households fall below the poverty line. If, *ceteris paribus*, a poor household gets poorer, the P_0 measure would not change - the

[23] I am indebted to two anonymous referees for this suggestion. The food-inflation adjustment produces a lower bound on the 1995/1996 cost of the nutrition standard diet. Cursory calculations indicate the current cost of the diet may be three times as expensive as it was in 1990/1991. There are many diets with equivalent protein content which are cheaper but do not have the essential nutritional variety of the standard.

number of poor households would remain the same. But the P_1 measure would change because the size of the shortfall would have increased. Finally, the P_2 measure indicates the severity of poverty. P_2 is constructed by squaring the expenditure shortfalls, so it weighs poor households with the largest expenditure shortfalls most heavily. If one poor household gave another poor household half its expenditures, the P_1 measure would not change, but the P_2 measure would change because the donor's new shortfall would be squared. The P_2 measure will be higher in poor populations whose expenditures vary widely from the poverty line. Policy efforts to redistribute resources among the poorest of the poor population will most affect the P_2 measure.

Table III.1 presents expenditure poverty rankings for each of the three poverty measures by urban or rural region. The rankings run from richest to poorest, with "Upper Rural" having the highest incidence, depth, and severity of poverty. The rural areas have the highest poverty rates in both surveys. The "Other Urban" region - Port Said and Suez - has displaced Cairo as the richest area in 1995/1996. In all cases, the null hypothesis that the estimate of P_0 equals 0 is rejected at the 99% level of significance. Standard errors of the other P_0 measures are relatively large. The statistical significance of the difference in any two point estimates can be calculated using equation (7) of the Statistical Appendix.

The row labeled "All Egypt" gives the simple column sum of the three measures. Given the assumptions and adjustments above to create the rural and urban poverty lines, which in standard statistical practice are the minimum reasonable assumptions and adjustments, the incidence of poverty in the entire country was 20.69% in 1990/1991, and 44.29% in 1995/1996. The poverty gap in the country almost exactly doubled, from 3.44% to 6.86% over the period. Other sources support these overall results: nominal per capita expenditures are only 21% higher over the 5 years, yet the population has grown by about 7 million; preliminary findings from the World Bank's Integrated Survey suggest a similar deterioration. The more important finding is that, except for the Frontier region, the *rankings are relatively stable* over the two periods. The fact that the classifications are robust over time provides more information from the standpoint of poverty targeting than the crude level poverty measures.

Let us assume that the government would like to fill the poverty gap in Upper Rural Egypt (.1260) for only those households surveyed in the 1995/1996 HIECS. From Table III.1, the amount of money required to fill that gap would be

$$= P_1(Z)(P_0)(\text{target population})$$
$$= (.1260) \times (5833.24 \text{ £E}) \times (.6747) \times 3504$$
$$= 1{,}737{,}620 \text{ £E}.$$

That figure would have to be multiplied by the sample weight of the households in Upper Rural Egypt to target the entire area. Of course, such a policy would assume absolute knowledge of which households to target, and more, would only be the minimum cost to the government. In practice, targeted amounts typically fall somewhere between the perfect-information amount and a crude maximum amount approaching Z times the entire population.

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Table III.2 broadens the poverty analysis by breaking the regions into governorates and ranking these, richest to poorest. The column labeled "%dist" is simply the sampled number of households in that governorate divided by the total sample size. All governorates have at least one poor household in both surveys. All but three governorates are within three levels of their former rank. The rank reversals for Kalyoubeya, Frontier (Red Sea, North and South Sinai, Wadi el Gadiid, and Matrouh) and Aswan are the largest. Kalyoubeya suffered the largest relative loss in the rankings. Frontier governorates are the same as the regional grouping of Table III.1; notably, the Frontier seems to have become *relatively* better off over the five year interval, and some of that progress may be due to the development of tourism in those areas. The poorest governorates were, and remain, in Upper Egypt, where agriculture predominates. An informed policy intervention for arresting the spread of poverty in rural areas would promote secondary and tertiary agricultural processing facilities along with the development of associated skilled labor for the retention of value added in those areas.

It is in comparing poverty by demographic categories that some insight can be gained about economic dynamics within an Egyptian household. Tables III.3a, III.3b and III.3c are concerned with the concentration of expenditure shortfalls given the education, employment status, and age of the head of the household. The typical household head in both samples is a 48 year old married male wage worker.

The distribution in Table III.3a follows expectations rather neatly. There is a clear inverse relationship between the attained level of education and the poverty rate. Households with illiterate heads are most prone to poverty. Even the minimum of education has a big effect: in both time periods, households headed by individuals only able to read and write still have a lower poverty rate than the national average. Still, poverty is not unknown among university and post-university graduates. Educational attainment in the absence of opportunity to make productive contributions to family and society can be a politically unstable mixture. Approximately 100,000 students graduate from colleges and universities every year (CAPMAS (1996), Table No. 8-9, p. 244), and waiting periods for guaranteed government jobs can be six years or more.

Table III.3b shows how poverty would cluster depending on the household head's employment status at the time of the first interviews. All P_0 results are statistically significant at a 1% level of confidence, and again, the rankings provide some support for the robustness of temporal comparisons. Households whose heads are regular wage workers have relatively low poverty rates; the self-employed experience higher rates of poverty. Otherwise Table III.3b highlights some changes in the classification of employment status between the two surveys. The "Unemployed Youth" category represented household heads with a short unemployment history; typically they were recent college graduates. "Unemployed Adults" were supposedly the longer-term unemployed. The recent survey dropped the confounding characteristics of age and unemployment experience from the worker "type" variable. "Unclassified" now includes those household heads who are outside the

labor force or unemployed.

Household heads on the tails of the age distributions are poorest. There are rank reversals from the 1990/1991 survey to the recent survey, but, again, the dispersion in the measures is not wide. The policy prescription indicated from this information is to target benefits to relatively recently-formed households and pensioners. Since the base of the population pyramid is so broad - half the population of Egypt is less than 20 years old, and almost 10% of the labor force is less than 12 years of age - targeting young families would present a much greater fiscal burden for the government than injecting more funds into the pension system. It is probably realistic to assume that inflation has outstripped any real gains by the pension class in recent years, although government figures for the early 1990's pointed to the opposite trend.[24]

In households with children - members less than ten years old - Table III.4 makes it clear that larger households have the highest incidence, depth and severity of poverty. A very interesting exception is the change in rank for multiple children households in the 1995/1996 data, although the low case count points to the possibility of an outlier result. It could be that, to make ends meet, more women are responding to additional children by entering the paid labor force. Arguably the most compelling accomplishment of development assistance to Egypt has been in the sphere of family planning. Egypt has succeeded in steadily reducing its total fertility rate, from 5.3 live births per woman aged 15-49 in the 70's, to 4.4 births for the period 1988-1991, to 4.1 births for the period 1990-1991, to 3.9 births for the period 1990-1992, and to 3.63 for the period 1993-1995.[25] A concentration on family planning is an enlightened policy in view of child survival and food security.

The poverty rate for single earner households was nearly double that of 4+ earner households in the 1990/1991 HIECS. In the recent survey, there is an interesting rank reversal which may indicate a diseconomy from increasing earners. The natural assumption is that additional earners contribute additional funds to the household on a near-monotonic basis, but the mere existence of earners does not guarantee such contributions. Under conditions of increasing resource scarcity, we may begin to see not only a change in the earner/poverty relationship, but an actual decrease in the degree of association between potential contributors and household economic conditions. As competition becomes ever keener, new coping mechanisms may replace reliance on the traditional extended family as a consumption smoothing mechanism.

Finally, Table III.6 shows the incidence, depth and severity of

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[24] (CAPMAS, (1996), *op. cit.*). Official figures for 1990 to 1995 comparing the average number of pension funds expended per "family" (definition not provided, Table No. 6-2, p. 183) with the "All Items" Urban CPI (Table No. 11-16, p. 308) show the former to have grown 35.6% per year and the latter 12.3% per year.

[25] El Zanaty, *et. al.* (1993), p. 33-34, and El Zanaty, *et. al.* (1996), pp. 37-9.

poverty by intervals of total household income. The intervals are inflated for the 1995/1996 HIECS to adjust for price increases. Household income is the sum of incomes from all sources received by earners within the household, weighted by the expenditure equivalence scale. One would expect a smooth negative relationship throughout the graph of income intervals on poverty rates, but instead poverty rates climb initially then begin to fall off at about 2500 £E in the previous survey. In the recent data poverty rates at the lower intervals are near linear before dropping. If the rankings were by depth or severity of poverty instead of by incidence, the curves would be downward sloping in their entirety. The distribution of summed and squared expenditure shortfalls is a better picture of poverty than crude incidence. Rank reversals from measure to measure at the lower income levels justify further scrutiny of the income distribution.

To conclude the discussion of poverty, the most informative finding is that poverty rankings by socioeconomic categories have not changed much over time. From the standpoint of policy reform and poverty targeting, rank classifications provide a better picture of economic dynamics within the household than crude overall levels. Some changes to the assumptions above will provide an indication of how sensitive the level poverty measures are. If the all-items CPI is used to adjust for inflation, poverty incidence rises from 21% in 1990/1991 to 64% in 1995/1996. Without adjusting for price increases (i.e., using nominal £E), poverty incidence falls to less than 3%.

We might consider constructing some relative poverty lines as well. If the poverty line is set at three-quarters of the equivalence adjusted median expenditures in the two time periods, poverty falls from an incidence of 10.79% in 1990/1991 (poverty gap = 1.79%) to 10.60% in 1995/1996 (poverty gap = 1.39%).

The standard of "a dollar a day" has often been mentioned as an unattainable expenditure for the poor of the world. Accounting for proper household sizes and exchange rates, this yardstick produces the poverty rates shown in Tables III.7a and III.7b. Rural areas are especially associated with less than $1.00 worth of expenditure per person per day owing to larger household sizes. This is another example that, given alternate assumptions, one can show a decline in overall poverty over the past five years.

III.F Inequality of Household Incomes

The objective of economic development cannot be limited to economic growth in the narrowest sense. The distribution of income, expenditures or employment in society should favor shared responsibility for, and popular participation in, the benefits of economic growth. "Equality," however, is difficult to measure because social and economic resources are so diverse, and people place different values on them. Relative access to clean water, favorable climate, differing perceptions of opportunities for education or political participation, etc., could also be used as currencies for comparing economic power in a society. Similarly, the reader may not agree that any one statistic can capture the essence of "inequality." All measures are bound up in the

subjective judgments of researchers: results will be sensitive to the measure used, to the choice of equivalence scale, to the sampling techniques employed and therefore the sampling variability of point estimates, etc.

This section explores what might be considered the minimum standard for making comparisons of "equality" in a data series. Household total incomes are assumed to reflect relative economic opportunity, and the familiar Gini index is used for area comparisons of income equality. The analysis closely follows the comparison standards outlined in Deininger and Squire (1995). The actual analysis variable is the household total income, which is itself a summation of after-tax individual incomes of household members. The income sources which make up an individual's income sum have remained the same for both surveys: wages and salaries, agricultural activities, non-agricultural projects, real estate and land, savings, and other regular returns. The 1995/1996 HIECS was designed with less detail in the individual income sources section, in an effort to burden the respondent less, otherwise total household incomes from the two surveys are comparable over time without further adjustment. Whether income is properly measured is another matter: in wages and salaries, for example, simply recording overtime, allowances, bonuses and other fringe benefits, in-kind or otherwise, is no proof that imputed estimates are correct.

The Gini index of inequality is limited. For example, if the highest quintile group gave all its money to the lowest quintile, the Gini index produced would be the same as if the highest quintile group gave all their money to the middle quintile. Therefore Deininger and Squire (1995), *op. cit.*, suggest reporting the income shares received by income quintiles. This is shown for the regions of Egypt in Table III.8, first using raw data unadjusted for household equivalence.

Overall, household income inequality has fallen over the five-year interval. The highest quintile has lost about 3% of the total income share. While it may seem contrary to anecdotal evidence,[26] the data show that the rich have not gotten richer. First note that the 1995/1996 sample has a higher rural representation, and this probably explains much of the decrease in inequality. Another contributing factor might be found in the Egyptian tax code (KPMG Peat Marwick (1995)). In 1993 the Global Income Tax Law went into effect. This law simplified the rate structure, reduced marginal rates, doubled allowances and removed many low-income individuals from the tax rolls.

Two other population factors may be responsible, to a lesser degree. The trend in female labor force participation rates is upwards, but probably not rising quickly enough to appreciably affect equity over only five years. Relatively little is known about the patterns of migration within the country since the last census of population was in 1986. The direction is rural to urban (CAPMAS (1996), Table No. 1-5, pp. 11-12) but the rate of flight is unsure. Poor classification of "rural" areas, and inadequate sampling in the urban areas which have grown

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[26] Sarah Gauch, "More Mercedes Cars Cruise Cairo Streets as Rich Prosper," Christian Science Monitor, Thursday, April 11, 1996.

fastest in recent years, have compounded the problem of analyzing internal migration.

A rise in poverty attending a fall in inequality is no inherent contradiction. No definitive correlation between economic growth spurts and inequality - Kuznets' hypothesis - has ever been determined empirically. In the case of Egypt, the 1990's have not been stellar growth years, so the association would be tenuous anyway. However, urban areas, with their higher per capita incomes, do favor unequal distributions even though the stationary equilibria necessary to confirm Kuznets' hypothesis may be absent. Variable subsidies may be partly responsible for rural income distribution remaining more egalitarian than urban, as Alderman and von Braun (1984) suggest.[27] Resource sharing in agricultural activities and less differentiation in labor skills contribute to equity. In urban areas higher inequality in incomes could be a consequence of wage contracts which compensate employees over and above the higher cost (from higher import content) of consumption goods and scarce shelter.[28] Empirically, the heterogeneity of human capital in urban areas reinforces inequality.[29]

As shown in Table III.8, there are rather large differences in inequality between the regions. The Lower Rural region is egalitarian, and the difference between it and Lower Urban is 18 Gini index points in the 90/91 survey, but only 3 Gini points in the 95/96 survey. Contemporaneous variation across regions - as measured by the coefficient of variation (CV, the standard deviation divided by the mean, expressed as a percentage) - is highest for the poorest and the richest quintiles of income recipients. This is in keeping with Deininger and Squire's (1995), *op. cit.*, findings (p. 22) that the volatility of movement into and out of quintile shares across areas is highest at the extremes. Over the time period, shares have risen in 5 of the 8 regions in the second and third quintiles. For the lowest quintile, income shares have fallen in four of the eight regions in the first half of the 1990s. In

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[27] Alderman and von Braun (1984) found that the net effects of the food price and subsidy policy showed a rural bias, whereas urban areas benefitted from subsidies transferred through government marketing channels. Similarly, the food price policy effect on income distribution was progressive, but the effect of government control of food distribution on income distribution was regressive.

[28] See Cardiff (1996). Shelter demand pressure is indeed incredible in the larger cities, renting is more common in urban areas, and rent control provisions have not succeeded in keeping actual tenant costs down.

[29] Mincer (1974)-type regressions on the HIECS data revealed that the disparity between male and female incomes is correspondingly lower in the rural areas, as women income earners receive similar incomes for similar tasks. Higher returns to education in urban areas are evident given the sheer quantity of opportunities as well as the diversity of curricula in schools. There is less of a premium to age in the urban sector as the traditional deference to elders is less pervasive.

Cairo, both the richest and poorest quintiles have become richer over time. The Lower Urban region has seen a remarkable decline in the share of income of the top quintile: from 58% to 41%. The CV of the *differences* shows that the greatest variability of capturing and losing income shares over time occurs in the fifth quintile.

III.G Conclusions

This paper began by outlining the macroeconomic environment on the eve of the IMF agreement which coincided with the completion of data collection for the 1990/1991 HIECS. The initiation of the economic stabilization and reform program presented an opportunity to benchmark some current household economic conditions, and provide an empirical foundation for comparison. The program's impact on poorer segments of the population, at least its effects on efficiency and equity, was then comparatively evaluated using the more recent 1995/1996 HIECS data set.

In this paper the poverty line was adjusted for a new food-to-total-expenditure ratio, a different household size, and food-only inflation. Under these assumptions, when the poverty line is defined as the necessary cost to obtain the minimum calorie and protein content diet for an average Egyptian household, poverty rates over time have remained remarkably stable. Upper and Lower Rural Egypt have had the highest rates of poverty. The richest governorates were, and remain, Ismalia, Port Said and Cairo, the poorest Assiut, Sohag and Menia. Poverty rates are a declining function of educational attainment. Self-employed individuals have higher poverty rates than wage earners. The poorest households have very old, and very young, household heads. Poverty increases near-monotonically with the number of children in the household, and decreases with the number of household earners. In the 1990/1991 HIECS, poverty rates fall rapidly above the first few income intervals; a similar relationship between income groups and poverty incidence and severity exists in the 1995/1996 HIECS data. Overall, the incidence of poverty has risen from 21% to 44%; while the deterioration is supported by other sources, the magnitude of the overall effect is sensitive to the cost of the diet and to the fact that more households from the rural areas are represented in the latter sample.

How can households be surviving if they are not spending enough to obtain the nutritional minimum? Simply put, they are not following the diet. Carbohydrates are taking the place of nutritional variety and higher quality foods. The mere existence of a standard diet does not guarantee access to such a diet, let alone provide preference in consumption.

The inequality section augmented area comparisons of Gini coefficients with quintile share ratios, and a number of hypotheses were put forward to explain the relative egalitarian stance of the rural areas. At each point in time, the tails of the income distributions are the most variable across the regions. The data suggest that household income inequality has fallen in four of the eight regions of Egypt over the last five years. Overall, the poorest quintile's share of total income has risen slightly, the richest quintile's share has fallen slightly, so the

gap between the rich and the poor has narrowed.

Conventional economics assumes the universality of poverty, considering it multi-faceted but typical, and static. "Inequality," too, is difficult to summarize using unidimensional statistics. Researchers are handicapped by, at best, shortcomings in the data; at worst by a biased urban, money-or-labor-choice outlook. Poverty is heterodox and fluid, and poor people face more indignities than the lack of a varied diet or lower incomes. The unequal distribution of economic opportunity is similarly complex, correlated with many factors which reinforce poverty. The FGT measures and the Gini coefficient are both incapable of capturing this multiplicity of characteristics. Exactitude in poverty and rank measurement would be enhanced by better specification of complex variables and indexes which place more focus on the coping strategies of the homeless and transient population, and the wealth and earnings characteristics of the very rich.

Appendix III.A Statistical Formulas

Appendix III.A.1 An Equivalence Scale for Egypt

Equivalence scales[30] figure prominently in considerations of economic well-being. Household economies of scale and composition must be accounted for, otherwise the restrictive and unlikely assumption must be made that household members share resources equally. A typical expectation is that the number, sex and age of household members account for differences in consumption patterns. Poverty measures are sensitive to the choice of equivalence scale (Phipps (1993)). An equivalence scale based on estimation was used to deflate both incomes and total expenditures by household size and composition as these characteristics existed in both HIECS samples. Linear regressions of food and beverages expenditures on total expenditures were chosen for the models from among a number of possible specifications, based on the F-statistic, the highest R-square statistic, and meaningful parameter coefficients. The coefficients from this regression were used to weight the data. Regression outputs are available from the author.

The scales are Engel specifications of the form

(1) $F = \alpha + \beta E + \gamma_{1...4} M1...4 + \gamma_{5...8} F1...4 + \mu$

where F is the household's expenditure on food and beverages, and E is total expenditures (a proxy to total income). M1..4, and F1...4 represent the number of males and females in each of four age groups, and μ is a stochastic error term.

Appendix III.A.2 The Foster Greer Thorbecke Class of Poverty Indices

To define the FGT indices, order an income or expenditure series $y = (y_1, y_2, \ldots, y_n)$ from highest to lowest, and define a poverty line $z > 0$, where n is the total number of households in the population. Note that more than one z can be defined over the domain of n without the loss of generality. Then let $g_i = z - y_i$ be the amount by which the ith household's income or expenditure falls below the poverty line, and consider only the set of households q where $q = q\ (y, z \mid g_i > 0)$, i.e., households which fall below the poverty line. The generic form of the FGT index is a weighted, normalized sum of income or expenditure shortfalls of the poor population

$$(2) \qquad P_\alpha = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{g_i}{z}\right)^\alpha$$

where α is a "poverty aversion" parameter. Functions of this index vary with the value of α, the most common being 0, 1 or 2.

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[30] A classic discussion of equivalence scales appears in Chapter 8 of Deaton and Muellbauer (1989), *op. cit.*

If $\alpha = 0$,

$$(3) \qquad P_0 = \frac{q}{n}$$

which measures the *prevalence of poverty*, or the "head count ratio" (the "household count ratio" will be referred to in the empirical section of this paper), simply the proportion of the population having an expenditure or income level less than the defined poverty line.
If $\alpha = 1$,

$$(4) \qquad P_1 = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{g_i}{z}\right)$$

is the *depth of poverty* measure, also called the "poverty gap." It is preferred to P_0 because it is sensitive to the income or expenditure deficits of the poor. Unlike the P_0 measure, P_1 will change if, *ceteris paribus*, one household suddenly gets poorer.
Finally, if $\alpha = 2$,

$$(5) \qquad P_2 = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{g_i}{z}\right)^2$$

measures the differences in *poverty severity*, and produces the coefficient of variation of the income distribution of the poor. This measure has the additional property that it is affected by income or expenditure transfers from one poor household to another. The squared term has the effect of emphasizing the *larger* income or expenditure shortfalls, not just the total amount of the shortfall (P_1), or the number of households having them (P_0). In comparing two populations, the one with the higher *inequality* in the distribution of shortfalls will have the higher value of P_2.[31]

One of the more attractive attributes of (2) is that it is additively decomposable.[32] In other words, we can index r over the total number of areas m, and write

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[31] Note that the measure becomes more and more sensitive to the least advantaged households as α takes on higher values until ($\lim (\alpha \to \infty) P\alpha = 0$) the measure reflects only the poorest household.

[32] A survey of desirable properties of poverty indices can be found in Rodgers and Rodgers (1991) and Maritato (1992).

$$(6) \qquad P_\alpha = \frac{1}{n} \sum_{r}^{m} \sum_{i}^{q} \left(\frac{g_i}{z}\right)^\alpha$$

This property permits us to compute poverty indices separately for each of *m* mutually exclusive and collectively exhaustive areas. The true worth of the indices is not so much their precise values, rather the ranking of values to form a poverty *profile*. Because they take into account not only the proportion of the poor population and their mean incomes or expenditures, but also the distribution of poor incomes or expenditures, the FGT class of measures is arguably the most effective for measuring and comparing the extent of poverty.

The P_0 measure is distributed bivariate normally with zero mean and variance $P_0 \times (1-P_0) / n$. The other P_α measures have variance $P_{2\alpha} - P_\alpha^2$. Kakwani (1990) provides the methodology for testing whether the difference between observed measurements P_α^A and P_α^B from any two independently drawn samples of size n_1 and n_2 is statistically significant. In this study we might compare the P_α measures between rural and urban areas, for example. The test statistic is

$$(7) \qquad \eta^* = \frac{(\hat{P}_\alpha^A - \hat{P}_\alpha^B)}{\sqrt{\dfrac{\hat{\sigma}_\alpha^{2A}}{n_1} + \dfrac{\hat{\sigma}_\alpha^{2B}}{n_2}}}$$

where the terms under the root sign are the variances of the poverty measures. An approximately α-level test of the null is to reject H_0 if $|\eta^*| > m_\alpha(k,\infty)$ where $m_\alpha(k,\infty)$ is the upper α critical value of the normal distribution with mean zero, unit variance and ∞ degrees of freedom.

Appendix III.A.3 Expenditure Equality and the Gini Coefficient

Lerman and Yitzhaki (1984, 1985) define the Gini coefficient as twice the covariance between total expenditures *E* and the cumulative distribution of expenditures *F* divided by the average expenditure μ.

$$(8) \qquad G = \frac{2\ Cov(E,F)}{\mu}$$

Table III.1 Poverty Rate Rankings by Region for 3 Poverty Measures and two HIEC Surveys, standard errors in parentheses

	1990/1991 HIECS					19950/1996 HIECS			
	N	P0	P1	P2		N	P0	P1	P2
Cairo	2310	0.0827	0.0116	0.0029	Other Urban	238	0.0420	0.0064	0.0013
		(0.0057)	(0.0528)	(0.0196)			(0.0130)	(0.0351)	(0.0085)
Other Urban	233	0.0944	0.0104	0.0019	Cairo	1962	0.2003	0.0258	0.0057
		(0.0192)	(0.0428)	(0.0107)			(0.0090)	(0.0712)	(0.0232)
Lower Urban	2374	0.1163	0.0160	0.0041	Frontier	227	0.3040	0.0330	0.0068
		(0.0066)	(0.0618)	(0.0247)			(0.0305)	(0.0755)	(0.0243)
Upper Urban	2242	0.1583	0.0234	0.0066	Lower Urban	1766	0.3267	0.0406	0.0078
		(0.0077)	(0.0777)	(0.0350)			(0.0112)	(0.0787)	(0.0223)
Alexandria	1089	0.1864	0.0278	0.0072	Upper Urban	1643	0.4029	0.0678	0.0180
		(0.0118)	(0.0801)	(0.0356)			(0.0121)	(0.1157)	(0.0445)
Frontier	216	0.1944	0.0350	0.0109	Alexandria	895	0.4045	0.0608	0.0143
		(0.0269)	(0.0984)	(0.0407)			(0.0164)	(0.1028)	(0.0358)
Lower Rural	3288	0.2254	0.0360	0.0111	Lower Rural	4570	0.4639	0.0607	0.0127
		(0.0073)	(0.0988)	(0.0497)			(0.0074)	(0.0949)	(0.0309)
Upper Rural	2483	0.4491	0.0862	0.0275	Upper Rural	3504	0.6747	0.1260	0.0360
		(0.0100)	(0.1417)	(0.0710)			(0.0079)	(0.1418)	(0.0651)
All Rural	5880	0.3216	0.0577	0.0182	All Rural	8183	0.5522	0.0882	0.0226
		(0.0061)	(0.1219)	(0.0603)			(0.0055)	(0.1215)	(0.0499)
All Urban	8352	0.1262	0.0180	0.0047	All Urban	6622	0.3078	0.0444	0.0104
		(0.0036)	(0.0664)	(0.0279)			(0.0057)	(0.0917)	(0.0317)
All Egypt	14232	0.2069	0.0344	0.0103	All Egypt	14805	0.4429	0.0686	0.0171
		(0.0034)	(0.0955)	(0.0447)			(0.0041)	(0.1114)	(0.0431)

Table III.2 Poverty Rate Rankings by Governorate

	1990/1991 HIECS					1995/1996 HIECS			
	P0	P1	P2	%dist		P0	P1	P2	%dist
Ismalia	0.0373	0.0032	0.0004	0.94	Port Said	0.0085	0.0003	0.0000	0.80
	(0.0164)	(0.0201)	(0.0034)			(0.0084)	(0.0030)	(0.0001)	
Port Said	0.0656	0.0074	0.0017	0.86	Suez	0.0750	0.0125	0.0025	0.81
	(0.0224)	(0.0404)	(0.0118)			(0.0240)	(0.0486)	(0.0119)	
Cairo	0.0827	0.0116	0.0029	16.22	Ismalia	0.1287	0.0160	0.0029	1.36
	(0.0057)	(0.0528)	(0.0196)			(0.0236)	(0.0517)	(0.0122)	
Damietta	0.0923	0.0159	0.0060	1.37	Cairo	0.2003	0.0258	0.0057	13.25
	(0.0207)	(0.0759)	(0.0429)			(0.0090)	(0.0712)	(0.0232)	
Kalyoubeya	0.1110	0.0165	0.0045	5.76	Giza	0.2335	0.0335	0.0082	7.75
	(0.0110)	(0.0649)	(0.0272)			(0.0125)	(0.0839)	(0.0291)	
Suez	0.1261	0.0138	0.0022	0.78	Damietta	0.2717	0.0323	0.0058	1.79
	(0.0315)	(0.0451)	(0.0093)			(0.0273)	(0.0687)	(0.0168)	
Giza	0.1586	0.0229	0.0068	8.42	Frontier	0.3040	0.0330	0.0068	1.53
	(0.0106)	(0.0793)	(0.0378)			(0.0305)	(0.0755)	(0.0243)	
Aswan	0.1609	0.0319	0.0110	1.62	Dahraleya	0.3113	0.0328	0.0061	7.25
	(0.0242)	(0.1000)	(0.0480)			(0.0141)	(0.0711)	(0.0207)	
Kafr-Shiekh	0.1656	0.0236	0.0063	3.14	Gharbia	0.3191	0.0385	0.0076	5.84
	(0.0176)	(0.0758)	(0.0343)			(0.0158)	(0.0784)	(0.0230)	
Dahraleya	0.1686	0.0224	0.0058	6.84	Kafr-Shiekh	0.3664	0.0479	0.0111	3.61
	(0.0120)	(0.0727)	(0.0314)			(0.0208)	(0.0937)	(0.0339)	
Gharbia	0.1722	0.0316	0.0106	5.71	Alexandria	0.4045	0.0608	0.0143	6.05
	(0.0132)	(0.0978)	(0.0468)			(0.0164)	(0.1028)	(0.0358)	
Alexandria	0.1866	0.0279	0.0072	7.64	Aswan	0.4519	0.0638	0.0145	1.61
	(0.0118)	(0.0802)	(0.0356)			(0.0322)	(0.1020)	(0.0355)	
Frontier	0.1944	0.0350	0.0109	1.52	Sharkia	0.4769	0.0534	0.0094	7.02
	(0.0269)	(0.0984)	(0.0407)			(0.0155)	(0.0809)	(0.0227)	
Menoufia	0.2222	0.0393	0.0121	4.24	Menoufia	0.4880	0.0730	0.0179	4.50
	(0.0169)	(0.1029)	(0.0464)			(0.0194)	(0.1120)	(0.0445)	
Sharkia	0.2267	0.0356	0.0113	6.17	Kalyoubeya	0.5591	0.0821	0.0178	5.15
	(0.0141)	(0.1000)	(0.0530)			(0.0180)	(0.1053)	(0.0333)	
Behera	0.2406	0.0326	0.0086	5.61	Fayoum	0.5714	0.0821	0.0188	3.22
	(0.0151)	(0.0870)	(0.0446)			(0.0227)	(0.1100)	(0.0406)	
Qena	0.2840	0.0542	0.0181	4.03	Behera	0.5884	0.0825	0.0166	6.27
	(0.0188)	(0.1233)	(0.0623)			(0.0162)	(0.0990)	(0.0291)	
Beni-Suef	0.3542	0.0630	0.0197	2.58	Beni-Suef	0.6493	0.1146	0.0336	2.99
	(0.0250)	(0.1254)	(0.0599)			(0.0227)	(0.1431)	(0.0664)	
Fayoum	0.3653	0.0736	0.0250	2.71	Menia	0.6531	0.0981	0.0222	5.32
	(0.0245)	(0.1401)	(0.0738)			(0.0170)	(0.1123)	(0.0407)	
Sohag	0.3856	0.0684	0.0197	4.39	Qena	0.7482	0.1506	0.0434	4.80
	(0.0195)	(0.1227)	(0.0502)			(0.0163)	(0.1439)	(0.0662)	
Assiut	0.3938	0.0733	0.0233	4.30	Sohag	0.7586	0.1428	0.0417	4.73
	(0.0198)	(0.1339)	(0.0643)			(0.0162)	(0.1460)	(0.0710)	
Menia	0.4461	0.0838	0.0253	5.15	Assiut	0.7981	0.1942	0.0643	4.35
	(0.0184)	(0.1350)	(0.0695)			(0.0158)	(0.1630)	(0.0864)	

Table III.3a Poverty Rate Rankings by the Attained Education Level of the Household Head

	1990/1991 HIECS					1995/1996 HIECS			
Level	**N**	**P0**	**P1**	**P2**	**Level**	**N**	**P0**	**P1**	**P2**
Post University	84	0.0000	0.0000	0.0000	Post University	67	0.0149	0.0004	0.0000
		(0.0000)	(0.0000)	(0.0000)			(0.0148)	(0.0029)	(0.0001)
University	1189	0.0362	0.0047	0.0012	University	1322	0.1051	0.0098	0.0015
		(0.0054)	(0.0340)	(0.0131)			(0.0084)	(0.0376)	(0.0081)
Less than University	2624	0.1071	0.0144	0.0037	Post Secondary	420	0.2286	0.0257	0.0050
		(0.0060)	(0.0589)	(0.0229)			(0.0205)	(0.0659)	(0.0188)
					Secondary	1996	0.2891	0.0335	0.0063
							(0.0101)	(0.0723)	(0.0201)
					Primary	1097	0.3655	0.0463	0.0094
							(0.0145)	(0.0854)	(0.0259)
Reads, Writes only	3976	0.1934	0.0283	0.0079	Reads, Writes only	3541	0.4007	0.0511	0.0103
		(0.0063)	(0.0841)	(0.0384)			(0.0082)	(0.0878)	(0.0264)
Illiterate	6303	0.2910	0.0524	0.0164	Illiterate	6362	0.6168	0.1090	0.0298
		(0.0057)	(0.1169)	(0.0571)			(0.0061)	(0.1339)	(0.0580)
Unclassified	58	0.3103	0.0519	0.0114					
		(0.0607)	(0.0936)	(0.0278)					

Table III.3b Poverty Rate Rankings by Employment Status of the Household Head

		1990/1991 HIECS					1995/1996 HIECS		
Status	**N**	**P0**	**P1**	**P2**	**Status**	**N**	**P0**	**P1**	**P2**
Unemployed Youth	26	0.1539	0.0345	0.0094	Wage Earner	6472	0.4036	0.0564	0.0125
		(0.0708)	(0.0907)	(0.0310)			(0.0061)	(0.0967)	(0.0315)
Wage Earner	6921	0.1695	0.0242	0.0063	Self-Empl'd/ Employing Others	2921	0.4238	0.0535	0.0103
		(0.0045)	(0.0754)	(0.0312)			(0.0091)	(0.0863)	(0.0241)
Self-Empl'd/ Working Alone	1944	0.2305	0.0400	0.0123	Self-Empl'd/ Working Alone	1813	0.4595	0.0665	0.0154
		(0.0096)	(0.1036)	(0.0488)			(0.0117)	(0.1050)	(0.0365)
Out of Labor Force	2651	0.2399	0.0457	0.0148	Household Laborer	16	0.5000	0.0633	0.0145
		(0.0083)	(0.1128)	(0.0533)			(0.1250)	(0.1025)	(0.0349)
Self-Empl'd/ Employing Others	2611	0.2520	0.0457	0.0149	Unclassified	3583	0.5208	0.1042	0.0318
		(0.0085)	(0.1132)	(0.0595)			(0.0083)	(0.1447)	(0.0666)
Unemployed Adult	46	0.3044	0.0315	0.0046					
		(0.0678)	(0.0604)	(0.0130)					
Household Laborer	36	0.3333	0.0483	0.0149					
		(0.0786)	(0.1120)	(0.0545)					

Table III.3c Poverty Rate Rankings by Age of the Household Head

		1990/1991 HIECS					1995/1996 HIECS		
Age Group	**N**	**P0**	**P1**	**P2**	**Age Group**	**N**	**P0**	**P1**	**P2**
36-45	2548	0.2025	0.0283	0.0074	46-55	3225	0.3777	0.0524	0.0118
		(0.0080)	(0.0814)	(0.0358)			(0.0085)	(0.0949)	(0.0323)
46-55	1561	0.2255	0.0372	0.0109	36-45	4011	0.3979	0.0524	0.0112
		(0.0106)	(0.0977)	(0.0457)			(0.0077)	(0.0919)	(0.0298)
26-35	1610	0.2280	0.0327	0.0089	56-65	2700	0.4559	0.0760	0.0202
		(0.0105)	(0.0883)	(0.0373)			(0.0096)	(0.1203)	(0.0493)
56-65	1099	0.2557	0.0544	0.0191	26-35	2761	0.4828	0.0713	0.0162
		(0.0132)	(0.1271)	(0.0658)			(0.0095)	(0.1054)	(0.0357)
0-25	185	0.3460	0.0543	0.0146	0-25	337	0.5490	0.0881	0.0215
		(0.0350)	(0.1079)	(0.0415)			(0.0271)	(0.1171)	(0.0433)
65+	542	0.3524	0.0761	0.0273	65+	1771	0.5613	0.1158	0.0361
		(0.0205)	(0.1467)	(0.0768)			(0.0118)	(0.1507)	(0.0712)

Table III.4 Poverty Rate Rankings by Number of Children in the Household

	1990/1991 HIECS					1995/1996 HIECS			
Number	**N**	**P0**	**P1**	**P2**	**Number**	**N**	**P0**	**P1**	**P2**
1	2704	0.1601	0.0233	0.0064	1	2725	0.3776	0.0503	0.0107
		(0.0071)	(0.0765)	(0.0333)			(0.0093)	(0.0904)	(0.0282)
0	5002	0.1755	0.0323	0.0103	0	6676	0.4107	0.0725	0.0205
		(0.0054)	(0.0964)	(0.0456)			(0.0060)	(0.1237)	(0.0529)
2	2863	0.1890	0.0285	0.0077	2	2864	0.4553	0.0599	0.0128
		(0.0073)	(0.0828)	(0.0351)			(0.0093)	(0.0957)	(0.0312)
3	2212	0.2514	0.0395	0.0113	6+	59	0.5424	0.0790	0.0171
		(0.0092)	(0.0987)	(0.0489)			(0.0649)	(0.1042)	(0.0304)
4	963	0.3448	0.0559	0.0163	3	1715	0.5574	0.0819	0.0181
		(0.0153)	(0.1147)	(0.0517)			(0.0120)	(0.1069)	(0.0358)
5	288	0.3785	0.0726	0.0228	4	602	0.6263	0.0998	0.0235
		(0.0286)	(0.1324)	(0.0638)			(0.0197)	(0.1165)	(0.0417)
6+	203	0.4729	0.1076	0.0414	5	164	0.7134	0.1095	0.0254
		(0.0350)	(0.1727)	(0.1040)			(0.0353)	(0.1158)	(0.0417)

Table III.5 Poverty Rate Rankings by Number of Household Income Earners

	1990/1991 HIECS					1995/1996 HIECS			
Number	N	P0	P1	P2	Number	N	P0	P1	P2
4+	212	0.1321	0.0211	0.0053	2	4821	0.3883	0.0545	0.0121
		(0.0233)	(0.0698)	(0.0277)			(0.0070)	(0.0956)	(0.0313)
3	761	0.1603	0.0246	0.0069	4+	680	0.4132	0.0575	0.0123
		(0.0133)	(0.0796)	(0.0369)			(0.0189)	(0.0946)	(0.0289)
2	2852	0.1652	0.0264	0.0074	3	1529	0.4304	0.0573	0.0123
		(0.0070)	(0.0820)	(0.0358)			(0.0127)	(0.0949)	(0.0304)
1	7844	0.2381	0.0401	0.0122	1	7775	0.4818	0.0806	0.0216
		(0.0048)	(0.1030)	(0.0492)			(0.0057)	(0.1228)	(0.0513)

Table III.6 Poverty Rate Rankings by Household Real Total Income Interval

		1990/1991 HIECS					1995/1996 HIECS		
Interval	**N**	**P0**	**P1**	**P2**	**Interval**	**N**	**P0**	**P1**	**P2**
8000+	1464	0.0481	0.0090	0.0029	12619+	943	0.0095	0.0009	0.0001
		(0.0056)	(0.0534)	(0.0248)			(0.0032)	(0.0111)	(0.0018)
6001-8000	1566	0.0840	0.0141	0.0048	9465-12618	1443	0.0367	0.0027	0.0003
		(0.0070)	(0.0679)	(0.0393)			(0.0050)	(0.0184)	(0.0033)
4501-6000	2310	0.1117	0.0177	0.0051	7099-9464	3038	0.1162	0.0096	0.0014
		(0.0066)	(0.0693)	(0.0325)			(0.0058)	(0.0358)	(0.0076)
3501-4500	2294	0.1666	0.0263	0.0084	5522-7098	3619	0.3421	0.0278	0.0042
		(0.0078)	(0.0877)	(0.0434)			(0.0079)	(0.0581)	(0.0144)
2501-3500	2288	0.3140	0.0411	0.0106	3944-5521	3798	0.8081	0.1011	0.0181
		(0.0097)	(0.0944)	(0.0417)			(0.0064)	(0.0889)	(0.0273)
1501-2000	493	0.5069	0.0941	0.0248	2367-3155	549	0.9308	0.2700	0.0897
		(0.0225)	(0.1261)	(0.0521)			(0.0108)	(0.1294)	(0.0630)
2001-2500	819	0.5222	0.0773	0.0187	3156-3943	1138	0.9341	0.2092	0.0545
		(0.0175)	(0.1130)	(0.0482)			(0.0074)	(0.1036)	(0.0422)
0-1500	435	0.6615	0.1875	0.0738	0-2366	277	0.9422	0.4004	0.1928
		(0.0227)	(0.1967)	(0.1094)			(0.0140)	(0.1801)	(0.1273)

Table III.7a Poverty Rate Rankings for Poverty Line set at US $1.00 per Day, Equivalence-Adjusted

	1990/1991 HIECS					1995/1996 HIECS			
	N	P0	P1	P2		N	P0	P1	P2
All Rural	5880	0.9872	0.3132	0.1207	All Rural	8183	0.8344	0.1770	0.0518
		(0.0015)	(0.1503)	(0.1095)			(0.0041)	(0.1429)	(0.0695)
All Urban	8352	0.6142	0.0992	0.0254	All Urban	6622	0.1675	0.0223	0.0049
		(0.0053)	(0.1249)	(0.0540)			(0.0046)	(0.0666)	(0.0217)
All Egypt	14232	0.7683	0.1876	0.0648	All Egypt	14805	0.5361	0.1078	0.0308
		(0.0035)	(0.1720)	(0.0941)			(0.0041)	(0.1385)	(0.0585)

Table III.7b Poverty Rate Rankings for Poverty Line set at US $1.00 per Day, Unadjusted

	1990/1991 HIECS					1995/1996 HIECS			
	N	P0	P1	P2		N	P0	P1	P2
All Rural	5880	0.8439	0.3648	0.1946	All Rural	8183	0.7380	0.2726	0.1353
		(0.0047)	(0.2481)	(0.1910)			(0.0049)	(0.2470)	(0.1766)
All Urban	8352	0.6001	0.1980	0.0899	All Urban	6622	0.3680	0.1118	0.0495
		(0.0054)	(0.2252)	(0.1436)			(0.0059)	(0.1924)	(0.1130)
Egypt	14232	0.7008	0.2669	0.1332	All Egypt	14805	0.5725	0.2007	0.0970
		(0.0038)	(0.2489)	(0.1727)			(0.0041)	(0.2381)	(0.1574)

Table III.8 Gini Statistics and Quintile Shares for Unadjusted data

1990/1991 HIECS

Region	N	Gini	Quint1	Quint2	Quint3	Quint4	Quint5
Frontier	179	0.2922	8.84	13.31	17.68	22.93	37.24
Upper Rural	2141	0.3113	7.94	13.05	17.10	22.80	39.10
Lower Rural	2546	0.3395	7.53	12.59	16.35	21.63	41.90
Cairo	1918	0.3472	7.04	12.00	16.57	22.53	41.85
Upper Urban	1885	0.3551	7.12	12.10	15.98	21.66	43.14
Alexandria	901	0.3797	7.04	11.29	15.33	20.91	45.44
Other Urban	202	0.3814	6.79	11.04	15.64	21.61	44.91
Lower Urban	1892	0.5230	5.32	8.99	11.89	16.15	57.66
All Rural	4772	0.3348	7.49	12.84	16.33	22.12	41.23
All Urban	6892	0.4122	6.42	11.19	14.40	20.00	47.99
All Egypt	11664	0.3853	6.78	11.49	15.33	20.76	45.64

1995/1996 HIECS

Region	N	Gini	Quint1	Quint2	Quint3	Quint4	Quint5
Lower Rural	4570	0.2960	8.32	13.52	17.60	22.42	38.15
Upper Rural	3504	0.3172	7.26	13.16	17.54	23.30	38.74
Lower Urban	1766	0.3265	7.78	12.76	16.82	21.94	40.70
Other Urban	238	0.3402	7.25	12.43	16.80	22.70	40.82
Alexandria	895	0.3681	7.03	11.95	16.39	20.07	44.57
Cairo	1962	0.3690	7.21	11.24	15.81	21.73	44.01
Frontier	227	0.3809	8.02	11.53	14.96	19.22	46.26
Upper Urban	1643	0.3989	6.43	11.34	15.26	20.19	46.79
All Rural	8183	0.3123	7.68	13.19	17.57	22.50	39.06
All Urban	6622	0.3722	6.87	11.62	15.68	21.33	44.51
All Egypt	14805	0.3514	7.14	12.40	16.14	21.62	42.70

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Chapter IV. Human Capital

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CHAPTER IV. HUMAN CAPITAL

IV.A Introduction

Most readers of the economics of Egypt will readily agree that the country is experiencing labor market disequilibrium, that workers are facing dislocation, even that the labor force is in crisis. The prevailing consensus is that unemployment is high[1] but underemployment is higher, that too many job applicants enter the labor force every year with expectations (and educations) that are too lofty to accommodate the slow growth of skilled positions, and that productivity is generally low and unit labor costs are high compared to other countries. The public sector is huge but bankrupt, and because the private sector hasn't been emphasized, job creation is so low.

Labor market policies have both reinforced current conditions and made future reform efforts predictably harder to accommodate. The public sector's involvement is direct, through minimum wage provisions and payroll deductions, and indirect, through its employment and dismissal laws. Secondary school and university graduates are constitutionally guaranteed a civil service job upon graduation, but typically wait for 8 years or more until a position opens.[2] On the demand side, workers see this incentive as large enough to outweigh the risk of government financial default. On the supply side, this results in a civil service with an overly large percentage of lower quality employees, the ones who waited in line to avoid the competition of the private sector.

This chapter first accounts for labor force conditions, presenting some differences in definition and standardization, and then addresses the complementary issues of unemployment and earnings differentials. It is noted that the unemployed are occupied in economically viable activities even though their earnings and their productive time remains, to a greater or lesser extent, unregistered. To understand unemployment, then, it is convenient to start with an employee's probability that he or she will participate in the paid (formal) labor force. This decision is endogenous at the household level. After characteristics are associated with probabilities to participate in the

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[1] There are varying conceptions of the level of unemployment in the country, depending on the source and definition. The Egyptian Ministry of Planning estimates reported by Central Bank of Egypt (1996, Table 1/5, Population, Labor Force & Unemployment Rate, p. 84) are 9.4% in 1995/1996, 9.6% in 1994/1995 and 9.8% in 1993/1994. CAPMAS estimated the unemployment rate to be 11.3% in 1995 (CAPMAS, 1996). A recent report by "IMF consultants" put the figure at 17.5% (as reported by Moataz el Hadiidi and Subhi Bahiri in "3.9 Million Unemployed ... trade balance deficit reached 31.6 billion £E, El Sha9ab, 11 April, 1997, p. 1). The popular Western press has current unemployment levels at 21% (Alexander Stille in "Perils of the Sphinx" New Yorker,February 10. 1997,p. 63).

[2] Assaad (1997) provides the best analysis to date on the effect of this guarantee on returns to schooling, and concludes that higher public sector salaries and non-wage benefits continue to drive the queuing process, despite severe overstaffing in government ranks and extremely high unemployment rates among graduates.

formal labor pool, the nature of wage differentials can be associated with human capital[3] attributes (age, sex, the quality of education, etc.). The findings will then be interpreted in light of Egypt's potential to created sustained labor-demanding growth.

IV.B Employment: A Question of Definitions

CAPMAS uses nonstandard, and therefore, noncomparable, definitions for "labor force" and "employed." The various conditions of labor are not recognized in a mutually exclusive and collectively exhaustive way, leading to misleading depictions of the status of employment. In order to prove that the government does not have a basic quantitative measure of employment and unemployment, it is sufficient to point to examples of double-counting or undercounting. This section compares Egyptian definitions with international standards for best practices in labor force measurement, and appeals to simple survey changes which would finally rectify matters, and thereby permit future comparison.

The Egyptian definitions come from CAPMAS (1996, "Introduction," p. 1) because the assumption is that CAPMAS takes the lead for setting statistical standards, and other agencies have followed this lead in the past. No changes have been made to the erroneous methodology; indeed, the mismeasurement of employment is a significant shortcoming of the 1996 census of population.[4]

Members of the military establishment and Egyptian residents abroad are considered "inapplicable" to labor force measurement, as these segments are not surveyed. For other population segments, the hierarchical outline is as follows:

1) The "Human Force" is that part of the population "which contributes to economic activity." It is made up of individuals 6 years or older but less than 65 years old and not "completely disabled to perform any job." The "Labor Force" is a more distinct grouping - those people 6-65 years old who are

a) "employed" and

b) "unemployed.

"Employed" means the person worked *at least one hour* during the one-week period of the labor force survey, in which they contributed to economic activity related to the production of commodities or services. A person is still employed if he or she is temporarily unable to engage in work due to sickness, injury, normal leave, grants for training and studies, labor disputes, and/or "temporary work stoppages due to the enterprise itself."

"Unemployed" are those who are capable and desirous of performing such economic activities, and who search for work but cannot find it, and who did not receive a wage during the survey period. It is noted that contracted employees who have not started work are among the ranks of the unemployed.

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[3] In this chapter, "human capital" refers to the experience, skills, and training of employable labor.

[4] This has an "Employment Status" item with 13 levels. CAPMAS tried to collect too much information in its census and therefore sacrificed the quality of data they got on this, and other, items.

The unemployed are further classified into two groups:

a. "The unemployed who previously worked but were not working during the period of the survey."

b. Unemployed who did not have a job before like graduates from schools or universities."

2) Those "Outside of the labor force" are persons 6-64 years old, able to work but not working at the time of the survey, and not searching for work, for one or more of the following reasons:

- housewives
- full-time students
- "those who do not want to work" (for any reason, i.e., they are lazy, rich, or discouraged for any reason)
- partial disability which causes a temporary absence from work
- retirement or early retired
- those on leave without pay for one year or more and not working
- patients and prisoners
- "persons of 6-12 years of age who are not working or studying"
- "those suspended temporarily, or for an indefinite period of time, as long as they are receiving no salary, and they are not searching for a job."
- university graduates undertaking General Service

It is time for CAPMAS to accept the fact that they have been measuring employment incorrectly for too long. This author is unaware of any references to the term "Human Force" in labor measurement literature outside of Egypt, its meaning and importance is ambiguous, and its difference from the "Labor Force" is a matter of confusion only. In some cases of definitions, such as those in quotes above, even native Egyptians consider the language confusing. The designation "outside the labor force" is much too broad to be meaningful, counting people who say they are not seeking work as outside the labor force when they are really indirectly seeking work and unemployed (their relatives may still be trying to find them a job, for example). Housewives who are earning incomes are not in the "Human Force." There are too many opportunities like this for double-counting and overlooking in the definitions. The situation would be simply remedied by following best practices; the example of the United States is the best comparison because it is the result of many years of experience and trial and error. The basic sequential approach which the Bureau of the Census uses in its Current Population Survey has remained unchanged since 1967; most changes to the CPS since then have been modifications reflecting changes to economy and society, sharpening the measurement of labor force concepts. The same structure for determining labor force status exists in most countries.[5] The sequence is internationally applicable (it transcends local considerations), and it produces proper comparable results.

The sequence is made up of no more than four questions:

1. The respondent is asked "What were you doing most of last week - working, keeping house, going to school?"

The person is employed if he did any work at all during the last week, whether part-time, full-time, or temporary. A person who performed at least

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[5] The United States follows a more specific version of definitions used in the ILO's Revised International Standards for Statistics on the Labor Force, Employment and Unemployment (ILO, 1983-3, pp. ix-xxvi.).

15 hours of unpaid work in a family business is employed; if less than 15 hours, the individual is counted "not in the labor force."
2. If the person said he did no work, the next question is: "Did you have a job from which you were temporarily absent or on layoff last week?" ("On layoff" means the person expects to return to work.)
If the person is awaiting recall from a layoff or has obtained a new job but is waiting for it to start, he is unemployed.
3. If the person neither works nor is absent from a job the next question is: "Have you been looking for work in the last four weeks?"

a. If the answer is "Yes," the respondent is prompted "What have you been doing to find work?"

If the person has not been ill, and is actively looking for work, he is unemployed.

Persons who are neither employed nor unemployed (discouraged workers, persons who are not seeking paid work, homemakers, students at school, the disabled, the retired) are not in the labor force. Therefore, "people with jobs are employed; people who do not have jobs, looking for jobs (and available for work) are unemployed; people who meet neither labor market test are not in the labor force" (BLS (1977), p. 6, and BLS (1994), p. 2). In this way, the entire population of the country over a certain age (it could be age 12 for Egypt) falls into 4 categories: Total Labor Force (made up of the Civilian Labor Force, the Armed Forces, and the Unemployed) and Not in the Labor Force. The unemployment rate is then simply the number of unemployed persons divided by the Civilian Labor Force (both Employed and Unemployed).

CAPMAS can no longer use the excuse that labor force measurement as done by CAPMAS is specific to the Egyptian cultural context. In recognition of the heightened need for data transparency attendant with development and the liberalization of the economy, it is strongly recommended that CAPMAS adopt the system of mutually exclusive and collectively exhaustive labor force status definitions which the sequence above assures.

The erroneous definitions result in *lower* estimates for "labor force" and *higher* estimates for the number of "unemployed." The Ministry of Planning reports the previous five years' figures as below. The assumption is that MinPlan follows CAPMAS's definitions:

Official Estimates of Levels (Thousands) for Labor Force, Employed and Unemployed

'000	1991/1992	1992/1993	1993/1994	1994/1995	1995/1996
Labor Force	15141	15571	16013	16452	16925
Employment	13742	14011	14436	14879	15340
Unemployment	1399	1560	1577	1573	1585

Source: Ministry of Planning, reported in Central Bank of Egypt (1995, 1996)

If the 1995/1996 HIECS data are categorized according to the standard definition and without reference to irrelevant definitions - i.e., a "pseudo-standard" definition is used - the monthly labor force percentage and unemployed rate of the pool of the monthly labor force is imputable. It is shown as Figure IV.1. The labor force participation rate equals the employed

plus the unemployed divided by the labor force within the analysis category (here the monthly sample of the labor force, merely for exposition), expressed as a percentage. The "Unemployed rate" is the percentage of unemployed divided by the labor force. Of the 73,939 individuals surveyed, only 33% fit into "the labor force" using the near conventional meaning of the term. This 33% happens to coincide with the total number of individuals who identified themselves as "earners" in the sample as well. The rates are similar whether or not they are weighted. The small labor force is mainly a reflection of the broad base of the population pyramid (Figure II.1). Males outnumber females "in the labor force" more than three to one, even though there is very little difference in the proportion of males and females within age cohorts; the yearly "unemployment rate" was 16.71 for females, 4.63% for males, and 7.45% overall.

The pool of unemployed persons certainly does not follow a unimodal distribution across age groups, as is evident in Figure IV.2. Once an individual reaches age 16 or 17, the probability of unemployment rises dramatically and remains high until about age 20, then it slowly recedes throughout the 20s. Participation rates are higher than the overall rate from the ages of 18 to 64 (the end bound is not shown in Figure IV.2 but the drop is from 46% at age 64 to 26% at age 65).

Consider how many jobs have to be created each year for only one age group, males and females aged 17. Males and females aged 16-20 years of age make up 11.57% of the population. Males and females aged 17 therefore represent one-fifth of that, about 2.3% of the population. If the population of Egypt is presently 60 million, the number of 17 year old males and females entering the work force in one year will be about 1.4 million. The government's 5 Year Plan, expected to start in July of 1997 and continue until August 30, 2002, has a target of only 2.5 million jobs, or 500,000 jobs per year.[6] Even if the government is fully successful creating half a million jobs each year, the private sector will have to generate about 900,000 additional jobs per year, just to accommodate the entrants! The private sector is not capable of absorbing so much labor.

Underemployment is a serious problem in Egypt. There are two main varieties of the underemployed: those who want to work full-time but are constrained to part-time, and those who usually work part-time but cannot find a job. Both situations come about due to structural disequilibrium in the demand for labor as well as temporarily slack economic conditions. Another cause for underemployment is skill mis-matched labor - university graduates performing routine clerical functions, for example. The best possible measure of labor efficiency and output equates the opportunity cost of alternate employment given first-best inputs. People should not be using pen and paper when they have access to a computer, for example. In many cases, prevailing labor market conditions impede the goal of maximum efficiency, of making the best use of human capital. Quantifying underemployment is a matter of serious scholarly interest and attention; unfortunately, the HIECS

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[6] Economist Intelligence Unit, p. 17.

did not permit even a good estimate of shortened hours.[7] In the next labor force survey CAPMAS should devote serious attention to the disparity between the individual will to work and the actual number of hours spent in profitable employment.

IV.C Some HIECS Human Capital Attributes

This section characterizes how human capital is distributed in Egypt, how the labor market is segmented. Table II.5 of Chapter II showed earners classified by sex and region. Males represent a fairly constant 70% of all earners throughout the regions, more in traditional Upper Rural Egypt. (Regional percentages are, of course, sensitive to sampling probabilities.) There is a small, but very important, contradiction here: it was stated above that males outnumber females in the labor force more than three to one when the labor force is measured as closely as possible to international standards. A number of females consider themselves "earners" but do not actually fit into the pseudo definition of "in the labor force." Women are being categorized improperly as outside the labor force, or outside the "human force" when, in fact, they are making important contributions to household earnings. CAPMAS does not recognize, specifically, the earnings of housewives.

The informal sector presents special measurement problems as well. The distinction "informal" is hardly obvious, and without defining differences between clearly informal activities (street vending, for example) and real small-scale enterprises, inferences about the size of the informal sector are difficult to make. That there are many individual, small-scale, part-time and intermittent enterprises cannot be disputed, however. And overall, the number of income sources people have is higher than it would be with a more developed formal sector. Extra jobs have become an indispensable way to make ends meet.

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[7] The question "How many days did you work last week?" resulted in an average of 6.1, well above the estimate of most countries. CAPMAS was skeptical that employees would be able to take a proper accounting of the number of hours worked the previous week.

Two-Way Table of the Number of Household Income Earners by the Number of Household Sources of Income

EARNERS	SOURCES			
Frequency Percent Row Pct Col Pct	1	2	3+	Total
1	1407 9.50 18.10 100.00	4181 28.24 53.77 79.99	2187 14.77 28.13 26.77	7775 52.52
2	0 0.00 0.00 0.00	1046 7.07 21.70 20.01	3775 25.50 78.30 46.20	4821 32.56
3+	0 0.00 0.00 0.00	0 0.00 0.00 0.00	2209 14.92 100.00 27.03	2209 14.92
Total	1407 9.50	5227 35.31	8171 55.19	14805 100.00

If extra jobs are an indicator of the informal sector, then the informal sector is rather extensive. It is more common for single earner households to have two, three, or more income sources than it is to have one income source; only 18% of single earner households have only one income source. Households with two earners are more than 300% likely to have more than two income sources.

Having multiple income sources is more a feature of rural areas:

Number of Household Income Sources by Rural and Urban

SECTOR	SOURCES					
Frequency Percent Row Pct Col Pct	1 Source	2	3	4	5	6
RURAL	113 0.76 1.38 8.03	2598 17.55 31.75 49.70	3140 21.21 38.37 64.73	1535 10.37 18.76 69.21	557 3.76 6.81 71.59	172 1.16 2.10 74.14
URBAN	1294 8.74 19.54 91.97	2629 17.76 39.70 50.30	1711 11.56 25.84 35.27	683 4.61 10.31 30.79	221 1.49 3.34 28.41	60 0.41 0.91 25.86
Total	1407 9.50	5227 35.31	4851 32.77	2218 14.98	778 5.25	232 1.57

The above table can be extended to the level of region, as in Table IV.1. The Upper and Lower Rural regions contribute the majority of multiple-source households. Multiple sources are associated with more than their sample proportions in those areas, suggesting that there may be more opportunities for household earnings with the diversity of rural activities. Opportunities for skilled labor in rural areas are scarce, so the enabling environment for specialization is less developed. Consequently workers engaged in eclectic activities get wage premiums. Over time the country's development, its success in reform, might be seen first in agricultural wages.[8] Testing this basic proposition over the first half of the 90s is a matter of comparing real wages in agriculture. This is possible because there are direct code concordances in economic activity and occupation over the two time periods.

IV.D Codes for Occupation and Economic Activity

The HIECS team translated the 687 six-digit level occupation codes and the 216 four-digit economic activity codes for the 1995/1996 HIECS (see the supporting appendix). This work was a considerable undertaking and it represents a great contribution to the survey infrastructure of CAPMAS. The occupation codes were partly changed from the 1990/1991 survey, but not the economic activity codes. The following codes were used at the one-digit level of economic activity:

1. Primary Extractive
2. Primary Industry

[8] This is the familiar Lewis-Fei-Ranis hypothesis (Lewis (1955); Fei and Ranis (1964)).

3. Secondary Industry
4. Machine Industry
5. Construction
6. Retail Trade
7. Transportation
8. Services - Private Sector
9. Services - Public

Also at the one-digit level, the concordance for occupation codes over the two survey periods is as follows:

The First Digit of Occupation Code, Concordance for Two HIECS

Digit	1990/1991 HIECS	1995/1996 HIECS
1	Professionals	Legislative, High-level Officials & Directors
2	Directors & Administrators in Business Trades	Specialists & Professionals
3	Clerical	Technical & Professional Assistants
4	Salespersons	Clerical
5	Service Occupations	
6	Agriculture, Animal Husbandry & Fishery	Agriculture, Animal Husbandry & Fishery
7	Industrial & Manual Workers	Crafts
8	Not elsewhere classified	Laborers in Industry, Using Machines
9		Manual Laborers in General Work
10		Military services
11		Not elsewhere classified

Average wages for the 1367 workers who were in *either* the "Primary Extractive" economic activity or in the "Agriculture, Animal Husbandry & Fishery" occupation in the 1990/1991 HIECS were 1598.27 £E. Median wages were 1400 £E. 1834 workers with the same occupation or economic activity codes in the 1995/1996 HIECS earned an average nominal wage of 2114.24 £E, and a median wage of 1800 £E. Adjusted for all-items inflation, real average wages in agriculture were 1200.37 £E and real median wages were 1030.11 £E, representing *25% declines in both real average and real median wages.* Once again, the immediate inference is that perhaps even the direction of wage movement is wholly sensitive to the inflation rate. But wages in agriculture

have not kept pace with the costs of living. Just to keep median wages constant over the time period, inflation would have had to grow no more than 5.15% per year; most people would agree that inflation has grown at least twice that amount per year.

Because poverty is so prevalent in Egypt, and the poor are believed to be living "hand to mouth," another wage comparison might be made for those workers who are mainly resigned to accepting part-time, intermittent, hourly, manual labor jobs.

Nominal and Real Comparison of Mean and Median Wages of "Day Laborers"

"Day Laborers"[9]	1990/1991 (N=745)	1995/1996 Nominal (N=1030)	1995/1996 Real (N=1030)
Mean Wages (£E)	2459.81	4094.18	2254.75
Median Wages (£E)	2190.00	3600.00	2060.23

The deterioration in real wages for manual laborers is less marked than for agricultural workers. The implication is that hourly wages for manual laborers are higher than expected, and persons who find such jobs can consider themselves privileged compared with the rest of the population. Thus, manual laborers do not properly represent "the poor."

IV.E Employment and Wages by Form of Ownership

Returning to the 1995/1996 data, wages and salaries are the largest source of individual incomes, as shown in Table IV.2. While the categories for "Type of Organization" are not mutually exclusive, they do encompass most types of labor sector organization. Non-governmental organizations ("NGO") and foreign joint ventures ("Foreign JV") are bound to be mostly private; cooperatives and investment organizations can be public or private. The difference between "public" and "government" organizations in Table IV.2 relates mainly to the occupation and economic activity of workers employed at each: "government" is usually taken to mean civil servants working in one of the ministries. Organizations or "authorities" more than 50% owned by the government are considered "public sector." Of the 21,416 individuals who provided information on the classification of their work organization, 25.8% said they worked for the government, 7.6% said they worked for the public sector, and 65.8% worked in the private sector.

One very interesting result is that private sector wages are the lowest of any organization type! The word "private," in the context of the other types of organizations, encompasses many types of individuals, from the street hawker to the secretary in the oil company. "Private" also carries connotations of "self-employment" more readily than any of the other categories, and the self-employed are a similarly heterogeneous group.

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[9] Paul Mulligan of USAID/EAP suggested the term "day laborers," connoting more regularity than "casual laborers" in such occupations.

IV.F The Probability of Being a Wage Earner

One of the defining characteristics of the formal sector is its exposure to labor market policies, such as the minimum wage. Formal sector labor is rationed as well. It may or may not be competitive, but to the extent that it is, the comparative statics of supply and demand, and the associated equilibrium wage rates for labor, are relatively easy to demonstrate.

Receiving a wage means receiving a regular payment which, in at least some respects, represents a degree of "formality." The self-employed, with or without employees to manage, are less easy to categorize as "formal" or "informal" sector.[10] It is just as easy to conceive of the self-employed in Egypt as being small-scale craftsmen or entrepreneurs working very informally under irregular and unregulated conditions, as it is to imagine them as managers of rigidly structured or highly regulated enterprises. Immediately the difficulty of definitions suggests that any extension of this formal/informal model should concentrate first on proper groupings.

What are the characteristics which associate workers with a higher probability that they will be wage earners, and therefore be members of the "formal sector?" This section relies on a loose definition of formality akin to Pradhan and van Soest (1995). The primary assumption is that income earners are poor respondents when it comes to assessing themselves as wage earners. The least formal sector worker may attempt to preserve prestige in the interview process by overestimating his degree of job security. The formal sector employee may downplay his position in the hierarchy, and suggest that his salary varies too much with his input to be described as a "wage." Response biases such as these will make the shape of the distribution for "formality" fatter, lacking well-defined tails. The analytical model is a probit likelihood function of an all-or-nothing dependent variable which varies according to changes in independent variables capturing demographic characteristics, based on the well-known censored-sample mechanics of Heckman (1979).[11]

The probability that an individual is a wage earner (and, so, a "formal sector" employee) was assumed to be associated with a number of demographic characteristics. I modeled response using the following independent variables: region, sex, age, household head or spouse, marital status, workplace organization, income, household density, existence of household members abroad, and distances to market and work. While inclusion was experimental, the availability of the data and their reasonableness conditioned the model's specification. Notably, levels of education were not included because of low statistical significance.

The first stage probit regression results are presented in Table IV.3.

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[10] Doctors, for example, may be self-employed, clearly in the formal sector, but not "wage earners."

[11] Green's (1981) heteroskedastic-consistent correction is not relevant here because the sample is not strictly censored. Rather Heckman's Two Stage method is meant here for uncovering the probabilities of formality, and only secondarily for refining a human capital wage regression with another potentially significant independent variable. See Appendix IV.A for a formal mathematical exposition of the model.

These are the coefficients and asymptotic standard errors of all the variables in the model which may explain the probability of being a wage earner. The reference (omitted) group appears in parentheses next to each variable. All of the coefficients are statistically significant at the 99% level of confidence. The likelihood ratio χ^2 statistic (= 12152.29 with 25 degrees of freedom) provides evidence for significance over all the coefficients in the model.[12] The likelihood ratio index value for the equation is .2189.[13]

In Table IV.3 positive coefficients mean that the characteristic raises the probability of being a wage earner, and therefore "in the formal sector," all other things equal. On the surface the signs on these marginal effects seem reasonable. If the employee is from Alexandria his probability of being in the formal sector is even higher than if he is from Cairo. The rural regions contribute a lower increase in probability than the urban regions. As the age of the employee increases, again all other things equal, his probability that he will continue to earn regular wages will fall; this may appear counterintuitive, but the degree of formality is not accumulated like other human capital, and more wage work is reserved for youth in Egypt. Never having been married decreases the probability of formality more than does being presently married. A very important result is that the public sector is fully "formal," while the private sector is fully "informal." *The interpretation here is that government efforts to intervene in labor markets where formal wage relationships apply may be mostly lost on the private sector*; given the above structure of organization, then, legislation stands to impact on only one-third of the labor force. Another important finding is that the probability of earning a regular wage decreases almost in lock step with household income level. This also is counterintuitive, if one makes too much of the empirical result that wage earners earn more than the self-employed. But wealthy self-employed businessmen are not likely to be entirely forthcoming about their earnings, and it is probably in just this case that most error in measuring incomes occurs. The relationship may be showing that wealth in the form of disposable capital is a precondition for entrepreneurship, for breaking out of the structure of regular wage work, which becomes unattractive at higher income levels. In similar ways, physical space per household member within the household is an indicator of potential, pointing to informality; having household members abroad shows resourcefulness and informality. The last two effects, distance to market and work, are hard to interpret intuitively, being too close to 0.00.

The coefficients of Table IV.3 can be indexed to provide a relative (perhaps more meaningful) interpretation of the probit results. Refer to Appendix IV.A. The representative individual's overall response index provides

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[12] This statistic is analogous to the F statistic in linear regression. It is computed as $\chi^2 = -2 (\ln \mathcal{L}_T - \mathcal{L}_U)$ in which the restricted log likelihood ($\mathcal{L}_T$) was obtained by maximizing the probit function with respect to the intercept alone.

[13] ρ^2 is a goodness-of-fit test of the model, similar to the R^2, which indicates how well the right hand side variables capture the variation in the dependent variable. It is formed as $\rho^2 = 1 - \ln \mathcal{L}_U/\mathcal{L}_T$. The calculated ρ^2 for the equation indicates a very good fit (Hensher and Johnson (1981)).

the benchmark from which to measure changes in response probability given a change in one or more of the representative individual's characteristics (X_n). Such a representative individual is a theoretical person constructed from various average sample characteristics arbitrarily determined by the chosen numeraire. The important point is that this theoretical representative individual has an overall index probability of being a wage earner of -.2021. The signs (positive or negative) on the coefficients of Table IV.3 indicate whether a given characteristic will increase or decrease the overall index probability of response. The change in the overall response index due to altering one characteristics is given by

$$\beta_n \left(\frac{1}{\sqrt{2\pi}} e^{-\frac{1}{2}R^{*2}}\right)$$

The indices of Table IV.3a were calculated by determining R* at each of the X_n for the reference (which is the intercept minus the effect of the four continuous variables), performing the remaining calculations in the parentheses above, multiplying the resulting value by β_n and adding this value to R*. For example, if a person differed from the representative individual in one aspect, that he came from Cairo, the probability that he would be a wage earner would rise from -.2021 to .1426, an increase of 170%. If the individual was a man rather than a woman, his response propensity would be 141% higher than the reference, and so on.

IV.G Human Capital Regressions

This final section presents wage regression coefficients from both the 1990/1991 and the 1995/1996 HIECS samples. In earlier regressions using the recent data set, the coefficient on the inverse of Mill's ratio, λ, was statistically significant but close to 0.00. The interpretation is that including information about the probability of being a "formal sector" employee on the right hand side of a level wage equation was meaningful. Before concluding that the *fact of earning a wage* is a statistically significant proxy for labor market *formality*, however, more refinements must be made to the definition of "formality." This might entail excluding and including various cases where appropriate using, perhaps, factor analysis. It is hoped that the method presented above provided a point of departure for future research into the structure of the Egyptian labor market.

Table IV.4 lists the coefficients of wage incomes regressed on various human capital attributes, along with their asymptotic t values. These characteristics are sex, age, education level, marital status, type of worker, occupation and economic activity for both surveys. The numbers are in £E, and generally the coefficient can be interpreted as the prevailing value for that labor market "quality," all other qualities held constant. No statements are made about temporal comparisons yet, either for the overall model or for individual coefficients; the results are shown side-by-side merely for convenience. The t statistic tests the null hypothesis that the individual coefficient equals 0.00 - the reader would normally reject the null if the t statistic is greater than or equal to 2.00, and conclude that the coefficient is statistically significant at (greater than) a 99% confidence level. Many of the

coefficients are statistically significant: sex, marital status, occupation and economic activity, and worker organization for the 1995/1996 HIECS data. The summary statistics for both regressions appear at the bottom of Table IV.4: the F testing the null of "all coefficient equality" is rejected at the .01 level of significance. The power of all the parameters in explaining the variation in the wage earnings (shown by the "Adjusted R-square") is acceptably high for human capital models.[14] The discrete jumps in education levels are significant sources of explanatory power. The intercept in the 1990/1991 data is "accepting" more unexplained variation than the intercept in the 1995/1996 data mainly due to missing variables, and is therefore larger.

The signs on the coefficients of Table IV.4 conform to *a priori* expectations, for the most part. There are wage premiums to being male and having a higher level of education. The self-employed with employees are the worst off group among worker types. Being married helps wage earning potential the most, and over time the penalty for divorce has grown larger; these trends are largely in keeping with the trend away from secularism in social relations. As regards economic activity, those engaged in primary industrial work are more highly rewarded than employees engaged in other economic activities; this finding is significant and robust, in the sense that time has not altered the relationship. Regarding temporal validity, we might define an index of value for the sum of a common bundle of sample human capital attributes over the time period as a ratio

$$\underset{k \in K}{I_V} \approx \frac{\sum \beta_k(T_1)\, w_k(C_1)}{\sum \beta_k(T_0)\, w_k(C_0)}$$

in which the coefficient values (including the intercept) appearing in both periods are multiplied by their prevailing sample means.[15] This index equals 1.3696. This means that the same qualities of wage labor in 1995/1996 were valued at 37% higher than they were in 1990/1991. Every year for the last five years wage labor has added about 6.5% to its nominal value. The extent of real growth in the value of human capital attributes depends, of course, on the inflation rate.

The real wage is an extremely important parameter because domestically it helps allocate the factors of production among competing uses and internationally keeps the country competitive. Egyptian wages are very

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[14] Kmenta (1971) calls R-squared values close to .20 for household behavior functions from the University of Michigan's Survey Research Center data "typical" (p. 234). Mincer's (1962) classic paper on returns to work experience and schooling was based on a coefficient of determination of .285. While poorly specified models can have low R-squared values, it does not follow that a model is misspecified simply because the influence of the random disturbance is stronger than the included variables.

[15] Both models collapsed the variable "AGE" into its continuous version. One additional year adds about 14 £E of wage earnings in the 1990/1991 period, and 53 £E in 1995/1996.

"sticky" downward; more rigid than they would be without certain practices, such as indexation, which have little to do with real output. Much of the distortion in the real wage in Egypt is due to the government acting as too large an employer, pushing the wage bill too high.[16] When the costs of wages get too high the use and intensity of labor compared to capital changes in ways which hurt overall growth in the economy, and may contribute to unemployment. In a macroeconomic context, higher productivity would serve to smooth the functioning of the labor market. Since mismatched labor and unemployment are high in Egypt, employers should invest in human capital through training, and the government should remove the legislative barriers which constrain labor mobility. The public sector should also continue to cut back on its wage rolls, and allow the private sector more latitude in setting real wage rates. In the meantime the government should send a signal that it is serious about privatizing by reconsidering the size of benefits to its employees, and by passing the unified labor law.

In a microeconomic context, the real gains in productivity should begin in the agriculture sector. This means that secondary processing should be developed and retained in the rural areas. Value added in agriculture must not continue to flow into urban areas where it commands a lower marginal value.

IV. Conclusion

This chapter began with estimates of labor force size, employment and unemployment rates. The measurement of these variables is confounded by nonstandard practices in Egypt. If CAPMAS adhered to best practices in labor force surveys, official estimates of labor force size would be higher and unemployment would be lower. Nonstandard definitions cause a downward bias in the number of household income earners, notably housewives.

Beyond the question of double counting and missing counts of employees, however, are two thorny measurement concerns: the extent of underemployment and the size of the informal sector both impact heavily on earnings. Underemployment, not just of labor, but also of the necessary production inputs, is the root cause of low productivity in the country. The next labor force survey should concentrate on measuring underemployment better. The size of the informal sector may covary with the number of extra jobs, and multiple income sources are more common in rural areas. Agricultural activities provide more and varied opportunities for earnings, but overall primary extractive work is not lucrative. Adjusting for inflation, real wages in agriculture have not kept pace with inflation. Real wages of day laborers have eroded only marginally less. Public sector wages are very high compared to other worker organizations.

What characterizes an Egyptian worker who aspires to a career in the well-paid public sector? For one thing, such a person earns a wage and is probably, therefore "in the formal sector." What factors, then, contribute positively to being a wage employee? Being young, married, and having lower household income levels makes an employee more likely to be a wage earner.

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[16] 1995/1996 preliminary actual wage expenditures are more than 27% of total current expenditures, according to the Central Bank of Egypt (1996), Table 5/1, p. 139.

Finally, standard human capital regressions show that wages are higher for married males with higher educations. The self-employed with employees are presumably the lowest paid category, but measurement error appears obvious. Employees find the highest paid jobs in primary industrial activities. Adjusting for the quality of these, and other, human capital characteristics reveals that workers' remuneration continues to be discounted. Only a concerted push for productivity will stem the erosion of real wages over time.

Appendix IV.A Adjusting Regression Output for Intuitive Interpretation

One of the first things a student of econometrics learns is to omit one or more classification variables from a model's right hand side to perform an ordinary least squares regression, otherwise the X'X matrix is not invertible (among other interpretations). If the mean of the excluded group is deviant from the other groups the included coefficients can have large and erratic shifts. To present a coefficient's effect in relation to the intercept, or ultimately the full sample mean, one can adjust regression output by adding a constant to each coefficient so that the weighted sum equals zero, and then subtracting the same constant from the intercept value. For example, the 1995/1996 HIECS regression output of Table IV.4 shows that

Wages = 748.59 + 817.49 (if the person is male) - 143.75 (if age < 15) + ...etc.

What if the person is female? Choose a constant, call it "c"

50 (817.49 + c) + 50 (0.00 + c) = 0
40874.5 + 50c + 50c = 0
c = -408.75

Therefore,

Wages = 748.59 + 408.75 (if the person is male) - ...etc.
Wages = 748.59 - 408.75 (if the person is female) - ...etc

Appendix IV.B The Heckman Two-Stage Method

IV.A.1 Stage One

Stimuli from a number of factors cause a latent response index R^*_i to surpass a threshold level (say, $R^*_i > 0$), and an individual will be a wage earner, i.e., an R_i will be observed:

$$1. \qquad R = \alpha + \beta_k X_k + \epsilon$$

The distribution of observed percentages of positive R ($R_i = 1$) is sigmoid in X_k space. The probit likelihood is a linear transformation of this S-shaped curve, based on the assumption that errors about estimates of R (R), and therefore response frequencies, are normally distributed

$$2. \qquad Prob\ (R = 1) = Prob\ (\epsilon_i > -\beta X)$$

where P. is the probability of a positive response, $\hat{R} = X - \mu / \sigma$ and errors $\epsilon_i = (R_i - R)$.

$$3. \qquad P = \int_{-\infty}^{\hat{R}} \frac{1}{\sqrt{2\pi}} \exp^{-\frac{1}{2}\epsilon^2} d\epsilon$$

In the multivariate case the probability of response being "wage earner" can be estimated as

$$4. \qquad R* = \hat{\alpha} + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \ldots + \hat{\beta}_k X_k$$

The estimator for the $\hat{\beta}$ is maximum likelihood: first, the likelihood function is formed from the probability mass function, r = 1 or r = 0,

$$5. \qquad \mathcal{L} = \prod_{i=1}^{I-n} P_i^r \prod_{i=n+1}^{I} (1 - P_i)^{1-r}$$

where I is the total number of individuals in the sample, and the n are those individuals who failed to respond. Then the natural log of (5) is:

$$5a. \qquad \ln \mathcal{L} = r \ln P(\beta X) + (1-r) \ln [1 - P(\beta X)]$$

$$\frac{\partial \mathcal{L}}{\partial \beta_j} = \frac{r}{P(\beta X)} \frac{\partial P(\beta X)}{\partial X_j} - \frac{(1-r)}{[1 - P(\beta X)]} \frac{\partial P(\beta X)}{\partial X_j}$$

which is maximized with respect to the unknown parameters: for any β_j

$$= \frac{\partial P(\beta X) \ / \ \partial X_j}{P(\beta X) \ [1 - P(\beta X)]} \ [r - P(\beta X)]$$

the numerator in the term above is the probability density function (PDF) and P(βX) is the cumulative density function (CDF).

IV.A.2 Stage Two

The second stage of the Heckman procedure uses information from the first stage probabilities to refine an OLS regression, in this case the regression of wage income on human capital characteristics. In this chapter the probability of earning a wage was held to be a proxy for the degree of formality. Beyond considerations of the formal/informal labor sector dichotomy, we could have simply used a dummy variable "wage earner" in a single OLS regression:
but this would have implied that the error term above was independent of the error term in equation 1. This assumption is not testable unless both stages are actually done. Dependence between μ and ϵ implies that the conditional

$$6. \qquad W = \alpha + \beta_\kappa X_\kappa + \gamma R + \mu$$

expectation of the censored sample (i.e., "formal") W given independent variables excluding the response indicator may be written

$$7. \qquad E\,(Y \mid Y > 0, X_\kappa, R \notin X_\kappa) = \beta_\kappa X_\kappa + \frac{cov(\epsilon\mu)}{\sqrt{var(\epsilon)}}\,\lambda$$

The second term on the right hand side provides both the justification and the correction in the Two-Stage Heckman. The error term is a composite of stochastic disturbances from both the level equation and the equation for the probability of formality, so that the regression estimation of equation 6. above is heteroskedastic, and missing variables are the cause. The symbol λ in equation 7. is the inverse Mill's ratio, the (negative of the) probability density function divided by the cumulative density function of a standard normal distribution:

$$7a. \qquad \lambda = -\frac{\phi(Z)}{\Phi(Z)}$$

To apply Heckman's method, then, λ_i is constructed from the probit response regression and used in the level equation for wages.

Figure IV.1 Implied Monthly Unemployment and Labor Force Rates Based on Pseudo-Standard Definitions, 1995/1996 HIECS

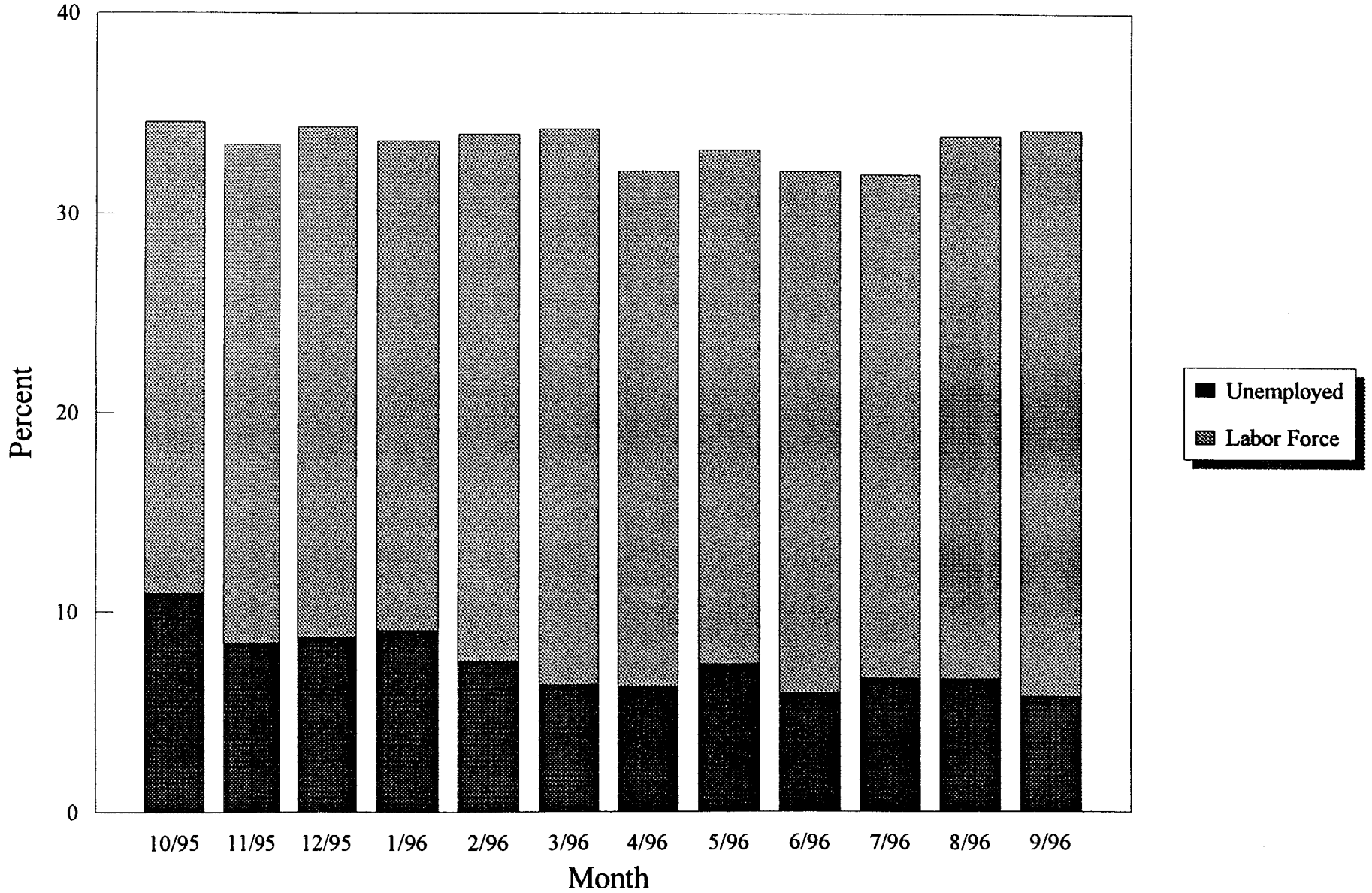

Figure IV.2 Implied Unemployment and Labor Force Rates by Age Based on Pseudo-Standard Definitions, 1995/1996 HIECS

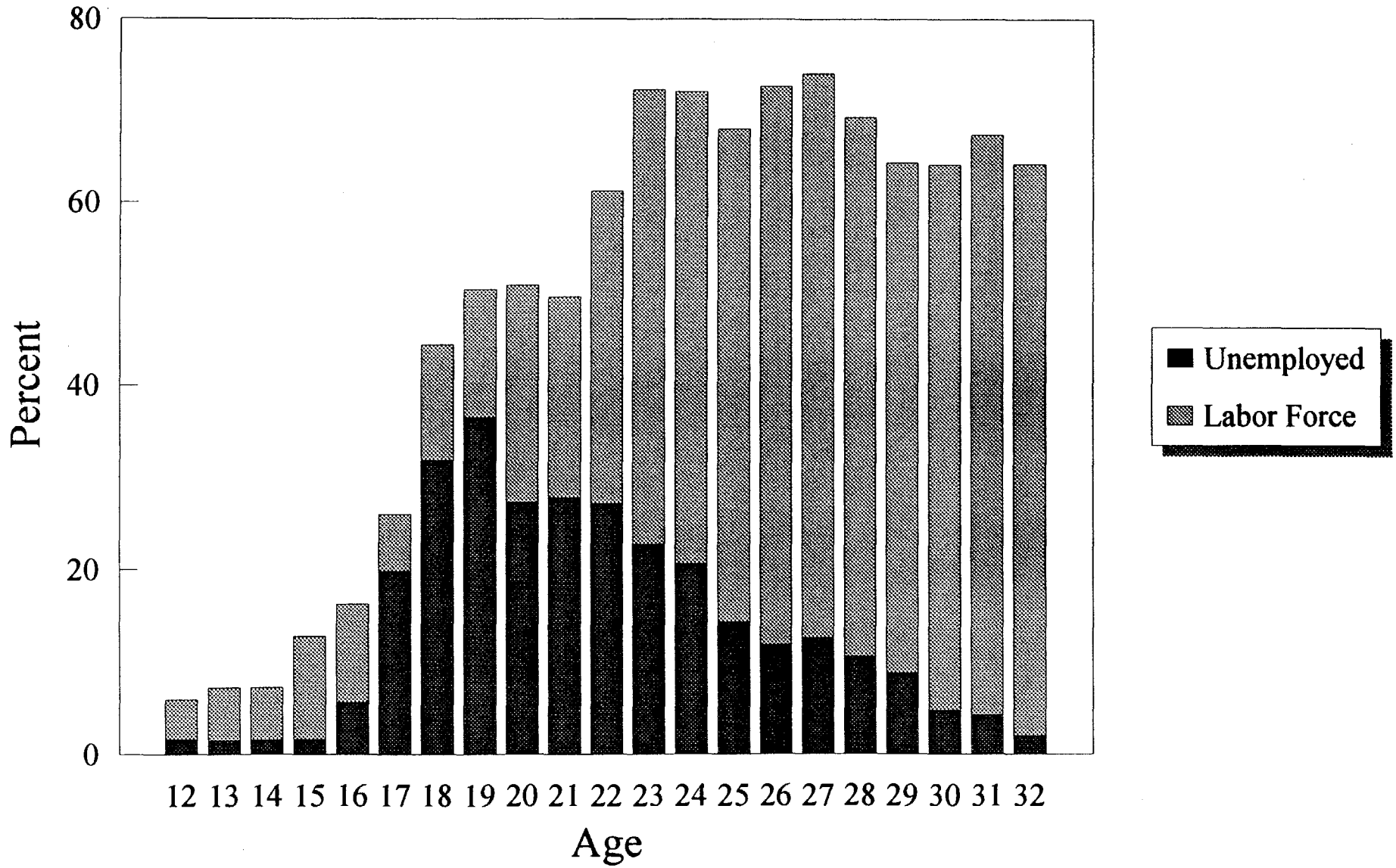

Table IV.1 Household Income Sources by Region

TABLE OF REGION BY SOURCES

REGION	SOURCES			
Frequency Percent Row Pct Col Pct	1	2	3+	Total
CAIRO	609 4.11 31.04 43.28	763 5.15 38.89 14.60	590 3.99 30.07 7.22	1962 13.25
ALEX- ANDRIA	221 1.49 24.69 15.71	336 2.27 37.54 6.43	338 2.28 37.77 4.14	895 6.05
OTHER URBAN	70 0.47 29.41 4.98	104 0.70 43.70 1.99	64 0.43 26.89 0.78	238 1.61
LOWER RURAL	86 0.58 1.88 6.11	1318 8.90 28.84 25.22	3166 21.38 69.28 38.75	4570 30.87
LOWER URBAN	210 1.42 11.89 14.93	737 4.98 41.73 14.10	819 5.53 46.38 10.02	1766 11.93
UPPER RURAL	24 0.16 0.68 1.71	1247 8.42 35.59 23.86	2233 15.08 63.73 27.33	3504 23.67
UPPER URBAN	173 1.17 10.53 12.30	658 4.44 40.05 12.59	812 5.48 49.42 9.94	1643 11.10
FRONTIER	14 0.09 6.17 1.00	64 0.43 28.19 1.22	149 1.01 65.64 1.82	227 1.53
Total	1407 9.50	5227 35.31	8171 55.19	14805 100.00

Table IV.2 Individual Incomes by Source and Type of Organization

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
Wages and Salaries							
Government	3448.98	48.672	1.41	3353.58	3544.38	2.51	5525
Private	1136.62	27.582	2.43	1082.56	1190.68	2.50	14090
Public	4565.62	95.729	2.10	4377.99	4753.25	2.08	1621
Investment	7217.60	769.660	10.66	5709.07	8726.14	1.36	106
NGO	5472.22	1868.998	34.15	1808.99	9135.46	1.00	9
Foreign JV	13878.17	2985.229	21.51	8027.12	19729.22	1.21	18
Cooperative	2654.47	222.986	8.40	2217.42	3091.52	1.05	47
Lands and Real Estate Income							
Government	269.61	12.677	4.70	244.76	294.46	1.43	5525
Private	195.04	10.829	5.55	173.81	216.26	1.59	14090
Public	262.25	20.184	7.70	222.69	301.81	1.06	1621
Investment	306.38	122.485	39.98	66.31	546.45	1.23	106
NGO	25.33	13.578	53.60	-1.28	51.95	1.03	9
Foreign JV	310.00	157.175	50.70	1.94	618.06	0.79	18
Cooperative	317.17	89.348	28.17	142.05	492.29	1.01	47
Income from Financial Assets							
Government	48.28	6.612	13.69	35.32	61.24	1.19	5525
Private	35.16	7.875	22.40	19.72	50.60	1.07	14090
Public	50.35	12.866	25.55	25.13	75.57	1.02	1621
Investment	138.87	56.007	40.33	29.09	248.64	0.65	106
Foreign JV	333.33	175.483	52.64	-10.61	677.28	0.72	18
Cooperative	12.77	12.789	100.18	-12.30	37.83	1.03	47
Other Source Income							
Government	135.41	11.342	8.38	113.18	157.64	1.36	5525
Private	134.52	6.879	5.11	121.04	148.01	1.40	14090
Public	86.32	12.854	14.89	61.13	111.52	1.17	1621
Investment	292.93	143.374	48.95	11.91	573.94	1.14	106
Foreign JV	320.00	210.724	65.85	-93.02	733.02	0.91	18
Cooperative	169.36	93.266	55.07	-13.44	352.16	0.88	47

Table IV.3 Results of Probit Model on Probability of Being a Wage Earner

Independent Variable	Estimated Coefficient	Standard Error
INTERCEPT	0.1694	0.0573
REGION (Upper Rural)		
Cairo	0.8818	0.0367
Alexandria	0.9479	0.0474
Other Urban	0.6696	0.0857
Lower Rural	0.2074	0.0247
Lower Urban	0.3690	0.0339
Upper Urban	0.4296	0.0354
Frontier	0.2832	0.0732
SEX (Female)		
Male	0.7289	0.0303
AGE (34.97)	-0.0086	0.0011
RELATION (All Others)		
Head of Household	0.1171	0.0365
Spouse of HH Head	0.3704	0.0499
MARITAL STATUS (All Others)		
Never Married	-0.2605	0.0341
Presently Married	-0.1029	0.0393
ORGANIZATION (All Others)		
Public Sector	1.5119	0.1115
Private Sector	-1.1386	0.0216
INCOME GROUP (0 - 1000 £E / yr)		
1001 - 3000 £E / yr	0.5653	0.0535
3001 - 5000 £E / yr	0.3346	0.0337
5001 - 7000 £E / yr	0.1874	0.0315
7001 - 9000 £E / yr	0.1575	0.0323
9001 - 12000 £E / yr	0.0984	0.0337
HH AREA / MEMBER (20.92)	-0.0040	0.0007
HH MEMBERS ABROAD? (No)		
Yes	-0.1029	0.0425
DISTANCE (1.08 km)		
To Market	-0.0060	0.0016
DISTANCE (6.06 km)		
To Work	0.0032	0.0004
Likelihood Ratio Statistic	12152.29	
Likelihood Ratio Index	0.2189	

Table IV.3a Sample Probability Calculations, Response = Wage Employee

Probability evaluated for representative individual *	-0.2021
Change to representative individual response probability varying:	
REGION (Upper Rural)	
Cairo	0.1426
Alexandria	0.1684
Other Urban	0.0596
Lower Rural	-0.1210
Lower Urban	-0.0579
Upper Urban	-0.0342
Frontier	-0.0914
SEX (Female)	
Male	0.0828
AGE (34.97)	-0.2055
RELATION (All Others)	
Head of Household	-0.1563
Spouse of HH Head	-0.0573
MARITAL STATUS (All Others)	
Never Married	-0.3039
Presently Married	-0.2423
ORGANIZATION (All Others)	
Public Sector	0.3889
Private Sector	-0.6471
INCOME GROUP (0 - 1000 £E / yr)	
1001 - 3000 £E / yr	0.0189
3001 - 5000 £E / yr	-0.0713
5001 - 7000 £E / yr	-0.1288
7001 - 9000 £E / yr	-0.1405
9001 - 12000 £E / yr	-0.1637
HH AREA / MEMBER (20.92)	-0.2037
HH MEMBERS ABROAD? (No)	
Yes	-0.2423
DISTANCE (1.08 km)	
To Market	-0.2045
DISTANCE (6.06 km)	
To Work	-0.2008

*A representative income earner from the full sample is defined as a 35- year-old married female head of household working in an organization categorized as "private."

Table IV.4 Wage Regression Results for the two HIECS Samples of Wage Earners

1990/1991 HIECS	Coefficient	t	**1995/1996 HIECS**	Coefficient	t
INTERCEPT	1289.01	3.80	INTERCEPT	748.59	0.79
SEX			SEX		
If Male	744.60	15.16	If Male	817.49	15.63
AGE			AGE		
Less than 15	-272.31	-1.63	Less than 15	-143.75	-0.80
Less than 18	-121.37	-0.70	Less than 18	271.26	0.99
Less than 22	-101.73	-1.23	Less than 22	-107.19	-1.30
Less than 41	-605.36	-15.08	Less than 41	-1042.97	-22.03
EDUCATION			EDUCATION		
Illiterate	153.92	0.51	Illiterate	-202.36	-0.25
Reads, Writes only	415.31	1.37	Reads, Writes only	147.39	0.18
Less than university	719.17	2.36	Primary certificate	303.13	0.38
			Secondary certificate	584.45	0.73
			Secondary plus	956.60	1.19
University certificate	1799.80	5.85	University certificate	2240.94	2.79
University plus	4162.35	11.77	University plus	4781.76	5.67
			SCHOOL TYPE		
			Government normal	-133.26	-0.32
			Government Language	1001.95	0.48
			Private normal	1177.43	1.56
			SCHOOL LEVEL		
			Preparatory	117.28	0.12
			Secondary	1736.80	1.94
MARITAL STATUS			MARITAL STATUS		
Below age	-756.15	-3.70	Below age	-1371.84	-4.22
Never married	-701.24	-5.19	Never married	-898.26	-5.90
Engaged	-548.18	-2.69	Engaged	-425.03	-1.89
Married	74.98	0.59	Married	271.91	1.89
Divorced	239.67	1.01	Divorced	130.20	0.52
WORKER TYPE			WORKER TYPE		
Wage Earner	427.01	3.09	Wage Earner	1156.74	2.22
Self-employed With	-313.18	-1.52	Self-employed With	185.63	0.32
Self-employed Without	64.75	0.34	Self-employed Without	697.72	1.11
Household laborer	507.48	1.33			
OCCUPATION			OCCUPATION		
Scientist, Professional	-431.17	-6.50	General work	9237.40	10.60
Directors, Administration	1419.75	10.31	Industrial labor	10166.00	11.71
			Crafts	10077.00	11.63
Agriculture, Fishing	-156.25	-1.21	Agriculture, Fishing	9593.51	10.97
			Services, Retail	9613.35	11.11
Clerical	-258.35	-4.25	Clerical	9903.12	11.45
Sales	-519.62	-3.97	Technical assistant	10087.00	11.66
Services	-553.83	-8.14	Scientist, technician	9971.67	11.52
			Professional, legal	11194.00	12.87
Production	-292.25	-3.90	Military	12706.00	14.47

Table IV.4 Wage Regression Results for the two HIECS Samples of Wage Earners (cont.)

1990/1991 HIECS	Coefficient	t
ECONOMIC ACTIVITY		
Primary extractive	-335.16	-2.73
Primary industrial	1642.03	8.33
Secondary industrial	583.50	10.17
Machine industry	299.90	2.20
Construction	574.27	8.28
Retail trade	721.25	7.57
Transport	831.62	11.76
Private service	853.09	7.98
F-Statistic	111.806	
Adjusted R-square	0.2680	
Degrees of Freedom	10291	

1995/1996 HIECS	Coefficient	t
ECONOMIC ACTIVITY		
Primary extractive	-530.42	-3.91
Primary industrial	3146.67	12.60
Secondary industrial	96.27	1.18
Machine industry	343.99	1.96
Construction	253.93	2.68
Retail trade	290.28	2.81
Transport	848.81	9.59
Private service	964.07	7.78
ORGANIZATION		
Government	-9554.53	-19.27
Public	-8591.82	-17.28
Private	-8548.00	-17.23
Investment	-5804.73	-10.83
Cooperative	-9674.34	-16.42
NGO	-7535.53	-8.81
F-Statistic	143.841	
Adjusted R-square	0.3554	
Degrees of Freedom	12695	

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Chapter V. The Consumer Price Index

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V.A Introduction[1]

One of the stated goals of the technical assistance effort for the 1995/1996 HIECS was a review of the methodology and practice of measuring price inflation in Egypt. As written and agreed upon, the scope of work for the HIECS made it abundantly clear that the mere production of expenditure weights could not be considered the ultimate measure of success in the project. USAID believed that all the effort to produce precise and unbiased estimates for consumers' budgets would come to naught if those estimates were used in a faulty consumer price index. Recognizing that estimates would only be as good as the sum of their parts, awareness of the real variability and misrepresentation of average prices had to inform the very design of the HIECS.

On numerous occasions, I approached CAPMAS leadership with the request for component price data and access to the CPI processing staff to research some of the pressing concerns of price measurement: price aggregation patterns and variance, the effect of delaying the use of weights and the representation of the prices themselves, the pricing scheme and standards of data collection, the price instruments, processing problems, etc. Having some experience with the institutional constraints within CAPMAS, and (from more than four years with the US Bureau of Labor Statistics) a background sensitivity to the sources of bias in inflation measurement, my prior attitude was wholesale skepticism. The inflation numbers coming from CAPMAS reflected neither the location nor the scale of the index for the cost of living. The fact that I was not even permitted to research the issues (and thereby, however partly, fulfill the terms of the technical assistance agreement) only served to deepen my cynicism.

In early 1997, a number of circumstances brought economic data issues, and specifically the measurement of inflation, to the fore. The data debate renewed when the International Monetary Fund sent a delegation to scrutinize data for decision makers. The CPI representative of the IMF made concise recommendations and pointed to the need to exploit the present circumstances for corrective action. A new openness about data quality, timeliness, representation and access for policy and investment began to characterize the upper echelons of the Egyptian political leadership. Noteworthy was the formation of a ministerial round table devoted to data sharing. Supporting data sources were ready: the processing phase for the census of population neared its maturity, and preliminary estimates for population weights for outlet areas could be produced by May; the expenditure weights from the HIECS were by now stable and known quantities.

The time is clearly right for fixing the index, but the real question remains, can CAPMAS do it? Building a high-quality CPI index is an extremely complex undertaking under any circumstances. There is a snowball effect to correction; once parts of the price collection method or the aggregation scheme are properly adjusted, the estimates are changed in small but extremely important ways, so that the final outcome is often a matter not of scientific rigor but of political or administrative feasibility. Perhaps another way to phrase the question is: has CAPMAS delayed correction for too long?

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[1] This chapter owes much to the conversations I had with the IMF's Mission representative for the price index, John Sungren.

To underscore the critical importance of measuring inflation properly, we ask one simple question: "Have expenditures (incomes, or wages) increased or decreased in the 1990s?" Redrawing the table from Chapter II, it is clear that the answer depends on the CPI.

Percentage Changes in Median Expenditures, Incomes, and Wages, 1990/1991 - 1995/1996

Estimate for Average Household	1990/1991 - 1995/1996 % Increase (+ or -)
Median Expenditures, Unadjusted	+ 27.61%
Median Expenditures, Adjusted by All-items CPI and Equivalence	- 30.03%
Median Incomes, Unadjusted	+ 39.23%
Median Incomes, Adjusted by All-items CPI, and Equivalence	- 23.80%
Median Wages & Salaries, Unadjusted	+ 40.39%
Median Wages & Salaries, Adjusted by All-items CPI	- 22.19%
Female Median Wages, Unadjusted	+ 52.29%
Female Median Wages, Adjusted by All-items CPI	- 15.99%
Male Median Wages, Unadjusted	+ 38.88%
Male Median Wages, Adjusted by All-items CPI	- 23.17%

The drastic declines shown in real incomes and expenditures between the two survey periods are dependent on the official (mis)measurement of inflation. Poverty results over time (the Foster Greer Thorbecke indices of Chater III), as well as wages adjusted for the qualities of human capital (Chapter IV), are similarly sensitive to the way the nominal value of money is deflated to account for price increases.

It is difficult to state when, and how, the measurement of inflation diverged from actual price changes. The official CPI produced by CAPMAS probably overstated inflation for the first three years of the decade, and then subsequently began to understate it, to the point of the current, absuredly low, rates. In terms of policy prescriptions, the degree and the mechanism of the bias itself is less important than the de facto mismeasurement.

V.B The Cost of Living and Measurement

The theoretical relation between a price index and the true cost of living should introduce a discussion of the measurement of the cost of living. CAPMAS uses a Laspeyres-type estimator as Egypt's Consumer Price Index

(CPI).[2]

$$(1) \qquad I_L = \frac{P_1 \times Q_0}{P_0 \times Q_0}$$

The current price is multiplied by fixed quantities and divided by the previous price multiplied by the same fixed quantities.

The Laspeyres price index is only an approximation to the true cost of living because it assumes that quantities are fixed from time period to time period. In the real world, consumers respond to changes in relative prices by substituting away from more expensive goods, depending on the consumer's opportunity to substitute, the nature of the good whose price has changed, and other things. Most of the problems of measuring price changes can be traced to the need to assume that consumer behavior is constant over time when it really is not. Relative prices change, and a single consumption basket is a rather restrictive interpretation for a constant living standard. In the case of the Laspeyres, since base period prices do not change, the same living standard can be secured along the same proportional budget - the Laspeyres index is an upward bound on the true cost of living. Another index, the Paasche, allows quantities to change with prices each period. The Paasche estimator produces an index which is a lower bound on the cost of living.[3]

$$(2) \qquad I_P = \frac{P_1 \times Q_1}{P_0 \times Q_1}$$

There is no such thing as *the* price index because the true cost of living depends on reference utilities which are different for different households and constantly changing. Because cost functions vary with utility in nearly all cases,[4] if expenditure levels are different then price changes will

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[2] One thing to note from the outset is that in CAPMAS official publications, the index is somewhat confusing if the full index is being represented. The numerator should be the sum of all shares times the price relatives of all shares. The denominator should be the weight of all items in the fixed basket. Further (see below), instead of averaging the price relatives, a less biased estimator would be a sum of all prices in the numerator divided simply by the sum of previous prices in the denominator.

[3] It is actually possible for the Paasche Index to exceed the Laspeyres. See Deaton and Muellbauer (1989), p. 172.

[4] The exception occurs under conditions of homothetic preferences (identical indifference curves) and an invariant utility/consumption relationship. In this case, there is a true cost of living index, and it lies between the Paasche and the Laspeyres.

affect cost of living differently for different persons.

Regardless of whether preferences are homothetic, substitution will always create differences between cost of living indices, and the extent of substitution is an indicator of the degree the CPI deviates from the true cost of living. In Egypt, as in other developing countries, poor people have fewer choices, so their substitution is fixed by their circumstances. When the price of bread rises, they cannot as easily go out and buy cake: their dietary components are fundamental - calories and nutrition derived mainly from wheat grains. The situation is fully unlike what rich households face: when Coca Cola becomes more expensive relative to Pepsi, consumers just buy less Coca Cola. Different consumption habits engender substitution and make the CPI less relevant. The problem is especially acute when comparing prices across countries, because consumption habits have a broader range and are much less homogeneous.

V.C Application of Sources of Bias to the Present Context

This section outlines the basic problems with the Egyptian CPI index, not necessarily in the order of importance (or notoriety).[5] It is meant as a checklist of items for recommended action should CAPMAS undertake an all-out effort to follow best statistical practices.

V.C.1 Base Year

Before January 1996, the weights used in Egypt's CPI were from the 1981/1982 "Family Budget Survey" and they lagged 5 years behind its base year of 1986/1987. When the 1990/1991 weights were first incorporated in January of 1996, CAPMAS did not update the base year. There is not much to say about this except that the index produced from January 1996 onward was a compounded calculation involving replaced weights. Such a situation would be easily remedied by making the base period 1990/1991, but since the 1995/1996 weights are ready, the preferred option is to rebase to 1995/1996.

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[5] Diewert (1994) identifies four sources of bias in the CPI of the United States which bear examination in the present context.

1) substitution bias - as prices rise, consumers substitute cheaper goods for more expensive ones.

2) outlet substitution bias - consumers may also stop patronizing the store where they used to buy the (now more expensive) good. The prices which enumerators continue to collect from those more expensive outlets do not always reflect current buying patterns - they are upward biased.

3) commodity mis-identification bias (Diewert calls this "superficial repackaging bias") - it is possible to imagine a statistical agency defining a good as "new" when, in fact, it performs the exact same functions as another good in the market basket, only much more cheaply, and much more efficiently. The bias occurs because the drop in price is not immediately reflected in the index.

4) new goods bias - the reality is that a market basket is ever expanding while a price index requires a fixed market basket. The set of goods available to a consumer at any one time is more valuable than is reflected in the official CPI.

V.C.2 Implementation of Current Weights

CAPMAS's experience provides an intuitive example for the costs of institutional inertia. A considerable effort was made in the last survey to implement the weights faster into the CPI. Fieldwork was completed on October 1, 1991. The weights were prepared by the analysis phase in December of 1993, but were not brought into the official index until January of 1996. This means that more than three years passed before making use of the "new" information. By that time the market basket was no longer current and the index no longer represented what Egyptians purchase. Many changes had occurred in consumer spending habits, and for a variety of reasons. Still this was a considerable improvement over the previous survey: it was not until July of 1988 that the weights from the 1980/81 HIECS were used.

As countries develop, their households become richer and are able to spend larger shares of their budgets on luxuries. If price changes over time include relative price changes between luxuries and necessities, then the cost of living index becomes a function of the relative economic standing of households, and no longer properly reflects the "cost-of-living."

To reiterate, in rapidly changing economies such as Egypt, delay in incorporating budget share weights from the HIECS in the price index means that the substitution bias built up since the last implementation of weights remains. On the day that the data from the last validated questionnaire was processed - November 21, 1996 - CAPMAS had in its possession the least biased and most precise representation of the annual expenditure shares of Egyptian consumers possible, under current circumstances. Each additional day of delay has effectively removed, bit by bit, the relevance of the HIECS for eliminating substitution bias. Studies have found that the length of delay in incorporating current weights is positively related to the size of the bias.

V.C.3 Representation of New Weights

Since 1990/1991 new items have gained importance in consumer budgets and old items have lost importance. The most efficient selection of market basket goods is an optimal tradeoff between the size and precision of representation of items and the administrative burden associated with pricing the basket. CAPMAS sacrifices variety in its concentration on item types. A number of the HIECS budget items have such small weights that they can effectively be deleted from pricing lists. Some goods may be selected despite their small weight due to unrelated criteria, such as strategic importance, cultural or geographical differences in taste, etc.

Other goods require particular attention because of changing realities. Utilities and building materials prices have been a proxy for housing costs, but with eventual rent decontrol the need for careful outlet selection and proper imputation of owner's equivalent rent become obvious. There are also theoretical concerns about separating the investment component of housing expenditure from its consumption components. Private automobiles prices should reflect more than status, and CAPMAS should move beyond imputations that equate value with the costs of petrol and oil, maintenance, and tires. The quality of education and medical care has certainly changed over the years. New inventory goods, such as computers, faxes, and cellular phones, have already changed the daily communication habits of many Egyptian households.

Because CAPMAS has always made the assumption that HIECS survey estimates were self-weighted, they have never population-weighted the expenditure weights in the basket, consequently the overall index is a summation of biased degrees of area representation. The recommendation not to inflate expenditure weights by the HIECS sample weight was a deliberate recognition that more current information would soon be available. With the preliminary population census data expected in May of 1997, CAPMAS has the opportunity to calculate the most up-to-date estimate of the average expenditure weight per person. Another possibility would be to discontinue the practice of giving equal weight to persons, and aggregate based on sales, or some other measure of size.

According to 95/96 HIECS estimates, the overall food share, for example, has fallen by 3.4%. But all of the other group weights have also changed. Table V.1 shows the pattern of changes to groups weights. The weights sum to 100.0 for both the 1990/1991 HIECS and the 1995/1996 HIECS. The last column is the relative difference. The weight of vegetables, for example, has fallen by 18.15%, the utilities weight is 21.18% higher, etc.

More can be said about representation based on the weight comparison. If unit prices are calculated for all the goods whose expenditure values can be divided by their respective quantities (there are 98 of these) in both time periods, the price relatives, though biased, provide some information about the way the current index has tracked price changes over the five years. The Törnqvist Index is then

$$(3) \qquad \log P(p^1, p^0; T) = \sum_k \frac{1}{2}(w_k^1 + w_k^0) \log\left(\frac{p_k^1}{p_k^0}\right)$$

The Törnqvist Index for the 98 items having unit prices is 708.36, indicating that these items have risen in price by a great deal more than all the items (the CAPMAS All-items index in March, 1996 was approximately 346.0). In order to compare the direction and extent of bias one would have to recalculate CAPMAS's CPI for the same items, which is not possible. This illustration suggests only that alternate estimators can produce results which differ greatly from the overall index.

V.C.4 Pricing

CAPMAS canvasses 26 governorates covering prices in urban areas each month and in rural areas every other month. There are 6 questionnaires categorized for the type of good to be collected and where (food or non-food, rural or urban). Pricing is done as close to the middle of the month as possible. Although actual purchase is recommended, especially for single-use, low-cost items, enumerators do not purchase the good.[6] CAPMAS headquarters

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[6] In countries where bargaining is very important and where single-use items predominate in consumers' diets and are readily available in markets, the difference between a recorded price and an actual purchase price can be a considerable source of bias. Bargaining produces a lower price. Goods not bargained for are higher priced partly because both parties see the benefits

receives all questionnaires from the governorates by the 23rd of the month. The index is ready within one month (i.e., by the middle of the following month). The enumerators collect prices from three outlets for every item on the form in every governorate. There are indices published for the main, strategic, items, by month. When all of the current month's prices are received from the field, they are entered into the computer. Additionally the prices of the same month but one year before are entered into the database to make a match with the current item codes.

The best estimate for the price of any item uses information from many different sources and many different varieties. To get to the "price of men's athletic shoes," it is not enough to visit two sporting goods stores, sum the total paid for two pairs of sneakers and divide by two. The range of prices will be broader the more broadly defined the item is, and there is a range of price estimates for all items. Even an item so narrowly defined as rice should be afforded more degrees of freedom to arrive at a figure which will become a component of a larger index for the price of "starches." Rice may be of many varieties. Statistically, a minimum of five estimates are needed to measure the price of the most homogeneously defined item (table salt, for example). As the item takes on heterogeneous aspects, the argument for more degrees of freedom becomes more compelling. To improve on estimates, then, both varieties and outlets have to be increased. Adding varieties mainly entails making changes to the price forms and training price-takers. Preliminary population census data can be used for framing and increasing outlet selection.[7] It is more important to select a random outlet with a known probability than to assure that certain outlets (kiosk, bakery, private store, coop or public shop, supermarket) are represented.

Generally CAPMAS pricers have not given detailed attention to item price estimation because the pricing forms are not adequate. Instructions on the forms refer to the need to avoid substitution of outlet, brand, and item number and only vaguely offer the suggestion to discuss with the supervisor the need to replace the item when it disappears from the outlet. Because of the near-infinite variety of some goods, true average prices either become theoretical constructs, or the price enumerator will admit defeat and end up putting a price of 0.00 in the column. With so many zeros, the decision of which goods to price in a given month appears arbitrary. In all survey data collection, indeed in the very nature of the process of collecting information, the tendency is to get less detail, to be less specific and less explicit. If enumerators are given a choice of the category "Other," they will categorize things that way an inordinate number of times. The choice of a substitute for the item-to-be-priced is often more of an art than a science, but it is facilitated by an easy to use form.

Figures V.1 and V.2 are examples of different pricing forms - from Belize and Kazakhstan. They can be compared with an example of Egypt's form, Figure V.3. The example shown for Belize is the "Miscellaneous" form, which was constructed with prices for services, such as transportation and

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of preserving the "solidarity of prestige."

[7] In practice the selection of outlets may favor an inverse correlation with the cost of petrol and the opportunity cost (in time units) of administration, now heavily oriented to the population census.

telephone calls, in mind. Note especially how flexible the form is with respect to how price-takers might react to changes in item specifications, how accommodating the form is to various additional descriptions of the item, and how portable the information can become from one period to the next. The "Recollection Code" is crucial for showing this. A "Complete" pricing occurs when a successful match is made with the previous item and the current price is noted. The match may be faulty (i.e., "with specification changes") yet the price may still be comparable. If specifications (unit, quantity, brand, origin, etc.) change in such a way as to make the price non-comparable, the price in recollection is a "Substitution." Similarly, the recreated form for women's sweaters from Kazakhstan is very easy to use under most fluid field circumstances. The form allows the enumerator to think and be creative about keeping quality constant. The circled converted prices are not used in the calculation of the price relative for that month because the items were determined to be not fully comparable. In contrast, Egypt's form is static and rigid - there are no opportunities to deviate from the prescribed item description, and the descriptions themselves are not adequate for the purpose of making distinctions between varieties of certain items which may be substantially different. If the place of origin, size of weave, appearance, or quality of "gabardine" differs in any way from one outlet to another there is no recourse to account for it, and the enumerator may just as well be pricing a different good.

A number of examples might illustrate whether two successive prices are truly comparable, i.e., whether a computed price relative is really valid. CAPMAS enumerators should be briefed on the *common violations of comparisons*:

1) The relative of prices for similar varieties of an item collected from different outlets
2) The relative of prices for similar varieties from different countries of origin
3) The relative of prices for different brands of an item produced in the same country
4) The relative of prices for different sizes (quantity, volume, weight) of the same brand (This violation is relaxed in the case of very small differences in size. Also, the price relative for different sizes of the same variety - comparing men's medium versus men's large T-shirts, for example - would be meaningful.)

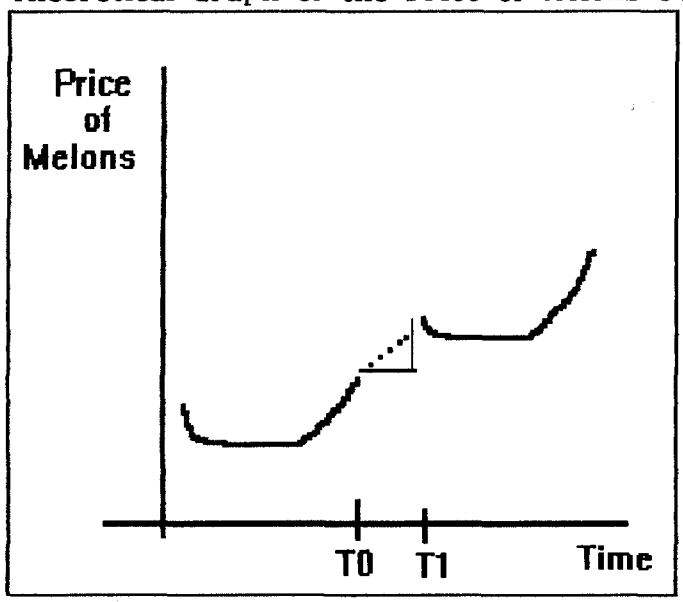
Instead of the arithmetic average of price quotes to estimate a monthly item price, the International Labor Organization (ILO) has recommended the Geometric mean as the method of calculating the elementary aggregation. The Geometric Mean is derived in the appendix. Consider 5 varieties of a certain item, and their prices:

There is some difficulty in the choice of which goods to price monthly and which goods to price quarterly, and the latter, especially, are under review. Because most people get paid at the beginning of the month, pricing takes place on the 15th. But it is entirely inappropriate to price perishables and seasonal items on one day like this. Fruits and vegetables prices exhibit an irregular pattern which is not picked up in one data point. Weekly collection is being recommended for such goods.

There is a special need for imputation to link seasonal items which are on-season and off-season at various times of the year. Out-of-stock items are similar. Such prices often exhibit a U-shape during their on-market cycle,

then when they disappear from the market, there is a break in continuity, as shown by the drawing for melon prices below.

Theoretical Graph of the Price of Melons over Time



At time T1, maybe a new season six months later, the overall prices are higher as well. The percentage change of all other fruits should be applied to melon prices from T0 to T1, and when melon becomes available again the series will self-correct. The decision to impute hinges on the nature of the good being truly seasonal or truly out of stock; if the item is merely sparsely available throughout the year, or only temporarily out-of-stock, it should be priced as other goods. CAPMAS price enumerators have no experience imputing values based on price changes of similar items or in using imputed prices to fill in missing cells for monthly group index calculations. Not imputing gives a permanent downward bias. Dealing with seasonal items in the Egyptian CPI is a matter of much importance and should be given special consideration in the new index.

V.C.5 Estimator

Unless sampling and non-sampling errors cancel it out, the Laspeyres Index formula has a natural upward bias. Moreover, a chained Laspeyres will place an even larger upward bound on the cost of living, and time will accentuate the drift. Finally, the Laspeyres estimator is sensitive to goods with high price elasticities of demand (such as fruits and vegetables), or goods that are frequently put on sale (such as clothing). Elasticities also rise the more narrowly the good is defined. A weighted average of price relatives in basic aggregation has been found to overstate price increases, and this effect will be greater the higher the price volatility. (At the BLS, a weighted ratio of average prices has been found less biased in the limit.)

An estimate of estimator bias was not possible because CAPMAS refused to provide raw index price data for analysis. However, the prescription for rationalizing the index estimator in the future is still valid and bears mentioning. This would involve comparing the extent of estimator bias in the

present CAPMAS Laspeyres with alternate indices. To calculate the substitution effect of the CAPMAS Laspeyres Index, the actual (ex post) monthly fixed-base index might be compared to one of the superlative indices. The Fisher Ideal Index, mathematically the geometric mean of the Paasche and Laspeyres Indices, would serve this purpose very well if not for the difficulty of constructing the Paasche. The Laspeyres estimator is popular in Egypt and in other developing countries because its calculation requires only expenditures in the base period, and then relative prices for subsequent calculation. The Paasche Index requires the collection of expenditure data in each period, a prohibitive undertaking for most statistical agencies.

V.D A Simple Spreadsheet for the Calculation of Price Change

It is being recommended that CAPMAS begin to use the chained version of the Laspeyres. This will allow linking of the indices from one month to the next, not merely from the current month to that month one year ago. Index users will be able to represent changes in the cost of living over any length of time, not merely for the past year. It will eliminate the need to track the old index with the new for one year. Monthly linking will also be less sensitive to the base period conditions. Finally, linking supports the greater emphasis being placed on compliance with international standards of data comparison. This strategy reflects well the idea of a dynamic process of index calculation on which multilateral donors base their international standards of data access and dissemination. The change can be made with a minimal amount of disruption to administrative procedures - it entails collecting both old and new items from both old and new outlet frames for one month - but the dividends for the institution will be great. June 1997 should be the link month, and the first new index quarter should then be July - September of 1997.

Figure V.4 shows the simple spreadsheet calculations of a chained Laspeyres price index.[8] Actual HIECS description, code, and weight data for the meat and poultry group are used as the row stubs. All of the necessary column calculations appear.[9]

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[8] I owe thanks to Dale Smith for the permission to reproduce and use this spreadsheet. His notes provided background for the numerical example in the appendix as well.

[9] The top part of the spreadsheet is for the most specific aggregation level, the items. The bottom part is for group calculations. The spreadsheet will therefore have as many rows are there are items and group codes. After column I is calculated, it is saved for next month's column D. Most of the individual calculations are straightforward. Imputations are simply and properly facilitated by the use of the conditional tests. The special "@IF" statements have the syntax:
@IF(test-condition, number-if-true,number-if-false)
so that the statement @IF(E17>0,E17*F17,0) means that the number appearing in that cell will either be E17*F17 or 0.00, depending on whether E17 is greater than 0.00.
Another symbol which appears three times on the spreadsheet is the dollar sign ("$"), as in the column equation at cell row 50, column K. This is

V.E Dissemination and Publication

It is possible to apply remedies in CAPMAS's price measurement measure-for-measure which will avoid the political controversies of wholesale changes in the price index itself. Many of the criticisms end-users will have about methodological changes in index construction can be dampened by the proper outreach from publications. A special CPI Bulletin should be devoted to the link month with a full explanation of how and why component indices are being changed for special commodity groups, how the new index can be conveniently compared with the old one, perhaps a recalculation of back indices using the new methods and index deflation factors ("splice ratios"). Other, less volatile, versions of the overall index (excluding items needing imputation or housing, for example) can be presented as workable alternatives. There is a clear need for a "gradualist" representation of the impact of the changes. Any reader, monitor, evaluator of Egyptian economic conditions will appreciate the additional information, and will begin to respect CAPMAS for its newfound commitment to customer satisfaction.

V.F Conclusion

The main recommendation regarding price measurement in Egypt is a very simple one: the weights from the 1995/1996 HIECS should be incorporated into CAPMAS's index immediately! There is no reason or excuse for delaying to use these weights. Caution is no longer a reason, as expenditure bounds and critical estimates have been shown to be asymptotically precise at given levels of statistical significance. This one recommendation, if properly implemented, entails changes to many other aspects of inflation measurement: the choice of items and weights, the pricing forms and how enumerators will adapt to new pricing techniques such as imputation, the use of simple spreadsheet technology to link the monthly index, and how all the changes will be presented to ultimate data users. The Laspeyres estimator CAPMAS uses is a common, acceptable one, but it should be linked.

A secondary recommendation is for further study and research, ultimately for the purpose of improving CAPMAS's ability to measure inflation. Alternate estimators (such as the Geometric, above) should be calculated to see how they track the official index. This would be a very simple point of departure; CAPMAS has all of the resources and there are plenty of good economists more than willing to undertake applied research into the CPI. Alternate price indices would be published, preferably, for the scrutiny of the wider statistical community.

Unfortunately, because the present index is grossly mismeasured, the prescriptions for making the situation better call for starting over. Even the proposed temporary remedies appear overly ambitious to be accomplished in the time period which the IMF has suggested. A full-time, on-the-spot technical assistance team would require at least six months to make the proper and necessary changes detailed above, and to transform the index into a state-of-the-art measure of representative changes in the cost of living would

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"+J50/J$44" which means that the computer will divide the number in cell J50 by the number in cell J44. The denominator will not change; the dollar sign makes it a constant divisor.

entail additional time for learning effects and the routinization of skills. The importance of measuring levels of living cannot be overstated, and the donor community should respond to CAPMAS's technical needs expeditiously and fully, because there will likely never be a better opportunity.

Appendix V.A An Alternate Estimator

Assume that a set of quantities purchased by representative consumers (the market basket) remains fixed and that those quantities are unaffected by changes in relative prices. We might posit a preference function for consumers that is not fixed-proportion based (Paasche or Laspeyres), but instead allows substitution between goods. In the statistical appendix, a price index based on the Geometric Mean is derived from the assumption of Cobb-Douglas preferences. A cost of living index based on the Geometric Mean is compelling in Egypt because consumer substitution into cheaper goods is rapid, given the large share of food in household budgets, the predominance of agricultural production in household accounts, and the overall importance of agriculture in the macro-economy. Fruits and vegetables are characterized by short-run price volatility which is not as efficiently estimated by a fixed-proportion index.

V.A.1. A numerical example

Suppose there are two periods and two goods and a consumer exhibits a Cobb-Douglas utility function

$$(4) \qquad U = X_1^{\alpha_1} X_2^{\alpha_2}$$

First note that ($\alpha_1 + \alpha_2 = 1$). A cost of living index is a ratio of a two period expenditure function

$$(5) \qquad I_{col,t,0} = \frac{E_t}{E_0}$$

The expenditure function is minimized in both periods subject to utility being greater than or equal to some specified value

$$(6) \qquad E = \min\ (P_1X_1 + P_2X_2)$$

subject to

$$(7) \qquad U = X_1^{\alpha_1} X_2^{\alpha_2} \geq \overline{u}$$

Minimization proceeds using the standard Lagrangian:

$$(8) \qquad \mathcal{L} = P_1X_1 + P_2X_2 - \lambda\ (X_1^{\alpha_1}\ X_2^{\alpha_2} - \overline{u})$$

$$(9) \qquad \frac{\partial\mathcal{L}}{\partial X_1} = P_1 - \lambda\ \alpha_1\ X_1^{\alpha_1-1}\ X_2^{\alpha_2} = 0$$

$$(10) \qquad \frac{\partial\mathcal{L}}{\partial X_2} = P_2 - \lambda\ \alpha_2\ X_2^{\alpha_2-1}\ X_1^{\alpha_1} = 0$$

$$(11) \qquad \frac{\partial\mathcal{L}}{\partial \lambda} = X_1^{\alpha_1}\ X_2^{\alpha_2} - \overline{u} = 0$$

solving eqs. (9) and (10) for λ

$$(12) \qquad \lambda = \frac{P_1}{\alpha_1\ X_1^{\alpha_1-1}\ X_2^{\alpha_2}}$$

$$(13) \qquad \lambda = \frac{P_2}{\alpha_2\ X_2^{\alpha_2-1}\ X_1^{\alpha_1}}$$

setting eqs. (12) and (13) equal

$$(14) \qquad \frac{P_1}{\alpha_1\ X_1^{\alpha_1-1}\ X_2^{\alpha_2}} = \frac{P_2}{\alpha_2\ X_2^{\alpha_2-1}\ X_1^{\alpha_1}}$$

and solving for X_2

$$(15) \qquad X_2 = \frac{P_1\ \alpha_2}{P_2\ \alpha_1}\ X_1$$

substituting eq. (15) into eq. (11) and solving for X_1^*

$$\bar{u} = X_1^{*\alpha_1} \left(\frac{P_1\alpha_2}{P_2\alpha_1} X_1^*\right)^{\alpha_2}$$

$$\bar{u} = X_1^{*\alpha_1} \left(\frac{P_1\alpha_2}{P_2\alpha_1}\right)^{\alpha_2} X_1^{*\alpha_2}$$

$$\bar{u} = X_1^{*\alpha_1 + \alpha_2} \left(\frac{P_1\alpha_2}{P_2\alpha_1}\right)^{\alpha_2}$$

and since ($\alpha_1 + \alpha_2 = 1$),

$$\bar{u} = X_1^* \left(\frac{P_1\alpha_2}{P_2\alpha_1}\right)^{\alpha_2}$$

$$(16) \qquad X_1^* = \bar{u} \left(\frac{P_2\alpha_1}{P_1\alpha_2}\right)^{\alpha_2}$$

and since X_1^* and X_2^* are symmetric

$$(17) \qquad X_2^* = \bar{u} \left(\frac{P_1\alpha_2}{P_2\alpha_1}\right)^{\alpha_1}$$

substituting eq. (16) and eq. (17) into the expenditure function

$$(18) \qquad E = P_1X_1^* + P_2X_2^*$$

$$= P_1\ \bar{u} \left(\frac{P_2\alpha_1}{P_1\alpha_2}\right)^{\alpha_2} + P_2\ \bar{u} \left(\frac{P_1\alpha_2}{P_2\alpha_1}\right)^{\alpha_1}$$

$$= P_1\ \bar{u}\ \frac{P_2^{\alpha_2}}{P_1^{\alpha_2}} \left(\frac{\alpha_1}{\alpha_2}\right)^{\alpha_2} + P_2\ \bar{u}\ \frac{P_1^{\alpha_1}}{P_2^{\alpha_1}} \left(\frac{\alpha_2}{\alpha_1}\right)^{\alpha_1}$$

$$= P_1^{1-\alpha_2}\,\overline{u}\,P_2^{\alpha_2}\,\left(\frac{\alpha_1}{\alpha_2}\right)^{\alpha_2} + P_2^{1-\alpha_1}\,\overline{u}\,P_1^{\alpha_1}\,\left(\frac{\alpha_2}{\alpha_1}\right)^{\alpha_1}$$

since $1 - \alpha_2 = \alpha_1$ and $1 - \alpha_1 = \alpha_2$

$$= P_1^{\alpha_1}\,\overline{u}\,P_2^{\alpha_2}\,\left(\frac{\alpha_1}{\alpha_2}\right)^{\alpha_2} + P_2^{\alpha_2}\,\overline{u}\,P_1^{\alpha_1}\,\left(\frac{\alpha_2}{\alpha_1}\right)^{\alpha_1}$$

$$= \overline{u}\,P_1^{\alpha_1}\,P_2^{\alpha_2}\,\left[\left(\frac{\alpha_1}{\alpha_2}\right)^{\alpha_2} + \left(\frac{\alpha_2}{\alpha_1}\right)^{\alpha_1}\right]$$

$$= \overline{u}\,P_1^{\alpha_1}\,P_2^{\alpha_2}\,\left[\frac{1}{(\alpha_2)^{\alpha_2}\,(\alpha_1)^{\alpha_1}}\right]$$

$$(19) \qquad E = \frac{1}{(\alpha_1)^{\alpha_1}\,(\alpha_2)^{\alpha_2}}\,\overline{u}\,P_1^{\alpha_1}\,P_2^{\alpha_2}$$

$$(20) \qquad I_{col,0,t} = \frac{E_t}{E_0} = \frac{\dfrac{1}{(\alpha_1)^{\alpha_1}\,(\alpha_2)^{\alpha_2}}\,\overline{u}\,P_{1,t}^{\alpha_1}\,P_{2,t}^{\alpha_2}}{\dfrac{1}{(\alpha_1)^{\alpha_1}\,(\alpha_2)^{\alpha_2}}\,\overline{u}\,P_{1,0}^{\alpha_1}\,P_{2,0}^{\alpha_2}}$$

Eq. 21 is a geometric mean of the price relatives.

$$(21) \qquad I_{col,0,t} = \left(\frac{P_{1,t}}{P_{1,0}}\right)^{\alpha_1}\left(\frac{P_{2,t}}{P_{2,0}}\right)^{\alpha_2}$$

$$= \frac{P_{1,t}^{\alpha_1}\,P_{2,t}^{\alpha_2}}{P_{1,0}^{\alpha_1}\,P_{2,0}^{\alpha_2}}$$

To fix things mathematically and for intuition's sake, an example will help, using the following basic data:

Period	Good 1			Good 2			Expenditure
	Price	Quantity	Weight	Price	Quantity	Weight	
	P_1	X_1	α_1	P_2	X_2	α_2	M
0	15	5	0.75	2.5	10	0.25	100
t	30	2.5	0.75	2.5	10	0.25	100

Note that $P_{1,0} = 15$; $\alpha_{2,t} = .25$; etc.,
$M_0 = P_{1,0} X_{1,0} + P_{2,0} X_{2,0} = 100$, and
$P_{1,0} X_{1,0}/M_0 = .75$

Using the data above, eq. (21) is

$$I_{col,0,t} = \left(\frac{30}{15}\right)^{.75} \left(\frac{2.5}{2.5}\right)^{.25} = 1.6818$$

The common Laspeyres Index is

$$(22) \qquad I_{L,0,t} = \frac{P_{1,t} X_{1,0} + P_{2,t} X_{2,0}}{P_{1,0} X_{1,0} + P_{2,0} X_{2,0}}$$

$$= \frac{P_{1,0} X_{1,0} \left(\frac{P_{1,t}}{P_{1,0}}\right) + P_{2,0} X_{2,0} \left(\frac{P_{2,t}}{P_{2,0}}\right)}{P_{1,0} X_{1,0} + P_{2,0} X_{2,0}}$$

$$(23) \qquad I_{L,0,t} = \alpha_1 \left(\frac{P_{1,t}}{P_{1,0}}\right) + \alpha_2 \left(\frac{P_{2,t}}{P_{2,0}}\right)$$

Either eq. (22) or eq. (23) can be used to calculate the Laspeyres Index. Eq. (23) is a weighted arithmetic mean of the price relatives. Using eq. (22), we have

Using eq. (23),

$$I_{L,0,t} = \frac{(30)(5) + (2.5)(10)}{(15)(5) + (2.5)(10)} = \frac{175}{100} = 1.7500$$

$$I_{L,0,t} = .75\left(\frac{30}{15}\right) + .25\left(\frac{2.5}{2.5}\right) = 1.5 + .25 = 1.7500$$

The Laspeyres index is larger than the Cobb-Douglas.

Returning to the Cobb-Douglas utility function, the fixed level of utility in the initial period is $(5)^{.75}\ (10)^{.25} = 5.496$. Combinations of X_1 and X_2 will provide this fixed level of utility along the indifference curve for this consumer. In the subsequent period, a price change has occurred. The combination of X_1 and X_2 - the "income-compensated demand values" - necessary to keep the consumer indifferent (with the same utility) after the price change can be derived from eqs. (15) and (16):

$$X_1^* = \bar{u}\left(\frac{P_2\alpha_1}{P_1\alpha_2}\right)^{\alpha_2} = 5.946\left[\frac{(2.5)\ (.75)}{(30)\ (.25)}\right]^{.25} = 4.20$$

$$X_2^* = \bar{u}\left(\frac{P_1\alpha_2}{P_2\alpha_1}\right)^{\alpha_1} = 5.946\left[\frac{(30)\ (.25)}{(2.5)\ (.75)}\right]^{.75} = 16.82$$

Table V.1 Comparison of Major Group Weights, 1990/1991 and 1995/1996 HIECS

a. Code	b. Group	c. 1990/1991 Weight	d. 1995/1996 Weight	Rel. Diff (%) =(d. - c.)/.c
0199	CEREALS	11.1319	10.1344	-8.96
0299	PULSES	1.4983	1.3685	-8.66
0399	VEGETABLES	6.3575	5.3807	-15.36
0499	FRUITS	2.8874	3.1582	9.38
0599	MEAT-POULTRY	12.6424	12.7311	0.70
0699	FISH	2.4894	2.6698	7.25
0799	EGGS	1.3138	1.4523	10.54
0899	MILK & DAIRY	4.3805	4.0260	-8.09
0999	OILS	4.1808	4.2925	2.67
1099	SUGARS	2.4917	2.3778	-4.57
1199	OTHER FOODS	2.2489	2.1653	-3.72
1299	TEA & COFFEE	1.4871	1.2645	-14.97
1399	NON-ALCOHOLIC	0.3121	0.3142	0.67
1499	ALCOHOLIC DRINKS	0.0058	0.0020	-65.52
1599	TOBACCO & DRUGS	4.4176	3.7452	-15.22
1699	READYMADE	6.4242	7.3403	14.26
1799	FOOTWEAR	1.6717	1.8092	8.23
1899	HOUSING	6.4169	6.2909	-1.96
1999	UTILITIES	3.0014	3.8080	26.87
2099	FURNISHINGS	2.0609	1.8409	-10.67
2199	CLEANING	2.3161	2.3018	-0.62
2299	HH SERVICES OUT	0.1088	0.1525	40.17
2399	HH SERVICES IN	0.1515	0.2467	62.84
2499	MEDICAL	4.0553	3.8157	-5.91
2599	TRANSPORT EQPT	0.6458	0.5667	-12.25
2699	PRIV TRANSPORT	1.5934	1.2643	-20.65
2799	PUBLIC TRANS	2.3598	2.3089	-2.16
2899	COMMUNICATION	0.4421	0.5399	22.12
2999	EDUCATION	2.4500	3.9748	62.24
3099	ENTERTAINMENT	0.2899	0.2383	-17.80
3199	CULTURE, SPORT	2.3566	3.3306	41.33
3299	FOOD AWAY	1.8408	1.1883	-35.45
3399	PERSONAL EQPT	0.6724	0.7088	5.41
3499	PERSONAL CARE	2.2834	2.4482	7.22
3599	OTHER, NEC	1.0106	0.7428	-26.50

Figure V.1 Example of a Price Collection Form, Belize

BELIZE

CSO MINISTRY OF FINANCE BELMOPAN

FORM IV
MISCELLANEOUS

MONTH:_____	ITEM	ESTABLISHMENT:	PRICE
YEAR:_____	CODE:_____	CODE:_____CITY:_____	_____
DAY:_____	NAME:_____	NAME:_____	PROCESSING CODE 1. COMPARABLE 2. NOT COMPARABLE
PERIOD:_____	_____	ADDRESS:_____	3. NO PRICE AVAIL.

RECOLLECTION CODE	CHARACTERISTICS	PREVIOUS	ACTUAL
1. COMPLETE, NO SPEC CHANGES 2. COMPLETE, WITH SPEC CHANGES 3. SUBSTITUTION 4. NO SUBSTITUTE ITEM AVAILABLE 5. REFUSAL 6. NO CONTACT 7. SEASONAL/TEMP. OUT OF STOCK	E. COUNTRY OF ORIGIN	E99_____ E1 DOMESTIC E2 CENTRAL AMERIC E3 MEXICO E4 USA E5 CANADA E6 SOUTH AMERICA E7 CARICOM E8 EUROPE E9 U. K. E10 JAPAN/FAR EAST E11 OTHER	E99_____ E1 E2 E3 E4 E5 E6 E7 E8 E9 E10 E11
	G. SIZE	G1 SMALL G2 MEDIUM G3 LARGE G99 OTHER (SPECIFY)	G1 G2 G3 G99_____

CHARACTERISTICS	PREVIOUS	ACTUAL
A. PRICE		
B. QUANTITY		
C. UNIT OF MEASUREMENT	C1 LBS C2 KG C3 GRAMS C4 OZ C5 BOTTL C6 LITRE C7 GAL C8 ML C9 FL OZ C10 PK C11 DOZ C12 TIN C99 OTHER (SPECIFY)	C1 C2 C3 C4 C5 C6 C7 C8 C9 C10 C11 C12 C99_____
D. BRAND		
F. MODEL/STYLE		

S. POINT OF ORIGIN

T. PT OF DESTINATION

U. TYPE OF SERVICE

INTERVIEWER_____
OBSERVATIONS_____

PREVIOUS DESCRIPTION_____

CURRENT DESCRIPTION_____

Figure V.2 Example of a Price Collection Form, Kazakhstan

Table 2. Price Collection Form for Women's Sweaters

CPI PRICE COLLECTION FORM FOR _January____1993 Republic of Kazakhstan

City/oblast/rayon ___Alma-Ata_____
Code ___1905

Item__Women's wool sweater Item code__212137____

Standard quantity__1____

		Previous Period					Current Period				
Code	Outlet	Date	Description	Qty	Price		Date	Description	Qty	Price	
					Collected	Converted				Collected	Converted
1	2	3	4	5	6	7	8	9	10	11	12
1	TSUM-Central Dept Store	11	Made in Alma-Ata, long-sleeved, size 48	1		3000	10	same	1		3500
2	"Voshod" store	12	Made by cooperative, long-sleeved, size 48	1		4000	11	not being sold			
3	Central Market	13	Made in Russia, with design on front, size 48	1		2800	12	Made in Russia, no design	1		2700
4	Commercial store	13	Made in Turkey, long-sleeved, size 48	1		7000	13	same	1		8000
5	"Universal" public market	14	made in China, cooperative	1		5000	15	same	1		5500
6	Store No. 77 cooperative	15					15	Made by cooperative, long sleeved, size 48	1		3800
			TOTAL			15000					17000
			Price Relative (Col 12:col7)			1.1333					

Figure V.3 Example of Egypt's Price Collection Form

Retail Consumer Prices - Rural
on the 15th of the Month 199

Price Form 1 716
1

Data Are Confidential By Law

_____ illage _____ ___Markaz _____ Governorate

(Prices in piastres)

Average	Names of the Outlets and their Prices						Unit	Item Description
	Price	Outlet	Price	Outlet	Price	Outlet		
								Winter Material
							meter	Gabardine Cotton
							meter	"beekah" Cotton
							meter	Cotton with velvet
							meter	Cotton without velvet

_____ Supervisor _____ Editor _____ Name of Enumerator

Figure V.4 Example CPI Calculation Spreadsheet, with Cell Formulae

Governorate_____ Kism_____ Month_____, 1997
Markaz_____

Row	A	B	C	D	E	F	G	H	I	J	K	L	M
	Description	Code	Base period weights W(0)	Long-term relative from previous month LTR(t-1)	Short-ter relative for current month STR(t)	For imputation calculations: [C]*[D] W(0)LTR(t-1)	[E]*[F] W(0)LTR(t	Short-ter relative (imputed if nec.) STR(t)	Long-term relative for current month LTR(t)	Index Points (B.Y.Tot. CPI=100) W(0)* LTR(t)	Current Relative Importances W(t)	Index Points (B.Y.Tot. CPI=100) W(0)* LTR(t-1)	Percent Change In Index (I(t)/I(t-1) -1.0)*100
15	VEAL	0501	4.7964			@IF(E15>0,C15*D15,0)							
16	BUFFALO	0502	1.2948										
17	MUTTON	0503	0.4024				@IF(E17>0,E17*F17,0)						
18	CAMEL	0504	0.2027										
19	OTHER-MEATS	0505	0.2110					@IF(E19>0,E19,D$50)					
20	FROZEN-MEATS	0506	0.2166										
21	LIVER-BRAIN	0507	0.2450						+D21*H21*H21/H21				
22	CANNED-MEATS	0508	0.0494										
23	MANUF-MEATS	0509	0.0955							+C23*I23*100			
24	KIDNEY-LEGS	0510	0.2486										
25	MEATS-PREP	0511	0.0023								+J25/J$44		
26	CHICKEN	0517	2.4571										
27	DUCKS-GEESE	0519	0.2101									+C27*D27*100	
28	PIDGEON	0521	0.1155										
29	TURKEY	0523	0.0151										(J29/L29-1)*100
30	RABBIT	0525	0.0570										
31	POULTRY-OTH	0527	0.0015										
32	FROZEN-CHICKE	0528	0.0074										
33	CHICKEN-LIVER	0529	0.0278										
34	POULTRY-PREP	0530	0.0151										

	Group		Weights (for imputation) [1]	Imputed short-term relative [2]			Long-term Index (BY=100) I(t-1)	Weights	Long-term Index (BY=100) I(t)	Index Points (BY TOT CPI=100) (t)	Current Relative Importances	Index Points (BY TOT CPI=100 (t-1)	Percent Change In Index (I(t)/I(t-1) -1.0)*100
44	All-Items	0000								@ROUND(@SUM(J46,J##,J##),4)			
45													
46	Food	0100							+J46/H46				
47													
48	Cereals & Starches	0199											
49													
50	Meat	0515	7.7647	@IF(@SUM(F15..F25)>0,@SUM(G15..G25)/@SUM(F15..F25),0)							+J50/J$44		(I49/G49-1)*100
51													
52	Poultry	0535	@SUM(C26..C34)				+L52/H52	@SUM(C26..C34)		@SUM(J26..J34)		@SUM(L26..L34)	
53													

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Chapter VI. Housing

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VI.A Introduction[1]

This chapter builds on previous research (Cardiff (1996)) on housing using the 1990/1991 HIECS sample. That analysis was motivated by the news that the Egyptian government would consider decontrolling rents. Since the social gains from exposing rents to the free market were already well thought out by Malpezzi (see, especially, (1984)), it seemed appropriate to survey the initial housing market conditions in preparation for such a big change. How had rent control affected the cost of housing services? Or even more simply, what was the cost of shelter in Egypt? Standard hedonic models were constructed for the 1990/1991 HIECS data set to compare housing costs for renters in Egypt. The "normal" rent market was covered by strict and established rent control provisions. The other market - for furnished dwellings - characterized a freer market structure. The effects of rent control on housing service costs were examined empirically by building index ratios from two quality-adjusted cost vectors evaluated at the sample averages. After adjusting rental costs by a standard set of housing characteristics in both markets, I found rent control responsible for all of the difference in nominal costs between the controlled and free markets.

Since that research the People's Assembly passed two laws which provide nominal concessions to owners. Law No. 4 of 1996 frees rent for all presently vacant (not previously leased) places. Law No. 6 of 1997 applies only to dwellings used for commercial purposes but, because it attacks the provision of transference of lease in perpetuity, it sets an important precedent for testing the mobility of leases. In terms of potential applied research, given the availability of new validated housing data from the 1995/1996 HIECS, perhaps the most striking aspect is the near absence of renters characterizing their present dwelling as "furnished." This not only precludes an updated analysis of the rent-controlled/free-market comparison. The lack of free-market rents (or, at least, actual responses indicating "furnished") is a telling signal that the expropriation of dwellings by former leasers is, *de facto*, complete.

VI.B Housing in Egypt

It is possible to generalize about shelter characteristics in Egypt, depending on an urban or rural setting. Urban housing may have many floors. Immediately after the vestibule one enters the main living room. A *mashrabeya* screen might separate this room from the smaller dining room. There is often a salon, a separate room, off the living room, which is seldom used except for entertaining; the importance of the salon is slowly coming out of favor in deference to efficient use of space. Often there is a balcony, which may or not be closed as a study. The kitchen is typically a small cubicle off the main living room. Practically all activity takes place in the living room, including sleeping. Rural housing can be larger and more open,

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[1] An earlier version of this chapter was presented at the Middle East Economics Association meetings of the Allied Social Sciences Association Conference in San Francisco, CA, January, 1996. The present chapter includes data and analysis not part of the earlier article.

often two or more floors, with a big room downstairs having a high ceiling. People sleep downstairs, and the big room is usually devoted to guests, and used for celebrations. In times past livestock were kept inside the housing compound in a room separated from the sleeping quarters; now they are mostly kept outside.

Practical possibilities for housing no longer can afford to uphold tradition, and this urban/rural characterization is obviously incomplete, as are all generalizations. Cairene housing, for example, is as diverse as the distribution of wealth, and thereby the access to free space, allows. However, with more than 75,000 people per square mile in some areas (Theroux, (1993)), no one would dispute that a large part of the city is overcrowded and cannot support additional growth. Substandard housing arises with the need to shelter the vast numbers; tragedy can result from overcrowding - for example, it is estimated that at least half of the 600 lives lost in the earthquake of October, 1992 were due directly to overcrowding and poor construction. The Northern and Southern Cemeteries, collectively known as the "City of the Dead," are vast, notorious redoubts of "creative homelessness." On the other side of the tracks, figuratively and literally, are the splendid villas of Ma'adi and Nasr City, where the rich cavort and compete in shows of capitalistic excess. In contrast to the noisy, polluted, streets of crowded Cairo, the rural areas can be idyllic, quiet and sedate. Yet the lure of the city remains overwhelming, and the city continues to find room for its internal migrants.

VI.C Analysis Using 1990/1991 HIECS Data

VI.C.1 Rent Control

The literature on rent control is broad and well-documented.[2] Much work on rental services costs in developing countries has focussed on assessing the components of demand under competitive conditions with strict distinctions between landlords and tenants. I make neither of those traditional assumptions. The contribution of this section is in using hedonic techniques on the 1990/1991 HIECS data to recover implicit prices at one point in time, and applying these to a comparison of two *possibly* separate markets. A snapshot of marginal prices for housing services from hedonic regressions is obviously limited evidence for making inferences about the effects of rent control. However, *quality adjustment does explain the observed and unexpected difference in nominal values in two renter markets.* It also informs a discussion about how different renters value various housing characteristics, and it might indicate how past and present policy has brought the housing market to this point.

This section is organized as follows: first I summarize the legal aspects of landlord/tenant relations in Egypt from the last 30 years; then follows a

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[2] Olson's article (1972) is a seminal study. Arnott (1995) provides a survey of past and recent research on housing markets under various rent control regimes. Under World Bank auspices, and specifically in Egypt, Malpezzi ((1984); (1993); and Mayo (1987); *et. al.* (1988); and Ball (1991)) concentrate on the detailed comparative statics of costs and benefits for landlords and tenants.

very brief discussion devoted to contemporary economic theory of rent control; the descriptive statistics of the 1990/1991 HIECS housing section are presented next, as background to the empirical section which employs hedonic models to build quality-adjusted, means-evaluated indexes for two renter markets; the conclusion introduces the potential to link the results with the 1995/1996 HIECS to sharpen the focus of research on shelter costs.

VI.C.2 The History of Rent Control in Egypt

The foundations of Egypt's housing crisis can be traced to post-Nasserist policies, in the shift from rural agrarian production to rapid urban, import-substitution industrialization. Many people migrated to the cities in search of better economic opportunities. Nasser's regime was committed to redistribution to win popular support, as well as to "justice and sufficiency," though without free enterprise. The State controlled relative prices by nationalizing industries and by forming cooperatives. Relative to housing policy, the government sought to keep shelter costs affordable, to fight demand-pull inflation, and to reduce landlords' potential to "exploit" tenants.

Figure VI.1 is a synopsis of the laws governing landlord/tenant relations in Egypt. Within the ten years from 1952-1962, five laws[3] were passed successively decreasing housing rents: coinciding with the Socialist Revolution of 1952, rents were decreased by 15%; in 1958, a further 20%; in 1961, a further 13.7%; in 1962, a further 5%. Law No. 46 of 1962 fixed annual rents at 5% of the cost of the land plus 8% of the cost of construction. Rents were frozen and any Egyptian who occupied a sole property continuously for three years or more could not be evicted. Further, the law granted the right to transfer tenancy through inheritance in perpetuity.

Landlord/tenant relations have had an impact on many aspects of Egyptian life. Perhaps the most obvious effect has been the great constraints placed on labor mobility, contributing to serious mismatches in employment. People fortunate to be renting at the time the earliest laws were passed pay (with inflation) even a smaller monthly rent than they paid decades ago. Anecdotally at least, there is evidence that the age of marriage has increased because it now takes so much more time to save the capital - younger housing seekers must buy their dwellings at astronomical prices. The average apartment for purchase today is worth about $5,300.00 (Stones (1994), p. 31), whereas established tenants pay as little as $6.00 rent per month, or even less! Landlords receive an insignificant share of land value as rental income - if an owner's building in central Cairo were to collapse today, for example, the owner could sell the land under it for millions of Egyptian pounds. On the supply side, then, landlords have little incentive to rent to Egyptians, or to maintain their property; on the demand side, tenants choose their place of habitation for life, and families start saving to house their children before they are born.

The early laws were generally successful in keeping tenant costs in line

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[3] The following discussion of the legal foundations of current landlord/tenant relations in Egypt is not intended to be comprehensive. It is a digest of four primary source materials - Joint Housing Teams, (1977); Topping and Sherer (1979); Arab Republic of Egypt (1981), and the Official Journal (1996; 1997); - in addition to Essam El Din (1994), and Attia (1988).

with incomes for most of the renter population, but the pace of depreciation of housing stock eventually outstripped the State's outlay on housing investment. Housing investment as a percentage of total government investment dropped from 12.4% in 1965 to 8.8% in 1973 to 5.9% in 1979, and has declined slowly since. State support for low- to middle-income housing finance lapsed as well.

Law No. 49 of 1977 greatly restricted the landlords' ability to increase rents to match even inflation. Article 14 of this law limited the annual net return on investment of a landlord's property to 7% of the value of the land and construction. This was a very minor concession to landlords following on Law No. 52 of 1969, which had limited annual net yields to 5%. Further, owners were told to establish federations for building maintenance and periodic restoration. Of course, there was no incentive for forming such federations. Instead tenants would be responsible for upkeep. *As the responsibility for maintenance, repair, and improvement shifted to the tenant, rent control lost its intended impact, to keep costs down.*

In 1981 yet another rent control law was passed, incorporating the previous fixed 7% rate-of-return provision. Building owners were required to provide at least two-thirds of their apartment properties to prospective renters. Luxury and furnished apartments were exempted from the rent ceiling. This law, perhaps more than any other, finally proved the unprofitablity of constructing housing for rent. Many landlords sold their apartments outright to the highest bidders as properties subject to rent control became liabilities. *Thereafter, most housing investment would be for building to sell.* Housing construction for furnished or luxury apartments would make up the residual.

Since 1981 the emphasis on tenants' rights at the expense of landlords' profit has produced a fragmented, complicated, rental market. *The rent control laws have become almost entirely unenforceable.* Landlords rarely issue contracts in informal areas. Rather, they charge "key money" - a monetized right of transfer - to replacement tenants for the privilege of occupying cheap dwellings.[4] Nearly all transfers to new renters have involved key money. Most transactions are carried out in cash and are therefore

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[4] Wheaton's (1978) analysis of key money defines an ultimate occupancy cost as a personalized reservation price of bargaining including risk. Key money usually comes short of the long-run amortized value of housing services for that dwelling: tenants who plan on occupying for a limited time period pay a discounted value, or ask for a rebate when forced to move suddenly. The landlord might provide a rebate which incorporates the risk of getting new key money from a replacement occupant, and so on. Wheaton suggests that the reason no capital market for the difference between official rents and shadow rents ever really developed in Egypt is because the only actors with collateral would be potential occupants, and then only contingent on occupying the property. As a mechanism for financing dwelling turnover, the lump-sum, infrequent nature of key money causes serious inefficiencies in resource allocation. Marginal, compensating side payments which fully reflect tenants' willingness to pay, and landlords' willingness to maintain the dwelling, are absent. Transfer by key money discriminates against the young, who have had little time to build up reserves of wealth, thereby constraining the formation of families.

notoriously difficult to regulate. Moreover, tenants evade the laws by subletting to friends. It has been estimated that there are some 12 million landlord/tenant lawsuits pending in the courts, and that by the year 2000 there might be 19 million.[5] The number of judges trying these cases has remained stagnant, and rental cases take up to 8 years to come to a decision.[6]

One of the results of Sadat's Open Door (*infitah*) economic policy - beginning roughly in 1974 - was a large increase in private sector investment in housing. The 1970s were boom years as the private sector took command of housing construction.[7] Land, building materials and construction labor prices rose rapidly.[8] However, housing investment was not intended for easing population pressures on inhabitable space during the decade after 1973. As the population of Cairo nearly doubled, from 6 million to 10 million, Waterbury (1983) estimates that three-quarters of all dwellings constructed during the period were intended for luxury use.

By 1992 housing investment had recovered to 10.9% of total investment in the economy, and 95% of this came from the private sector. For the government's Third 5-Year Plan (1992-1997), the private sector was expected

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[5] Statement of former World Bank resident advisor in Egypt Marcelo Cuigale.

[6] Serageldin (1993).

[7] Between 1960 and 1976 the public sector provided around one-third (UN (Habitat), p. 15) of housing construction, mainly substandard (or "popular") housing to be provided at greatly subsidized rates. Legislation for informal communities emphasized the government's commitment to equity and participation. Law 135 of 1981 officially recognized slum areas as legitimate and permanent settlements to be incorporated into the formal planning process, with associated infrastructure enhancements. Law 31 of 1984 established procedures for legalizing land tenure in slum areas (Cooperative Housing Foundation, 1988). The state had, by that time, established its opinion that private, individual ownership of land - especially for the poorer segments - was the most secure and respectable tenure form, and therefore the most likely form for encouraging households to invest. It also provided a mechanism for cost recovery from slum upgrading. However, the state would eventually reverse its support for tenure legalization as obligations to provide infrastructure became overwhelming. A very detailed study of informal communities in Cairo and Beni Suef is found in Abt Associates, (1982).

[8] Districts around Cairo have seen the largest land value increases. Unimproved land in Nasser City today costs approximately 7,000 £E per square meter, and upwards of 10,000 £E per square meter in Zamalek. Land in Heliopolis and Ma'adi is only marginally cheaper. Overall building costs per square meter have risen accordingly. As quoted by Dr. Milad Hanna, professor *emeritus* of construction engineering at Ain Shams University, Cairo, in Essam el Din (1994), pp. 15-16, the cost of constructing new popular housing is about 160 £E per square meter, 200-400 £E for "above average" housing, and 1,000-2,000 £E for luxury housing.

to contribute 17.8 billion £E of 18.5 billion £E of planned housing investments.[9] Although the bulk of government capital investments for the FY 1995/1996 budget were earmarked for housing and construction, the figure was only 2.15 billion £E (USAID (1996), Table 3). The trend is toward ever greater participation of private enterprise in the provision of housing services.[10] But rent control has made large-scale investment in low-cost housing uneconomic. Taxes can account for up to 24% of total construction costs,[11] a disincentive for any type of building. The perverse effect engendered by Egypt's regulatory environment is that a critical shortage of low-income housing coincides with high vacancy rates for luxury housing.

The last law directly relevant to rent control, No. 4 of 1996, represented a sea change in landlord/tenant relations in the country. This law exposed all presently vacant dwellings without leases to the free market. The duration of the lease and the rental amount became the discretion of the owner. For the first time, the government recognized that rent control had a disastrous effect on housing maintenance and mobility. Although the potential overall effect of opening up some 1.8 million units[12] to market forces would prove to be less momentous since few could afford such incredible rents, the law did have a important psychological effect on potential private sector landlords, and thereby on the supply of available housing. Landlords now choose from a tenant pool including Egyptian nationals, lowering search costs - formerly they had to find foreigners to occupy vacant units, for whom rental laws were exempt, to make any lease arrangements lucrative. Otherwise, construction for sale took precedence to construction for rental.

Only about four percent of Egypt is inhabited, only about six percent is cultivable land,[13] and there is limited area available for construction within cities and towns. Rapid cityward migration and high rates of natural population increase[14] have swelled the population of Cairo to some 17 million inhabitants. Another law, passed in the wake of the 1992 earthquake, further restricted the supply of housing by limiting the height of buildings to 10 stories. Workers returning from the Gulf countries have invested much of their savings in unregulated and unlicensed buildings, on land lacking

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[9] According to Mahmoud Mahfouz, chairman of the Shura Council's Services Committee, quoted in Essam el Din, *op. cit.*, p. 15.

[10] "In the future, housing should be the responsibility of the private sector, not the government" and "So far, 95% of (housing) investments have been covered by the Egyptian private sector," H.E. Mohammed I. Soliman, Minister of State for New Communities, in Anon. (1994), p. 13.

[11] UN (Habitat), p. 72.

[12] (Hanna (1988)). This figure should be treated with some degree of skepticism, being an estimate almost ten years old.

[13] Richards, p. 327.

[14] The trend is downward for the population growth rate, but in 1993 it stood at 2.1% per year, as reported by the GOE, USAID (1994), p. 31.

infrastructure or planning permission. Slums have burgeoned from outright invasion of public and private land. The table below shows that informal communities presently accommodate about 40% of Egypt's urban population (some 1.9 million housing units - about 60% of the country's population lives in "urban" areas). That figure is likely to grow to 60% by the year 2000 (Essam el Din (1994), p. 20).

Distribution of Informal Communities in Ten Governorates

Governorate	Number of Areas	Population	% of Urban Population Living in Informal Communities in Urban Areas
Cairo	79	2,437,988	35.9
Giza	32	1,398,000	62.0
Kalyoubeya	60	686,350	46.0
Alexandria	40	1,162,750	34.0
Fayoum	28	99,853	23.5
Beni Suef	46	144,770	31.0
Menia	30	273,000	49.0
Assiut	49	401,000	25.0
Sohag	34	381,181	56.4
Qena	8	22,700	31.4
TOTAL	406	17,665,475	39.7

Source: Shura Council Report on Informal Communities, March 1994 in Essam el Din, *op. cit.*, p. 22.

Since passage of the 1981 law, the government of Egypt has based its low-income housing subsidy policy on a supply side objective: establish and develop new communities to ease the population pressures and infrastructure problems of greater Cairo and the Nile Delta. Funds for building materials, basic provision of water and sewerage systems, power generation, transportation, market access and infrastructure management have failed to meet plan expectations. It will take some time before these services have been established in the harsh desert locations to make the new communities viable.

There are a limited number of ways, with or without state intervention, to bring housing prices closer to reality, to deflate the huge unrealized demand values (natural as well as speculative) caused by housing policies. If funding for such purposes was unlimited, the state could make long-term tenants legal owners of their properties, and compensate landlords for an assessed market rental value. More than likely, landlords would then tear down their buildings, build expensive new ones, and exacerbate the problem. At about the same cost, because a large proportion of low-rent tenants are

civil servants, the state could free rents and increase wages. Such scenarios are fictional in the present climate of fiscal restraint under economic reform.[15] Immediate and unfettered rent decontrol is therefore not a viable option: it would cause widespread homelessness. In keeping with a market solution, the gradual, phased decontrol and the rescission of perpetual tenancy rights, are the obvious first steps. Landlords might be encouraged to collude with tenants by selling the buildings and splitting the proceeds, but that would amount to a partial solution for each party: the landlord would recoup some of the property value; the tenant could use the money to look for a less valuable apartment elsewhere.

VI.C.3 Theoretical Effects of Rent Control

Among economists it is almost universally accepted that rent control is a bad thing for an economy.[16] Price fixing sets in motion complex changes to costs and benefits, supply and demand. Rationing housing with a rent ceiling is hardly a surgical procedure. Those tenants able to find rent-controlled housing, rarely those who need it the most, benefit from lower monthly rental payments. Landlords face the impact of falling returns on their investments, and curtail supply by withholding maintenance expenditures, discriminating against potential renters, and scaling back future investment plans. Lower housing costs force up demand at the margin, resulting in wider disparities in individual use of housing services. Housing turnover falls as housing costs decrease in relation to other goods in the consumer's budget set - transportation, for example - leading to mismatched sectoral labor supply. Finally collateral effects arise from the circumvention and evasion of laws. Grey markets in housing develop. Side payments become commonplace, key money being the more common type.

Figure VI.2a shows the standard textbook treatment of equilibrium in the housing market occurring at the intersection of supply (short-run marginal cost) and demand for housing services. A modern analysis of rent control[17] focusses on the imposition of a rent ceiling on housing *units* as opposed to housing *services*. A housing unit is comprised of a quantity (q) of housing services (p). A rent ceiling on units implies the algebraic constraint $pq \leq R$ a rectangular hyperbola. Landlords can cut back on the quantity of housing services when rent control is imposed. Tenants try to maximize the

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[15] Wages and salaries already account for the largest component of current government expenditures - 36%. In spite of this, the government budget for FY 1995/1996 calls for a 16% increase in the wage and salary bill. The 1994/1995 inflation rate was 9.5% (EIU, (1995)). Pensions, on the other hand, are expected to fall 1.2% in real terms. FY 1995/1996 subsidies for low-cost housing are projected at only 1.4% of total government expenditures (USAID (1995)).

[16] Arnott (1995, p. 99) refers to a study of a stratified, random sample of economists among whom there was a 93.5% agreement to the statement "A ceiling on rents reduces the quantity and quality of housing available."

[17] Attributed to Frankena (1975) in Arnott (1995).

consumption of housing. Assuming that housing units are homogeneous, equilibrium under rent control can occur only at points on or below this $pq \leq \hat{R}$ curve.

Figure VI.2b depicts supply when rent control is imposed: below the constraint, supply follows SRMC; at prices above the rent constraint, supply coincides with the rectangular hyperbola. Landlords constrain supply to the lowest cost/highest revenue point, along the rent constraint. (Note that there would be no incentive for landlords to supply at E_A housing units as opposed to E_B because revenue would be the same and costs would be higher.) Assuming that landlords stop paying for maintenance altogether and supply immediately constricts, equilibrium will occur at E_1, the intersection of market demand and the rent constraint. Renter costs are higher than they were before rent control was imposed. However, in the short run, supply is not so elastic; it takes time to establish controls, and time for the cutoff in maintenance to effect supply. Equilibrium will settle at somewhere between Z and E_1: there is excess demand, and prices can be lower or higher than they were at free market equilibrium.

A general, dynamic model for a housing market model under rent control would have to account for stock adjustment (through construction and abandonment, especially), the rate of deterioration to maintenance over time, and quality differentiation among housing units. Such a treatment is beyond the scope of this paper. Instead, a simpler model is presented below, incorporating only differences in quality under two different renter arrangements, assuming an imperfect market.

The regulatory environment in Egypt compounds the limited competition commonly associated with housing markets. The market for dwelling space rarely fits the theoretical conditions of perfect competition. Housing units are not homogeneous commodities, and consumer taste is idiosyncratic. These characteristics make for a thin market: it is difficult to pin down exactly what is being demanded and by whom. Landlords can act as discriminating monopolists by pricing above marginal costs. High search costs ("apartment hunter" fees, for example), along with generally limited information about vacancies, constrain consumer access. There are a limited number of suppliers,[18] and significant barriers to entry and exit. Scale economies rarely exist. Imperfections in labor and capital markets reinforce these housing market imperfections. Marks (1984) makes the point that prices for housing characteristics in markets which are not permitted to clear may fail to show expected relationships. Rent controls in an imperfect market will cause a decline in the quality of the rent controlled unit and change the prices for characteristics which make up that rent. It becomes possible to have high vacancy rates occurring simultaneously with excess demand. Of course, housing stock deterioration does not have to be the result if the incentive to maintain, repair and improve the dwelling passes wholly to the tenant.

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[18] Most landlords in Egypt are 1) small-scale - Serageldin's (1993) study estimated that 76% of landlords had less than ten tenants, and 2) inactive - almost half of the landlords had been renting their buildings for more than 30 years, and only 5% had begun investing in the last 10 years.

VI.C.4 1990/1991 HIECS Housing Data

The data collected in the 1990/1991 HIECS provided a very good description of demographics and housing amenities in addition to expenditure and income components. The section on family housing conditions in the HIECS questionnaire included descriptions of housing type, tenure, number of rooms, whether the kitchen, bath, and toilets were shared or private, main source of lighting, source and connection of water supply, and connection to the sewerage system.

The six categories of tenure relations in the survey were 1) "ordinary rent" 2) "furnished dwelling rent" 3) "owner of the entire building" 4) "owner of a dwelling" 5) "subsidized" (or "in-kind," provided by employer) and 6) "other." Both ordinary renters and furnished dwelling renters provided actual amounts paid for housing per month, including expenditures on guards and gardeners, water consumption, regular housing maintenance and repair costs, garbage disposal and insurance premiums. In cases of ownership or subsidized, the respondent (usually the head of the household) was asked to impute a monthly value for "similar" housing.[19] It was recognized that payers of ordinary rent were responsible for their own maintenance (painting, wallpapering, plumbing, electrical outlets, etc.) and repairs. *Ordinary renters occupied rent controlled dwellings.* Furnished dwelling renters, on the other hand, held contracts of variable durations, with rent increases permitted at the discretion of the landlord; therefore, *furnished rents best typified the free market costs of housing services.*

VI.C.5 Empirical Analysis of Possible Rent Control Effects on Housing Services Costs

The next section is devoted to the relative difference between rental prices in the rent controlled market (ordinary rents) and rental prices in the control exempt market (furnished rents). Rental costs are considered as a summation index of the relative prices of a set of housing attributes, area, type, amenities, and inventory. The methodology employed borrows from hedonic[20] index applications in the context of interarea prices (Moulton (1993); Kokoski and Cardiff (1992)). The models are semi-logarithmic hedonic regressions of actual rent costs on a standardized set of dummy variables defining the characteristics of the rental housing market. All available variables which might possibly affect housing services costs were considered for inclusion in the right hand side of the equations. Ultimately the criterion

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[19] The respondent was told that "similar" housing had approximately the same square meters of area, the same finishing, location, and year of construction. Further, for the urban areas, "like" housing rent would be approximate to the yearly real estate tax cost for the unit owned and occupied by the household, or the tax cost of a unit having the same construction date. For rural areas, in the absence of real estate taxes paid, the imputed value equalled the estimated rent for a similar housing unit sharing the same specifications and construction date.

[20] For an introduction to the hedonic method, see Griliches (1971).

chosen was the contribution of statistical significance to either of the two independent models from stepwise selection.[21]

Formally, for observation i in the sample of renters m, first estimate separate regressions for the controlled (c) and free (f) markets ($m = c,f$):

(1)
$$\ln P_{im} = \beta_{0m} + \sum_{k=1}^{N} \beta_{km} X_{kim} + \varepsilon_{im}$$

where ε_{im} is a stochastic error with mean zero and possibly heteroskedastic variance σ_i^2. The vector X_{kim} ($k = 1...N$) is a set of binary dummy variables which equal 1 if that rental unit has the (kth) characteristic, and 0 otherwise. In one case (number of rooms), k is a continuous variable. The coefficient of the X_{kim} variable, β_{km}, is the natural log of the ratio of the price of that characteristic k relative to the numeraire characteristic (i.e., the omitted dummy). The antilogs - $\exp^{(\beta km)}$ - are consistent estimates of price relatives for rental housing characteristics. An alternative to the above specification would be to assume that the price function parameters differed only in the constant term, in which case the data could be pooled and a dichotomous variable for rent control added (Fallis and Smith (1985)).

Before proceeding to results, it should be clear that these models in no way purport to be deterministic. The intent is not to investigate the structure of demand in the two markets. Rather, the coefficients represent ex post equilibrium relatives in an envelope of all the market supply and offer curves for housing services existing at one point in time. There is an added complication of biased coefficient values from the effects of excess demand on rent attribute prices, and missing variables. There is nothing to guarantee that housing having a given characteristics bundle is attainable at any price. Despite measurement error, the direction and magnitudes of the coefficients are instructive. Marginal costs of housing services are valuable for determining the benefits of slum upgrading and changes to laws governing landlord/tenant disputes. They reflect the value of real estate and can inform policymakers about important tax and cost recovery measures.

Table VI.1 lists the separate hedonic regressions for the controlled and uncontrolled markets. t statistics testing the statistical significance of difference from zero appear in parentheses below each coefficient estimate.

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[21] This decision was made after experimental modelling with all potential variables, and mainly to simplify the reporting of results. Stepwise selection is an iterative technique whereby the residuals from each step are regressed on remaining potential explanatory variables, which are then included in the model if the R-squared statistic is maximized. Normally this procedure is to be avoided because it produces biased coefficients from not including correlated explanatory variables. However, when considering the question of inclusion or exclusion of a set of variables, rather than single variables, in two models, the common procedure is inclusion if F is greater than some specified number. In considering the tradeoff between goodness of fit (R-squared) and parsimony (number of explanatory variables), the set of variables were chosen to minimize the expected loss associated with the predictive power of indexes constructed from the coefficients.

The coefficients represent the predicted changes in characteristics prices resulting from a one unit increase in the given characteristic.[22] The difference between individual coefficients in both markets is the difference in the characteristics price which would arise from moving a dwelling from controlled to uncontrolled status. In general, the magnitudes seem reasonable, and most of the coefficient values are statistically significant at 95%. The R-squared statistics are low, but this is normal for relationships describing household behavior estimated from household data.[23] The numeraire housing attributes (those omitted from the regressions), were chosen because they have the highest case counts. The sector omitted category is "rural." However, the area omitted categories are "Urban" and "Frontier." Housing types omitted are "Apartments" and "Minimal Housing Standard" types. ("Minimal Housing Standard" consists of a single room or rooms occupied by a household randomly *within a building*; "Ind. Rooms," on the other hand, consist of one or more established, independent rooms *within a dwelling*. "Temphous" is "temporary housing" of a "non-traditional" nature, such as tent shacks, dwellings in cemeteries or hastily constructed dwellings on rooftops, etc.) Dwellings with private kitchens, private baths, and private or common toilets are omitted. Those with electrical or no lighting are omitted. Finally, with regard to water and sewerage connections, those dwellings with water supply from a network connected to the dwelling or building but not connected to the sewerage system, are omitted.

Everything else equal, higher quality dwellings have higher costs. The intercept intersects the cost axis at a higher point in the controlled market. This reflects the difference in nominal (i.e., unadjusted) overall average rents between the two sectors: for ordinary renters, 251.10 £E per year, and for furnished dwelling renters, 228.62 £E per year. *Note for future reference that nominal controlled rents are therefore 9.83% higher than uncontrolled rents.*

The difference in the sector coefficient shows (again, *cet. par.*) that the rural premium for controlled renters is higher than that for uncontrolled renters. Furnished dwelling renters find it costlier to live in Upper Egypt than ordinary renters. With the exception of uncontrolled villas, all the housing types cost less than apartments or established rooms within dwellings. We might question, also, whether the magnitude of the coefficient for VILLA in the controlled market is reasonable; assuming villas do rent for less, should we expect them to rent for 70% less than otherwise identical units? The TEMPHOUS coefficient is negative as well, and actually greater than 1 in the controlled market, meaning that it is more than 100% cheaper to live in a temporary dwelling. The negative signs on kitchen, bath, water and sewer, and lighting amenities conform to expectations that the numeraire categories

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[22] Because these are log-linear models, the coefficients equal 1 + the price elasticity; therefore, to recover the elasticities of the characteristics we subtract 1 from the coefficient estimates.

[23] Kmenta (1971) calls R-squared values close to .20 for household behavior functions from the University of Michigan's Survey Research Center data "typical" (p. 234). While poorly specified models can have low R-squared values, it does not follow that a model is misspecified simply because the influence of the random disturbance is stronger than the included variables.

are more highly valued. Notable exceptions are that shared baths are costlier than the numeraire in uncontrolled markets (the t statistic is statistically significant at 95%); dwellings with pumped and other sources of water supply are also costlier (although the coefficient on "Pumped" is not statistically significant). Expected signs on all of the household inventory coefficients are positive, and the models mainly confirm this. It is less expensive to rent a furnished dwelling than an ordinary dwelling if the household owns a car, a refrigerator, or a vacuum cleaner; these unexpected signs may have more to do with the model's specification than the fact that the dwelling is furnished.

A test of the null hypothesis that parameter estimates from the rent controlled sample are the same as those for the furnished rent sample is rejected at a 99% level of statistical significance.[24] Therefore two distinct data generating processes are at work in the markets.

Having controlled for housing characteristics, the hedonic model predicts that the sum of price relatives under rent control will be lower. To test this, Fallis and Smith (1985) construct the indices

(2)
$$\frac{\sum \beta_k(f)\, w(c)}{\sum \beta_k(c)\, w(c)}$$

and

(3)
$$\frac{\sum \beta_k(f)\, w(f)}{\sum \beta_k(c)\, w(f)}$$

which are weighted by evaluating either at the controlled, $w(c)$, or uncontrolled, $w(f)$, means of the sample.

When the calculation in Equation (2) is made, the value is .998. Controlled rents, taking into account the housing quality prevailing in the controlled market, are indeed higher than uncontrolled rents. However, quality adjustment has removed the 9.83% nominal difference. When the estimates are weighted by the sample means of the uncontrolled market, the effect on the index is large enough to reverse the interpretation. The index value of Equation (3) is 1.024. Quality adjustment controlling for free-market characteristics makes rent control seem a bit worthwhile for ordinary renters. Still the marginal transfer from landlord to tenant effected by rent control amounts to essentially the value of the quality of the dwellings.[25] *In other words, whether the indexes are evaluated at controlled or free-market sample averages, quality adjustment shows that there is no real effect of rent control on tenancy costs.*

While it is significant that controlling for quality equilibrates rents, the

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[24] The test (see Kmenta (1971, pp. 373-4)) is the equality of two regression equations whose statistic (= 2.025) follows an F distribution with 31 numerator and 3245 denominator degrees of freedom, and whose critical value at 99% is 1.70.

[25] I am grateful to an anonymous referee for pointing out that the confidence in this statement would be sharpened by higher R-squared statistics.

magnitudes are perhaps smaller than expected. The reason is because rent controlled dwellings in the sample were generally of higher quality than furnished dwelling units. They had more rooms (3.19 as opposed to 2.25), higher probabilities of access to urban infrastructure, more often higher probabilities of having private kitchen, bath and toilet facilities, in addition to a higher quality set of housing inventories.

The remainder of the 1990/1991 HIECS data analysis will focus on the renter sample. The following tables collapse the sample into four areas of Egypt: Urban, Lower, Upper and Frontier.[26] The next table shows actual unweighted annual spending on housing units for the two tenure categories by area.

Average annual household expenditure on housing (£E) by tenure and area:

1990/1991	Urban Govs	Lower Egypt	Upper Egypt	Frontier
Ordinary Rent	222.46	325.88	253.11	354.39
Furnished Rent	174.25	274.63	238.22	180.40

The results seem contrary to expectations. One would assume, at least, that furnished dwelling renters would be paying more for housing than renters whose rents are constrained to a certain maximum by government fiat. How can mean housing expenditure levels be less for furnished dwelling occupants? Quite possibly, measurement error may have skewed these expenditures to the extent that outliers were more common in the ordinary rent sample than they were in the furnished rent sample.[27] Indeed, response biases *would* be expected to operate in opposite directions: ordinary renters may have been unwilling to tell an enumerator how little he or she paid for housing; furnished dwelling renters may have underreported expenditures, fearing tax authorities. It is also possible that a strict definition of "furnished rent" was not adhered to in the response, or that dwellings outfitted with a bare light bulb were mistakenly taken as "furnished." Ordinary renters might have been overstating annualized estimates of rents, in the amount of amortized key money, perhaps, but that is not likely.

The simplest explanation is that renters in rent controlled dwellings

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[26] This is a different classification scheme than that used previously. Urban Egypt does not contain any rural areas. It consists of the four cities Cairo, Alexandria, Port Said, and Suez. Lower Egypt is made up of the urban and rural sample of the following governorates: Damietta, Darahlia, Sharkia, Kalyoubeya, Kafr-el-Shiekh, Gharbeya, Menufia, Behera, and Ismailia. Upper Egypt contains the rural and urban samples of Giza, Beni Suef, Fayoum, Menia, Assiut, Sohag, Qena, and Aswan. The Frontier governorates are Red Sea, El Wadi el Gadeed, Matrouh, and North and South Sinai.

[27] The result is not sensitive to the existence of outliers alone. Removing 2% of the cumulative distribution from the upper tails of the TOTAL RENT distribution resulted in similar moment measures.

have historically valued their dwellings as *de facto* owners entitled to permanent occupancy, and so maintained, repaired and improved the dwellings on their own, as shown below. Costs were not "controlled" in the aggregate, just passed on as upkeep expenses.

Average annual household expenditure on maintenance, repair and improvement (£E) by tenure and area:

1990/1991	Urban Govs	Lower Egypt	Upper Egypt	Frontier
Ordinary Rent	86.55	58.77	50.82	29.52
Furnished Rent	54.96	38.96	37.61	32.60

However, with the exception of the frontier governorates, expenditure *shares* in the typical household budget were slightly higher for furnished dwelling renters.

Mean housing expenditure as % of total expenditures by tenure and area:

1990/1991	Urban Govs	Lower Egypt	Upper Egypt	Frontier
Ordinary Rent	0.0426	0.0680	0.0572	0.1167
Furnished Rent	0.0485	0.0687	0.0709	0.0975

Note how small the shares were. Malpezzi and Ball (1991) refer to countries with "strong rent controls" having rent to income shares of 10% or less. Again, assuming that expenditures correctly proxy incomes, Egypt fits this mold well.

The data reveal that rent control was not effective in keeping nominal rents down. One might question whether a system of housing subsidies might not be at least as effective as rent control. In order to enhance social equity (the ostensible reason for the now entrenched rent control ethic in Egypt), a state will often subsidize inelastic commodities. The fear is that short-run price fluctuations cause windfall gains for landlords, harming equity, until a (fairly-inelastic) supply adjusts. We have seen that lower expenditure households will pay higher fractions of their expenditures on housing than higher expenditure households. Do demand conditions overall provide support for such a subsidy policy? Apparently not. Unweighted expenditure elasticities across the market in 1990/1991 for ordinary renters and furnished rent payers are shown below.

Rent Elasticities

1990/1991	Obs	Elasticity	Std Error	R-square	F Value
Ordinary Rent	2557	.64	.026	.1912	604.381
Furnished Rent	417	.33	.074	.0478	20.862

Both rents were normal goods, and empirically "necessities" but ordinary rent was fairly elastic. Neither case provides justification for subsidizing rent against short-run bottlenecks.

A 10% rise in household mean annual expenditures could be associated with a 6.4% rise in ordinary rents, *ceteris paribus*. Intuitively, *renting a rent-controlled dwelling was much the same as owning it:* a certain percentage of increased expenditures went towards maintenance and capital improvements. This was twice as elastic as the demand for furnished dwelling expenditures: 33% of an increase in total expenditures would be spent on housing for furnished rent payers. Maintenance and repair expenditures for furnished dwellings were paid by the landlord, so furnished rent elasticity did not incorporate this effect.

VI.D Comparison of Tenure for both HIECS

CAPMAS changed the variable for "tenure" between surveys. In the 1990/1991 HIECS, renters were either "ordinary renters" or furnished dwelling renters, owners either "owned the whole building," or "owned an apartment." "In-kind" provision by employers, and "other" were also included tenure codes. The 1995/1996 HIECS has the same renter classification, but owners can now be defined as those household heads who a) said they were owners or b) purchased the dwelling only partly. A new code classification for tenure relations was created to capture tenancy of children due to receipt of a "gift," but this dummy variable cannot be assumed to be synonymous with permanent ownership, and will be removed from "owner" category for the tabulations below. "In-kind" tenure exists in the 1995/1996 HIECS, but the practice has fallen dramatically, from 1067 cases in 1990/1991 to merely 66 cases in 1995/1996.

In terms of overall tenure relations in the country, the data show that outright ownership is common, and much more prevalent in rural areas compared to urban areas. See Table VI.2. In 1990/1991, about 64% of all household heads owned the dwelling the household lived in, and only 23.5% rented. Ordinary and furnished renters accounted for only 7.6% of rural dwelling tenure, but 35% of urban dwelling tenure. In 1995/1996, owners were 70.5% of the sample (a consequence of the recent survey having a larger rural representation), but in the rural areas almost 90% owned, in contrast to 51% in the urban areas.

Tenure relationships were almost evenly split in Cairo (46.9% renters, and 51.4% owners) and Alexandria (51.8% renters, 46.4% owners) in 1990/1991. Since then, however, renting has become more common in these two major cities: 68% of households are renters in Cairo, and 67% in Alexandria in the 1995/1996 HIECS. Over time, and especially in the larger cities, ownership has become prohibitively expensive for many households.

In addition, the tenure category "In-kind" is separated from the other

ownership categories for 1990/1991 to show that the provision of free housing, mainly by the state to civil servants, was not merely a residual. The tenure relations for the recent survey are collapsed into renters and owners only.

Table VI.3 shows tenure relations for the two HIECS samples by this area classification. The Frontier governorates are poorly represented in both samples because of their low population weight. In 1990/1991 there were actually more subsidized rent recipients in the sample of 13,418 households than there were furnished dwelling renters; about 9% of owners in Urban Egypt and Upper Egypt were benefitting from subsidized housing, as opposed to 12% in Lower Egypt. Furnished dwelling renters in Lower and Upper Egypt made up a larger percentage of all renters than in Urban Egypt. Assuming that the sample of households from the above was approximately self-weighting, about 20% of Egypt's housing stock was rent-controlled. In Urban Egypt rent control provisions covered perhaps two-fifths of all dwellings. *In the recent survey, since there are practically no cases of furnished rents, the assumption must be that there has been a decrease in the free-marketing of rental dwellings since the last survey, due to the abrogation of tenancy contracts.* The number of ordinary renters has increased, indicating an entrenchment of the expropriation process; renters benefitting from tenancy rights continue to consolidate their gains.

There is no *a priori* expectation for economic status for any particular tenure type. We might contrast average annual household expenditures (£E) on all goods by tenure and area over time, as below. To the extent that lifetime incomes are better approximated by present monetary outlays, it appears that owners have lost a little ground in comparison with the renting class.[28] In 1990/1991, furnished rent payers had the lowest mean annual expenditures, but to ascribe this to a larger share of household budgets going to free-market housing would be inferring too much. It is certainly possible that household economies of scale and composition are correlated with tenure type.

Average Household Expenditures by Tenure and Area

1990/1991	Urban Govs	Lower Egypt	Upper Egypt	Frontier
Ordinary Rent	5723.49	4975.01	4946.21	4408.84
Furnished Rent	4292.00	3746.95	3557.07	3035.56
Owners	6121.42	5188.86	4996.68	5665.56
Subsidized Rent	8127.21	6292.80	7051.21	6385.98

[28] Once again, if expenditure proxies income, this would appear to contradict the assertion of Abt Associates (1982, p. 125) that "ownership status, despite being preferred by households, is not positively related to income."

1995/1996	Urban Govs	Lower Egypt	Upper Egypt	Frontier
Renters	8495.02	6542.57	6984.08	7102.28
Owners	9199.90	6380.81	5642.71	10146.46

If the total expenditures above are deflated by household size and makeup:[29]

Equivalence-Adjusted Average Household Expenditures by Tenure and Area

1990/1991	Urban Govs	Lower Egypt	Upper Egypt	Frontier
Ordinary Rent	5050.31	4890.64	4884.30	4849.13
Furnished Rent	4599.18	4405.40	4265.64	4113.72
Owners	5232.74	4950.93	4817.55	5114.86
Subsidized Rent	5680.84	5296.32	5392.07	5397.78
1995/1996	Urban Govs	Lower Egypt	Upper Egypt	Frontier
Renters	7150.27	6519.09	6613.75	6498.80
Owners	7238.10	6121.55	5624.66	6728.70

There are two rank reversals in the data after weighting for adult equivalence, between ordinary renters and owners in Upper and Lower Egypt; correction for household size results in ordinary renters now making higher mean annual expenditures than owners in those areas. However, the furnished rent payers are still at the bottom of the expenditure ladder, and the subsidized rent class are still the highest spenders.

VI.E Comparison of Utilities Shares for Both HIECSs

What basis is there for the subsidization of utilities and will price increases on utilities harm the poor disproportionately? At first glance utilities would seem proper targets for subsidization, as Chapter II presented evidence that the composite good "housing and utilities" is inferior. From the theory of optimal taxes, a Pareto improving price increase relies on an inelastic marketed surplus, and therefore the precondition for efficiency of targeting is whether the targeted good is inelastic. The optimal price given a negative elasticity is another matter, of course.

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[29] The equivalence scale presented in Cardiff (1994) uses the simple full-sample, level-level regression of food and beverages expenditures on total expenditures, then weights the data by coefficient values on the number and gender of adults and children.

Considering utilities as electricity, butane gas, natural gas and kerosine (water consumption is included in housing expenditure), expenditure shares have risen over time, from 3.4% to 4.5% of households budgets. The two sets of data below present budget shares for those commodities and overall for each of 14 income groups. The income groups are adjusted for household size, and the age and sex of its members pertaining in that time period. "Level 1" refers to those households with equivalence-adjusted incomes between 0 £E and 1000 £E; "Level 2" are households with incomes between 1001 £E and 2000 £E, etc.

1990/1991 HIECS Utilities Shares by Equivalence Adjusted Income Group, N=13,676

Level	Electricity	Butane Gas	Natural Gas	Kerosine	All Utilities
All	.013586	.0049299	.00030074	0.009714	0.034428
1	.014757	.0049064	.00012345	0.017776	0.043809
2	.014602	.0039758	.00028084	0.015101	0.041569
3	.014411	.0042306	.00015503	0.013182	0.039170
4	.013777	.0046665	.00019646	0.011527	0.036779
5	.013095	.0052059	.00019406	0.009345	0.033638
6	.013325	.0054964	.00028440	0.007959	0.032402
7	.012855	.0056024	.00048872	0.006767	0.030745
8	.013138	.0054851	.00051775	0.005496	0.028993
9	.012926	.0051911	.00057882	0.004979	0.027729
10	.012719	.0053772	.00069673	0.004314	0.027018
11	.013176	.0050956	.00085478	0.003873	0.026395
12	.013415	.0045817	.00080655	0.003249	0.025566
13	.015438	.0059430	.00047990	0.004435	0.030018
14	.012254	.0046767	.00068489	0.003384	0.024373

1995/1996 HIECS Utilities Shares by Equivalence Adjusted Income Group, N=13,656

Level	Electricity	Butane Gas	Natural Gas	Kerosine	All Utilities
All	0.019305	0.011144	0.013040	0.019257	0.045352
1	0.017736	.	.	0.049013	0.075191
2	0.024630	0.019805	0.014030	0.046134	0.074959
3	0.022218	0.018199	0.013536	0.035802	0.064628
4	0.019875	0.015619	0.022860	0.027307	0.055924
5	0.019369	0.012954	0.015326	0.022497	0.050120
6	0.019268	0.011959	0.011332	0.018301	0.045908
7	0.018664	0.010750	0.013828	0.015535	0.042425
8	0.018619	0.010006	0.014648	0.012339	0.039338
9	0.018845	0.009760	0.012975	0.010672	0.037766
10	0.018766	0.008954	0.015191	0.009159	0.035775
11	0.019109	0.008469	0.013107	0.008858	0.034919
12	0.019228	0.008374	0.011034	0.006635	0.033574
13	0.019525	0.008188	0.011609	0.006902	0.033386
14	0.018573	0.007981	0.009762	0.006442	0.031986

Over the range of income groups there is a pattern of decreasing utility expenditure shares; the poor spend a relatively higher percentage of their incomes on utilities.

Having shown that the poor stand to suffer more from a price rise, the

next question becomes "How much would they suffer?" The magnitude of the negative effect depends on initial conditions, how utilities are priced in the first place. Electricity, for example, is very cheap in Egypt, especially for small consumers. An estimated 40% of Egyptian households use from 0-50 kilowatt hours (kwh) of electricity per month (the first rate block) and they pay only half a piaster for each kwh. The second rate block consumers, another 40% of Egyptian households, use from 50-200 kwh per month, and they pay about 8.3 piasters per kwh. The final rate block (20% of households) uses more than 200 kwh per month. Overall, the cost of one kwh for all rate blocks combined in 1996 was about 2.5 piasters per kwh. There is clearly room for price increases given the very low costs to consumers.

VI.F Analysis Using 1995/1996 HIECS Data

Following best practices, the design for the housing section of the 1995/1996 HIECS tried to incorporate as much information as possible within a limited set of interview questions. There are two main sections, the characteristics section and the expenditures section. Eventually it would take respondents less than five minutes to answer the two page characteristics section - 21 multiple answer plus the durable inventory list. Because the interviewer was present to corroborate the testimony of the respondent, the housing characteristics data have, arguably, the highest quality of all the HIECS data. The expenditure section consists of annual housing and utilities, and fuel and lighting payments. These estimates are likely prone to more bias, given the nature of the expenditures - continuous rather than categorical, in addition to the sensitivity about rents and owners' equivalent rents in general.

Certain potential housing variables were considered in the design phase of the 1995/1996 project but eventually discarded. The enumerators, through general observations, could have been trained to rate on a Guttman scale (1 to 5), such issues as the general cleanliness or the lack of obstructions in main traffic areas, general state of repair of walls, abundance of furniture and decoration, etc. These interviewer-source techniques might be employed in the next HIECS.

Three variables of the housing characteristics section bear further scrutiny for their importance: housing type, tenure, and the key money proxy.

Classification of Housing Type and Tenure in the 1995/1996 HIECS

TYPE	TENURE
1. One apartment	1. Ordinary Rent
2. More than one apartment	2. Furnished Rent
3. Villa	3. Owned
4. Country (rural) house	4. Purchased
5. One or more independent rooms	5. Gift
6. One separate room or more	6. In kind
7. Non-traditional housing	7. Other

Under TYPE, a villa was taken to mean a classic older house in an urban setting. The difference between 5. and 6. is as follows: Households occupying one or more independent rooms in a dwelling may be sharing the dwelling with other households and occupying non-contiguous space. Other times there are separate rooms in an apartment or house (for example, on the roof), and the household will take up one or more of these. One or more separate rooms are usually inhabited as part of the housing structure. Non-traditional housing captures the squatters, the homeless, people living in cemeteries and tents.

Under TENURE, the codes are hardly changed from the 1990/1991 survey but the results surely have. Ordinary renters make regular rent payments and are always responsible for their own maintenance (painting, wallpapering, ceramic or alumetal purchases, plumbing, electrical outlets and bulbs, etc.) and utilities (electricity and water). The age of the tenants rather than the age of the structure provides a better indicator of whether the rent is ordinary or furnished. Furnished rent tenureship is associated with those needing contracts to rent a furnished apartment. Before Law No. 4, landlords could raise rents on furnished apartments a) annually, for year-length contracts, b) when the present tenant vacated the dwelling, and c) if the contract was recent, and so stipulated a different rent increase schedule. In the process of changing the law, furnished renters realized that having a contract became a liability if rents could be liberalized merely with the existence of a contract. *Contracts, and therefore, furnished renters, became very scarce very quickly.* The new law explains the lack of furnished renters. Abrogating a contract means taking a case to an already overwhelmed judicial system.

Another interesting feature of tenureship in Egypt is the provision of "in kind" rent. In kind payments can make up an substantial share of public sector employee wages, but Table IV.2 shows a precipitous drop in the practice from 1990/1991. Most of the employees who receive in kind rent pay nothing for their housing, about 10% of employees have some money taken out of their salaries for rent, and a nominal number of in-kind tenants pay a very

nominal rental fee.

In the context of rent control, estimates of the subjective valuation of dwelling space are extremely important. Such estimates inform the willingness to move as much as the willingness to pay, and can be aggregated to provide a benchmark for the social costs of rent control. All household heads were asked: "If you would rent the dwelling today, what amount of rent could you receive per month?" This "key money proxy," or "keyrent" as it came to be known, was then annualized. For ordinary and furnished renters, the difference between actual and subjective rent approaches consumer surplus for individual cases. The obvious question is whether consumer surplus, properly adjusted for housing characteristics quality, is higher for owners than for renters.

For owners, annualized keyrent should be very near to imputed rental value. The former estimate has a more subjective connotation, more opinionated content; the latter comes from coaching the respondent that taxes indicated dwelling costs, and that the estimate should be based on a dwelling with about the same age and amenities. During the enumerator training phase, there were concerns raised about owners' imputation, whether the respondent would be afraid, or really would be capable, of providing a good estimate for the value of the dwelling. The distribution of owners' imputed rent estimates is worthy of further analysis, especially as an excellent departure for research into imputation bias in the HIECS.

VI.F.1 Intensity of Use of Housing Services

A simple indication of the intensity of use of housing services in the country can be derived from the ratio of household members to the number of rooms in the dwelling. This ratio can be further classified by area, tenure, and household expenditure level. Table VI.4 does this, for *survey weighted data* (the data are weighted to make inferences about housing at the national level). At first glance one might consider it surprising that rural areas have higher dwelling intensity, and may ascribe this result to the inability to classify households so strictly as either rural or urban. However, households designated rural have more members, and dwellings in rural areas traditionally have fewer rooms. Rural Qena governorate has the highest number of persons per room (1.68) and urban Kafr-Shiekh the lowest (1.07). The use intensity in the tenure group "Other," which includes squatters, the homeless, people living in the City of the Dead, is extremely high. As unadjusted household expenditures rise the number of persons per room exhibits an S-shaped curve; economies of scale in housing appear to reach a plateau at about one and one-half persons per room..

VI.F.2 Inventory of Durable Goods

Dividing the 14,805 households into unweighted average annual expenditure quintiles of 2,961 households each, the 1995/1996 HIECS sample frequencies for the existence of household durable goods produces the typical conclusion that the richest quintile owns the most amenities, the poorest quintile the fewest. The frequencies below only characterize the sample and without weighting should not be assumed to represent all Egyptian households. Even if weighted the estimates should not be considered reasonable (or

statistically significant) without accounting for variance. For example, only .78% of sampled households own a private automobile. In May of 1996 the Ministry of Transportation estimated the number of "private vehicles" in Egypt to be 1.075 million (with "other vehicles" given as 1.059 million). If "private vehicles" are defined as private automobiles and motorcycles, the inference from sample information given the number of households presumed to exist in Egypt (12,343,580) would produce an overestimate of 1.5 million private vehicles in the country.

1995/1996 HIECS Durable Goods, by Quintile, N = 14,805

Durable Good	Quint1	Quint2	Quint3	Quint4	Quint5
Car	2	5	12	30	528
Motorcycle	93	204	252	316	363
Bicycle	4	15	19	39	67
Phone	79	175	303	535	1369
Refrigerator	900	1433	1745	2097	2573
Freezer	12	22	31	64	402
Cooker	1259	1752	2026	2298	2665
Washing Machine	1508	2221	2462	2663	2836
Dish Washer	2	9	10	11	90
Water Heater	175	336	543	821	1686
Vacuum	25	50	93	215	878
Air Conditioning	2	3	6	21	201
Fan	996	1420	1696	2050	2421
Heater	32	45	97	155	492
Clothes Iron	703	1361	1747	2084	2565
Color TV	475	933	1250	1553	2222
Black & White TV	1358	1515	1436	1251	886
VCR	11	22	77	183	746
Stereo System	1366	1811	1990	2221	2571
Personal Computer	0	2	1	10	103

Black & white TVs appear to be the only goods for which the number of

cases does not rise throughout the curve of household expenditure quintiles. Since each quintile represents 2,961 households, one can infer that about 48% (1,420/2,961) of households in the second quintile owned a fan, etc. It is surprising, at least for the highest quintile, that so few households own a personal computer. The present lack of a technology base has wide-ranging implications for technology transfer, in general, and access and dissemination policies, in particular.

VI.F.3 Average Housing Expenditure

Table VI.5 has the estimates of survey weighted actual housing expenditures by the same categories - area, tenure, and raw expenditure class. Suez is the most expensive city for housing, and it is relatively cheap to dwell in rural Upper Egypt. Annual housing costs are about $109.00 per year in rural Assiut. Rural housing is cheaper than urban housing overall. Furnished renters are, indeed, paying a very high premium by being under a rent contract, although the standard error of the furnished rent estimate is rather high. Housing costs rise directly with raw expenditures, and so do standard errors (at least at the higher expenditure levels), indicating heteroskedasticity in the housing cost estimates.

VI.F.4 Imputed Valuation of Dwellings, the Key Money Proxy

Table VI.6 shows estimates of the ratio of keyrent to housing expenditures. As stated above, this is expected to deviate from 1.0 more for renters than for owners, as it does. Still the value 1.27 for owners suggests that owners believe they could earn 27% more by renting out their dwelling unconditionally than they could if they put their dwelling in an auction of dwellings with similar age, taxes, and amenities. In other words, owners feel that those three variables are limited for capturing valuation overall. The comparison between the ratio for ordinary rent (1.55) and furnished rent (.90) is striking - it is obvious that ordinary renters realize that they are reaping consumer surplus, and that furnished renters think they are paying too much. Because the keyrent-to-actual-expenditure ratio is heavily influenced by the extent of renting, it is hard to present an interpretation of geography on the index. People in urban areas believe that they could get 46% more than their actual or imputed values if they put their dwelling onto the market. In the rural areas the estimate of consumer surplus is only 21%. In the rural Frontier the index is 1.0; people generally believe they are getting the fair market value they pay for or expect. Finally, as household annual expenditure levels rise, the subjective valuation gradually decreases. However, before inferring that the poorest expenditure levels believe themselves to be getting the most for their money, the expenditures should be scaled for equivalence.

A final question concerns the comparison of economic well-being between renters and owners, given the subjective valuation of the key money proxy. We define the difference between key money and paid rent (for renters) or owners equivalent rents (for owners) to signify relative consumer surplus. The comparison uses hedonic indices of housing amenities evaluated at the means for each sample. Table VI.7 shows the results of both hedonic regressions for renters and owners. For both groups, the index of consumer surplus (the sum of the products of the estimates and their sample mean

values) is positive: 587.51 for renters and 418.72 for owners. Therefore, both renters and owners believe that they are spending less than they could actually get for their dwelling. Owners believe themselves to be, in the aggregate, about 40% worse off than renters, therefore.

VI.G Conclusion

The analysis of the 1990/1991 data began with the question "What is the cost of shelter in Egypt?" It turned out to depend on who was asking the question - renter or owner, young or old, rich or poor. It also depended on how shelter was defined. The various characteristics of shelter (type, place, size, other "amenities") were shown to have their own implicit prices. These prices were then compared for separate markets assumed to be affected differently because of historical experience, custom, and law. After surveying the historical/legal context of landlord/tenant relations, and outlining a theoretical basis for rent control, shelter costs from household sample survey data were presented for various tenure types. Incredible demand pressure should be driving shelter costs ever higher but government regulation to keep costs down is well ingrained in the system. Tenure relations have been essentially static for well over a decade. Renters made up about one-quarter of the population in 1991, but a higher proportion rented in urban areas. About four-fifths of renters were covered by rent control provisions which lost their intended impact some time ago, as maintenance, repair, and improvement costs passed to tenants. The empirical section proved that even though the data come from separate samples, rents equalize after adjusting for quality.

Time constraints and data limitations dictated a less ambitious analysis for the recent HIECS data. Preliminary results from the 1995/1996 HIECS show that obvious extensions and refinements to the rent control analysis are not possible given the lack of a clear dichotomy of rent-controlled/free-market samples, a paucity of free market renters characterizing themselves as renting "furnished" apartments. However, the 1995/1996 data does include questions about the age of the dwelling unit, its approximate size, present imputed rental value, general surrounding conditions, location and distance to market and economic activity. Hedonic models using these additional variables better characterize the existing housing stock. Controlling for amenities, renters perceive themselves better off than owners. Supply response should be accorded equal due, especially the important effect of expectations on supply under strict regulation. Alternate data sources should be sought to compare and integrate findings (see Cairo Development Center, (1994)). Trend comparisons with the previous survey are especially compelling in light of the present economic reform program. Finally, the 1995/1996 HIECS has permitted the updating of weights for market basket items in the official consumer price index. Research into the services cost of housing grows in importance with changes in inflation measurement design and methodology, with rent decontrol, and with increases in the cost shares of housing.

Appendix VI.A The Elasticity of Utilities, and the Impact of Price Change

A number of assumptions are made in standard economic theory to make inferences about elasticities. These bear repeating in the context of utilities consumption, especially when referring to effects on disparate groups. Assume constant prices and a household linear budget constraint. The implication of this is that prices will have to be independent of quantities purchased. This assumption is not as difficult to justify where prices are set by fiat, a common practice for monopolies.

a. Household maximize utility subject to a budget constraint

$$1) \qquad Y = \sum_k p_k q_k$$

that is, income is the sum of expenditures (or incomes).

b. each individual Marshallian demand is a function of prices and income

$$2) \qquad q_i = q_i \ (p, y)$$

equations 1) and 2) give us the adding up restriction

$$3) \qquad Y = \sum_k p_k q_k \ (p, y)$$

c. and demands have to be homogeneous of degree 0. That is, if we raise prices and incomes by the exact same amount, nothing happens to demands.

$$4) \qquad q_i \ (\theta p, \theta y) = q_i \ (p, y)$$

The household is maximizing utility, so we take the partial derivatives with respect to income and prices:

$$5) \qquad y: \quad \sum_k p_k \frac{\partial q(p,y)}{\partial y} = 1 \qquad\qquad p: \quad q_i + \sum_k p_k \frac{\partial q_k}{\partial p_i} = 0$$

The results above are referred to as Engel Aggregation and Cournot Aggregation. We need to test if these aggregations hold to make inferences about elasticities. A flexible equation for testing adding up is the Working-Leser

$$6) \qquad w_i = \alpha_i + \beta_i \ln y$$

where w_i is the household expenditure share of good i.
A sufficient condition for satisfying adding up (equation 5) is $\Sigma \ \alpha_i = 1$ and Σ

$\beta_i = 0$. Chapter II showed that the sum of the elasticities for group goods was very near zero and would likely equal zero in the limit. To sum up: Adding up holds, so elasticities are valid for the data; over time, utilities shares have remained slightly inferior; utilities shares have increased over time; utilities are very cheap. It is likely that utility price increases would impact more on the poor, but that the poor could afford these changes, given the initial low costs of utilities.

Figure VI.1 A Synopsis of Egyptian Housing Laws

Law No. 46 of 1962
• fixed annual rents at 5% of the cost of the land plus 8% of the cost of construction;
• rents were frozen and any Egyptian who occupied a sole property continuously for three years or more could not be evicted;
• tenancy rights transferred to children in perpetuity.

Law No. 52 of 1969
• limited the annual net return on investment of a landlord's property to 5% of the value of the land and construction.

Law No. 49 of 1977
• annual net return limited to 7% of the value of the land and construction.

Law No. 136 of 1981
• incorporated the previous fixed 7% rate-of-return provision;
• building owners were required to provide at least two-thirds of their apartment properties to prospective renters.

Law No. 4 of 1996
• amends Laws No. 49 of 1977 and No. 136 of 1981 (and similar). Rent control will no longer apply to dwellings not previously leased, and places with expired or expiring leases (i.e., vacant dwellings).

Law No. 6 of 1997
• the right of lease for premises used for non-residential purposes ("commercial, industrial, trade or vocational activity") shall terminate upon the death or departure of the first generation of beneficiary heir of the original leasee;
• stipulates the graduated highest legal rent for non-residential leases as:
Eight times the present legal rent for premises established before January 1944;
Five times the rent for dwellings built from Jan 1944 - Nov 1961;
Four times the rent for dwellings built from Nov 1961 - Oct 1973;
Three times the rent for dwellings built from Oct 1973 - Sept 1977;
1.10 times the rent for dwellings built from Sept 1977 - 30 Jan 1996.
• fixes the annual rental increase at 10% per year for all such dwellings.

Figure VI.2a Standard Graph of the Housing Market

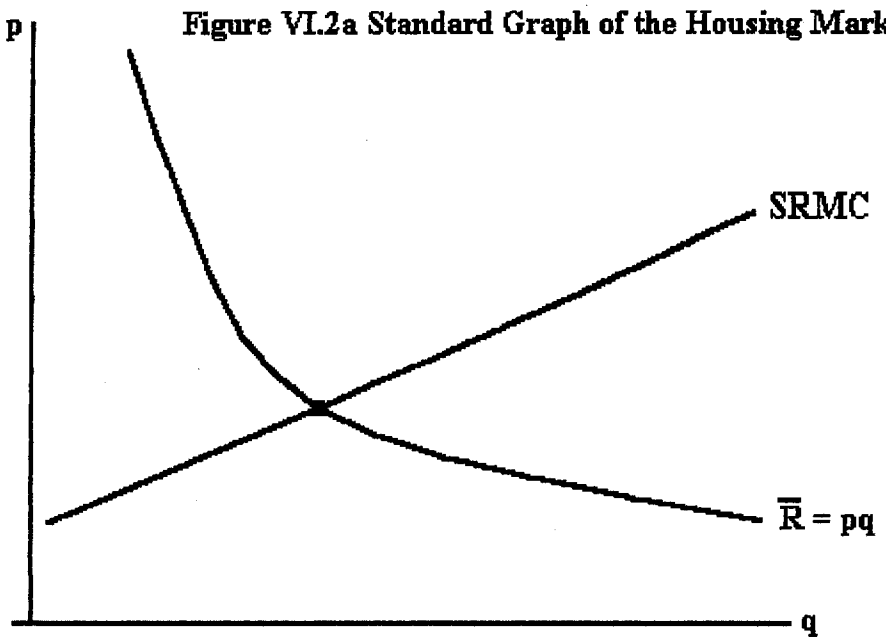

Figure VI.2b Graph of the Imposition of Rent Control and Effects

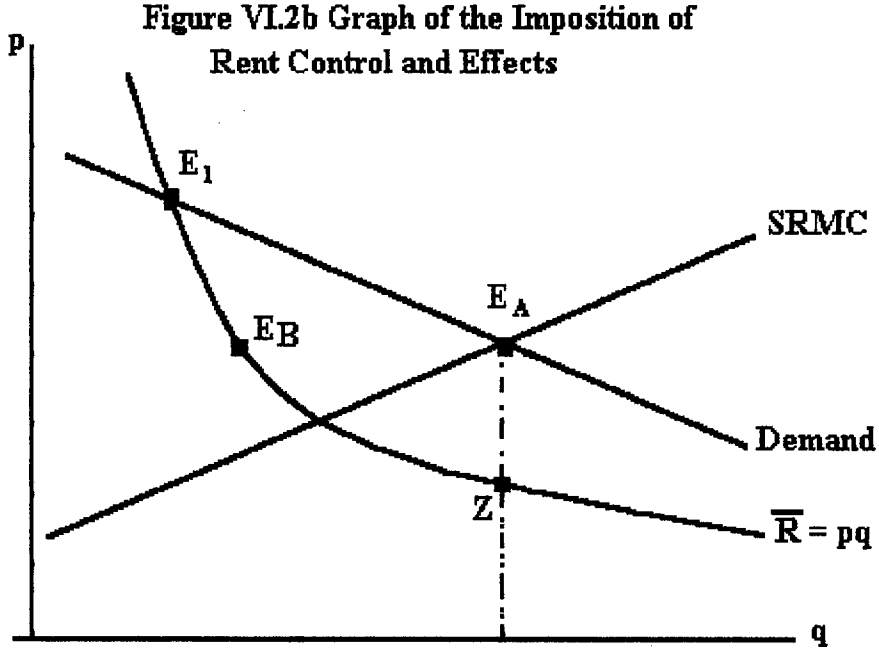

Table VI.1 Semi-Log Hedonic Regression Results, Controlled and Uncontrolled Markets (with s.e.)

Variable	Controlled Rsq = .2066 F = 22.486	Uncontrolled Rsq = .1355 F = 3.428
INTERCEPT	5.418	4.941
	(49.534)	(25.474)
Locale:		
SECTOR	-0.442	-0.171
(urban=1)	(-5.155)	(-1.732)
LOWER	0.267	0.365
	(5.948)	(3.484)
UPPER	0.029	0.206
	(0.638)	(1.843)
# ROOMS	0.028	0.059
	(2.25)	(2.243)
Type:		
VILLA	-0.695	0.058
	(-1.907)	(0.199)
RURALHOUS	-0.288	-0.119
	(-3.287)	(-1.29)
IND.ROOMS	-0.198	-0.561
	(-3.198)	(-3.299)
TEMPHOUS	-1.123	-0.624
	(-3.87)	(-2.455)
Amenities:		
KITCHEN	-0.151	-0.268
(shared=1)	(-1.615)	(-1.495)
NO KITCHEN	-0.243	-0.800
(yes=1)	(-4.53)	(-0.707)
BATH	-0.141	0.306
(shared=1)	(-2.029)	(2.005)
NO BATH	-0.019	-0.053
(yes=1)	(-0.401)	(-0.47)
NO TOILET	-0.047	-0.183
(yes=1)	(-0.72)	(-1.771)
SEWER	-0.301	-0.112
(conn=1)	(-5.835)	(-1.062)
Water source:		
PUMPED	-0.245	0.050
(yes=1)	(-2.161)	(0.424)
OTHER	-0.042	0.312
(yes=1)	(-0.427)	(2.386)
NONE	-0.113	-0.120
(yes=1)	(-1.396)	(-1.062)
Light source:		
KEROSINE	-0.018	-0.255
(yes=1)	(-0.133)	(-1.953)
OTHER	-0.122	-0.860
(yes=1)	(-0.335)	(-2.154)

	Controlled	Uncontrolled
Inventory (own=1):		
PHONE	0.121	0.189
	(3.133)	(1.717)
CAR	0.081	-0.027
	(1.857)	(-0.207)
MOTORCYCLE	0.153	0.100
	(3.565)	(0.808)
BIKE	0.007	0.167
	(0.159)	(1.528)
VCR	0.125	0.012
	(3.153)	(0.105)
COLORTV	0.075	0.137
	(2.028)	(1.438)
REFRIGR	0.066	-0.185
	(1.717)	(-2.124)
WASHMACH	0.077	0.046
	(2.008)	(0.571)
FAN	0.130	0.126
	(3.447)	(1.441)
VACUUM	0.127	-0.015
	(3.099)	(-0.139)
GAS OVEN	0.083	0.104
	(2.186)	(1.197)

Table VI.2 Tenure by Rural/Urban in Two HIECS Samples

1990/1991 HIECS

Frequency Percent Row Pct Col Pct	RURAL	URBAN	TOTAL
Ordinary Rent	165 1.19 6.23 2.93	2484 17.90 93.77 30.09	2649 19.09
Furnished Rent	283 2.04 40.78 5.03	411 2.96 59.22 4.98	694 5.00
Own the Building	3516 25.34 53.17 62.54	3097 22.32 46.83 37.51	6613 47.65
Own an Apartment	827 5.96 33.92 14.71	1611 11.61 66.08 19.51	2438 17.57
In-kind	579 4.17 54.26 10.30	488 3.52 45.74 5.91	1067 7.69
Other	252 1.82 60.43 4.48	165 1.19 39.57 2.00	417 3.00
TOTAL	5622 40.51	8256 59.49	13878 100.00

1995/1996 HIECS

Frequency Percent Row Pct Col Pct	RURAL	URBAN	TOTAL
Ordinary Rent	247 1.67 7.15 3.02	3208 21.67 92.85 48.44	3455 23.34
Furnished Rent	0 0.00 0.00 0.00	8 0.05 100.00 0.12	8 0.05
Owned	7283 49.19 72.45 89.00	2770 18.71 27.55 41.83	10053 67.90
Bought	36 0.24 9.50 0.44	343 2.32 90.50 5.18	379 2.56
Gift	566 3.82 67.38 6.92	274 1.85 32.62 4.14	840 5.67
In-kind	48 0.32 72.73 0.59	18 0.12 27.27 0.27	66 0.45
Other	3 0.02 75.00 0.04	1 0.01 25.00 0.02	4 0.03
TOTAL	8183 55.27	6622 44.73	14805 100.00

Table VI.3 Tenure by Area in Two HIECS Samples

1990/1991 HIECS

Frequency Percent Row Pct Col Pct	Urban	Lower	Upper	Frontier	Total
Ordinary Rent	1537 11.45 58.15 43.25	541 4.03 20.47 10.28	541 4.03 20.47 12.29	24 0.18 0.91 12.00	2643 19.70
Furnished Rent	211 1.57 30.62 5.94	197 1.47 28.59 3.74	276 2.06 40.06 6.27	5 0.04 0.73 2.50	689 5.13
Owners	1637 12.20 18.14 46.06	3988 29.72 44.18 75.80	3251 24.23 36.02 73.84	150 1.12 1.66 75.00	9026 67.27
In-kind	169 1.26 15.94 4.76	535 3.99 50.47 10.17	335 2.50 31.60 7.61	21 0.16 1.98 10.50	1060 7.90
Total	3554 26.49	5261 39.21	4403 32.81	200 1.49	13418 100.00

1995/1996 HIECS

Frequency Percent Row Pct Col Pct	Urban	Lower	Upper	Frontier	Total
Renters	2106 14.29 60.81 68.22	812 5.51 23.45 12.88	507 3.44 14.64 9.87	38 0.26 1.10 18.45	3463 23.50
Owners	981 6.66 8.70 31.78	5494 37.29 48.74 87.12	4629 31.41 41.07 90.13	168 1.14 1.49 81.55	11272 76.50
Total	3087 20.95	6306 42.80	5136 34.86	206 1.40	14735 100.00

Table VI.4 Persons/Room, by Area, Tenure, and Household Average Expenditure Class, Survey Weighted

Category	Estimate	Standard Error	C.V. (%)	95% Conf Interval Lower	Upper	Design Effect	Number of Observations
Persons per Room							
AREA							
Cairo	1.21	0.04	2.93	1.14	1.28	6.13	1962
Alexandria	1.29	0.06	4.65	1.18	1.41	7.44	895
Port Said	1.16	0.17	14.79	0.82	1.49	15.60	118
Suez	1.27	0.10	8.04	1.07	1.47	3.18	120
Damietta R	1.24	0.07	5.22	1.11	1.37	2.00	177
Damietta U	1.15	0.04	3.14	1.08	1.22	0.35	88
Dahraleya R	1.29	0.03	2.08	1.24	1.34	1.80	776
Dahraleya U	1.11	0.07	5.99	0.98	1.24	5.13	297
Sharkia R	1.26	0.03	2.10	1.21	1.31	1.85	835
Sharkia U	1.14	0.06	4.87	1.03	1.25	3.16	205
Kalyoubeya R	1.47	0.05	3.69	1.36	1.57	3.37	442
Kalyoubeya U	1.36	0.06	4.39	1.24	1.47	3.48	320
Kafr-Shiekh R	1.37	0.05	3.72	1.27	1.47	3.08	417
Kafr-Shiekh U	1.07	0.09	8.54	0.89	1.25	3.36	118
Gharbia R	1.35	0.03	2.34	1.28	1.41	1.46	590
Gharbia U	1.17	0.06	5.11	1.05	1.29	3.12	275
Menoufia R	1.46	0.02	1.38	1.42	1.50	0.41	527
Menoufia U	1.31	0.11	8.69	1.08	1.53	3.51	139
Behera R	1.50	0.03	2.08	1.44	1.56	1.72	718
Behera U	1.20	0.08	6.51	1.05	1.35	4.02	210
Ismalia R	1.30	0.07	5.05	1.17	1.43	1.70	88
Ismalia U	1.27	0.14	11.15	0.99	1.55	5.44	114
Giza R	1.24	0.03	2.69	1.17	1.30	1.86	477
Giza U	1.27	0.06	4.57	1.16	1.39	7.09	671
Beni-Suef R	1.49	0.05	3.00	1.40	1.58	1.10	328
Beni-Suef U	1.26	0.15	12.11	0.96	1.56	5.13	114
Fayoum R	1.44	0.03	2.00	1.39	1.50	0.55	360
Fayoum U	1.27	0.11	8.85	1.05	1.49	2.44	116
Menia R	1.40	0.03	2.11	1.34	1.46	1.06	647
Menia U	1.37	0.05	3.78	1.27	1.47	0.67	140
Assiut R	1.53	0.06	4.10	1.41	1.66	3.04	472
Assiut U	1.35	0.14	10.58	1.07	1.63	5.93	172
Sohag R	1.59	0.05	2.95	1.50	1.68	2.00	534
Sohag U	1.27	0.07	5.62	1.13	1.42	1.86	166
Qena R	1.68	0.08	4.60	1.52	1.83	4.83	536
Qena U	1.31	0.13	9.74	1.06	1.57	6.10	175

Table VI.4 Persons/Room, by Area, Tenure, and Household Average Expenditure Class, Survey Weighted (cont.)

Category	Estimate	Standard Error	C.V. (%)	95% Conf Interval Lower	Upper	Design Effect	Number of Observations
Persons per Room							
AREA (cont.)							
Aswan R	1.39	0.08	5.88	1.23	1.55	2.67	150
Aswan U	1.30	0.07	5.14	1.17	1.43	1.04	89
Frontier R	1.39	0.14	10.15	1.11	1.66	4.19	109
Frontier U	1.42	0.11	7.75	1.21	1.64	2.05	118
URBAN	1.24	0.02	1.44	1.21	1.28	5.48	6622
RURAL	1.41	0.01	0.73	1.39	1.43	1.93	8183
TENURE							
Ordinary rent	1.28	0.03	1.97	1.23	1.33	5.17	3455
Furnished rent	1.11	0.26	23.00	0.61	1.61	1.00	8
Owned	1.34	0.01	0.64	1.32	1.36	1.79	10053
Purchased	1.21	0.07	6.13	1.07	1.36	5.86	379
Gift	1.53	0.03	2.10	1.47	1.59	1.39	840
In-kind	1.44	0.12	8.37	1.20	1.67	1.43	66
Other	1.99	0.12	6.02	1.76	2.23	0.08	4
EXP GROUP							
le 2000	0.63	0.02	2.86	0.60	0.67	1.14	697
gt 2000 le 3000	1.00	0.02	2.39	0.96	1.05	1.41	1195
gt 3000 le 4000	1.22	0.02	1.69	1.18	1.26	1.62	1827
gt 4000 le 5000	1.38	0.02	1.22	1.35	1.41	1.38	2223
gt 5000 le 6000	1.42	0.02	1.18	1.39	1.45	1.43	2216
gt 6000 le 7000	1.47	0.02	1.17	1.43	1.50	1.28	1763
gt 7000 le 8000	1.47	0.02	1.37	1.43	1.51	1.28	1278
gt 8000 le 9000	1.47	0.03	1.68	1.42	1.52	1.50	948
gt 9000 le 10000	1.42	0.03	1.78	1.37	1.46	1.28	651
gt 10000	1.26	0.02	1.78	1.22	1.31	3.63	2007

Table VI.5 Average Housing Expenditure, by Area, Tenure, and Household Average Expenditure Class, Survey Weighted

Category	Estimate	Standard Error	C.V. (%)	95% Conf Interval Lower	Upper	Design Effect	Number of Observations
Average Housing Exp							
AREA							
Cairo	725.72	53.01	7.30	621.81	829.62	14.13	1962
Alexandria	580.38	45.48	7.84	491.23	669.52	4.41	895
Port Said	680.53	82.90	12.18	518.05	843.01	9.29	118
Suez	1237.35	255.13	20.62	737.31	1737.40	5.26	120
Damietta R	624.45	37.64	6.03	550.68	698.22	2.43	177
Damietta U	599.98	47.44	7.91	506.99	692.96	1.75	88
Dahraleya R	655.07	33.39	5.10	589.62	720.51	4.85	776
Dahraleya U	713.84	34.68	4.86	645.88	781.80	2.14	297
Sharkia R	548.29	16.20	2.95	516.53	580.04	3.66	835
Sharkia U	702.11	66.49	9.47	571.79	832.42	5.91	205
Kalyoubeya R	618.15	44.00	7.12	531.90	704.40	5.74	442
Kalyoubeya U	618.73	50.19	8.11	520.37	717.10	3.89	320
Kafr-Shiekh R	943.97	47.63	5.05	850.63	1037.31	3.73	417
Kafr-Shiekh U	991.35	113.38	11.44	769.12	1213.58	5.90	118
Gharbia R	647.82	32.34	4.99	584.44	711.19	2.36	590
Gharbia U	752.09	52.71	7.01	648.78	855.40	2.11	275
Menoufia R	582.68	40.08	6.88	504.12	661.24	2.24	527
Menoufia U	693.29	110.41	15.93	476.88	909.70	6.31	139
Behera R	699.35	18.76	2.68	662.57	736.12	2.52	718
Behera U	726.13	75.02	10.33	579.09	873.17	8.18	210
Ismalia R	955.13	24.09	2.52	907.91	1002.35	0.29	88
Ismalia U	962.30	28.48	2.96	906.49	1018.12	0.24	114
Giza R	829.54	47.06	5.67	737.30	921.78	5.07	477
Giza U	837.16	77.31	9.23	685.63	988.68	11.69	671
Beni-Suef R	552.87	42.90	7.76	468.79	636.95	2.19	328
Beni-Suef U	673.75	56.22	8.34	563.56	783.95	1.13	114
Fayoum R	827.96	29.08	3.51	770.97	884.96	1.65	360
Fayoum U	792.63	45.62	5.76	703.21	882.05	1.54	116
Menia R	456.70	14.93	3.27	427.45	485.95	0.86	647
Menia U	577.35	73.73	12.77	432.84	721.87	2.88	140
Assiut R	370.57	15.88	4.29	339.44	401.70	1.90	472
Assiut U	533.87	50.17	9.40	435.54	632.19	3.42	172
Sohag R	511.91	20.61	4.03	471.51	552.31	2.96	534
Sohag U	552.20	32.22	5.83	489.05	615.35	2.13	166
Qena R	424.77	26.20	6.17	373.41	476.13	2.71	536
Qena U	646.82	117.42	18.15	416.68	876.96	9.71	175

Table VI.5 Average Housing Expenditure, by Area, Tenure, and Household Average Expenditure Class, Survey Weighted (cont.)

Category	Estimate	Standard Error	C.V. (%)	95% Conf Interval Lower	Upper	Design Effect	Number of Observations
Average Housing Exp							
AREA (cont.)							
Aswan R	423.33	33.94	8.02	356.80	489.85	3.31	150
Aswan U	524.71	77.24	14.72	373.32	676.10	5.87	89
Frontier R	1029.70	203.95	19.81	629.97	1429.44	10.26	109
Frontier U	909.19	101.48	11.16	710.29	1108.09	2.41	118
URBAN	713.06	21.10	2.96	671.71	754.42	8.39	6622
RURAL	614.75	8.48	1.38	598.13	631.38	3.11	8183
TENURE							
Ordinary rent	618.06	15.44	2.50	587.80	648.32	3.54	3455
Furnished rent	3328.81	975.80	29.31	1416.23	5241.38	2.01	8
Owned	668.91	9.04	1.35	651.19	686.63	3.14	10053
Purchased	1063.86	180.97	17.01	709.17	1418.55	14.87	379
Gift	560.29	19.74	3.52	521.60	598.98	2.57	840
In-kind	552.07	53.44	9.68	447.34	656.81	1.00	66
Other	972.54	244.69	25.16	492.95	1452.13	1.31	4
EXP GROUP							
le 2000	241.10	6.66	2.76	228.04	254.16	1.48	697
gt 2000 le 3000	349.34	6.07	1.74	337.45	361.24	1.45	1195
gt 3000 le 4000	449.34	6.73	1.50	436.16	462.53	1.68	1827
gt 4000 le 5000	529.63	6.71	1.27	516.48	542.79	1.47	2223
gt 5000 le 6000	603.91	7.82	1.29	588.58	619.23	1.51	2216
gt 6000 le 7000	670.59	9.53	1.42	651.92	689.27	1.39	1763
gt 7000 le 8000	718.33	13.95	1.94	690.99	745.66	1.76	1278
gt 8000 le 9000	778.24	16.70	2.15	745.50	810.98	1.57	948
gt 9000 le 10000	858.63	21.66	2.52	816.18	901.08	1.37	651
gt 10000	1197.54	45.39	3.79	1108.57	1286.52	4.82	2007

Table VI.6 Ratio of Imputed Value of Dwelling to Actual Housing Expenditure, by Area, Tenure, and Household Average Expenditure Class, Survey Weighted (cont.)

Category	Estimate	Standard Error	C.V. (%)	95% Conf Interval Lower	Upper	Design Effect	Number of Observations
Keyrent/ Housing Exp							
AREA (cont.)							
Aswan R	1.36	0.09	6.72	1.18	1.54	3.26	150
Aswan U	1.55	0.07	4.59	1.41	1.69	0.80	89
Frontier R	0.99	0.10	10.11	0.79	1.18	3.22	109
Frontier U	1.20	0.08	6.84	1.04	1.36	1.44	118
URBAN	1.46	0.03	1.81	1.41	1.51	4.21	6622
RURAL	1.21	0.01	1.03	1.19	1.24	2.56	8183
TENURE							
Ordinary rent	1.55	0.04	2.25	1.48	1.62	2.97	3455
Furnished rent	0.90	0.09	10.30	0.72	1.08	0.87	8
Owned	1.27	0.01	1.03	1.24	1.29	2.39	10053
Purchased	1.35	0.06	4.46	1.24	1.47	2.66	379
Gift	1.33	0.03	2.17	1.28	1.39	1.51	840
In-kind	1.26	0.07	5.25	1.13	1.39	1.00	66
Other	0.41	0.17	41.47	0.08	0.75	1.33	4
EXP GROUP							
le 2000	1.72	0.04	2.54	1.64	1.81	1.33	697
gt 2000 le 3000	1.60	0.03	1.94	1.54	1.66	1.38	1195
gt 3000 le 4000	1.45	0.02	1.66	1.40	1.50	1.71	1827
gt 4000 le 5000	1.38	0.02	1.36	1.35	1.42	1.50	2223
gt 5000 le 6000	1.35	0.02	1.48	1.31	1.38	1.65	2216
gt 6000 le 7000	1.34	0.02	1.58	1.30	1.39	1.47	1763
gt 7000 le 8000	1.32	0.03	1.88	1.27	1.37	1.60	1278
gt 8000 le 9000	1.30	0.03	2.00	1.25	1.35	1.38	948
gt 9000 le 10000	1.31	0.03	2.61	1.24	1.38	1.37	651
gt 10000	1.24	0.04	2.91	1.17	1.31	2.92	2007

Table VI.6 Ratio of Imputed Value of Dwelling to Actual Housing Expenditure, by Area, Tenure, and Household Average Expenditure Class, Survey Weighted

Category	Estimate	Standard Error	C.V. (%)	95% Conf Interval Lower	Upper	Design Effect	Number of Observations
Keyrent/ Housing Exp							
AREA							
Cairo	1.58	0.07	4.13	1.46	1.71	6.72	1962
Alexandria	1.36	0.07	5.28	1.22	1.50	2.20	895
Port Said	1.11	0.23	20.47	0.66	1.55	15.14	118
Suez	1.20	0.07	6.21	1.05	1.34	0.69	120
Damietta R	1.29	0.07	5.25	1.16	1.42	2.53	177
Damietta U	1.36	0.13	9.35	1.11	1.61	2.75	88
Dahraleya R	1.47	0.04	2.99	1.38	1.56	2.67	776
Dahraleya U	1.59	0.10	6.03	1.41	1.78	3.89	297
Sharkia R	1.38	0.04	2.58	1.31	1.45	3.19	835
Sharkia U	1.44	0.10	7.09	1.24	1.64	4.88	205
Kalyoubeya R	1.64	0.09	5.52	1.46	1.81	4.93	442
Kalyoubeya U	1.78	0.07	3.94	1.64	1.91	1.28	320
Kafr-Shiekh R	1.05	0.05	4.45	0.96	1.14	4.81	417
Kafr-Shiekh U	1.10	0.10	8.74	0.91	1.29	4.40	118
Gharbia R	1.23	0.05	4.13	1.13	1.33	2.65	590
Gharbia U	1.37	0.10	7.16	1.17	1.56	2.93	275
Menoufia R	1.16	0.07	5.90	1.03	1.30	1.94	527
Menoufia U	1.16	0.14	12.32	0.88	1.43	4.53	139
Behera R	0.96	0.02	2.52	0.91	1.01	2.48	718
Behera U	1.04	0.11	10.88	0.82	1.26	12.23	210
Ismalia R	1.06	0.10	9.63	0.86	1.26	6.55	88
Ismalia U	1.11	0.06	5.47	0.99	1.22	1.31	114
Giza R	1.25	0.04	2.84	1.18	1.32	3.20	477
Giza U	1.61	0.06	3.62	1.50	1.72	3.28	671
Beni-Suef R	1.12	0.04	3.23	1.05	1.19	0.65	328
Beni-Suef U	1.37	0.22	15.66	0.95	1.79	5.09	114
Fayoum R	0.87	0.05	5.93	0.77	0.97	4.63	360
Fayoum U	1.04	0.10	9.17	0.85	1.23	3.19	116
Menia R	1.23	0.06	4.85	1.11	1.34	1.94	647
Menia U	1.22	0.15	11.91	0.93	1.50	3.13	140
Assiut R	1.15	0.05	4.65	1.05	1.26	1.83	472
Assiut U	1.54	0.38	24.43	0.80	2.28	14.52	172
Sohag R	1.15	0.05	4.36	1.05	1.25	5.24	534
Sohag U	1.46	0.08	5.38	1.30	1.61	2.74	166
Qena R	1.11	0.07	6.29	0.97	1.24	3.32	536
Qena U	1.49	0.05	3.38	1.39	1.59	0.80	175

Table VI.7 Comparison of Consumer Surplus, Renter and Owner Hedonic Housing Regressions

	RENT, N=3451, R-sqr=.4574, F=65.27		**OWN, N=11243, R-sqr=.3438, F=133.32**	
	EST	T Value	EST	T Value
INTERCEP	-3016.706	-17.57	-2585.157	-33.64
AREA	-4.054	-4.13	-0.149	-1.09
AREA Squared	0.027	5.66	0.001	4.36
AGE	9.634	10.04	13.810	19.67
AGE Squared	-0.050	-6.36	-0.118	-13.13
Log (Keyrent)	617.075	37.01	500.686	56.92
Log (Light & Fuel Costs)	-45.291	-2.20	-60.711	-6.18
# ROOMS	8.121	0.63	-7.960	-2.24
Connected to Sewer?	87.823	2.69	0.636	0.06
Distance to Work	0.007	0.03	0.048	0.36
Distance to Market	-0.957	-0.27	-0.147	-0.51
If Apartment	-89.925	-1.95	-79.412	-5.13
If Rural House	-49.906	-0.81	-100.098	-7.32
Private Kitchen?	-16.511	-0.45	-32.037	-2.72
Private Bath?	4.884	0.12	22.169	1.51
No Separate Bath?	-84.188	-2.01	56.351	2.90
No Separate Toilet?	20.591	0.56	-42.185	-3.02
No Flush Toilet	-29.060	-1.34	-18.595	-1.57
Other Garbage Disposal	-48.337	-1.86	10.111	0.80
Area Dry	65.837	1.55	32.096	1.85
Connected to Water Mai	-74.800	-1.40	-25.410	-2.02
Tap in Dwelling	-58.443	-1.51	-17.788	-1.48
Electrical Lighting	-222.654	-2.38	-41.222	-1.88
Butagas for Cooking	-166.236	-6.47	-114.930	-5.25
Brick Exterior	15.095	0.57	-38.856	-3.79
HH OWNS:				
CAR	76.123	2.07	14.412	0.48
BIKE	-38.479	-1.24	0.349	0.03
CYCLE	-1.426	-0.01	-42.140	-1.12
PHONE	27.470	1.22	-24.878	-1.64
FRIDGE	4.061	0.13	4.693	0.41
FREEZER	-21.528	-0.61	36.265	1.16
COOKER	89.098	2.09	94.807	4.13
WASHMACH	-30.186	-0.85	-14.443	-1.19
DISHWASH	-77.471	-1.16	508.910	9.43
WATHTR	-20.939	-0.92	26.188	1.74
VACUUM	16.265	0.61	27.380	1.10
AC	96.306	1.81	163.330	3.70
FAN	-22.420	-1.02	6.435	0.64
HEATER	67.150	2.33	29.880	1.36
IRON	12.835	0.48	-5.108	-0.46
COLORTV	29.920	0.92	-19.589	-1.34
BWTV	25.788	0.97	-8.476	-0.75
VIDEO	-121.617	-4.44	-82.980	-3.40
CASSREC	11.613	0.53	-0.435	-0.05
PC	20.023	0.33	334.364	5.55

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Chapter VII. Education

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VII.A Introduction[1]

There are many more positive results from education - externalities - than merely increased incomes.[2] People who receive education are better able to take care of the health requirements of their families; they emphasize nutrition and preventive medical care. Formal education is widely recognized (perhaps at the expense of informal education, in Egypt) in labor market competition. For women especially, knowledge brings self-esteem and power, engendering control over marital status and reproductive behavior. The value and benefits of education are stark compared with the costs of ignorance.

This chapter focusses on evidence from the HIECS survey to provide background for the effect of education on economic behavior. First the issue of education will be placed in a sample survey context - the number of males and females of education age and their levels of formal education attainment. Then a brief overview of households' decisions about education expenditures - whether they rise or fall with total expenditures, with the number of enrolled children, with the education status of the mother or father - will inform models for both the probability of being enrolled and human capital correlates.

Some evidence will be presented here which supports recent inferences (King and Hill, (1993)) about the effect of mothers' education on household size - a negative relationship. Other findings may be interpreted in the context of the general literature. El Zanaty, et. al. (1996) find a negative relationship between a mother's education level and the probability of stunting in children (a height-for-age ratio which is at or below two standard deviations from the median of the reference population), but the HIECS data cannot provide corroborating evidence of that. Similarly, confirming that education has a stronger effect on the total fertility rate (the mean number of live births per woman during her lifetime) than family planning programs (Chang (1995)) would require too many assumptions about the impact of family planning programs. Gender gaps in primary education - one measure is the *ex post* ratio of enrolled girls to enrolled boys - have received considerable attention in Egypt. These are reportedly lowest, approaching 80% and below, in Upper rural Egypt due mainly to differences in religion, culture and tradition in this region. Wahba (1996) finds improvement in the gender disparities of primary and secondary enrollment rates in Egypt due to relaxing household constraints from returning migrants. Subbarao and Raney (1995) conclude from cross-country comparisons that large gender disparities in educational attainment reduce per capita GDP. Whether this latter relationship holds in regional sub-aggregates is a matter for empirical investigation.

VII.B HIECS Responses

Education variables come from two sections in the 1995/1996 HIECS, the

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[1] The focus of discussion in this chapter benefited from conversations I had with Sally Patton and Jennifer Notkin of USAID/ETP.

[2] "Education" in this sense should be taken to mean the stock of knowledge pertaining in a population at any given time, known to have developed from formal and informal schooling, training and experience.

demographic section and the expenditure section. Every individual is the target of the demographic section, and therefore all persons provided coded information for their specific level of education:

1 - underage
2 - illiterate
3 - no certification received, individual can read and write only
4 - received primary certificate, and less than preparatory education
5 - secondary and equivalent certification
6 - above secondary, less than university
7 - university certified
8 - post-university education, whether or not certified[3]

Every individual is asked whether he or she has "matriculated in any educational institution this current academic year" (enrolled). While this may seem a straightforward question, the student may be enrolled but may not be attending school.[4] In fact, the student may have been enrolled "the current academic year" and not be enrolled now. Students are kept on the school rolls even when they do not attend school for extended periods. The potential for bias in this response was known in early HIECS design sessions but an obvious solution was not apparent. The real test of enrollment levels comes in the comparison for consistency with household education expenditure levels. Realized expenditures on education provide a better indication of the household's commitment to educating children than the number of enrolled members. If the student was enrolled, he or she then provided information on the type of school (government or private and normal or "language" school), the education stage the student had completed (primary, preparatory, secondary, or university), finally, the number of years successfully completed in that education stage.

In subsequent enumerator visits, the household provided information on specific education expenditures, school fees and tuition, and the costs of books categorized for the various stages of education of the households' children: primary, preparatory, secondary, university. From this exercise,

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[3] Codes 4, 5, and 6 were grouped into one code in the previous survey: "less than university." Information about the student's current enrollment status, the type of education, stage, and years completed in stage was not collected in the 1990/1991 HIECS.

[4] How could the real truth about attendance be determined statistically? The problem is related to *validity coefficients* in the psychometric literature (Duncan (1985), p. 6). These are constructed as the square root of the true variance to the total variance. Assume that I denotes the ex post actual number of attendants and R denotes the reported number enrolled. The ratio of measurement error variance to true variance is var $(I - R)$ / var (R). Total variance would be var (R) + var $(I - R)$. R used as a right hand side regressor would be measured with error; the true coefficient for the right hand side would be the coefficient on the erroneous measure R times (1 + (var $(I - R)$ / var (R)). Call the error-to-true variance X. The validity coefficient is $(1 / 1 + X)^{.5}$. The inverse of the validity coefficient is the familiar signal-to-noise ratio, a measure of how much the variable's variance would bias outcomes in the regression framework.

another potential source of bias was eventually discovered: when the household pays school fees, only one receipt is returned, usually, which includes tuition and books. Parents were not always able to separate these costs.

Another widespread practice in Egypt is the reliance on tutoring for the main purpose of passing government exams. Respondents may have underestimated these costs. Related to this, what if a student at secondary school takes extra classes at a university? Is the end use secondary or university education? These small concerns may suggest the presence of multicollinearity when using component school expenditures as regressors.

The first table of Chapter II gave the proportion of respondents who fell into each of the education levels in the 1995/1996 HIECS. This information is repeated in Table VII.1, along with the other basic proportions for the educational variables under review. Only 27.5% (see the far-right column - 20,339 individuals out of 73,939 individuals surveyed) consider themselves illiterate.[5] Note that this is not 27.5% of the school age sample, but 27.5% of the *entire sample*. Subtracting off those "Less than age," *40.6% of persons 15 years and older identified themselves as illiterate in the 1995/1996 HIECS. In the 1990/1991 HIECS, it was 39.5%.* The percentage of the sample who are presently enrolled in all levels of education is only 27.7%, or 20,505 persons. For the stage of education, and the type of education, a row for "not applicable" exists to emphasize that the relevant sub-sample is made up of enrolled students. An even smaller sub-sample provides the real subject group for research interests here: namely, the 6 - 14 year olds, whose members must be enrolled and should be attending primary school or preparatory school.[6] These enrollees number 14,646 children, and there are 16,775 children in the sample 6 - 14 year age bracket, an enrollment rate of 87.3%. Ninety-six percent (.267/.277) of all enrolled students attend "normal government" schools.

Table VII.2 shows the total number of students in the 1995/1996 HIECS, weighted and unweighted, and the percent of enrolled students, by region. The weighted total number of students is 16,845,000, or about 28% of the population of 60 million persons. This percentage accords generally with the average percentage of students across the regional samples.

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[5] Researchers in education will no doubt consider my liberal use of these terms unacceptable. "Literacy" here refers only to the subjective evaluation of the respondent when given a dichotomous choice of yes or no to the term "illiterate" (the arabic word is *umii* and is well known) in the interview. It should not be considered comparable to a formal standard definition, such as the following, from the UNDP (1994): "able, with understanding, to read and write a short simple statement on everyday life."

[6] The variables "primary" and "secondary" are not without bias, of course; the category may not exactly conform to the 6 - 14 year-old age bracket. Some children begin primary school at age 5. Primary school is five years in length; prep school is three.

VII.C Characterizing Young Pupils

Concentrating on primary education in a country where half the population is under 20 years of age means more than acting with enlightened interest. But resources are constrained, and especially where males earn a premium in later life, the household's preference towards males in education spending is often explained as efficient behavior. The efficiencies are misconstrued and short-lived. Gender differentials in education are known to be associated with eventual pathological outcomes in health, and the creation of welfare dependency. But more directly, a male gender bias in education decreases the overall quality of education; an unnatural separation of the sexes at early stages of learning is a poor precedent for nurturing free thought, not to mention developing sexual identity.

Table VII.3 presents the frequencies of enrollment by sex and category for the 6 to 14 year-old age bracket. The numbers shown comprise only the enrolled, not the total number of persons in each classification. For the entire 6 - 14 year age bracket, the enrollment comparison of females to males is 93%. Increasing age does not appear to be related to the ratio. The Upper Urban region has the lowest female-to-male ratio, 88%. Qena, Aswan, Darahlia governorates have rates lower than that. In all normal government schools, females are 15% less likely to be enrolled than males. Females are staying away from school, and in many cases are being kept at home, during their very impressionable early years. Households in the higher expenditure quintiles appear to encourage female enrollment more.

VII.C.1 The Probability of Being Enrolled

What household and demographic factors are correlated with being enrolled if one is a child between 6 and 14 years of age? The probability that a student in the household is enrolled in school can to be associated with a number of demographic characteristics: sex, place of habitation, education level, household income group, education level of the household head, household habitation space (measured in square meters per person), the household distance to both market and the workplace of the household head, household amenities (electricity, television, phone), and the total household expenditure on education. Again, any variable which may impinge on alternatives to being enrolled in school is fair game for inclusion in the right hand side. The probit likelihood equation creates an overall index probability of response for the dependent variable. Positive signs on the unstandardized coefficients indicate that that right hand side variable contributes to the student's probability of being enrolled in school. A negative sign means that the factor negatively influences the student's enrollment.

Tables VII.4 and VII.4a are, respectively, the underlying probit equation and adjusted index coefficients for the probability of being enrolled in school. On the surface, being female decreases the probability of being enrolled by .23 index points, all other effects equal. Also, the variables measuring the education level of the 6 - 14 year old student are negative and statistically significant. The coefficient on "illiterate" is so strongly negative that measurement error is likely involved, at least in the definition of "illiterate." The negative coefficients on the expenditure quintiles support a similar interpretation of a tradeoff between household earnings (measured by expenditures) and the percentage of children enrolled. Each additional year

of age of the household head contributes negatively to enrollment potential - thus, the idea of substituting child labor for the input of aging parents may be indicated, as well as the lack of enlightenment in the older generation. Port Said and Suez (the "Other Urban" region) add to the intercept probability of enrollment. Also, having household members abroad increases the probability that a student will be enrolled - less incentive exists to stay home and help the household earn income, and education is probably demanded more for the sibling aspiring to migrate himself.

The coefficients of Table VII.4 are adjusted for a relative interpretation in Table VII.4a.[7] The representative student's overall response index provides the benchmark from which to measure changes in response probability given a change in one or more characteristic. The representative student is a male from Upper Egypt, from a poor household (lowest quintile of total expenditures) whose head who is 45 years old and illiterate, etc. This student has an initial response probability index of being enrolled equalling 1.5448. The table shows the change in the overall response index due to altering individual characteristics. If the student were exactly the same in all other respects except that he came from the richest household, his overall enrollment probability would be lower than the initial response probability, 1.5229. Apparently the richest households value standard education less; increasing expenditures are associated with lower enrollment rates than the overall likelihood. If the student were female, her overall probability of being enrolled would be 1.5173, about two percentage points below the overall index of probability. There is therefore statistically significant empirical evidence for the fact that being female lowers one's probability of being enrolled.

VII.E Education Expenditures

Education is a normal commodity (empirically - see Table II.14) in both HIECSs, meaning that as household incomes rise, the proportions households spend on education rise as well. The table below gives the household equivalence adjusted average annual expenditures on education and education shares as a percentage of total household budget. It also reports these education expenditures by equivalent expenditure quintiles, and by rural and urban areas, for both surveys.

[7] See the appendix to Chapter IV.

Average Annual Expenditures on Education and Budget Shares of Education, Rural and Urban, by Quintile, for Two HIECS

	Overall	Quint1	Quint2	Quint3	Quint4	Quint5
1990/1991						
Rural Mean (£E)	109.20	77.17	93.10	114.88	122.11	138.73
Rural Share (%)	2.32	1.64	1.86	2.31	2.50	3.28
Urban Mean (£E)	195.26	126.81	158.14	182.62	214.50	294.32
Urban Share (%)	4.33	2.42	3.03	3.59	4.53	8.12
1995/1996						
Rural Mean (£E)	264.49	175.97	220.50	255.91	302.75	367.43
Rural Share (%)	4.79	3.42	4.05	4.53	5.35	6.59
Urban Mean (£E)	439.86	233.86	323.64	399.05	506.14	736.93
Urban Share (%)	7.79	4.04	5.25	6.41	8.30	14.95

Urban areas prize education in both absolute and relative terms compared to rural areas. In all quintiles and for both surveys, rural shares are lower than urban shares. The richest urban quintile currently spends about 15% of the household budget on education. Over time, most quintiles currently spend about twice the budget share amount spent on education in 1990/1991.

In Chapter 4, higher education levels were associated statistically with higher wages. For any former or present student, the education level attained can be placed in the context of household earnings as well. Consider samples of individuals who have attained discrete education levels, and correlate this schooling with per capita household expenditures and incomes. The table below indicates that higher levels of education attainment provide ever greater benefits for household members (measures are in £E, and standard deviations in parentheses):

Two-Way Classification of Attained Education Levels, and Mean and Per Capita Household Expenditures and Incomes

Sample Education Level	N	Household Mean Expenditure	Household Per Capita Expenditure	Household Mean Income	Household Per Capita Income
Illiterate	6362	5248.37 (3401.39)	1218.64 (744.53)	5894.30 (4462.93)	1368.89 (987.24)
Read, Write only	3541	6791.00 (3822.85)	1460.42 (1061.18)	7563.69 (4948.54)	1641.38 (1352.22)
Primary School	1097	6984.45 (4668.33)	1597.29 (1171.58)	7869.42 (7942.05)	1869.23 (3609.82)
Secondary Certificate	1996	7181.73 (4381.75)	1739.81 (1328.61)	7790.12 (4997.47)	1886.52 (1429.85)
Post-Secondary Certificate	420	8272.32 (6855.57)	2200.98 (5265.02)	10194.60 (29491.57)	3595.71 (29128.33)
University Certificate	1322	10939.43 (7693.66)	2902.69 (2415.61)	13316.36 (19862.74)	3628.49 (6444.58)
Post-University	67	18068.80 (10955.18)	4567.90 (2880.82)	25735.43 (38373.64)	6296.58 (7997.10)

Of course crosstabulating educational attainment with household earnings is a stylize exercise because households are composed of members with varying educations. But the beneficial aspects of human capital development through education cannot be denied; even being able to read and write makes a great difference to household earnings potential. Nevertheless, assuming that the household tries to maximize benefits still begs the question of how much investment in education is best. Households are not merely buying all the education they can get. Returns from education are highly complicated, depending on many factors, including the background, experience, and aptitude of the student; the variation of quality of education by stage; from area to area, from school to school, and over time.

Estimating returns to human capital investment is complicated by the fact that households do not keep the "input" of education constant. Households spent an annual average of 203.82 £E per enrolled student in 1995/1996, but this per-student household expenditure on education fell as the number of enrolled students in the household rose:

Two-Way Table of Number of Enrolled Students, and Average Per-Student Expenditure

Number of Enrolled Students	N	Average Per-Student Expenditure, £E (standard deviation in parentheses)
1	2618	250.73 (371.89)
2	2710	204.98 (351.02)
3	2012	181.41 (262.33)
4	945	150.81 (140.75)
5	343	141.46 (131.46)
6	106	133.22 (77.41)

Per-Student education spending also increases with the the education level of the parents:

Comparison of Father's and Mother's Education Levels on Per-Student Education Expenditure

Sample Education Level	N (Father)	Per-Student Expenditure (Father)	N (Mother)	Per-Student Expenditure (Mother)
Illiterate	2686	128.47 (133.87)	5557	141.26 (158.29)
Read, Write only	2154	163.55 (176.09)	1066	226.43 (297.49)
Primary School	667	203.06 (223.97)	453	250.08 (363.24)
Secondary Certificate	1169	212.30 (315.25)	955	287.27 (384.98)
Post-Secondary Certificate	254	290.72 (430.80)	148	335.98 (623.78)
University Certificate	758	473.03 (623.20)	400	654.60 (768.88)
Post-University	47	1009.31 (1038.39)	8	1271.73 (1043.56)

The table above shows that, for both parents, spending on education increases with their own education levels; educated parents value spending on education based on their own experience.[8] There may be a number of other potentially associated factors contributing to spending on education, and the reader is cautioned against inferring too much influence to education levels in this very complex consumption relation.

VII.F Mothers' Education and Number of Children

A final question might be introduced at this stage: whether or not higher educational attainment contributes to lower fertility. Because the HIECS does not collect information on children "ever born," rather only on surviving children, the conclusion cannot be definitive. Adding the number of attempted births would probably be a monotonic increase of the number of children in the household in the limit, however. I define children to be the number of household members twelve years of age or less, and mothers to be female household heads or spouses of household heads. The mean number of children is 2.53. There is evidence that the higher the educational attainment of the mother the fewer the number of children in the household:

Average Number of Children Given Mother's Attained Level of Education

Education Level of Mother (N)	Mean Number of Children (Std Dev)
Illiterate (5891)	2.72 (1.45)
Read, Write only (976)	2.28 (1.24)
Primary School (486)	2.37 (1.23)
Secondary Certificate (1226)	2.20 (0.98)
Post-Secondary Certificate (189)	2.13 (0.98)
University Certificate (445)	1.99 (0.87)
Post-University (8)	1.50 (0.53)

[8] At first glance it appears that, when per-student education spending is classed by the education level of each parent separately, mothers spend more than fathers at all education levels. But this argument is based on a fallacy, an invalid assumption that attained education levels for both sexes are comparable, when in fact education status of mothers is a separate scale from that of fathers. The scales differ in both quantity and quality. There is empirical support, also, for the contention that per-child expenditure on "childrens' goods" (an index constructed by summing household expenditures on powdered milk, childrens' clothing (underwear) and footwear, and education) rises with the education level of the mother.

We might want to test whether mothers who have received university certificates indeed have fewer children than mothers who have only attained a primary education. The test statistic against the null of equality of the means is:

$$\approx \frac{2.37 - 1.99}{\sqrt{\frac{(1.23)2}{486} + \frac{(0.87)2}{445}}} = 5.48$$

There is empirical support for the direction of this association and, given the standard errors (which are typical of large-scale surveys such as the HIECS) the difference is significant at the 99% level of confidence.

VII.G Conclusion

This chapter on education reported a number of findings which are so varied and distinct that one generalized conclusion is not possible. The chapter began with basic tabulations of education related HIECS data, including "illiteracy" rates (about 40% for both periods), including some comparisons with the previous survey. The focus shifted to young pupils, specifically gender gaps and the probability of being enrolled. The data suggest that there is a bias against females in enrollment. The reason for low enrollment probability was linked to higher household expenditures (unexpected), a lower education level of the head of the household (expected), and the geographic location of households (lower probabilities of being enrolled if the household is from Upper Rural Egypt, or the Frontier governorates). Then education was placed in the household context to introduce correlations between the effect of the parent's education on household income and expenditure levels (positive) and the effect of the mother's attained level of education on the number of children in the household (negative).

The often repeated themes are that students should want to stay in school and parents should get what they pay for. Hanushek (1995) makes abundantly clear that school quality is what matters. He argues for less rigid, decentralized, evaluative systems to engender efficiency in education. In work on Egypt, Hanushek and Lavy (1994) find considerable differences in primary school quality (large gains in student achievement in a given year after controlling for individual differences in student achievement and parents' education), and that students who go to high-quality schools are less likely to drop out than students who go to low-quality schools. Grade repetition and high dropout rates represent more significant wastage of resources than policy-makers sometimes care to admit. Harbison and Hanuschek (1992) assemble the results from 96 studies of education systems in developing countries to summarize the effects of six traditional inputs: teacher-pupil ratio, teachers education, teacher's experience, teacher's salary, expenditure per pupil, and facilities. They point to insignificant (non-positive) outcomes to conclude that clear and systematic associations between these inputs and student performance is lacking. Kremer (1995) uses the same

data to suggest an opposite conclusion. The authors do agree that reducing class sizes should not be a priority, and also that investing in textbooks and radio education is efficient.

Egypt's education system needs to be reformed, but the ways to enhance school quality are open to considerable debate. Historical, religious and social circumstances have conspired to create an educational structure which advocates rote learning at the expense of free and analytical thought. From the youngest years students are rewarded for passing exams rather than for solving problems. Performance incentives for both students and teachers are weak, and continuous evaluation is alien to the educational setting.

These issues cannot be fully understood by comparing static educational levels and household expenditures. Education information in household survey data is limited in scope and can only refute or corroborate the gross inferences, the general policy directions. Even the way of analyzing education outcomes - so much output for so much input - is merely scratching the surface of an extremely complex relationship. One girl who spends three years at a first-rate academic institution but does not graduate may be better educated than another girl who spends five years at a second-rate institution and does receive her certificate. Economists still cannot agree what makes students or schools better, only that resources are sometimes used inefficiently. Similarly, in Egypt, the local context probably matters the most, and the least understanding will come from assuming that all schools are the same.

Table VII.1 Estimates of Proportions for 4 Basic Education Variables, 1995/1996 HIECS

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
EDUCATION							
Less than age	0.229	0.002	0.99	0.224	0.233	2.16	16923
Illiterate	0.275	0.004	1.29	0.268	0.282	4.70	20339
Reads/writes	0.144	0.002	1.26	0.141	0.148	1.99	10666
Primary < prep	0.167	0.002	1.15	0.163	0.171	1.97	12349
Secondary cert	0.125	0.002	1.75	0.120	0.129	3.22	9219
Post-sec < U	0.018	0.001	3.68	0.016	0.019	1.80	1311
University cert	0.041	0.002	5.14	0.037	0.045	8.36	3039
Post-University	0.001	0.000	15.94	0.001	0.002	2.37	93
ENROLLED							
No	0.723	0.003	0.35	0.718	0.728	2.31	53434
Yes	0.277	0.003	0.90	0.272	0.282	2.31	20505
STAGE							
Not applicable	0.723	0.003	0.35	0.718	0.728	2.31	53434
Primary	0.129	0.002	1.17	0.126	0.132	1.49	9523
Preparatory	0.069	0.001	1.44	0.067	0.071	1.15	5123
Secondary	0.055	0.001	1.86	0.053	0.057	1.49	4086
University	0.024	0.001	3.29	0.022	0.026	1.96	1773
TYPE OF SCHOOL							
Not applicable	0.723	0.003	0.35	0.718	0.728	2.31	53434
Gov't normal	0.267	0.003	0.97	0.262	0.272	2.55	19720
Private normal	0.006	0.000	8.13	0.005	0.007	2.98	449
Private language	0.003	0.001	17.60	0.002	0.004	7.02	226
Gov't language	0.001	0.000	18.15	0.001	0.002	3.63	110

Table VII.2 Totals of Enrolled Students, by Region, 1995/1996 HIECS

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
ENROLLED, UNWEIGHTED							
Cairo	2254	92	4.08	2074	2434	3.86	7959
Alexandria	1058	56	5.34	947	1169	3.06	3861
Other Urban	289	22	7.68	245	333	1.71	993
Lower Rural	7085	115	1.62	6860	7310	2.06	24723
Lower Urban	2308	71	3.07	2169	2447	2.25	7857
Upper Rural	4743	120	2.54	4507	4979	3.26	19596
Upper Urban	2300	90	3.92	2123	2477	3.64	7495
Frontier	468	37	7.96	395	541	2.99	1455
URBAN	8445	160	1.89	8132	8758	3.41	28911
RURAL	12060	170	1.41	11727	12393	2.86	45028
Total	20505	233	1.14	20048	20962	3.67	73939
ENROLLED, WEIGHTED (,000)							
Cairo	1985	73665	3.71	1841	2129	3.45	7959
Alexandria	970	46688	4.82	878	1061	2.79	3861
Other Urban	298	24394	8.2	250	345	2.45	993
Lower Rural	5583	122570	2.2	5343	5823	3.62	24723
Lower Urban	2006	56584	2.82	1896	2117	2.01	7857
Upper Rural	3718	98690	2.65	3525	3912	3.40	19596
Upper Urban	2077	74597	3.59	1931	2223	3.38	7495
Frontier	208	39424	18.95	131	285	9.15	1455
URBAN	7444	130892	1.76	7187	7700	3.20	28911
RURAL	9401	161717	1.72	9084	9718	4.02	45028
Total	16845	208050	1.24	16437	17253	4.34	73939
% STUDENTS in SAMPLE							
Cairo	0.283	0.008	2.86	0.267	0.299	2.57	7959
Alexandria	0.274	0.011	3.95	0.253	0.295	2.28	3861
Other Urban	0.291	0.012	3.99	0.268	0.314	0.65	993
Lower Rural	0.287	0.004	1.29	0.279	0.294	1.66	24723
Lower Urban	0.294	0.006	2.14	0.281	0.306	1.50	7857
Upper Rural	0.242	0.005	2.19	0.232	0.252	3.00	19596
Upper Urban	0.307	0.008	2.77	0.290	0.324	2.55	7495
Frontier	0.322	0.036	11.09	0.252	0.392	8.48	1455

Table VII.3 Enrollment Ratios (Freq of Girls/Freq of Boys) by Category, 1995/1996 HIECS

AGE	Girls	Boys	Ratio
age 6	693	703	0.99
7	701	792	0.89
8	991	967	1.02
9	986	1065	0.93
10	1071	1225	0.87
11	878	1012	0.87
12	995	1107	0.90
13	922	909	1.01
14	856	902	0.95
Total age 6 - 14	**8093**	**8682**	**0.93**
REGION			
Cairo	670	729	0.92
Alexandria	400	370	1.08
Other Urban	99	90	1.10
Lower Rural	2815	3134	0.90
Lower Urban	815	808	1.01
Upper Rural	2366	2529	0.94
Upper Urban	740	840	0.88
Frontier	188	182	1.03
GOVERNORATE			
Cairo	670	729	0.92
Alexandria	400	370	1.08
Port Said	31	31	1.00
Suez	68	59	1.15
Damietta	135	133	1.02
Darahlia	570	689	0.83
Sharkia	566	594	0.95
Kalyoubia	423	419	1.01
Kafer-el-Sheikh	317	344	0.92
Gharbia	455	515	0.88
Menoufia	433	455	0.95
Behera	623	683	0.91
Ismailia	108	110	0.98
Giza	577	630	0.92
Beni-Suef	290	306	0.95
Fayoum	316	352	0.90
Menia	571	582	0.98
Assyout	395	432	0.91
Souhag	430	409	1.05
Qena	405	520	0.78
Aswan	122	138	0.88
Frontier (4)	188	182	1.03

Table VII.3 Enrollment Ratios (Freq of Girls/Freq of Boys) by Category, 1995/1996 HIECS (cont.)

SCHOOL TYPE	Girls	Boys	Ratio
Gov't Normal	6262	7386	0.85
Private Normal	40	42	0.95
Private Languag	151	133	1.14
Gov't Language	91	89	1.02
HOUSEHOLD TOTAL EXPENDITURE QUINTILE			
0 - 20%	1641	1716	0.96
21 - 40%	1561	1796	0.87
41 - 60%	1618	1733	0.93
61 - 80%	1638	1718	0.95
81 - 100%	1635	1719	0.95
QUINTILE OF HOUSEHOLD PER-STUDENT EDUCATION EXPENDITURE			
0 - 20%	1559	1615	0.97
21 - 40%	1468	1703	0.86
41 - 60%	1510	1663	0.91
61 - 80%	1552	1621	0.96
81 - 100%	1500	1667	0.90

Table VII.4 Results of Probit Model on Probability of Being Enrolled, 6 - 14 Year Olds

Independent Variable	Estimated Coefficient	Standard Error
INTERCEPT	1.3529	0.3497
REGION (Upper Rural)		
Cairo	0.2038	0.0846
Alexandria	0.1836	0.0947
Other Urban	0.6300	0.2974
Lower Rural	0.1774	0.0435
Lower Urban	0.2738	0.0738
Upper Urban	0.2344	0.0727
Frontier	0.0584	0.1306
IF FEMALE	-0.2278	0.0361
EDUCATION (all others)		
Under age	-0.8529	0.0565
Illiterate	-5.1850	0.3467
Reads, Writes only	-0.5414	0.0616
HH EXPENDITURE QUINTILE (Quint1)		
QUINT2	-0.1232	0.0553
QUINT3	-0.1121	0.0574
QUINT4	-0.1883	0.0601
QUINT5	-0.1812	0.0704
HH HEAD CHARACTERISTICS		
Age (45.4 years old)	-0.0042	0.0018
Education (Illiterate)	0.7320	0.3150
Reads, Writes only	0.8609	0.3146
Primary	0.9249	0.3186
Secondary	1.2267	0.3171
Post Secondary	1.5149	0.3696
University	1.1214	0.3214
HH AREA / PERSON (15.02 sq. m.)	0.0133	0.0027
MEMBERS ABROAD? (No)	0.1054	0.0807
DISTANCE TO MARKET (1.39 km.)	-0.0023	0.0009
DISTANCE TO WORK (6.48 km.)	0.0009	0.0007
HH AMENITIES		
Electric Lighting	-0.1677	0.1218
Black & White TV	0.0782	0.0497
Color TV	0.0921	0.0593
Phone	0.3040	0.0902
TOTAL EDUCATION EXPENDITURE (419.91 £E)	0.0004	0.0001
Likelihood Ratio Statistic	-2843.94	
Likelihood Ratio Index	0.6051	

Table VII.4a Sample Probability Calculations, Response = Enrolled

Probability evaluated for representative individual *	1.5448
Change to representative individual response probability varying:	
REGION (Upper Rural)	
Cairo	1.5695
Alexandria	1.5670
Other Urban	1.6210
Lower Rural	1.5663
Lower Urban	1.5779
Upper Urban	1.5732
Frontier	1.5519
IF FEMALE	1.5173
EDUCATION (all others)	
Under age	1.4416
Illiterate	0.9176
Reads, Writes only	1.4793
HH EXPENDITURE QUINTILE (Quint1)	
QUINT2	1.5299
QUINT3	1.5313
QUINT4	1.5220
QUINT5	1.5229
HH HEAD CHARACTERISTICS	
Age (45.4 years old)	1.5443
Education (Illiterate)	1.6334
Reads, Writes only	1.6490
Primary	1.6567
Secondary	1.6932
Post Secondary	1.7281
University	1.6805
HH AREA / PERSON (15.02 sq. m.)	1.5464
MEMBERS ABROAD? (No)	1.5576
DISTANCE TO MARKET (1.39 km.)	1.5445
DISTANCE TO WORK (6.48 km.)	1.5449
HH AMENITIES	
Electric Lighting	1.5245
Black & White TV	1.5543
Color TV	1.5560
Phone	1.5816
TOTAL EDUCATION EXPENDITURE (419.91 £E)	1.5449

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Chapter VIII. Medical Expenditures

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VIII.A Introduction

Access to medical care is a fundamental right. Yet the supply of medical services is variable geographically and medical expenditures as a group are inferior (see Table II.14) in Egypt. This makes such services good candidates for attracting subsidies. There are vast disparities in medical care quality and scale in the country. There exists simultaneously a scarcity of clinics offering very basic medical care (prenatal, birth, and antenatal, for example, with simple preventative medical practices) juxtaposed against inappropriate, high-tech, capital-intensive hospitals that serve the few.

In development assistance circles, the goals of curbing population growth and aiding child survival have traditionally taken precedence over lowering the incidence of certain endemic and emerging diseases (schistosomiasis, Hepatitis C, and HIV/AIDS). Egypt is succeeding in lowering both its birth and death rates but infant and child mortality rates remain unacceptably high.[1] Women are marrying later - in many cases in deference to the high cost of living together as a couple - yet are still having more children than they consider ideal (El Zanaty, et al., (1996), p. 37). Methods of family planning are widely disseminated, well-known, and supported by both husbands and wives, but the rate of contraceptives use is slowing, and households point to unmet needs in family planning (El Zanaty, et. al., ibid., p. xx). HIECS data show that 16.1% of households spent some money on contraception in 1995/1996.

VIII.B Some Temporal Comparisons

VIII.B.1 Household Medical Expenditures by Item

Data coverage in the medical expenditures section remained unchanged between the two HIECS periods, except for the addition of two variables in the new HIECS (expenditures on traditional medicinal plants and contraceptives). The first table, Table VIII.1, shows the number of non-zero cases for medical expenditure items, the average expenditure (in nominal £E) and standard deviation of the estimate, for both household surveys. Since these are averages by item and not over the sample, the focus is on the cost of individual medical expenditures. The row labeled "TOTAL" does, however, represent household nominal annual average expenditures on all medical categories.

In both surveys, some explanatory notes appeared on the questionnaires themselves and were relevant when it came to interview probing to produce a response. "Dentist fees" include extraction, filling, orthodonture, and cleaning. The group "Government hospital, elective" has within it a number of sub-categories: the cost of the medical personnel (specialist or resident,

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[1] In 1990, countrywide infant and child mortality rates were 61.5 and 84.8 per 1000 live births, but in Upper Egypt the rates were 105.8 and 146.7 (USAID (1996)). Currently one in twelve children will die before he reaches age five, 75% of these deaths before the first year. Even as infants survive birth, the probability that they are undernourished is too high. El Zanaty, et. al., (1996) have found that 30% of children under five years of age are short for their age.

surgical or procedural, anesthesiologist), the cost of the operating room, X-ray and lab analysis, tools used, and the cost to stay in a hospital's premium-rate room. Since "Health Insurance" is supposed to be 2% of gross salary for government employees, and 4% of gross salary for public and private sector workers, it was imputed according to that schedule in cases where the respondent was unable to provide a figure. A dichotomous variable for the existence of health insurance cannot be formed because the question was not explicitly asked - an estimate of insurance payments exists only for households having respondents who made payments. There is no way of determining how to allocate the increase of households who paid insurance in the respective samples (from 34% to 41%) to increased coverage and increased need.

The nominal cost of kidney dialysis among the list of medical care items appears to have skyrocketed (an increase of 338%). Such an increase in costs for this treatment may reflect its luxury value (despite the bias in the mean from the small number of cases); patients who take such treatments often are the least likely to benefit because of old age and other infirmities. Alternate investments, for research and prevention, and concentrating on the younger, more at-risk population, might be better made. Some of the items which have seen nominal decreases in average household outlays, such as "Injections, dressings" and "Other Medical Svcs" cannot be taken at face value because such categories are prone to measurement error, being too heterogeneous for precision comparison. Nominal initial fees for consultation (examinations) have stayed constant, so have become cheaper in real terms.

VIII.B.2 Equivalence-Adjusted Average Medical Expenditures

Adjusting for household size, age and sex characteristics as they exist in both samples, average expenditures for medical goods and services show an increasing relationship to household total expenditures. Below are the urban and rural means and budget shares of medical expenditures for both HIECS surveys.

Average Annual Expenditures on Medical Goods and Services, and Budget Shares of Medical Expenditures, Rural and Urban, by Quintile, for Two HIECS

	Overall	Quint1	Quint2	Quint3	Quint4	Quint5
1990/1991						
Rural Mean (£E)	154.47	97.33	134.03	149.36	170.04	221.62
Rural Share (%)	3.22	2.09	2.57	2.90	3.43	5.13
Urban Mean (£E)	219.00	152.86	179.10	200.95	256.18	305.97
Urban Share (%)	4.50	2.59	3.15	3.68	5.08	8.02
1995/1996						
Rural Mean (£E)	208.47	158.93	172.79	190.89	214.97	299.33
Rural Share (%)	3.36	2.38	2.75	3.01	3.35	5.20
Urban Mean (£E)	301.71	236.77	261.02	288.02	343.02	376.27
Urban Share (%)	4.39	3.15	3.52	3.93	4.90	6.38

Budget shares for medical goods and services rise over the quintiles of equivalence-adjusted expenditures. In the rural areas, budget shares have risen over time; in the urban areas, they have declined for the higher quintiles: this is an artifact of constrained supply in rural areas. The urban shares in the highest quintile are quite high, reflecting the high cost of elective medicine and procedures chosen by the richest patients.

VIII.B.3 Regressing Medical Expenditures

The third type of comparison which might be made over time has to do with the relative effect of household characteristics on household total annual medical expenditures. Table VIII.2 shows the coefficient values for household demographic effects on total medical expenditures for both surveys. These demographics include attributes of the head of the household (age, sex and education), household total expenditure, number of individuals fitting into each of six age/sex categories for children, the number of household members, and the region of the country. The equations are in level £E. Overall the fit of both equations is acceptable given the criterion of experience, and with the application of the usual caveat, that these are not deterministic models. It must also be noted that the 1990/1991 HIECS equation's intercept is not significant at an acceptable level; this could be due to a non-unique merging of the three data sets, because the medical expenditures datafile is missing the variable for PERIOD (the quarter of the year in which the data were collected).

Being a male household head is associated with a decrease in medical expenditures, *ceteris paribus*. After the head reaches a secondary education

level, additional educational attainment affects medical expenditures negatively. An intuitive interpretation is that additional education serves to keep the household ever healthier. The coefficients on total expenditure suggest that 4 piasters of each additional £E spent by the household will go to medical goods and services - in line with the overall budget shares. An unexpected and significant finding is that additional household members are associated with smaller overall medical expenditures - one additional member will decrease medical expenditures 5.62 £E in 1990/1991 and 12.93 £E in 1995/1996 - this is probably a combination of budget strain and household scale economies. We will see a similar relationship (next section) of household size to per capita medical expenditures. The regions having the lowest expenditures (the numeraire is Cairo) are, expectedly, in Upper Egypt and the Frontier governorates.

VIII.C 1995/1996 Household Average and Per Capita Medical Expenditures

Regional and household-size breakdowns of per capita expenditures on medical goods and services in the recent survey (Tables VIII.3 and VIII.4) point clearly to differential access based on geography. Per capita expenditures on medical goods and services in the rural areas are only about one-half what they are in urban areas. Not surprisingly, in average terms the regional distribution of medical expenditures parallels the regional distribution of total expenditures (see Table II.3), and per capita expenditures are similar. The budget shares shown in Table VIII.3 are different from the shares shown above for two reasons: a) they are not equivalence-adjusted, and b) they are formed as a less-biased ratio of sample-summed numerator over sample-summed denominator instead of as an average of household-level ratios (as above).

Both average and per capita expenditures for medical goods and services fall over most of the curve as household members increase; there is a point, after ten members, when both curves bend upward. As households grow in size their members receive an ever declining share of medical expenditures. Naturally the standard errors of the estimates in Table VIII.4 fall with the number of cases and rise with the number of household members (keeping precise track of many expenditure sources being more complicated).

VIII.D Conclusion

Admittedly there are a number of extensions[2] to make to the analysis of medical expenditures. A focus on the distribution of insurance payments would serve to broaden the understanding of in-kind payments made to employees, and would inform models correlating illness prevention with incidence. In two other health related surveys in Egypt, the National Household Health Care Utilization and Expenditure Survey, and the linked Provider Survey, the Cairo Demographic Center and the Egyptian Ministry of Health estimated that 70% of the surveyed population was not covered by any

[2] Scott Moreland of the Population Project Consortium of Egypt (PPC) suggested these classifications.

medical insurance (DDM (1996)).[3] Categorization of services as in-patient and out-patient would do much to assign inelastic medical payments to competing uses. Another fertile ground for research exists in the regional differences in access to health services and medical spending.

[3] In the rural areas, fully 74% of individuals are uncovered by health insurance. These surveys also estimated that only 63% of rural area physicians had earned more than a Bachelor's degree in Medicine, and that 73% of all physicians surveyed held more than one job (DDM, (1996)).

Table VIII.1 Mean Medical Expenditures by Item, Full Samples, Two HIECS

Item	1990/1991 HIECS N	Mean	StdDev	1995/1996 HIECS N	Mean	StdDev
Regular Medication (for diabetes, high blood pressure, etc)	3543	215.43	320.06	3409	284.06	361.44
Non-Regular Medication	10950	73.35	129.11	12499	83.32	147.65
Consultation (Exam) fees	9399	48.82	67.87	10948	48.71	57.10
Laboratory fees	1870	65.44	96.46	1701	78.06	170.11
X-Ray (normal, color), Ultrasound, CAT scans	908	52.38	77.39	515	65.38	105.66
Arthroscopy	48	102.25	143.48	27	167.70	271.25
EKG, EEG	295	45.66	82.50	169	58.34	80.25
Lenses, glasses, hearing aids, prosthetics, etc.	437	111.94	112.68	291	116.57	93.76
Kidney Dialysis	32	850.37	3402.43	11	3721.45	7172.53
Injections, dressings	3478	20.76	36.74	4449	14.74	19.95
Dentist fees (technician)	1348	27.35	70.68	1402	37.57	61.39
Government hospital, elective	989	69.12	232.05	748	75.98	206.79
Private Hospital	325	504.08	795.14	186	681.59	1255.15
Hospital insurance	203	71.29	182.08	178	53.87	128.36
Midwife, ObGyn	688	23.04	28.23	481	31.16	23.07
Other Medical Svcs (casts, circumcisions, etc.)	2560	19.92	70.57	2061	11.58	33.30
Health Insurance	4539	56.61	57.76	5850	80.90	74.22
Traditional treatment using medicinal plants				317	27.60	28.02
Contraceptives				2390	19.08	30.59
TOTAL	13298	223.28	415.09	14219	258.58	466.60

Table VIII.2 Total Annual Medical Expenditures Regressed on Household Characteristics, Two HIECSs

1990/1991 HIECS	Coefficient	t	**1995/1996 HIECS**	Coefficient	t
INTERCEPT	6.30	0.41	INTERCEPT	-155.87	-7.12
HOUSEHOLD HEAD			HOUSEHOLD HEAD		
Age	0.93	4.90	Age	3.85	12.48
If Male	-15.68	-1.67	If Male	-14.97	-1.37
Reads, Writes only	6.16	0.86	Reads, Writes only	10.48	1.08
Less than University	17.15	1.99	Primary certificate	33.97	2.26
			Secondary certificate	41.37	3.35
			Secondary plus	7.36	0.32
University certificate	-17.96	-1.52	University certificate	5.15	0.34
University plus	-4.10	-0.11	University plus	-130.78	-2.34
TOTAL EXPENDITURE	0.04	45.02	TOTAL EXPENDITURE	0.04	41.77
CHILDREN			CHILDREN		
Males < 1 yr old	30.94	1.46	Males < 1 yr old	56.27	2.95
Females < 1 year old	-2.83	-0.14	Females < 1 year old	25.91	1.29
Males 1 - 4 yrs old	0.08	0.02	Males 1 - 4 yrs old	32.98	4.14
Females 1 - 4 yrs old	2.55	0.50	Females 1 - 4 yrs old	74.76	9.33
Males 5 - 9 years old	-6.28	-1.29	Males 5 - 9 years old	-3.26	-0.48
Females 5 - 9 yrs old	-7.58	-1.57	Females 5 - 9 yrs old	-1.82	-0.26
HOUSEHOLD SIZE	-5.62	-3.88	HOUSEHOLD SIZE	-12.93	-6.00
REGION			REGION		
Alexandria	27.69	2.23	Alexandria	54.55	3.09
Other Urban	-13.96	-0.61	Other Urban	36.07	1.20
Lower Rural	-20.46	-2.10	Lower Rural	15.49	1.24
Lower Urban	-0.46	-0.05	Lower Urban	52.69	3.65
Upper Rural	-46.12	-4.42	Upper Rural	-13.71	-1.01
Upper Urban	-21.53	-2.12	Upper Urban	3.85	0.26
Frontier	-11.17	-0.46	Frontier	-88.78	-2.73
F-Statistic	124.53		F-Statistic	118.47	
Adjusted R-square	0.1940		Adjusted R-square	0.1616	
Degrees of Freedom	10776		Degrees of Freedom	14020	

Table VIII.3 Household Average Annual and Per Capita Medical Expenditures, and Budget Shares

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
Average Expenditures (£E)							
Cairo	332.12	16.169	4.87	300.43	363.81	3.91	1962
Alexandria	329.05	30.296	9.21	269.67	388.43	2.91	895
Other Urban	478.37	57.460	12.01	365.75	591.00	2.53	238
Lower Rural	224.43	8.767	3.91	207.25	241.61	2.21	4570
Lower Urban	310.32	16.154	5.21	278.66	341.98	2.29	1766
Upper Rural	161.28	10.166	6.30	141.36	181.21	1.08	3504
Upper Urban	255.62	15.012	5.87	226.19	285.04	2.96	1643
Frontier	255.41	40.362	15.80	176.30	334.52	3.91	227
URBAN	311.03	8.783	2.82	293.82	328.25	2.89	6622
RURAL	197.61	6.627	3.35	184.62	210.60	1.54	8183
Per Capita Expenditures (£E)							
Cairo	81.87	4.592	5.61	72.87	90.87	4.49	1962
Alexandria	76.28	7.953	10.43	60.69	91.86	3.49	895
Other Urban	114.66	14.666	12.79	85.91	143.40	2.48	238
Lower Rural	41.82	1.658	3.96	38.57	45.07	2.24	4570
Lower Urban	69.85	3.864	5.53	62.27	77.42	2.46	1766
Upper Rural	29.13	1.825	6.27	25.56	32.71	1.08	3504
Upper Urban	56.17	3.948	7.03	48.43	63.91	3.71	1643
Frontier	40.74	6.069	14.90	28.85	52.64	3.48	227
URBAN	71.36	2.289	3.21	66.87	75.85	3.36	6622
RURAL	36.24	1.216	3.36	33.86	38.62	1.54	8183
Budget Shares (%)							
Cairo	3.7	0.001	2.99	0.04	0.04	1.57	1962
Alexandria	4.5	0.002	5.10	0.04	0.05	0.95	895
Other Urban	4.0	0.002	4.54	0.04	0.04	0.46	238
Lower Rural	3.7	0.001	3.40	0.03	0.04	1.92	4570
Lower Urban	4.4	0.002	4.20	0.04	0.05	1.68	1766
Upper Rural	3.2	0.002	5.75	0.03	0.04	1.05	3504
Upper Urban	3.7	0.002	5.13	0.03	0.04	2.47	1643
Frontier	2.7	0.002	8.77	0.02	0.03	1.33	227
URBAN	4.0	0.001	2.01	0.04	0.04	1.62	6622
RURAL	3.5	0.001	2.95	0.03	0.04	1.39	8183

Table VIII.4 Household Average Annual and Per Capita Medical Expenditures, by Household Size

Category	Estimate	Standard Error	C.V. (%)	95% Confidence Interval Lower	Upper	Design Effect	Number of Observations
HH Average Expenditure by HH Size							
One	166.06	9.002	5.42	148.42	183.71	1.36	949
Two	268.58	14.009	5.22	241.12	296.04	1.36	1491
Three	242.26	9.717	4.01	223.22	261.31	1.48	1652
Four	258.63	8.234	3.18	242.50	274.77	1.34	2446
Five	256.20	7.414	2.89	241.67	270.73	1.18	2593
Six	235.59	8.141	3.46	219.64	251.55	1.25	2152
Seven	238.08	16.963	7.13	204.84	271.33	1.18	1438
Eight	228.99	11.087	4.84	207.26	250.72	1.11	954
Nine	258.33	29.835	11.55	199.86	316.81	1.01	519
Ten	244.72	17.377	7.10	210.66	278.78	1.01	342
Eleven	370.92	76.413	20.60	221.16	520.69	1.02	82
Twelve +	564.29	149.53	26.50	271.21	857.37	1.00	187
HH Per Capita Expenditure by HH Size							
One	166.06	9.002	5.42	148.42	183.71	1.36	949
Two	134.29	7.005	5.22	120.56	148.02	1.36	1491
Three	80.75	3.239	4.01	74.41	87.10	1.48	1652
Four	64.66	2.058	3.18	60.62	68.69	1.34	2446
Five	51.24	1.483	2.89	48.33	54.15	1.18	2593
Six	39.27	1.357	3.46	36.61	41.93	1.25	2152
Seven	34.01	2.423	7.13	29.26	38.76	1.18	1438
Eight	28.62	1.386	4.84	25.91	31.34	1.11	954
Nine	28.70	3.315	11.55	22.21	35.20	1.01	519
Ten	24.47	1.738	7.10	21.07	27.88	1.01	342
Eleven	33.72	6.947	20.60	20.11	47.34	1.02	82
Twelve +	47.02	12.461	26.50	22.60	71.45	1.00	187

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Chapter IX. The Use of HIECS Data

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IX.A Introduction

An official data gathering organization should secure the faith of the public to fulfill its role of providing information. Public confidence arises from, and is maintained by, the professionalism and objectivity of the organization. An agency which seeks to expose its practices and procedures to investigation, and which makes clear its production methods to its customers, increases its reputation, and adds value.

This chapter is devoted to a discussion of CAPMAS's data access policy. The benefits associated with freer access to the data which CAPMAS produces, as well as written documentation about the methods and practices employed in producing the data ("metadata") would far outweigh the "costs" of exposing the organization to wider and more incise scrutiny. *On the contrary, free access to information enhances data quality.* Quality data are timely, relevant, accurate, and comprehensive. In the case of official data, they are often objective as well, and independently generated.

Administratively one would think it quite simple for CAPMAS to reform its present data access policy, to formalize an operations statement such as:

> "CAPMAS will continue to maintain the confidentiality of individually identifiable information. Data, and associated documentation regarding its production, shall be released to the public,
> (after a period of (n) months), and/or (after the time period of internal government dissemination and commentary),
> (at a cost of (n) £E). CAPMAS will endeavor to make future revisions of data available to all interested parties, and will make known well in advance major changes to methods and practices in producing official statistics."

If CAPMAS management thinks caution essential in the early phase of policy liberalization, it could consider limitations on use by third parties, or confining application to specific research purposes, or requiring final research reports be sent back to the agency, before or after management has had a chance to review or comment on the studies.

Most data gathering organizations have such policies intact, or are developing strategies to respond to the worldwide information explosion. Many respond to data queries from the public as an operating matter of course. In the United States and in other western countries statistical agencies regularly provide very detailed data at cost to anyone who requests it. In the United States, the Freedom of Information Act mandates most federal agencies to release data to the public after two years. Where the agency also happens to represent a government, laws placing proprietary data generated by public entities in the public domain are common, the governments having long recognized that such data are the necessary and rightful property of its citizenry. In general, then, these conditions exist where property rights are upheld, sanctions are enforced, and the rule of law is paramount.

Other agencies are taking advantage of the relatively inexpensive information management and delivery system of the Internet, downloading data

to an audience presently estimated at 60 million or more subscribers.[1] The commercial visibility, advertizing potential, and establishment of client bases engendered by the free flow of information through the Internet should not pass Egypt by.

IX.B The Present Context

CAPMAS's current data access policy upholds the law of the Government of Egypt, which is rigid and anachronistic,[2] and falls far short of the standards for public data release set forth by international organizations such as the IMF.[3] Potential data users have been kept from using vital statistics to respond to supply needs, to exploit business opportunities, and to adjust their plans according to expected outcomes. The stability which comes from quality information about markets is missing. Further, institutional barriers to data access have greatly curtailed the development of an indigenous research culture. Ultimately CAPMAS must bear much of the responsibility for the lack of quality topical data, undermining the country's development effort.

Data quality has its own self-reinforcing ethic: the higher the value

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[1] The Internet and its associated protocols (the Web, telnet, ftp, sendmail, ListServ, gopher, and WAIS) is already the established platform for information and data access.

[2] The following two laws invest CAPMAS with permanent monopoly authority in the production of data:
1) "No authority in the Government of Egypt, or public or private sector, is allowed to collect any statistics, or conduct any censuses investigations or surveys unless a written approval by CAPMAS is obtained. The approval should specify the way, time of each process and the publication of its results." (Translation, *sic*, Ministerial Decree No. 231 for 1986 Concerning Conducting Statistics, Censuses, Investigations and Surveys).
2) No other ministry or authority or individual in the Government or the public sector or the private sector is allowed to publish by any means of publication or media or printed matters or results or data or statistical information except those statistics collected and compiled by CAPMAS, they should not be published without CAPMAS agreement." (Translation, *sic*, Article 10, Presidential Decree No. 2915 for 1964 Establishing CAPMAS)

[3] Timely provision of accurate data to the IMF permits the IMF to conduct better surveillance over its members' policies, and IMF reporting of member commitments to accounting accuracy permits markets to make better assessments of investment potential (IMF Survey, January 8, 1996, p. 6-7.) The IMF norm for GDP data, for example, prescribes dissemination to the public on a quarterly basis within one quarter (IMF Survey, May 6, 1996, p. p. 158-9.) Grosh and Glewwe (1995) evaluate data access in a number of countries (Table 9, p. 32) and find that "initiatives are under way to make data access more open in several countries." Grosh and Glewwe (1996) suggests that data access is improving by noting that the percentage of articles in academic journals using household budget survey data increased dramatically since 1974/1975, with nearly all authors having access to original data.

placed on HIECS survey output, for example, the more it will be in demand, and the greater the pressure will be on CAPMAS to produce timely and accurate results. Just the opposite has been the case in the past: *lack of pressure* from policymakers is, perhaps, the main reason the 1987 Household Labor Force Survey was never tabulated; the 1990/1991 HIECS results, also, would not have been woefully delayed had external users, ministries, and policymakers grasped the true value of survey results early on.

Competitive spirit should infuse any survey operation; not only should the demand for survey output be expected to rise over time and experience, but data supply should better respond to this demand. A free-market approach to data collection is needed in Egypt, one which involves a number of different "suppliers." CAPMAS's credibility and reputation as an objective, reliable statistical organization would be enhanced through a policy of openness, higher quality in-house analysis and timely processing, easier end-user access, and independent involvement by outsiders. Such openness would have beneficial spillovers throughout the entire survey structure. Staff could no longer afford to be complacent; data users would begin trusting CAPMAS when it supports the measurement and control of survey errors, and is willing to tell users about the quality of its products.

The laws as stated limit the access of raw data (or "crude" data) to all except those working in CAPMAS. Potential users have had to approach CAPMAS with specific but uncomplicated tabulation requests, and ultimately the requestor would wait a lengthy period while the request was "processed;" rarely has demand for data been properly filled to the satisfaction of the potential user. Quite the opposite: *total effective demand for CAPMAS data has been improperly constrained by barriers to access.* The market is thin by design, and whether or not such a regulatory effect was intended, the policy is wrong. For 32 years CAPMAS has had a monopoly in producing results that few researchers or (even) other government agencies could legally refute or corroborate. Of course, rent seeking behavior in obtaining data has produced some notable exceptions.

CAPMAS management is the main impediment to data dissemination and metadata evaluation. Management acts as the primary interest group, and sees requests for data not as opportunities to inform public debate but as currency for maintaining position. The practice of accessing data from CAPMAS has usually come down to who knows whom, and which contacts can be exploited to the least-cost effect. This author argues, on the other hand, that data is a scarce public good, which might be allocated as in other countries, on a willingness-to-pay basis. As positive externalities accrue to the organization from goodwill, from a trusted commitment to openness, so rises the value and quality of the data. Experimentation in a spirit of competition produces the best data.

Concern for confidentiality is overly strident within the organization. Researchers could never identify a specific household or firm from information on the data file once a certain amount of identifying information was removed. There is a point to be made that certain data is proprietary and that a proper balance must be struck between providing the data quickly while assuring security. Also, the case of establishment data is special and requires a different way of dealing with the problem, but the concept of liberalizing the policy remains valid. Information on money-making operations might be considered controversial, but here again, CAPMAS needs to examine just what cause is served by refusing to provide the information.

It has been stated that households or firms which acted as respondents

and later found that the information provided to the enumerator was freely passed on to data requestors would be less likely to respond should they find themselves in a future sample. Such an argument is so full of hypotheses and assumptions as to seem like fiction. The data user would have to search out and identify the household or firm on the ground (assuming some motive which escapes the author), the respondent would have to find this out, they would have to communicate with one another, then the supposed breach of confidence would have to have been perceived negatively by the original respondent, then the original respondent would have to be selected in the subsequent sample. The probability of such loss in respondent confidence from such an unlikely sequence of events is infinitesimal.

Why is CAPMAS such a "closed-shop," so reluctant to release anything but tabulated data? Why withhold raw data when this data would be beneficial to society at large? I expect other researchers who have worked within the bureaucracy for an extensive period of time could add to the following:

1) Fear of negative publicity has built up an institutional inertia against openness. It is quite conceivable that a number of good economists could make a case for high unemployment, poor climate for investment, chaos in the capital market, high poverty, etc. However, it may be just as likely that positive reports on the state of the economy result, how Egypt is attempting to privatize and reform, how upbeat potential investors are about growth opportunities, the strides she has made in family planning, etc.

2) Knowledge is power. Government establishments in Egyptian society, and policy-making circles in general, exist mainly to maintain the status quo, not to distribute the gains from work effort.

3) Institutional rigidity. The "Public Mobilization" side of CAPMAS exists as a relic from the state defense establishment, the theory being that a defense establishment with full knowledge of strategic resources, potential target areas, security perimeters, and the like, would be better capable of protecting its citizenry. The situation seems perfectly appropriate for a country permanently at war, but it is not a proper and efficient way to run a statistical organization. The setup has spawned a rather unique separation between management - mainly military careerists - and a much larger cadre of employees with varying levels of statistical, commercial, or computer knowledge and experience. Patronage is rife, turnover is high, consensus and learning effects are nearly non-existent. It is hardly a wonder that distrust pervades working relationships.

4) Genuine Concern about Validity. Empirically and methodologically, GDP, employment and inflation are measured with error in Egypt. The first thing CAPMAS should know, however, is that every country faces mismeasurement in its official statistics. US GDP fails to capture much of the value of software development services, an estimate of 1% worth; the difference between monthly nonfarm payroll estimates and the revisions of those estimates will experience increases during 1997 to account for annual benchmark revisions; labor productivity has been underestimated by the US Commerce Department for years; the overestimate of the US CPI is already established, and the long-term revision of the index is well under way. It is not difficult to infer that estimates are estimates everywhere. The important point is that many people question the numbers because they have a vested interest in getting them right. With many people involved, the mathematical likelihood that the estimate will approach the zero bias low variance figure is higher.

Estimates often cannot be replicated due to poor historical evidence.

CAPMAS does not invest enough in written documentation of surveys or the archiving of supporting materials related to the construction of estimates because such documentation would seem to represent "extra work." Yet the value of metadata as a public good may approach the value of the survey findings.

5) Technical infeasibility. At present this is a legitimate excuse for some types of data. In a rapidly changing policy environment, some data get stale too quickly. Other data that correlate with static, behavioral relationships, "last" longer. Reporting of national income accounts, for example, has been thwarted by separate official measurements and the slow response of firms to establishment questionnaires. The shift of CAPMAS personnel and resources to the Population Census precludes generating data which would otherwise be considered "regular."[4] A number of surveys, for buildings, tourism and education, are well out of date, and re-survey plans have not been made. The World Bank's Priority and Integrated surveys have been completed, but analysis and dissemination by domestic actors has been dogged by lack of local funds, manpower, or political will. The Demographic and Health Survey data is very recent and now readily available.[5] The validated and final HIECS data - the most current, comprehensive, and relevant measures of the state of economic conditions of Egyptian households - were stable and were available for dissemination only three months after fieldwork completion. The price surveys CAPMAS undertakes to produce the country's Consumer and Producer Price Index (CPI and PPI), while seriously biased by long-run substitution effects, do show an institutional competence for regularly scheduled dissemination.

Such caution and circumspection about data and information are responsible for the even greater reluctance to share information *between ministries*. For example, one of the reasons the Ministry of Agriculture is undertaking a separate survey on the effect of subsidies is because CAPMAS would not provide the data the ministry needed to analyze the issue. The rancor engendered by the refusal of government entities to share much needed information, the frustration of potential foreign direct investors, and the perceived failure of international donors to pressure for reform, all reached a limiting point by early 1997. President Mubarak's opening speech at the Cairo Economic Summit (November, 1996) included the following language:

> "There is a new governance in Egypt, one based on *transparency* in the formation of policies, in the institutions that manage them, and in the data that evaluate them."

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[4] See Rowland (1996). The design of the Egyptian Population Census was too ambitious. CAPMAS leadership tried to use the census as a substitute for intermittent establishments and labor force surveys. This substitution of quantity for quality will result in a serious undercount and extensive need for imputation.

[5] There were efforts to stop the dissemination of the recent DHS results due to sensitive findings about the treatment of women and the extent of female circumcision. Otherwise the DHS survey results have been widely consumed because data access was a prior provision among the contracting parties, Macro International, USAID/Cairo and CAPMAS.

Transparency means, at least implicitly, a need to recognize that in an open society one government agency should not have a monopoly on data. In response a cabinet-level steering group formed to set up an clearinghouse for information from various ministries.

The steering committee is well underway compiling the disparate statistics from official ministerial sources. It is a two-way relationship: the bureaucracies will begin the process of complying with the IMF's Special Data Dissemination Standards (SDDS); sovereignty will be maintained because data intended for international organizations must pass through the cabinet. In this process, the Cabinet Information Decision and Support Center (IDSC) is at the forefront of technology development and will likely usurp CAPMAS's position as the primary information provider. Already Egyptian national income and trade data are available from any web-accessible personal computer in the world. IDSC evokes a liberal interpretation of providing "information" and not "data" to justify the way it informs potential investors.

Still there is a great difference between allowing access to graphs and providing the underlying data to allow a researcher to draw the graph himself. Ultimately the only real way to open up the information market will be to change the laws. Arguing against full disclosure is futile; Egypt's best interests would be served by reforming the information laws.

In the meantime institutional reform is key, and information providers would find it in their best interests to prepare to apply the lessons learned from other countries (see IRIS (1996)). Briefly, targeting institutions for reform entails developing "checks and balances" among and between institutions, limiting the role of government, encouraging oversight by the media and the public, and promoting principled behavior in government institutions through incentives. If these means seem lofty and abstract, consider a creative, yet simple, way to apply them. A US Census Bureau advisor went to Yemen once and asked the chairman of the Central Statistical Office where people went to get data. The chairman could not say because he did not know. The advisor thereupon recommended that the CSO set up a display in the main lobby showing all of CSO's products and volumes. Knowing that this would enhance his status as a leader, the chairman complied. The public became informed about the achievements of the organization, and now knew where to go to find data; employees felt a newfound pride in their work.

IX.C Access and International Experience

Where a large portion of the production of survey data is work for others, legal contracts usually stipulate that basic data belongs to the sponsors.[6] In competing private firms, information is valued and traded as any other commodity, and access is limited only by willingness to pay. Non-profit agencies usually make their survey results publicly available, at least after a brief period, recognizing that it is against good public policy to withhold information. Local administrations in the United states usually model their laws about information access after federal statutes. For example, the

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[6] The wording may be as simple as "The raw data files from the survey, stripped of household and individual identifying information, shall become the property of (sponsor) on _____(date), and forever thereafter be used by (sponsor) for whatever purposes it deems appropriate."

preamble to the District of Columbia's freedom of information law states:

> "Generally the public policy of the District of Columbia is that all persons are entitled to full and complete information regarding the affairs of government and the official acts of those who represent them as public officials and employees."

The US Freedom of Information Act (FOIA) of 1966 (PL 89-487) requires agencies of the US government to make all documents and records available to citizens, with some limiting conditions (national security, trade secrets, personal information, personnel or medical files), within a reasonable period. In practice this has meant that all information produced by the government can be requested within two years of the date of production. This Act extends to the request for disaggregate and individual-level data, and while most ultimate decisions are agency specific, non-compliance for reasons of compromising personal information is nonexistent because the providing agencies must remove identifying information. Quite the contrary, agencies see requests for validated final economic data as evidence of interest in their programs, as well as a source of revenue.

The information explosion has meant an unprecedented availability of very detailed data sets for downloading to home personal computers. Rather than limited access, an economist searching the worldwide web under the subject terms "international economic data" would face information overload, and would likely be forced to make his or her search terms more distinct. Most statistical agencies in the First World have web sites now, and many offer data for transfer free of charge. For example, in the United States, the Census Bureau offers Public Use Microdata Sets (PUMS) from various surveys. 1% and 5% samples of the US Census of Population are also available. There are Internal Revenue Service cohort wage and tax data freely available which allow individuals to perform research, and which other government entities use to test the accuracy of separate data sources; the Bureau of Labor Statistics has an entire universe of data available at hand; the Bureau of Economic Analysis provides detailed Gross Domestic Product (GDP) component data within a week of release in an automated telephone recording; selected interest rate data are available from the Federal Reserve Board; the University of Pennsylvania makes available the Penn World Tables for international cross-country comparisons; the Luxembourg Income Study is a source for individual household income and expenditure data. A listing of Internet Universal Resource Locator (URLs) of sites for securing individual level data in electronic format is certainly beyond the scope of this chapter.

Of course there are limits. One rule of thumb for securing data, in more or less time, is that the more unique the statistics on the output file (consider industrial information, for example), the more the data stream must be collapsed into higher aggregation levels. One would never be able to identify an individual firm, in other words. Most researchers, the good ones anyway, consider identifying information irrelevant.

This author is unaware of any legal provisions against undertaking surveys in the United States. Marketing surveys are now standard business practice for the most profitable firms. Private companies need to be given the opportunity to supplement consumer information from surveys with what is already available on-line.

IX.D The Future of CAPMAS

The market for data in Egypt is very thin - few people have computers, by experience they have seldom relied on the government for information, and most of the requests CAPMAS receives for data are for hard copy printout anyway. Still, CAPMAS can follow any number of strategies to avoid the inevitable irrelevancy which would arise from staying the course and refusing to reform. The institution can try to maintain monoploid influence, and retain market share, by defining its role more clearly in a mission statement, as an agency dedicated to serving the public interest. It can also develop the demand for its data products by packaging its role more properly as an experienced information provider. These are merely the first steps - CAPMAS leadership already recognizes the need to create a market, and then to respond to customers. The president of the organization knows that the world is undergoing a technological revolution and admits that every day of delay in implementing change represents a year of missed opportunities. Unfortunately the strategy of his attack may have the wrong scale - relying on the highest technology to share data without first changing employees basic perceptions that data are not state secrets is probably inappropriate. Technology is not the solution, merely the means of achieving a more efficient access to information. It may be that technology is better for responding to dissemination strategies rather than initiating them.

IX.E Strategy for Donors

Donors should greet any movements toward reform as opportunities. Properly monitored and evaluated funding, targeted to compliance with the IMF's SDDS, or to opening up channels for official information, including the transfer of economic statistics and other such data to the public, are investments well made. This is to suggest a cautious, measured approach toward liberalization. Donors should generally oppose the provision of data on the Internet without restriction, source citation,[7] or waivers and caveats about error sources, initially due to potential misuse, misinterpretation, and/or mis-quotation. But much more fundamentally, donors should support CAPMAS, the ministries, and other cabinet departments to take an inventory of their products, to survey their markets, to respond to their customers, to remove barriers that cause disequilibrium in the market for information.

IX.F Conclusion

Information is just like any other good. It is traded more or less freely, in open and restricted markets, at a wide range of values and costs. In Egypt the cost of information is kept artificially high by regulation and custom, so its use is limited to a select set of consumers. This chapter intended to make clear that broadening the customer base would result in

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[7] Partly because data and other resource materials for applied research are so scarce and/or inaccessible to students, source citation standards are not part of the curriculum of most colleges and universities in Egypt. What would otherwise be construed as plagiarism is common. Copyright infringement and trademark violations are, perhaps for their visibility, more obvious, and much more costly.

higher quality, less costly information. In addition, there would be numerous, multiplicative benefits to freer access to information. Institutional reform in this area alone is more than a test case for openness, it is a *cause celebre* for progressive attitudes. Access to economic data would provide investors with critical tools for making business decisions, provide thousands of researchers with opportunities to apply the theories they have been taught for years to real life phenomena, give the public more confidence in its institutions, and set the stage for further regulatory reform.

Therefore CAPMAS should draft a mission statement reiterating its responsiveness to public requests. It should draft an action plan for making available to decisionmakers, researchers, and the public, based on scheduled release and some formula for willingness to pay, the individual level data of its surveys, stripped of identifying information. It should provide along with that data all source materials related to the solicitation, processing, and validation of the survey data files (the "metadata"). It should empower its public to decide how to evaluate the economy.

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The 1995/1996 Household Income, Expenditure and Consumption Survey

Final Analysis Report
Appendices and Supporting Documents
As Referenced

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for

USAID / Egypt

and

US Bureau of the Census / Washington, DC

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A Survey on Income, Expenditure and Consumption

1995/1996

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Introduction

The Government is seeking to provide necessities of goods and services such as food, houses, clothes, health care, and educational and cultural services ... etc.

Further, the Government is depends on statistical information representing reality, and is helping in the production of development plans and programs.

The statistical information provided by the **"Survey on Income, Expenditure and Consumption"** is related to levels of income, consumption modes, and the impact of household characteristics on these modes.

Field work is the backbone of this survey because other clerical and computerized works depend on information collected by enumerators from families surveyed.

Thus, the in-depth examination of these guidelines is essential and significant for various levels working in this survey to achieve the principal goal of sincerely assisting the government in providing primarily necessities of life through designing planning policies counting on precise statistical information.

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Objectives of the survey:

1. Identifying goods consumed and services provided for individuals to assess present demand, and determine consumption levels of these goods and services in the national plans,

2. Identifying average expenditure at household and individual level,

3. Identifying average income at household and individual level,

4. Identifying relative expenditure distribution in terms of various expense items, which is used as balances in computing the standard figure for consumer's prices,

5. Providing necessary information to assess income elasticities (or expenditure) reflecting the size of relative changes in spending on various goods due to the relative change of income to meet the purposes of forecasting volume of consumption, and

6. Studying the relation between household demographic characteristics, its income and consumption expenditure structure in terms of goods and services.

General Instructions for Information Collection:

The enumerator collects necessary information on either expenditure and consumption, or income by holding periodic meetings with the household surveyed. The following steps should be implemented by the enumerator to maintain efficient performance:

1. Creating a friendly relationship with household members; exerting conceivable efforts to make the household feel comfortable, confident and safe in the first few minutes while she is introducing herself. The enumerator can use the following way of introduction:

   Good morning/Good afternoon

   My name is ....., and we are carrying out a survey to serve the community. Our survey is a study of income and expenditure, and I need to talk to you about this survey.

   The enumerator should master communication techniques, she should not roughly interrupt the respondent in order to force the household surveyed to understand the objectives of the survey and recognize its value. This is an important element to gain a household's confidence, which can be increased by the enumerator presenting her card, issued by the CAPMAS, when introducing herself even if she was not asked for it.

2. Dealing with households avoiding information disclosure:

   The enumerator might realize from the first minute that the household is trying to evade disclosing information, but this should not cause the enumerator to be perplexed because she can face it with wisdom. This behavior is natural and most enumerators will experience it when obtaining information from the household.

   The household might change the course of the survey and the information needed, however the successful enumerator is capable of steering the conversation without appearing that she is restricting the respondent's freedom or interrupting her speech. This requires a skillful and intelligent enumerator.

   Escaping and rejecting conversation result from the enumerator not choosing suitable timing, therefore she has to choose the right time to visit the household. If the enumerator feels that the time is not suitable, she has to apologize and excuse to leave hoping that she might visit them in another suitable day according to the household's desire.

   The household might refuse to cooperate with the enumerator as it considers information of expenditure, consumption and income very personal and not for disclosure. Here, the creation of a friendly relationship between the enumerator and the household is very significant, in addition to emphasizing secrecy and publishing information accumulatively for statistical purposes. Further, the enumerator respecting the household's customs and

traditions, and holding back information of one household from another makes the household feel safe and secure and can then reveal its information in a good manner. If the enumerator fails to convince the household to cooperate and disclose accurate information, it is the responsibility of the editor and supervisor to convince the household regarding the necessity of disclosing accurate information.

3. Individual meetings:

Its well known that information of expenditure, consumption and income is very sensitive. Thus, a stranger present during the meeting might prevent the household from disclosing accurate information. This is a situation which requires the enumerator to be intelligent enough to individually question the respondent of the household. If the enumerator had to meet the household in the presence of others, she can sit close to the respondent and question him in an audible low voice so as not to be heard by others. In this manner, the household will feel secure that all sensitive information has been held secretly.

4. Full commitment to statistical definitions and concepts:
The enumerator should be fully committed to statistical definitions and concepts (explained below), and not use her personal judgements and self interpretation while obtaining information. However, the enumerator has to refer to the instructions manual, references or supervisor to explain any inquiry.

5. Clear and integrated information:

Information should be written in clear hand writing between lines and in the allocated column using fountain pens. The enumerator has to review data before leaving the household and moving to another household, to ensure that they are complete and thorough. Also the enumerator can put down her remarks at the end of the table to clarify illogical information.

INFORMATION TO BE COLLECTED FROM THE HOUSEHOLD SURVEYED:

A. <u>General Information:</u>

- Basic information (characteristics)
- Information on household's visitors during the month of the survey
- Information on household members travelling abroad for working purposes
- Information on food ration card

B. <u>Information on actual expenditure and consumption for each class of goods and services,</u>

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and its components:

When obtaining information, the reference period should be identified as it is differs according to goods and service classes and their components.

The reference period is the duration for obtaining information, which is divided into:

* One Month: Related to food stuff, oil and lighting

* Three months: End at the termination of the month of the survey, which is related to services and health care

* One year: End at the termination of the month of the survey, which is related to furniture and furnishings

It should be observed that goods or service classes can be divided into more than one reference period according to the nature of consumption or expenditure depending on its components (e.g. information collected on different services and health care varies between one month, three months and a one year period).

C. Income information:

Information of income depends on various sources through which the members of the household earn their gains. The reference period for this type of information is one year period ending at the termination of the month of the survey.

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Survey FORMS

A. Auxiliary form (Form no. 30 B A M A)

It is a notebook, to be handed over to the household in the enumerator's first visit, to enter its actual expenses and consumption on a daily basis through the month of the survey.

Information to be recorded in the auxiliary form is:

1. Quantity and value of actual consumption of food and drinks

2. Value of out-of-household expenses for each household member such as

* At work (breakfast or lunch, drinks for the person himself or his visitors)

* At coffee shops (tea, coffee and hookah)

* In the street (sandwiches, drinks and juices)

The auxiliary form consists of the following:

1. A letter addressed to the head of the household introducing the survey

2. General guidelines on recording daily expenses and consumption

3. The following is a group of forms for recording daily expenses and consumption:

Form (A): To record on daily basis the quantity and value of goods consumed (food and drinks) during the month of the survey, where a column is allocated for each item. The information should be written on a separate line (including consumption date, source of goods either home-produced or bought from a shop, and quantity and value of daily consumption of the item).

Form (B): To record on daily basis goods consumed of indeterminate quantity and value during the month of the survey. The purpose of this form is to accumulate all goods one time at the end of the month of the survey. Taking into consideration that goods mentioned in this form should not be the same as those mentioned in the former form (A).

Form (C): To record out-of-household expenses for each household member (i.e. not itemized under the household's common budget) and naming the person who spent the money.

Form (D): To be used by the supervisors responsible for implementing the survey.

<u>The way of recording expenses and consumption in the auxiliary form:</u>

1. As previously mentioned, the household will record on a daily basis the actual expenses and consumption by itself for each commodity (food and drinks), as well as out-of-household expenses as per household member.

   The enumerator should review and discuss the entries of the household to correct information guided by the size of the household and its characteristics - housing circumstances - and appliances possessed (all supplementary information exists at the beginning of the form)

2. If the household was incapable of recording its daily expenses and consumption in the auxiliary form due to the household members illiteracy, the enumerator can record the quantity and value of consumption for each commodity by himself twice a week (in the mid and at the end of the week) during the month of the survey.

   This means that information recorded by the household itself will be on daily basis, whereas information recorded by the enumerator will be from 3 - 4 days.

B. <u>Income, Expenditure and Consumption form (Form no. 30 A - A M A)</u>

   The enumerator keeps the form with him to summarize the information in the auxiliary form at the end of the month of the survey, and record these briefs in this form. For example, the actual quantity and value of consumption of each commodity (food and drinks) during the month of the survey are collected and sorted in this form. In addition to information of expenses and consumption related to other various goods and service classes of reference periods (one month, three months and one year). The income information is collected by the enumerator after entirely fulfilling expenses and consumption information.

   In view of the sensitivity of income information, it is recommended to collect this information after fully collecting information of expenses and consumption to avoid negative effects on other information. The income information is needed for a reference period, one year, ending by the termination of the month of the survey.

<u>Visiting families surveyed:</u>

* The survey-related information is collected by meeting the household in their quarters.

* Ten neighborhood families are assigned to each enumerator per month (duration of the survey), i.e. 10 visits will be conducted for each household during the month of the survey, to prevent families from forgetting its actual expenses and consumption. The first

visit will be before the beginning of the month of the survey with one or two days, and the ninth and tenth visits will be conducted on the first or second day of the month following the month of the survey directly. Whereas visits from 2 to 8 are distributed between first and ninth visits, i.e. visiting the household every 3 - 4 days (enumerator's responsibilities in each visit are described below in details).

Field Work:

The organization of field work and its implementation rules are major grounds to achieve the survey's intended goals.

Thus, duties and responsibilities of each category of administrators implementing the survey are determined to facilitate functioning their tasks perfectly and within the scheduled durations.

Administrators and their duties:

I. *Enumerators*

Enumerators collect necessary information from the household enrolled in the list submitted to her at the beginning of her job. Ten families are assigned to each enumerator per month to collect information by paying 10 visits to families, grouped under her domain, during the month of the survey. The visits are classified as follows:

* First visit is conducted before the beginning of the month of the survey for one or two days
* Visits from 2 to 8 are conducted between the first visit and the ninth visit, i.e. two visits per week
* Ninth visit is conducted on the first day following the month of the survey
* Tenth visit is conducted on the second day following the month of the survey

The following is a detailed description of the enumerator's duties in each visit:

Duties of the enumerator in the first visit:

The first visit takes place before the beginning of the month of the survey for one or two days, and the enumerator's duties are summarized as follows:

1. Go to the address of the household enrolled in the list submitted to the enumerator by the editor. In case she cannot reach the household, she has to refer back to the editor or supervisor. The enumerator has to meet the head of the household, introduce herself and present her card issued by the CAPMAS (instructions in

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general guidelines should be followed as defined above). She has to provide a simplified idea about the reasons of the visit, objectives of the survey and its importance, and information needed (information of expenses and consumption are initially requested without mentioning anything on income as it is a sensitive issue). It is necessary to inform the household of the way of recording daily information, hand out the auxiliary form, and confirm the next suitable visit with the household to receive him. The enumerator has to record the agreed on dates in her notebook to be able to recall them.

If the enumerator sees that the household is unwilling to cooperate in providing necessary information, she has to repeat her endeavor with smartness and calm through a well-educated household member in an attempt to convince the household. If all attempts are unsuccessful, the enumerator has to refer back to the editor or supervisor for more support to convince the household. It is observed that the successful enumerator is one who attains positive results by convincing the household.

2. To collect the following general information:

a. Basic information of the characteristics of the household including nineteen questions

b. Household members currently travelling abroad for working purposes

c. Household's food ration card

d. Household's housing circumstances

e. Household's possession of appliances

3. To introduce the household to the survey duration (one month), and determine the beginning and end of the month of the survey

4. To introduce the household to the method of recording information (daily expenses and consumption) in auxiliary forms A, B & C in which the daily quantity and value of consumption of each commodity (food and drinks) are logged. Form A is used also in recording the value of services.

To record out-of-households daily expenses of any of the household members in form C.

To record quantity and value of monthly consumption of a group of goods, characterized by small quantity used daily, in form B. These goods are as follows:

a. Cereals and Starchy group -- flour, starch, dehydrated bakery products, green wheat, small baked goods and various kinds of pastry.

b. Vegetables group -- onion, cucumber, and carrots

c. Fruits group -- dried dates and pressed dates

d. Dairy and its products group -- concentrated milk, household dried milk, baby dried milk and different kinds of cheese, cream

e. Oils and fats -- various kinds of butter, cooked butter, imported cooking butter, animal oil and fats, various kinds of oil, artificial butter, and sesame-seed meal and sugar

f. Sugar, marmalade and sugary materials -- subsidized sugar, non-subsidized sugar, sugarcane honey, bee honey, sesame-seed meal, marmalade, syrup, dehydrated and packed fruits powder

g. Other food stuff -- Salt, spices and condiment, and vinegar ... etc.

h. Drinks -- Tea, grind coffee, green coffee, cocoa, cinnamon, anise seed, and hibiscus

5. The enumerator should be sure of implementing each of the following points when reviewing or recording information of consumption and expenditure:

* Recording information of value and quantity precisely

* Identifying the source of the commodity consumed by the household if it is:

A. Home-produced -- related to goods or poultry obtained from the household's farm or factory. It is necessary to record during the month of the survey the actual consumption of household-made products, as well as the estimated value of the quantity consumed by using prevailing market prices. For example:

1. Plant production from the household's farm such as cereals, vegetables and fruits ... etc.

2. Poultry production such as:

- Animals raised by the household and its production of milk

- Poultry and eggs produced from the poultry farm owned by the household or sharing in its ownership. This includes ducks and rabbits husbandry, and poultry raised by the household, as well as fowls hunted such as quails and the like.

- Production of stinging insects such as honey bee or queen bee food produced by the household's beehive.

- Fish production such as fish produced by the fish husbandry, owned by the household or sharing in its ownership, or fish caught by a household member.

- Industrial production such as any production produced by the factory, owned by the household or sharing in its ownership, such as sesame seed meal.

The household's consumption from its stores is not considered a household production, in spite the fact that the value of the goods was paid indirectly, for example:

- Goods consumed by a grocer's household from its owned shop without paying its value directly

- Goods consumed by a butchers's household from its owned butchery without paying its value directly

In all previous conditions of non-household-production, actual quantity consumed and estimated value are recorded using prevailing retail prices during the time of its consumption.

B. Non-household-production (including goods purchased, gifts and in-kind benefits):

* If the household purchased during the month of the survey a commodity and fully consumed it, the quantity and value are recorded in the auxiliary form as an actual consumption, besides marking that it has been purchased.

* If the household purchased a commodity during the month of the survey and consumed part of it, the quantity and value of actual consumption are recorded, besides marking that it has been purchased

* If the household consumed part of a purchased commodity and stored it such as cooking butter, legumes and white rice ... etc., the actual portion consumed and its estimated value are recorded according to the prevailing market prices, besides marking that it has been purchased.

* If the household consumed a stored home-produced commodity, the quantity and value of actual consumption are recorded using the prevailing market prices in estimating the value of the consumed portion, marking that the commodity is home-produced.

* If the household consumed a commodity, part of it is purchased and the other part is home-produced (either from the farm directly or home-produced stock), the quantity and value of goods purchased and home-produced products are recorded individually on two separate lines (using the prevailing market prices), besides marking both parts as purchased goods and home-produced products on two separate lines.

* If the household consumed a commodity obtained through a grant, aid, gift or an in-kind benefit, the quantity and value of this commodity are recorded in the auxiliary form using the prevailing market prices, marking that it is a non-household production.

* It should be observed that information recorded represents consumption of each household member, either it is a within-house or out-of-households consumption, or consumption of individuals generating income or not. It is understood that recording value of out-of-households expenses should be accompanied with the name of the person who made the expenditure.

* The household's consumption does not include the quantity and value of goods exchanged or given for third parties as a gift, charity, in-kind wages, or food for animals and birds, or used as seeds for sowing.

* The value of free-of-charge services rendered to the household during the month of the survey are not considered.

Duties of the enumerator during the second and third visit:

These two visits take place during the first week of the month of the survey, which are distributed over the mid and the end of the week. The visit should take place on the date determined by the household at their suitable convenience.

Duties of the enumerator in these two visits are as follows:

1. Reviewing information of expenditure and consumption recorded in the auxiliary form by the household during the first week of the month of the survey, and discussing the information with the household if it is incomplete or inconsistent. The general information, housing conditions and household inventory should be taken into consideration for guidance in correcting statements.

2. Recording information of expenditure and consumption for the period between the beginning of the month of the survey and the first visit or between the first visit and the second visit. This takes place when there is no literate member in the household where each consumed commodity is recorded all at one time.

3. Reviewing information recorded by the household or recording out-of-household expenses in restaurants, coffee shops and hotels for each household member as follows:

a. Out-of-household meals

b. Non-alcoholic drinks (juice and carbonated drinks ... etc.) and alcoholic drinks

c. Tobacco and opiates (hookah and narghile)

d. Accommodation charges in hotels and motels for working purposes

Instructions require identifying the name of the household member when recording her expenses according to former items form a to d.

Expenses made by the individual at her work (breakfast, lunch and drinks for himself and his visitors) include expenses made in restaurants, coffee shops and hotels (out-of-household expenses). Such expenses should be recorded accompanied with the name of the individual who spent the money.

4. Answering any inquiry made by the household, and helping them in understanding the recording system.

5. Entering information of the following tables:

a. Table (4) related to the quantity and value of clothes, domestic effects and footgear, which is divided into four sub-tables (4-1), (4-2), (4-3) and (4-4).

b. Table (5) related to household expenses on housing and its requirements, which is divided into two sub-tables (5-1) and (5-2).

Duties of the enumerator during the fourth and fifth visit:

These two visits take place in the mid and at the end of the second week of the month of the survey. The enumerator in these two visits will carry out same duties provided in the second and third visits, i.e. reviewing information of household's actual expenses and consumption during each day of the second week, or recording in the auxiliary form; studying general information filled in the first visit so that she has an overview of the household's position to thoroughly analyze information recorded; and reviewing or recording information of out-of-household expenses in restaurants, coffee shops and hotels, besides identifying the name of the household member who spent the money.

In addition, the enumerator will fill in the following tables:

a. Table (6) related to household's expenses on furniture and domestic services, which is divided into four sub-tables (6-1), (6-2), (6-3) and (6-4).

b. Table (7) related to household's expenses on services and health care

c. Table (8) related to household's expenses of transportation, which is divided into

four sub-totals (8-1), (8-2), (8-3) and (8-4)

Duties of the enumerator during the sixth and seventh visit:

These two visits are conducted during the third week of the month of the survey (mid and at the end of the week) where the enumerator's duties are as follows:

1. Recording or reviewing information of actual expenses and consumption of goods and services recorded by the household during the third week.

2. Following up the recording of out-of-household expenses in restaurants, coffee shops and hotels, and each expenditure item should be associated with the name of the person who spent the money.

3. Filling the following tables:

a. Table (9) related to expenses of education

b. Table (10) related to expenses of culture, athletics and recreation, which is divided into two sub-tables (10-1) and (10-2)

c. Table (12) related to other consumption expenses, which is divided into three sub-tables (12-1), (12-2) and (12-3).

Duties of the enumerator during the eighth and ninth visit:

The eighth takes place in the mid of the fourth week, and the ninth visit takes place on the first day of the month following the month of the survey directly. The duties of the enumerator in these two visits are as follows:

1. Recording or reviewing actual expenses and consumption of the goods and services during the days following the previous visit (seventh visit) till the end of the month of the survey.

2. Following up out-of-household expenses in restaurants, coffee shops and hotels during the days following the previous visit till the end of the month of the survey, and each expenditure item should be associated with the name of the person who spent the money.

3. Filling table (11) related to household's expenses in restaurants, coffee shops and hotels.

4. Filling table (13) related to transfer payments.

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5. Filling table (14) related to installments and payments for goods they received before or after the month of the survey.

6. Filling model (b), in the auxiliary form, related to the group of daily goods of small consumption where its quantity and value are recorded including the sources of these goods either they are home-produced or purchased (i.e. non-household-production).

7. Entering information of table (3), in the form of expenses and consumption, related to actual consumption value of cigarettes and tobacco.

8. Filling the table related to visitors during the month of the survey.

9. Filling table (2) related to the quantity and value of actually consumed goods of food and drinks

10. Reviewing information of expenses form, and discussing with the household inconsistency of information recorded, besides noting any footnote below the table to avoid misunderstanding and confusion of information in these tables.

Tenth visit:

This visit takes place on the second day of the month following the month of the survey directly where the enumerator's duties are as follows:

1. Completing missing information of expenses and consumption.

2. Filling information of tables related to income including all household members except servants.

General duties of the enumerator:

1. Implementing general instructions to collect necessary and precise information.

2. Determining appointments suitable to the household

3. Respecting household's answers, and asking questions in a polite manner to avoid household's embarrassment. The enumerator revises statements recorded in the auxiliary form in each visit.

4. Respecting traditions and customs prevailing in the area.

5. Alleviating worry, emphasizing secrecy, and using information in statistical purposes without disclosing them except accumulatively.

6. Completing items specified in each table of consumption and expenses, and income to record the quantity and value, or value only, according to instructions related to each table, but without leaving any blank items. If any item in the consumption and expenses, and income tables is not applicable, the enumerator places a dash (-) in this item.

7. Following the completion of necessary information, forms are submitted to the editor after they are reviewed and initialized by the enumerator.

8. Correcting forms, after being reviewed by the editor, by referring back to the household and re-discussing uncertain information.

Dates of completing information during visits

1st visit before the beg. of the month of the survey	2nd & 3rd visits in the mid & at the end of the 1st week	4th and 5th visits in the mid & at the end of 2nd week	6th and 7th visits in the mid & at the end of 3rd week	8th and 9th visits in the mid of the 4th week and on the 1st day of the following month	10th visit on the 2nd day of the following month
1. Basic information of household members, questions from 1-19	1. Table (4) - clothes, cloths and footgear, 4-1, 4-2, 4-3 & 4-4	1. Table (6) - furnishings, domestic effects & services, 6-1, 6-2, 6-3 & 6-4	1. Table (9) - education expenses	1. Table (11) - restaurants, coffee shops & hotels expenses 2. Table (13) - transfer payments	1. Finalizing incomplete information of expenditure and consumption
2. Household members currently travelling abroad for working purposes	2. Table (5) - housing expenses, 5-1 & 5-2	2. Table (7) - Expenses of services and health care	2. Table (10) - expenses of culture, athletics and recreation, 10-1 & 10-2	3. Table (4) - Installments & payments paid	2. Tables related to income
3. Food Ration card		3. Table (8) - expenses of transportation, 8-1, 8-2,8-3 & 8-4	3. Table (12) - other expenditure and consumption elements	4. Table (3) - consumption of tobacco, cigarettes & opiates	
4. Housing circumstances				5. Information of visitors and reviewing tables previously completed	
5. Appliances possession				6. Table (2) - quantity and value of consumed goods of food and drinks	

Duties of the editor:

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The editor is the link between the enumerator and supervisor in the governorate where he supervises activities of his enumerators, and reviews information provided in the auxiliary form during field work, and the forms handed out by enumerators to ensure soundness and integrity of information. His duties are as follows:

1. Attending the central training at CAPMAS Cairo headquarters

2. Participating with the supervisor in the local theoretical and practical training of enumerators

3. Handing enumerators a list of household samples under her domain, and other forms necessary for the survey

4. Assisting enumerators in contacting and communicating with families surveyed, and introducing objectives and advantages of the survey to families

5. Conducting regular field visits to support his enumerators to solving constraints such as rejecting coordination, or to correct mistaken conception to the enumerator particularly at the beginning of the period of the survey. He also has to thoroughly review basic information (demographic) of all household members to classify information later on according to this demographic information.

6. Conducting regular field visits without enumerators, visiting a sample of families, and studying auxiliary forms to assess work progress and to be sure that the enumerator reviews information recorded and initials the revised form, and checking if the enumerator records information himself in case of the absence of a literate household member.

7. Recording his remarks when visiting families in the page designed for this purpose, and entering the date of the visit.

8. Preparing a simplified report on the survey's activities to the supervisor after each field visit including the following:

a. Number of families visited per day including all families scheduled for his enumerators

b. A summary of common mistakes

c. A summary of a variety of problems facing enumerators

9. Receiving completed forms directly after the end of the survey, and performing field revision by 10% of the forms, carrying out clerical revision of forms by 100%, and initialling his revision of forms.

10. Signing on a sample of lists to ensure that each household falling in the domain of each enumerator has been surveyed, and submitting a report to the supervisor in this regard.

11. After the revision is completed, the supervisor receives activities undertaken by each enumerator including the following:

a. Framework of the sample

b. Auxiliary forms

c. Forms of income, expenses and consumption

d. Any blank forms to prevent misusing them

Duties of the supervisor:

The supervisor is usually the director of the statistics branch or his representative in his absence.

He is responsible for the managerial and technical aspects of all stages of the survey, and his duties are summarized as follows:

1. Selecting enumerators, preferring females (from Public Service) and editors (from employees of the statistics branch), and submitting a list of the names to the survey department and keeping a copy of it, taking into consideration that there should be substitutes to avoid any emergencies

2. Attending the central training at CAPMAS Cairo headquarter

3. Training enumerators locally on field work and filling information related to the survey

4. Distributing working areas and forms, and participating in solving problems slowing work progress

5. Following up on editors and enumerators in the field to ensure quality control and proper implementation according to the plan and time table designed, and taking advantage of the editors' reports to pinpoint common mistakes during the following up process

6. Reviewing forms received from editors thoroughly, and signing them. He will then send these forms to the project's management office on the seventh day of the month following the month of the survey

7. Confirming that all families in the area have been studied, and preparing a related report to be submitted to the management including a summary of common mistakes

8.a. Preparing a certified and sealed list of seconded editors, from outside CAPMAS, where an original and a copy will be submitted to the project's management, while an additional copy will be kept in the office.

b. Preparing a certified and sealed list of the names of editors from CAPMAS, where an original and a copy will be submitted to the project's management, and an additional copy will be kept in the office.

DEFINITIONS USED IN THE Survey

1. Living household

Household in this survey means an individual or a group of persons living together in one place in which they are related or not related with a kinship relation, and that they form a living unit based on a joint expenditure budget.

Any individual who spends six months at least with the household during the month of the survey is considered a household member.

Therefore, individuals in the military force or commissioning military service are considered as a living household member in case they fulfill the condition of living six months at least with the household during the month of the survey. Whereas sons working or recruited in the military force are not considered as a living household member if they do not live permanently or temporarily for a period of six continuous months during the month of the survey.

Also fully accommodated (food and residency) servants are considered household members, thus expenses paid by the household for servants are recorded, while expenses paid by servants themselves are not considered.

Furthermore, visitors and guests not living for six months or more with the household during the month of the survey are not considered.

2. Head of the household

This person is responsible for managing the expenses policy of the household. The household selects the person who could be its provider; it need not be the oldest person in the household, and the household head can be male or female.

3. Visitor

He is the person who shares with the household food and residency for a one day minimum and six months maximum till the end of the month of the survey. The visitor could be a relative or not.

4. Survey unit

The living household is considered as a surveyed unit in this survey.

5. Domicile

It is the place where the living household abides, which is divided into the following two kinds:

a. Regular domicile

A unit or a place particularly prepared as an accommodation such as an apartment, villa, country house and a private room(s).

b. Places not prepared for dwelling but it is occupied in the household's house such as shops, garages, burial grounds and vaults under staircase

6. Educational status

The highest educational degree involving different ages from ten years old and above, this includes the following:

1. Below the age
2. Illiterate
3. Reads and writes (with no educational degrees)
4. Below intermediate certificate (preparatory and primary schools)
5. Intermediate certificate (General Secondary school or its equivalent)
6. Above the intermediate certificate and below university
7. University graduate (BA and the like)
8. Higher degree certificate (Master/Phd)

7. Employment status

The employment status of the household members a week before the enumerator's visit. The employment conditions are as follows:

a. Working individuals

- Individuals in the age of six years old or more who are working in any economic activities, permanently or temporarily (at least one hour), during the week of the survey inside or outside organizations.

- As good as working individuals are those who are engaged in work but are unable to practice it due to their illness, injury, normal leave, training and educational grant, labor dispute, or instability of work due to temporary reasons or factors referring to work nature in some activities.

b. Unemployed individuals

- Individuals in the age of six years old or more who are capable and wishing to work, but they jobless during the week of survey.

- Individuals are considered unemployed even if they contracted to work, but the starting date is determined to be after the week of the survey

- Individuals who are suspended from work for a certain or unknown period, and jobless during the week of the survey.

Unemployed individuals are divided into:

1. Persons who were working before the start of the survey, but became jobless during the week of the survey.

2. Newly graduated who did not work before.

c. Individuals outside work force -- are individuals whose age range from 6 to 64 years old and are capable of working, but they are out of work or do not look for jobs during the week of the survey due to the following:

1. Household reasons (assigned to domestic activities)
2. Preparing themselves to work (students devoted to studying)
3. Not wishing to work (restrained from work)
4. On pension or retired
5. Partially disabled
6. Leave without pay for one year or more, and are not working
7. Recruits and public service
8. Prisoners
9. Patients not engaged with work
10. Individuals from 6 to 12 years old who are not working or studying

d. Individuals outside human force

a. Individuals less than 6 years old
b. Individuals in the age of 65 years old or above who are jobless and not wishing to work
c. Entirely disabled

8. Working condition

The relationship of a 6 years old individual or above with work during the week preceding the month of the survey. The working conditions could be one of the following:

a. Working with pay:

A person working for a third party for cash or in-kind salary (daily / weekly / monthly) during the week preceding the month of the survey.

b. Employer managing his work and using others

Works in an owned private business and is using one employee or more with or without pay, either a household member or others.

c. Employer working on his own

He works alone in an economic activity in a private firm and does not depend on employees such as an owner of a firm working singly, peddler, carrier, wandering plumber working singly, vegetable and fruit seller, and a taxi or a truck owner working singly ... etc.

d. Working for the household without pay

A person working without pay for any of the household members whether in a firm or a farm owned or rented by the household. It is observed that if there is a household member whose working condition is "functioning for the household without pay", therefore there will inevitably be an individual in the living household whose working condition is " an employer managing his work depending on others".

9. Basic Profession (for individuals 6 years old or above)

- It is a craft in which the person spends most of his time working regardless the economic activity of the firm which he works in. It is very important to identify in detail the kind of job he undertakes such as the following:

(accounts clerk, seller, assistant diesel engineer, secondary school mathematician, general practitioner, taxi and truck driver, wandering vegetables seller, agricultural laborer, farmer in an owned or rented land, plumber, carpenters, construction laborer, painter and builder ... etc.

10. Economic activity

- Individuals working inside a firm has to identify in detail the main activity of the firm regardless the nature of his job or profession, for example the physician working in a spinning and weaving factory his economic activity is "spinning and weaving".

- Individuals working outside firms, his economic activity is derived from the work he is carrying out, for example the wandering vegetables seller his economic activity is "retail selling of vegetables", and the farmer and the agricultural laborer their economic activity is "agriculture".

11. Consumption and expenses of goods and services

Consumption means the quantity and value of actual household consumption during the survey period either goods are homemade (from its farm or factory) or a non-household-production (either it is purchased or given as a gift, grant and in-kind benefit).

Quantities consumed exclude goods exchanged against other commodities, gifts, grants or compensations, such as in-kind wages to agricultural laborers, given by the household. Also, quantities used for production purposes such as seeds or agricultural food sold by the household to third parties are not included.

Service expenses means payments paid, in cash or in-kind, by the household on services provided during the survey period. This does not include the value of free services rendered to the household during the survey period.

12. Transfer payments

The value of expenses supported by the household for non-living household members either (relatives or not) such as bridal money, trousseau, wedding present, donations, charity, alms and alimony, cash or in-kind transfers from the household to third parties either inside or outside Egypt.

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Instructions for filling Income, Expenses and Consumption form No. (30/A) A.M.A

General Instructions

1. Instructions, definitions and concepts should be carefully read before filling the form.

2. Information should be clearly recorded in a blue fountain pen, except information representing overall sub-totals in tables 2 - 14 are recorded in red, as well as the overall basic totals in table 1, which will be clerically prepared after visiting families.

3. One form is distributed to each household. If the number of household members exceeds 10 persons (even by one individual), the rest of household members will record in the additional model (30 AMA b), which will be stapled to the form. The geographical information should be filled in the form's cover, and should not be left blank. It is necessary to write the same information on the additional model (30 A.m.a b) in case the number of household members exceeds 10 persons.

4. Making use of information cited in the auxiliary form.

The following are instructions for filling the form:

The cover of the form

1. The number of the household at the governorate's level

This number is placed according to samples list on each form, either it is filled or not for any reason. It is necessary to write the same number on the additional model in case it is used.

2. The number of the household at the administrative subdivision/village level

This number is placed according to sample lists on each form, either it is filled or not for any reason. It is necessary to write the same number on the additional model in case it is used.

3. Cycle of the survey

Information, to be collected through the twelve months period on monthly basis, is divided into four cycles, each includes a three month period of information of the year of the survey. This statement will be encoded by the survey's administration.

4. Month of the survey

The year of the survey is divided into twelve survey periods, each includes a one month period.

The enumerator has to record on the form's cover the month in which the visit is conducted to follow up recording and filling of information of this month.

5. Number of the district

This number is filled in according to the samples list.

6. Geographical information

Fill information as to:

Urban/rural, governorate, police administration / markaz, city / administrative subdivision / village, name of the street, number of the organization, name of the household's head, and the name of the owner's building. This information is filled in according to data recorded in the samples list handed out to the enumerator. It is necessary to put a mark in front of the number of the organization if it is not available, as well as recording the number of household members after completing basic information.

7. List of income-earning individuals and sources (excluding servants)

This table is clerically completed after fulfilling basic information of all household members, where income-yielding individuals are selected from question no. (18), having YES answers, encoded by no. (1), in which the number of the individual on the form and his name are recorded.

- Income sources:

  Six income sources were identified, each bearing a relevant number. The enumerator has to circle the number representing individual's income according to question no. (19). Multiple answers are allowed if the individual's income sources are more than one.

8. Identifying administrators in the survey form

Each administrator in the survey form has to record his name in front of occupation such as field enumerator, field editor, field supervisor, clerical editor, encoding clerk, encoding editor, statements clerk, and recording editor.

9. The field supervisor encodes information available on the form's cover as follows:

- Number of district ... according to the relative number enlisted in the samples list.
- Governorate, police administration / markaz, and city / administrative subdivision / village according to administrative unit directory reference no. 902/91

- Urban / Rural. Urban is encoded (1) and rural is encoded (2).

Household general information includes the following:

1. Basic information of all household members
2. Visitors during the month of the survey
3. Individuals currently travelling abroad for working purposes
4. Household food ration card
5. Household housing conditions
6. Possession of appliances

Basic information of all household members

- Information-gathering consists of nineteen questions designed to be pre-coded so that each question has potential answers and each answer has a serial number. Therefore, the serial number and title of answers, agreeing with the individual, are recorded in the column designated for this individual.

- This information includes ten household members. Each individual was given a serial number (the same number for the same individual), which will be used in all tables, particularly table (11) of expenses on hotel and coffee shops, which requires the name and number of the individual, and tables of income (2, 3, 4, 5, 6 and 7).

- If household members exceed ten individuals, the additional model (30 A.M.A. b), which starts with serial number (11), will be used to record additional members. This model will be attached to the original form.

- It is necessary to respond to answers, assigned for each individual in this part, according to its serial number, and to move from one question to the other. Taking into consideration, the word "MOVE TO" in some of the answers, which requires moving directly to the question identified. Also, it is important to finish answering questions of individual (1) before moving to individual (2) ... etc.

- A separate column is allocated for each individual to write down his name. Each individual should be given a serial number so that the head of the household is (1), the wife is (2), the eldest son is (3), and the following son is (4) and so on till all household members are recorded. The following should be considered:

    1. Questions from (1) to (10) are directed to all household members

    2. Questions from (11 to (14) are directed to household members whose answers in question (10) are working

    3. Questions (15), (16) and (17) are directed to household members whose answers

in question (10) are unemployed

4. Questions (18) and (19) are directed to all household members

5. Individuals working in military force (officers / noncommissioned officers / soldiers), answer question (12) related to major profession, are persons who can not be classified according to occupation, and its code is (10).

6. Individuals working in police (officers / noncommissioned officers / soldiers), answer question (12) related to major profession, are performing services, and its code is (5).

7. Individuals working in military force or police (officers / noncommissioned officers / soldiers), answer question (13) related to the economic activity general community services, and its code is (9).

8. The major profession for each individual should be clearly written in details, and it is encoded by the editor and supervisor according to appropriate occupations provided in the answers column. In case there is any complication when encoding any profession, refer back to the profession classification directory - reference no. 98-12014/93.

9. Identification of age in table (3) represents full age of each individual disregarding months, even if it reaches twenty one months. For children below their age, it is sufficient to write the word "BELOW".

Taking into consideration, recording age according to birth certificate, I.D. card or household I.D. card, or any official paper identifying the age of the individual. In case related official papers are not available, the enumerator should inquire from the surveyed about the year of his birth to determine actual age. Alternatively, the enumerator can help the respondent to remember his year of birth by making use of extraordinary events and the date they occurred in order to identify his real age.

- Responses of these questions should be filled in the first visit.

Visitors during the month of the survey

This table is filled in the last visit.

Currently travelling abroad for working purposes

This table includes individuals who will be travelling, and those who are actually travelling

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abroad. This table is completed in the first visit.

Food Ration card

Information of this table is related to the household's ratio food card as to its availability and the number of individuals enlisted. This table is filled in the first visit.

Housing circumstances

This table is filled in the first visit. It comprises nineteen questions its answers are fixed, and one answer is required for each question by circling the appropriate answer.

The following should be accounted:

1. Question (3) related to the number of rooms, its answer was left to be determined by the enumerator, record that the living room is considered a separate room and it should be added to the number of rooms. Whereas the bathroom, toilet and kitchen are not included as rooms.

2. Question (10) related to the area of the house, the internal area should be recorded in square meters.

3. Question (11) related to the year of the building's construction, the exact year is recorded after asking the head of the household.

4. Question (12) related to the estimated monthly rental if the household desired to rent with the current market price, the value of monthly rental estimated by the head of the household should be recorded regardless of the actual monthly rate. The answer of this question is required by each individual disregarding the kind of possession.

5. In questions (13), (14), (15) and (16) having answers (private, joint and not available). The word "private" means that the household uses (kitchen / bathroom with lavatory/ private bathroom / private lavatory) privately with no sharing from another household; and the word "joint" means that another household is sharing these facilities with the household; and the word "not available" means that such facilities are not available in this house.

Possession of appliances

- This table is filled in the first visit.

- This table determines if the household owns or do not own a private communication or transportation means.

Also this table determines the availability of domestic appliances. Thus, the answer for each object is either "YES" or "NO", and the enumerator has to circle number (1) if the answer is "yes", and circle number (2) if the answer is "no".

- After completing the table, the answers are summarized in the "Summary Table", at the top of the page, as follows:

  * Circles placed in front of question (1) in each item will be calculated and recorded under number (1) in the summary rectangle at the top of the page.

  * The same will be applied to answers with "NO" by calculating circles placed in front of number (2), and recording the total under number (2) in the summary rectangle.

Its worth noting that this general information helps the enumerator in determining the standard of the surveyed household culturally, socially and financially, and the size of the household, as well as if the household possesses private communication or transportation means, or domestic appliances. Such information assists the enumerator to form an idea of the level of income, expenditure and consumption of the household. In other words, these tables reveal the actual level of the household, which it tries to hide when recording its daily information in the auxiliary form. Therefore, the enumerator can draw a picture of the household through these tables before each visit to enable him to analyze information of the household's income, expenses and consumption.

The enumerator has to use the information recorded in these tables to analyze data of income, expenditure and consumption.

For example:

* Making use of the size of the household to determine a round figure of the consumption volume of some of the essential food, and thus the value of its expenses.

* If the household has sons working abroad and they transfer money to them, this will help in understanding the increase in the value of consumption expenses due to returns from these transfers.

* If the household owns a private telephone or a car, this means that there are expense items to each one in table (8).

* The increasing number of electrical domestic appliances must reflect the value of power consumption and maintenance.

* The housing circumstances also determine the actual standard of the household, which should help in analyzing information of table (5).

These are simple examples that define the significance of these tables helping the enumerator and editor in performing a smooth objective discussion with the household to reach accurate information about income, expenditure and consumption.

Table (1): Gross annual expenses

*This table represents the gross annual expenses of the surveyed household during the year ended by the end of the month of the survey, which is distributed to each main and secondary group of expenses.

In other words, this table is as a summary of tables from (2) to (14).

*This table is clerically prepared after the month of the survey and information of expenses and consumption are completed with regard to tables from (2) to (14), according to the reference period determined in relation to each item.

Then, the enumerator will elaborate these tables so as to represent one whole year as follows:

a. If the reference period is 1 month, then the statement will multiplied by 12
b. If the reference period is 3 months, then the statement will multiplied by 4
c. If the reference period is 1 year, then the statement will multiplied by 1

In this way, the information in the form will be entirely converted to represent the household's expenses per year in terms of each object. Information in all tables will be vertically added up to achieve annual expenses in relation to each main and subsidiary group of expenses; and then totals derived from tables (2) to (14) are transferred to table (1); and totals in major groups from (1) to (11) are added up to achieve total consumption expenditure per year; and by adding transfer payments and installments we will achieve the household's gross annual expenses.

This table consists of 13 main group and 37 secondary groups as follows:

No. of main group	Name of main group	No. of secondary groups
1	Food and drinks	14
2	Cigarettes, tobacco and opiates	1
3	Clothes, furnishings, threads & footgear	2
4	Housing and Maintenance	2
5	Cloth, furnishings & domestic services	4
6	Services & health care	1

7	Transportation	4
8	Education	1
9	Culture, athletics & recreation	2
10	Restaurant, coffee shops & hotel services	1
11	Other consumption expenditures	3
12	Transfer payments	1
13	Paid installments	1

- Four columns are allocated in the table to record household expenses -- two for recording household expenses in terms of each secondary group, and two forms for recording household expenses in terms of each main table. The figure of main group is achieved by adding up subsidiary groups forming each main group.

Table (2): Quantity and value of actually consumed commodities of food and drinks during the month of the survey

Information of this table is the quantity and value of actually consumed commodities, either it is homemade production or non-household-production (purchased, gift or in-kind benefits), during the month of the survey.

Generally, the following should be considered:

a. Information of this table is basically derived from model (a) & (b) in the auxiliary form. Record in vertical addition information of each commodity recorded in model (a) of the auxiliary form in which the figures of homemade production and non-household-production are calculated separately.

b. Quantity and value of each commodity consumed are recorded by the household during the month of the survey in two separate lines -- quantity and value consumed of household-produced goods on one line, and the quantity and value consumed from non-household-production (purchased, gifts or in-kind benefits) in the second line.

c. Household consumption does not include the quantity and value of goods used for exchange; amounts given to third parties as gifts, charities or in-kind wages; goods used as food for animals, livestock, fowl and poultry; and goods used for production purposes such as seeds or manufacturing some food or industrial products which the household sells to third parties and does not consume.

Table (2) includes the following secondary groups:

1. Grains and starchy foodstuffs:

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This second group contains the following commodities:

Wheat, maize, other grains, wheat flour, white rice, macaroni, raw vermicelli & doughnuts, waffles, green wheat, brown and white bread, european bread, dry bakery products, super bakery products, pastries, other starchy foodstuffs and grains processing.

The following should be taken into consideration:

* If the household manufactured a commodity and consumed it such as pastries, macaroni, doughnuts and bread, the value and quantity of ingredients used in these products are recorded.

* Payments paid by the household for processing grains, such as grinding grains to obtain flour, kneading and baking bread, and hulling and bleaching rice, are recorded.

2. Dry legumes:

This secondary group includes the following:

Beans, crushed beans, black lentils, yellow lentils, european beans, cow peas, peas, fenugreek, and other dry legumes (chick pea and lupine).

The following should be considered:

* This group includes the quantity and value of beans actually used by the household in making ta'amiah or besarah (cooked crushed beans) and other products consumed during the month of the survey. Also this group comprises quantity and value of fenugreek used by the household during the month of the survey in manufacturing bread for its own consumption, while the value of fenugreek drink is recorded under other drinks in item no. 1208.

* This group does not include ready-made legumes food purchased from third parties for the household's consumption such as cooked beans and ta'amiah, or beans and ta'amiah sandwiches. However, this is included under other foodstuffs.

And beans and ta'amiah sandwiches purchased from third parties to be consumed outside home, therefore, its value is recorded under table (11) related to expenses on restaurant and coffee shops services.

3. Fresh, canned and frozen vegetables:

This subsidiary group includes the following:

a. Fresh vegetables -- tomatoes, potatoes, onion, garlic, eggplants, marrow, okra,

molokhia, kinds of peppers, european bean, cucumber, cabbage, cauliflower, peas, spinach, taro, artichoke, green beans, carrots, and other fresh vegetables (lettuce, watercress, radish, parsley, dill, green coriander, green onion ... etc.)

b. Frozen vegetables include okra, molokhia, peas, mixed vegetables, grapes leaves, and other vegetables.

c. Canned vegetables include tomatoes, cooked beans and other vegetables ... etc.

d. Dry vegetables include okra and molokhia

The following should be considered:

a. The group of fresh, canned and frozen vegetables does not include:

* Watermelon, melons and pineapple which is included under fruits group

* All kinds of pickles including pickled green and black olives, which is included under other foodstuffs

* Lemon, and green or black olives (fresh not pickled), which is included under fruits group

b. Farm products consumed by its owners:

Tomatoes, potatoes, onion, garlic, eggplants, marrow, okra, molokhia, european peas, cucumber, peas, spinach, taro and green pepper.

Record the quantity and value of actually consumed of vegetables by the household during the month of the survey. The related information will be recorded in a separate line in front of (household production) using the prevailing consumer's price during the survey duration as basis to estimate the value.

Whereas the consumption of the following household-made products:

Cauliflower and taro, artichoke, lettuce, watercress, radish, parsley, dill, green coriander, and green onion.

Record the quantity and value of actually consumed vegetables by the household during the month of the survey using the prevailing consumer's price as basis to estimate the value.

c. The quantities of actually consumed dried or frozen vegetables such as okra, molokhia, peas, carrots, green peas, grape leaves, spinach and artichoke, either manufactured by the household or not, are recorded.

The same way will be applied to carrots used in manufacturing marmalade where the value and quantities of actual consumption during the month of the survey will be recorded.

d. If the household consumed part of its commodity reserve, either purchased or home-produced, during the month of the survey such as dried and frozen vegetables, the actual consumption will be taken into account. In addition, estimate the value of the quantity consumed according to the prevailing consumer's price during the month of the survey.

4. Fresh and dried fruits:

This group consists of the following:

Citrus fruits, bananas, grapes, watermelon, melons, pineapple, apricot, plums, apple, peach, pear, mango, figs, guava, fresh dates, strawberry, lemon, green & black olives, and other fresh fruits (basmaellah, cream (keshdah), cacao, mulberry, and sycamore), dried dates, pressed dates, and dried fruits such as raisins, prunes, figs, apricot, and jelly apricots; and candied almonds include almonds, walnut, camel's eye nuts, hazelnuts. The following are considered:

a. Quantities of fresh fruits used in making marmalade and syrup are not included. However, household's actual consumption of marmalade and syrup during the month of the survey is recorded using the prevailing consumer's price in estimating the value of ingredients of marmalade and syrup.

b. Quantities of fruits dried such as grapes, apricot and dates to be used throughout the year are not included, However, household's actual consumption of dried fruits are recorded using prevailing consumer's price in estimating its value.

5. Meat and poultry:

This subsidiary group includes:

a. Meat

Local meat, imported meat (liver, brain and heart), canned meat, manufactured meat (sausage, burger, beef jerky, luncheon, meat balls and dough meatballs, and exteriors and interiors (anklebones, tripes, spleen and head meat).

b. Poultry

Chickens, ducks and geese, pigeons, rabbits, other poultry such as turkey, quail and chaffinch), frozen poultry, liver and gizzard, poultry preparation (slaughtering and cleaning). The following

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are considered:

* Quantities consumed of household production of poultry and chickens during the month of the survey are recorded on a separate line, in front of "Household production" in the form of household expenditure and consumption. In addition, estimate the value of quantities consumed using the prevailing consumer's price. It is also observed that quantities consumed during the survey duration of (chaffinch and quail) haunted by a household member are considered a household production.

* Fowls and poultry raised and sold by the household are not included in the household's consumption.

* This group does not include cooked meat obtained by the household such as (Kebab and kofta - poultry and the like) for domestic consumption, however it is included in other foodstuffs.

  Cooked meat (Kebab and Kofta - poultry and the like) consumed by one household member or more outside home are not included under the group of meat and poultry, however it is included under restaurants, coffee shops and hotel services.

6. Fish

This subsidiary group includes:

Fresh fish, frozen fish, canned fish, smoked fish, salted fish, crustaceans and oysters, fish preparation (cleaning and grilling). The following are considered:

* Fish of household production is which consumed by the household during the month of the survey provided that it is either from a fishery, owned by the household or sharing ownership, or fished by one of the household members.

* Grilled or fried fish purchased by the household for domestic consumption are not included in this group, however it is recorded under other foodstuffs.

Also not included under this group, quantities consumed outside the household since this is categorized under restaurants, coffee shops and hotel services.

7. Eggs

Quantity and value of eggs consumed by the household during the month of the survey should consider the following:

* Eggs used by the household during the month of the survey is considered a household production since it is the yield of chickens either raised at home or in

poultry husbandry owned by the household or sharing ownership.

* Eggs sold or offered to third parties by the household are not included in the household's consumption.

8. Dairy and its products:

This group includes the following:

Milk, pasteurized and sterilized packed milk, fermented, skimmed and curdled milk, yoghurt, packed and liquid concentrated milk, powder milk for household, powder milk for infants, white cheese and other kinds of cheese.

The following are considered:

* Full cream milk, yielded from a household-owned dairy cattle, consumed by the household during the month of the survey is considered a household production.

* Full cream milk products, such as cream, butter, fat oil and cheese, yielded from dairy cattle owned by the household, consumed by the household are considered a household production. The quantities of each product actually consumed during the month of the survey are recorded separately, as well as estimating the value of each product consumed according to the prevailing consumer's price. It is observed that we have abandoned the principle of returning the product, consumed by the household, to its principal ingredients, which in this case is milk. This will facilitate the task of the enumerator and the household to determine the quantity of milk used in manufacturing each dairy product. Products sold or offered to third parties are not included as a household consumption.

9. Oils and fats

This subsidiary group includes the following:

Local butter, exported butter, local cooked butter, exported cooked butter, animal fats, rationed food oil, non-subsidized food oil, industrial butter and sesame-seed meal. The following are considered:

* Quantities of oils and fats, either used in ordinary food or in food industries, are considered as a household production during the month of the survey such as pastries, vermicelli cooked in milk, doughnuts and Om Ali).

* Varieties of cod-liver oil, oils used in pharmacies such as castor oil or oils used in paintings.

10. Sugar, marmalade and sugar materials

This subsidiary group includes the following:

Rationed (subsidized) sugar, non-subsidized sugar, sugar cane honey, bee honey, sweet sesame-seed meal, marmalade, syrup, packed fruits juice, dry fruits powder, canned fruits, soft candies, dry candies, chocolate and bonbon, and ice cream.

The following are considered:

The quantity of sugar used in manufacturing marmalade and syrup, which will be used by the household throughout the year, is not included under household's consumption during the survey duration. The quantity consumed of marmalade and syrup during the survey duration will be taken into consideration by estimating the value of each according to prevailing consumer's price.

11. Other foodstuffs

This subsidiary group includes the following:

All foodstuffs prepared for domestic use, as well as foodstuffs not mentioned such as salt, spices and condiments, and other foodstuffs (gelatine, vanilla, baking powder, sodium benzoate, flower water and orange-blossom water, banana flavor, ammonia, jelly, custard, pudding, cream chantey, tart stuffing cream, basbosa (pastry made of flour, melted butter, sugar and oil), farmacille, ice, mustard, ketchup, varieties of soup cubes, and boiled beans. Also, meals prepared for domestic use such as cooked beans, ta'amiah, varieties of sandwiches, kebab and meatballs, grilled chicken, grilled and fried fish and lobster, pickles, and other meals.

The following are considered:

* This group includes the value of food meals obtained by the household or any of the household members against rendering services to third parties such as agricultural labor and reciters of the Koran.

* This group does not include the value of foodstuffs consumed by household members such as visitors to third parties.

* This group does not include the value of foodstuffs consumed by the household outside the house in hotels, coffee shops and hotels, which is provided in table (11).

12. Drinks

This subsidiary group includes the value and quantities of drinks consumed during the survey duration, such as dry tea , either subsidized or non subsidized tea, grained coffee, green coffee grains. In addition, actual consumption of cacao, cinnamon, anise, ..., and other drinks (ginger, licorice root, grained carob, tamarind, glossostemon bruguieri root, salep, and fenugreek). The following is considered:

* Value of fenugreek used by the household as a drink is recorded under other groups of drinks. Whereas fenugreek used as flour with wheat to manufacture bread is recorded under dry legumes.

13. Non-alcoholic drinks

This group includes carbonated drinks and mineral water, and other non-alcoholic drinks (Fayrouz and Pirel). The following are taken into account:

* Non-alcoholic drinks provided in this table represent the household's consumption during the month of the survey, while non-alcoholic drinks consumed by the household outside home are provided in table (12).

* Non-alcoholic drinks consumed by third parties are not included within this group.

14. Alcoholic drinks

This subsidiary group includes beer, wine, and other alcoholic drinks. The value is only recorded with no quantities, taking into consideration that the value of alcoholic drinks consumed outside home (restaurants, coffee shops and hotels) is not recorded in this table, it is recorded in table (11).

Table (3): Actual value of consumption of cigarettes and tobacco

This table includes the value of cigarettes, tobacco and opiates consumed by the household during the month of the survey. Whereas tobacco expenses at coffee shops such as (hookah and narghile) are recorded in table (11).

Table (4):

4.1. Value of clothes received by the household during the year ended by the end of the survey.

In this table, the value of clothes received by the household during the year ended by the end of the survey is recorded in respect of the following:

- Outer wear winter and summer ready-made clothes

- Underwear winter and summer ready-made clothes
- Other ready-made clothes such as scarfs, head coverings, stockings, handkerchief, ties, belts, and suspenders

The value of school uniform (Students unified uniform) is not included in this table, it is recorded in table (9) related to household expenses of education.

Record information of clothes received by the household during the year ended by the end of the month of the survey, either they are purchased in cash or credit, or if they are received as a gift or any other manner.

4.2. Value and quantity of cloth received by the household during the year ended by the end of the month of the survey.

In this table, the value and quantity of cloth received by the household during the year ended by the end of the month of the survey in respect of male and female cloth (winter and summer).

Record the value and quantity of cloth received by the household during the year ended by the end of the month of the survey, either used or not, and whether they are purchased in cash or credit, or if they are received as gifts or any other manner.

4.3. Value of threads, tailoring services, and fixing clothes received by the household during the year ended by the end of the month of the survey.

In this table, the value and quantity of accessories and threads, either tricot or other kinds, either used by the household or not, and whether they are purchased in cash or credit, or received as gifts or in any other manner.

Also, the value of tailoring, fixing and darning clothes, and cost of tricot manufacturing are recorded during the survey duration.

4.4. Value and quantity of shoes received by the household during the year ended by the end of the month of the survey.

In this table, the value and quantity of shoes, slippers and sandals received by the household, either purchased in cash or credit, or received as gifts, during the year ended by the end of the month of the survey.

<u>Table (5):</u> Household expenses of housing and its requirements

5.1. Value of housing expenses during the year ended by the end of the month of the survey, and this table includes:

1. Rent

* In case the house is owned by the household through inheritance or ownership by purchase, in-kind benefit or donation, the corresponding rent, i.e. the rent of a unit similar to the place occupied by the household, and similar means unit having the same area, finishing, location and construction date like the one occupied by the household. In both cases, this rental value is needed for one year as defined in the title of the table.

The following is considered:

* If the head of the household or his wife with the assistance of a household member paid the rental value of their apartment, its annual rent will be recorded in table (13) under transfers inside Egypt.

* Regarding the rental value of the unit owned by the household, the corresponding rent will be estimated as follows:

  a. Urban: The real estate tax per year for the unit owned and occupied by the household or the rent of a similar unit having the same construction date.

  b. Rural: In view of no real estate tax in villages, rent is estimated based on the rent of a similar unit sharing the same specifications and date of construction.

2. Other expenses

* Doorman salary (fixed salary including social insurance)
* Gardener salary
* Consumption value of potable and irrigation water
* Renovations, fixing and repairing the house including (paints, wall paper, ceramics, alumital, plumbing, electrical switches and sockets, and lamps
* Insurance installments against theft and fires
* Garbage collector salary
* Subscription of ownership union or any joint expenses such as water, water pump, staircase lighting, elevator's expenses, cleaning or decoration materials, and sweeping expenses, taking into consideration that this item does not include the remaining installments of the apartment.

5.2. Value and quantity of actual consumption of fuel and lighting during the month of the survey

This includes the quantity and value of the household's consumption of electricity, butagaz, natural gas and kerosine, as well as the household's monthly expenses of wood, firewood, red alcohol, dry batteries, candles and matches.

Table (6): Household expenses of furniture, furnishings and domestic services

6.1. Value of furniture, domestic furnishings and services received by the household during the year ended by the end of the month of the survey.

In this table, the value of furniture, domestic furnishings and furnishings received by the household during the year ended by the end of the month of the survey is recorded. Also, the table includes the value of maintaining and repairing appliances and furniture listed, in addition to the charges of the upholsterers and cleaners of copper.

The following are considered:

* This table represents information of goods received by the household during the year of survey. Whereas goods received by the household before the year of the survey or after it will be recorded in table (14) since the value of installments of these goods are non-consumption expenses.

* Relative information includes overall value, actual installments paid during the year of the survey and residual value concerning goods, which its installments are paid during the year of the survey. Thus, overall value is considered a household consumption expenses.

* The value of goods paid in cash during the year of the survey is placed in the columns of overall value, installments paid during the year and residual value.

* The value of goods, received by the household during the year of the survey, which its price was not yet paid, is placed in the column of overall value and putting (-) in the column of installments paid during the year of the survey. Also the overall value is recorded in the column of residual value (the commodity overall value is considered consumption expenses.

* Any furnishings bought for marriage purposes, to one of the household members, are considered consumption expenses as long as it belongs to a household member. Therefore, it is necessary to record each commodity in its correct place within household expenses.

6.2. Value of expenses of domestic detergents during the month of the survey:

This table includes the value of actual consumption of soap (for clothes and kitchen), industrial detergents, chemical antiseptics and insecticides, paper detergents, and other cleaning materials either:

- Scented materials (Ovo, Glade and incense)
- Paper materials (vito and the like)

- Other materials (shoe polish, floor wax, moquette, chandeliers and furniture detergents)

The table also includes the value of cleaning materials such as washing threads, variety of brooms, sweepers, cleaning rags, pails, dusters, washing-up brushes, cleaning instrument, shoe brushes, clothes line and dryers, and clothes pins.

The value of toilet soap and shampoo used by the household during the month of the survey is included in table (12-2) under toilet soap.

This table represents the value of household consumption during the month of the survey, thus it should not include unconsumed stored quantities.

6.3. Value of expenses of household services during the month of the survey or the year ended by the end of the survey

In this table, value of household service expenses existed during the month of the survey such as ironing, steam cleaning, and washing clothes in laundries, or services existed during the year ended by the end of the survey such as washing, dying of rugs and moquette, and spraying and incensing.

This table does not include wages of washerwomen or servants as they are enumerated in table (6.4)

6.4. Value of domestic service payments during the month of the survey

This table includes the value of household payments to permanent servants (cook, waiter, governess, and house administrator). As well, payments for temporary servants: washerwomen, female cooks, and cleaners.

The household's private driver salary is recorded in table (8-2).

Table (7): Expenses of services and health care

This table shows expenses of services and health care during:

a. The month of the survey on pharmaceutical
b. The three months ended by the month of the survey such as charges for doctor fees, medical analysis charges and medical equipment costs.

c. The year ended by the end of the month of the survey such as charges for (X-rays, scope, cardiograph, medical and therapy equipments, dentist, hospital fees, and midwife), and other medical service fees such as (nursing, inoculations, orthopedics, circumcision and physical therapy).

This table does not include free services rendered to the household by non profitable medical governmental or voluntary organizations, record, to record individual's expenses in return of medications or surgeries undertaken through health insurance.

Table (8): Transportation expenses

8.1. Value of transportation expenses during the year ended by the end of the month of the survey

The value of transportation means, during the year ended by the end of the month of the survey, such as a private car, motorcycle or vespa, is recorded in this table.

Record in terms of credit purchase, overall value and installments paid during the year of the survey, while in cash payment the value is placed in the column of overall value and installments paid during the year of the survey.

The value of installments paid for transportation means before the year of the survey or after it is recorded in table (14).

8.2. Expenses of private transportation means

This table includes the value of operating private transportation means

a. During the month of the survey such as benzine or solar cells, oils, lubrications, washing, repairing, as well as parking fees, driver's salary and vehicle insurance.

b. During the year ended by the end of the month of the survey such as driving license, documentation costs or honorarium, violations and driving training fees.

Table (8.2) includes the expenses of the private car as being used for normal use only, any other expenses related to using the car in productive purposes are irrelevant.

8.3. Expenses of public transportation means

This table includes the value of public transportation expenses during the period determined in connection with each transportation means.

The expenses of travelling include plane or steamer fare for a residing household member during the survey period.

It is also observed that any expenses spent on resident individuals are considered a consumption expenditure, otherwise any expenses paid for non-resident members are not considered a consumption expenditure but in fact it is a transfer which is provided in table (13). Also it should be noted that this table does not include expenses of school

buses which are recorded in table (9) related to education expenses.

8.4. Value of telecommunication expenses

This table includes expenses of mail and telegrams during the three months ended by the end of the month of the survey; and expenses of installing or transferring a telephone, or telephone bills (local or long-distance) during the year ended by the end of the month of the survey.

Table (9):

This table includes education fees based on each educational stage separately either for governmental or private schools and institutions. This also includes charges of educational books distributed by each stage. This table also includes the following expenses:

Foreign books and scientific references, school and university tools, private lessons including additional strengthening exercises in schools or institutions at all educational stages, transportation fees to and from the place of the study comprising expenses of school uniforms, kindergarten and other educational charges such as contributions for schools and universities.

Table (10): Expenses of culture, athletics and recreation

10.1. Value of cultural, athletics and recreation instruments purchased by the household during the year ended by the end of the month of the survey. The table consists of the following two parts:

Part One:

Includes expenses of cultural and recreational instruments received by the household during the year of the survey

Part Two:

Includes expenses of athletic instruments, as well as maintenance expenses in both sections.

The following are considered:

* Total value of goods, provided in the table, purchased in cash is recorded in the columns of overall value, installments paid and residual value.

* Total value of goods, provided in the table, purchased by installments (credit) is

recorded in the overall value column including the value of installments paid (considered consumption expenditures), and then the difference is entered in the residual value.

* Total value of goods, provided in the table, not paid during the year of the survey is recorded in the overall value column and putting (-) in installments paid column. Also the same overall value is recorded in residual value column.

* Installments paid for goods purchased before the year of the survey or installments paid during the year of the survey are not recorded in this table as they enter in table (14).

10.2. Expenses of culture, athletics and recreation

Includes the following expenses:

* Newspapers & magazines, cultural books, video rental during the month of the survey

* Cinema, theater and amusement tickets, sport matches and personal pocket money during the three months ended by the end of the month of the survey

* Athletic, social and cultural clubs subscription, school trips, weekend trips, winter and summer resorts inside Egypt during the year ended by the end of the month of the survey.

The following are considered:

* For winter and summer resorts outside Egypt, the value of tickets paid in local currency is recorded in table (8.3) under transportation by planes and steamers, while expenses of accommodation and recreation outside Egypt is recorded in table (12.3) under expenses outside Egypt.

* Expenses of using car in travelling to winter and summer resorts are disregarded in this table since they are previously entered in table (8.2).

Table (11): Expenses of restaurants, coffee shops and hotels during the month of the survey. This table represents expenses of any household member outside the home.

This table consists of the following two parts:

Part One:

Includes the value of food, sandwiches, drinks and beverages, tobacco (hookah and narghile),

which were consumed outside home either in the street, sites, casino or coffee shops during the month of the survey.

Part Two:

Includes expenses of accommodation in hotels and camps during the month of the survey for lodging purposes (not as summer and winter resorts).

Expenses of each household member are recorded separately by using points enumerated in auxiliary form (C), where the reference number of the person, who made the expenses, is recorded according the number of the individual mentioned in the basic information item.

Table (12): Other consumption aspects

12.1. Value of personal effects received by the household during the year ended by the end of the month of the survey. This includes the following:

Watches, eyeglasses, bags, gold and accessories, notions, and other tools such as pens and desk set, as well as maintenance value of personal effects provided in the table.

The following are considered:

* Gold and jewelry for the wife or the sons living with the household are recorded in this table

* Gold and jewelry offered as a marriage gift to a non-resident individual are recorded in table (13) under marriage gift item since its value is not considered a consumption expenditure.

* Gold and jewelry offered to a non-resident individual, either relatives or not, are recorded in table (13) under gifts item.

Since this is not a consumption expenditure, and if the household was selected for survey, the value of the gift is recorded in table (7) related to income, item (3) transfers from outside Egypt.

12.2. Expenses of personal requirements and accessories

Includes the following:

* Value of actual consumption of bathroom soap, shaving and hair dressing for males and females during the month of the survey.

* Expenses during the three months ended by the end of the month of the survey regarding shampoo, hair dye, shaving, teeth cleaning tools, perfumes for men and women, and accessories.

* Expenses during the year ended by the end of the month of the survey regarding other instruments such as nail trimming, nail filing and brush, hair brush, combs, scissors, and hair dryer.

12.3. Expenses of services not previously scheduled during the year ended by the end of the month of the survey

This table includes expenses of unscheduled personal services. Information was divided into the following two parts:

Part One:

Expenses of judiciary services inside Egypt such as issuing official documents, banking services, expenses of funeral ceremonies and marriage celebrations, membership and subscription fees, and other service expenses.

Taking into consideration, that expenses of marriage celebration does not include the value of marriage gift, which is provided in table (13).

Part Two:

Expenses outside Egypt for medical treatments, religious (pilgrimage and minor hadj) and recreation tourism, as well as others (subscription of foreign magazines and organizations).

This means that the value recorded in this table includes expenses outside Egypt supported by the household, while travelling tickets from Cairo are recorded in table (8.3) under transportation fare by plane and steamers.

Taking into consideration, that money transferred, regularly or irregularly, to one of the household members or a relative outside Egypt (his name is not mentioned with the household members) is not considered consumption expenditure. However, it is considered as a transfer, which is recorded in table (13) under Transfers outside Egypt.

Table (13):

This table includes general income tax, installments of life insurance, dowry and marriage gift, furniture, gifts, charity, alms, tithe, and transfers inside and outside Egypt.

Table (14):

This table includes premiums paid during the survey year for goods obtained before the survey year and premiums paid for goods reserved but not yet received.

Income Tables

Table 1.
Total Net annual income for households. It includes:
1. Total net income for households from wages and salaries.
2. From agricultural activities.
3. From non-agricultural activities.
4. From lands, properties, and real estate.
5. From financial assets.
6. From other regular returns.

Table 2.
Net Annual income from Wages and Salaries for Individual Workers during the year of the survey.

1. This table includes the net basic annual salaries and wages
2. Net annual overtime and allowances
3. Net annual bonuses and incentives
4. Net annual in-kind wages, example housing, clothes, transportation, medical treatments, food, etc.
5. Other annual wages and salaries.

Table 3.
Net annual income for the household during the year from agricultural activities. It includes:

1. Farm crops
2. Vegetables
3. Fruits
4. Nursury
5. Greenhouse agriculture
6. Wood and trees
7. Breeding animals
8. Poultry farms within household
9. Breeding cattle for fatting
10. Beehives
11. Fish farms
12. Farm poultry prodcution
13. Hatching laboratories
14. Rent of agricultural machines for others
15. Other agricultural activities

This table appears as household income from agricultural activities during the year of the survey. It is for knowing personal income from this activity. The following table explain the distribution

of this income on the individuals of the family who participate in this activity. This table contains the name of the person and their number from the household and the percentage of each.

You must write the number and the name of each individual who participate in this activity from the basic demographic data for every member of the household according to their answers in the income sources in Question #19. Participating means participating in the ownership for the individuals of the household and distribute the net income for these persons. If there is no participation in this activity between the individuals, then record the name of the person who owns this activity completely and his number in the first line, and write his participation equals 100%.

Table 4.

Net annual income from non-agricultural activities of the household during the year of the survey.

this table includes the owned-projects or project participation, or self-management, and the net annual income from these projects, whether project is commercial, industrial, or services, others. This table reflects the household income from non-agriculatural projects to know the income from each individual for the project, the following table explains the distribution of income for individuals participating in this project, containing the name, number, and percent of particiaption, as well as value.

Table 5.

Net annual income from lands, property during the year,

This table includes

1. Agricultural land rent
2. Empty land rent
3. Revenue from sharing agricultural land
4. House building rent
5. Rent from projects rented to others.
6. Estimation of rent (imputed) from own house
7. Others

(same notes)

Table 6.

Net annual income from financial assets during the survey year, includes

1. Profits returned
2. Stock benefits
3. Deposit benefits
4. Current account and saving benefits
5. Post office saving payments

6. Investment interest
7. Interest from sharing investments with others
8. Other financial asset benefits

(same notes)

Table 7.

Net annual income from regular returns. It includes:

1. Pensions
2. Foreign exchange returns
3. Local exchange returns
4. Legal alimony
5. Other returns

Table 8.

Net changes in household saving and properties during the year of the survey. This table is not considered part of the other income tables, but the main aim is to measure the changes in ownership fixed assets and financial assets. By recording the value of appreciation during the year of the survey, and also the value of depreciation of these assets during the year to get the net change, plus or minus.

Data Entry
Manual

339

كيفية الدخول إلى شاشات التسجيل وتحديد مفاتيح حزمة الإستمارات ومفاتيح الإستمارة الواحدة

- يفتح الجهاز

c:\> ٢١

- نضغط على مفتاح (Enter)

- تظهر شاشة رقم (١):

International Statistical Programas Center
U.S Bureau of the Census
Washington, DC 20233

CENTRY

CENsus and survey data enTRY IMPS Version 3.1

EXECUTION MODE

-- Press any key to continue --

- بالضغط على مفتاح (Enter)

• تظهر شاشة رقم (٢):

Enter Batch name:

CENTRY

CENsus and survey data enTRY IMPS Version 3.1

EXECUTION MODE

• تكتب على شكل السنتراك ملحقة بحزمة الإستمارات.
• تكتب فى المستطيل إسم ملف البيانات الخاص بالقطعة المساحية (طبقاً لماتم تحديده مع المشرف).
• فى حالة أن هذا الملف يتم إنشاؤه لأول مرة
تظهر الرسالة التالية:

Can't Find Batch. Create it?

Yes No

• بالضغط على مفتاح (Enter)
• تظهر شاشة [تعريف مجموعة (حزمة) إستمارات].
• لبدء الكتابة بالعربى إضغط على مفتاحى (Ctrl + Shift) من جهة اليمين لقلب الشاشة يمين.
• يتم الضغط على مفتاحى (Alt + Shift) لقلب (Key board).

وهذه الشاشة تظهر بالشكل التالى:

بحث الدخل والإنفاق والإستهلاك عام ٩٥ / ١٩٩٦ شاشة تعريف مجموعة (حزمة) إستمارات			
دورة البحث رقم:	☐	شهر البحث:	☐☐
محافظة:	☐☐	حضر / ريف:	☐
قسم / مركز:	☐☐	شياخة / مدينة / قرية:	☐ ☐☐
رقم القطعة المساحية:	☐☐☐		

- يتم تسجيل بيانات هذه الشاشة من على غلاف الإستمارة.
- عند الإنتهاء من تسجيل هذه الشاشة سوف تظهر الرسالة التالية:

Accept The Batch ID fields	
Yes	No

- إذا كانت هذه البيانات صحيحة يتم الضغط على Yes.
- وإذا كانت غير صحيحة فالمطلوب تعديل البيانات لها يتم الضغط على No.

للرجوع إلى الشاشة مرة أخرى وتعديل ما هو مطلوب وبعد المطابقة والتعديل يتم الضغط على Yes.

- عند الضغط على Yes تظهر الشاشة التالية وهى شاشة البيانات التعريفية للإستمارة:

بحث الدخل والإنفاق والإستهلاك عام ٩٥ / ١٩٩٦ البيانات التعريفية للإستمارة رقم الأسرة على مستوى المحافظة: ☐☐☐☐ رقم الأسرة على مستوى الشياخة: ☐☐☐☐ رقم الأسرة بالإطار: ☐☐☐☐			
دورة البحث رقم:	☐	شهر البحث:	☐☐
محافظة:	☐☐	حضر / ريف:	☐
قسم / مركز:	☐☐	شياخة / مدينة / قرية:	☐ ☐☐
رقم القطعة المساحية:	☐☐☐		

- يسجل من على غلاف الإستمارة بيان رقم الإستمارة على مستوى المحافظة

و بيان رقم الإستمارة على مستوى الشياخة / القرية.

وسوف تظهر قيمة كل منهم تلقائياً على الشاشة التالية دون تدخل من المسجلة.

وفى حالة ظهور هذا الرقم برقم مخالف لما هو موجود على غلاف الإستمارة يتم إدخال الرقم الموجود على غلاف الإستمارة.

وفى هذه اللحظة تظهر الرسالة التالية:

Out OF Sequence
Enter Correct V value or F2 To force

وفى هذه الحالة يتم الضغط على F2.

. ويتم تسجيل حقل عدد الأفراد من على غلاف الإستمارة.

- عند الإنتهاء من تسجيل هذه الشاشة

إذا لم يتطابق بيانات هذه الشاشة مع البيانات التى تم تسجيلها مسبقاً (البيانات التعريفية للإستمارة) فى ملف مفاتيح الإستمارات (ID Check File)

سوف تظهر الرسالة التالية:

Quest ID Not Found In ID Check file
Continue

- بالضغط على مفتاح (Enter)

سوف ترجع الشاشة مرة أخرى لتعديل البيانات الخطأ المطلوب تعديلها لكى تتوافق المفاتيح مع مفاتيح الملف.

وعند الإنتهاء من التعديل وبفرض صحة البيانات سوف تظهر أول شاشة فى الإستمارة:

وهى شاشة الأفراد ذوى الدخول ومصادر دخولهم.

- <u>ملحوظة هامة:</u>

بالنسبة لإدخال كود المهنة أو كود النشاط الذى يبدأ بال (x أو y) لابد من تحويل الشاشة للكتابة بالإنجليزى وذلك بالضغط على مفتاحى (Ctrl + Shift) ثم الضغط على مفتاحى (Alt + Shift) من جهة اليسار.

وبعد الإنتهاء من إدخال هذا الكود لابد من تحويل الشاشة للكتابة بالعربى

وذلك بالضغط على مفتاحى (Ctrl + Shift) ثم الضغط على مفتاحى (Alt + Shift) من جهة اليمين.

كيفية إستخدام المفاتيح
فى
أولاً: مرحلة ADD to Batch

١- <u>لإدخال حقل:-</u>

ا- بالضغط على مسطرة المسافات (Space Bar) لإلغاء حقل أو إستخدام مفتاح (DEL) أيضاً لإلغاء حقل.

ب- بالضغط على مفتاح (Backspace) لإلغاء حرف.

ج- بالضغط على (*) الموجودة على اللوحة الرقمية من لوحة المفاتيح لإدخال حقل بنفس قيمة نظيره فى السجل السابق.

د- بالضغط على مفتاح (Enter) لإدخال الحقل والإنتقال إلى الحقل التالى.

٢- <u>للإنتقال بين الحقول وبعضها:-</u>

ا- (Enter) للإنتقال إلى الحقل التالى.

ب- (-) الموجودة على اللوحة الرقمية بلوحة المفاتيح للإنتقال إلى الحقل السابق (قبل ملأ الحقل الحالى).

ج- (→) للإنتقال إلى الحقل التالى.

د- (←) للإنتقال إلى الحقل السابق.

٣- <u>للإنتقال بين الشاشات وبعضها:-</u>

ا- (PgDn) للإنتقال إلى الشاشة التالية بالإستمارة إلى أخر شاشة واقفة عليها.

ب- (PgUp) للإنتقال إلى الشاشة السابقة بنفس الإستمارة.

ج- (Home) للإنتقال إلى أول شاشة فى الإستمارة.

د- (End) للإنتقال إلى أخر شاشة قبل الضغط على مفتاح (Home).

٤- <u>للإنتقال بين السجلات وبعضها:-</u>

ا- (/) للإنتقال إلى السجل التالى.

ب- (Tab) للإنتقال إلى النوعية التالية من السجلات.

ج- (Ctrl - F5) لتحديد رقم نوعيه السجل المطلوب الإنتقال إليه.

د- (F5) لإختيار نوعيه محددة من السجلات من الشاشة المساعدة.

٥- <u>إضافة أو إلغاء سجل:-</u>

ا- (F3) إضافة سجل قبل السجل الحالى ثم إستخدام (F5) لإختيار نوعيه السجل المطلوب الإنتقال إليه.

ب- (Ctrl + F3) لإضافة سجل بعد السجل الحالى ثم إستخدام (F5) لإختيار نوعيه السجل المطلوب الإنتقال إليه.

ج- (F4) لإلغاء السجل الحالى.

٦- <u>للخروج من الإستمارة:-</u>

ا- (F7) لإنهاء الإستمارة وحفظها من أى مكان.

ب- (Esc) لإلغاء الإستمارة وعدم حفظها.

٧- <u>عند الإنتهاء من التسجيل:-</u>

أكتب 6 ثم إغلق الجهاز.

ثانيا: مرحلة MODIFY

" تعديل إستمارات تم إدخالها من قبل "

١- لإدخال حقل:-

ا- بالضغط على مسطرة المسافات (Space Bar) لإلغاء حقل أو إستخدام مفتاح (DEL) أيضاً لإلغاء حقل.

ب- بالضغط على مفتاح (Backspace) لإلغاء حرف.

ج- بالضغط على (*) الموجودة على اللوحة الرقمية من لوحة المفاتيح لإدخال حقل بنفس قيمة نظيره فى السجل السابق.

د- بالضغط على مفتاح (Enter) لإدخال الحقل والإنتقال إلى الحقل التالى.

٢- للإنتقال بين الحقول وبعضها:-

ا- (Enter) للإنتقال إلى الحقل التالى.

ب- (–) الموجودة على اللوحة الرقمية بلوحة المفاتيح للإنتقال إلى الحقل السابق (قبل ملأ الحقل الحالى).

ج- (→) للإنتقال إلى الحقل التالى.

د- (←) للإنتقال إلى الحقل السابق.

٣- للإنتقال بين الشاشات وبعضها:-

ا- (PgDn) للإنتقال إلى الشاشة التالية بالإستمارة إلى أخر شاشة واقفة عليها.

ب- (PgUp) للإنتقال إلى الشاشة السابقة بنفس الإستمارة.

ج- (Home) للإنتقال إلى أول شاشة فى الإستمارة.

د- (End) للإنتقال إلى أخر شاشة قبل الضغط على مفتاح (Home).

٤- للإنتقال بين السجلات وبعضها:-

ا- (/) للإنتقال إلى السجل التالى.

ب- (Tab) للإنتقال إلى النوعية التالية من السجلات.

٥- للإنتقال بين الإستمارات وبعضها:-

ا- (F6) لتحديد الإستمارة المطلوب الإنتقال إليها وتعديلها.

ب- (Ctrl + F6) لتحديد الإستمارة التالية.

ج- (Ctrl + PgDn) للإنتقال إلى الإستمارة التالية.

د- (Ctrl + PgUp) للرجوع إلى الإستمارة السابقة.

هـ- (Ctrl + Home) للرجوع إلى أول إستمارة.

و- (Ctrl + End) للإنتقال إلى أخر إستمارة.

٦- لإضافة أو إلغاء سجل:-

- الإنتقال أولاً إلى الشاشة الخاصة بالسجل:

ا- (F3) لإضافة سجل قبل السجل الحالى

ثم إستخدام (F5) لإختيار نوعية السجل المطلوب الإنتقال إليه بعد ذلك.

ب- (Ctrl + F3) لإضافة سجل بعد السجل الحالى ثم إستخدام (F5) لإختيار نوعيه السجل المطلوب الإنتقال إليه بعد ذلك.

ج- (F4) لإلغاء السجل الحالى.

٧- لإضافة أو إلغاء إستمارات:-

- الإنتقال أولاً إلى الشاشة الخاصة بالإستمارة:

ا- (F3) لإضافة إستمارة قبل الإستمارة الحالية.

ب- (F4) لإلغاء الإستمارة الحالية.

٨- لتحديد الأخطاء الموجودة فى النطاق:

(Ctrl + E) للبحث عن الحقل التالى الذى به خطأ فى النطاق المسموح به.

٩- للخروج من الإستمارة:-

ا- (F7) لحفظ الإستمارة بعد تعديلها وللخروج.

ب- (Esc) للخروج من الإستمارة بدون حفظ التعديلات التى تمت عليها.

ثالثا: مرحلة VERIFY BATCH
" التحقق من صحة البيانات التى تم تسجيلها "

١- لإدخال حقل:-

ا- بالضغط على مسطرة المسافات (Space Bar) لإلغاء حقل أو إستخدام مفتاح (DEL) أيضاً لإلغاء حقل.

ب- بالضغط على مفتاح (Backspace) لإلغاء حرف.

ج- بالضغط على (*) الموجودة على اللوحة الرقمية من لوحة المفاتيح لإدخال حقل بنفس قيمة نظيره فى السجل السابق.

د- بالضغط على مفتاح (Enter) لإدخال الحقل والإنتقال إلى الحقل التالى.

٢- للإنتقال بين الحقول وبعضها:-

ا- (Enter) للإنتقال إلى الحقل التالى.

ب- (-) الموجودة على اللوحة الرقمية بلوحة المفاتيح للإنتقال إلى الحقل السابق (قبل ملأ الحقل الحالى).

ج- (→) للإنتقال إلى الحقل التالى.

د- (←) للإنتقال إلى الحقل السابق.

٣- للإنتقال بين الشاشات وبعضها:-

ا- (/) للإنتقال إلى السجل التالى.

٤- للإنتقال بين الإستمارات وبعضها:-

ا- (F6) لإختيار والإنتقال إلى إستمارة لم يتم التحقق من صحة بياناتها بعد.

ب- (Ctrl + F6) لإختيار والإنتقال إلى الإستمارة التالية التى لم يتم التحقق من صحة بياناتها بعد.

ج- (Ctrl + PgDn) للإنتقال إلى الإستمارة التالية التى لم يتم التحقق من صحة بياناتها بعد.

د- (Ctrl + PgUp) للرجوع إلى الإستمارة السابقة التى لم يتم التحقق من صحة بياناتها بعد.

٥- للخروج من الإستمارة:-

ا- (F7) لحفظ الإستمارة التى تم التحقق من صحة بياناتها

ب- (Esc) للخروج من الإستمارة دون حفظها .

فيما يلى بيان بأرقام الصفحات:

عند الضغط على مفتاح (F5) لإختيار نوعيه محددة من السجلات من الشاشة المساعدة سيظهر التالى:

الغلاف	COVER
من صفحة رقم (٢ - ٧)	DEMOGRAPHIC
من صفحة رقم (٨ - ٩)	HOUSING
من صفحة رقم (١٠)	INVENTORY
من صفحة رقم (١٣ - ١٤)	EXPTOT
من صفحة رقم (١٥ - ٣٥)	FOODBEV
من صفحة رقم (٣٦)	CIGS-TOBACCO
من صفحة رقم (٣٧ - ٣٩)	CLOTHING
من صفحة رقم (٣٩)	FTWEAR
من صفحة رقم (٤٠)	UTILITIES
من صفحة رقم (٤١)	LIGHT-FUEL
من صفحة رقم (٤٢ - ٤٣)	FURNITURE
من صفحة رقم (٤٤ - ٤٥)	MAINT-CLEAN
من صفحة رقم (٤٦)	MEDICAL-SVCS
من صفحة رقم (٤٧)	EQPT-TRANS
من صفحة رقم (٤٧ - ٤٨)	TRANS-PRIV-PUB
من صفحة رقم (٤٨)	COMMUNICATION
من صفحة رقم (٤٩)	EDUCATION
من صفحة رقم (٥٠)	VAL-ENT
من صفحة رقم (٥١)	CULTURE
من صفحة رقم (٥٢)	RESTAURANT
من صفحة رقم (٥٣)	ACCESORIES
من صفحة رقم (٥٤)	PERS-SVCS
من صفحة رقم (٥٥ - ٥٦)	SVCS-TRANSF-PREM
من صفحة رقم (٥٩)	NET-ANN-INCOME
من صفحة رقم (٦٠)	WAGESAL
من صفحة رقم (٦١)	AGRICULTURE
من صفحة رقم (٦١)	ADIST
من صفحة رقم (٦٢)	NON-AGRI
من صفحة رقم (٦٢)	NDIST
من صفحة رقم (٦٣)	LANDS
من صفحة رقم (٦٤)	FINANCIAL
من صفحة رقم (٦٥)	INCOME-OTHER
من صفحة رقم (٦٦)	SAVINGS

تعليمات هامة

عند إدخال الإستمارات

لتسجيل ال Batch Name سوف يكون لديك ورقة مكتوب عليها هذا الإسم يجب عليك أن تتأكد تماماً من أن هذا الإسم صحيح حيث أن أى خطأ فيه سوف يعمل مشكلة كبيرة جداً فإذا وجدت خطأ لابد من إبلاغ المشرف عليك لتصحيحها.

وهذا الإسم يتكون من:

١- أول خانة عبارة عن الشهر

أكتوبر	=	A
نوفمبر	=	B
ديسمبر	=	C
يناير	=	D
فبراير	=	E
مارس	=	F
أبريل	=	G
مايو	=	H
يونيو	=	I
يوليو	=	J
أغسطس	=	K
سبتمبر	=	L

٢- ثانى وثالث خانة عبارة عن كود المحافظة وهو نفس الرقم المرمز للمحافظة إذا كانت حضر أما إذا كانت ريف فيضاف لهذا الرقم ٥٠

٣- رابع وخامس خانة عبارة عن كود القسم أو المركز.

٤- سادس وسابع خانة عبارة عن كود الشياخة أو القرية.

٥- آخر خانة عبارة عن SpLit.

بمعنى إذا كانت هناك SpLit فى نفس الشياخة فالأولى تأخذ رقم (١) والثانية تأخذ رقم (٢) أما إذا كانت No SpLit فى هذه الشياخة فتأخذ رقم (صفر).

Instructions for Office Editing

The 1995/1996 HIECS
CAPMAS

Instructions for Office Editing

First: Editing Coverage

1. Be sure to complete the data questionnaire and do not forget any edit item. For consumption and expenditure schedule, be sure to complete that and record value and quantity for every commodity recorded on the schedule, or value only when the case of (-) occurs in the quantity cell. In case when the household consumption for every commodity through this survey period also put (-) in the special cells to clear the quantity and value for this commodity.

For the income schedule, be sure to record net annual income value according to every schedule income item according to sources which match on the household level. If the household does not obtain income, put a (-) in the special cell for that purpose.

2. Follow the instructions for skipping for basic data questions for every household member. These questions number 20 in all for individuals.

3. Be sure when the number of individuals is more than ten persons to complete the additional survey model (30 a.m.a.) which begins with person number 11 until you complete basic data for all individuals. After completing these models, staple them to the original questionnaires.

4. Be sure that identification data on the questionnaire cover matched the ID data on the second page, and the special codes for this data and the same household number on the governorate and on the shiakha/village and the external frame on the cover matches with the second page. If we have add models (30 a.m.a.) the cover of these models have to be the same covers of the original questionnaire.

5. Be sure the questionnaire cover codes on first and second pages are recorded special codes for this data in the special boxes provided, and also code occupation type with six (6) digits for every members who have occupation in question number 15, and code the economic activity using four (4) digits for every member who has economic activity in question number 16.

6. Be sure to transfer the quantity and consumption values for every commodity placed in the consumption cell, or the monthly expenditure, or the quarterly expenditure values to annual value. This step is completed by multiplying the monthly values by 12, multiplying the quarterly values by 4, and recording this annual value for consumption or expenditure in the

total consumption cell or annual expenditure cell on the left side columns for every table. If the annual columns are already filled in, there is no need to adjust by multiplication.

7. Starting from Table 2 to Table 14, be sure that every column total for all item values is correct for and every column total for every group in the commodity groups reflected in the tables is correct. These tables are annual expenditures for every household according to group indicators for every main group and sub-group.

8. Be sure that the total for sub-groups in the first table is correct, and record the value in the main groups cell in the same table. Total the main group value starting with Group number 1 to Group Number 11, and record this value in the group cell number 98 which is for consumption and expenditure total in this table. Add the group 12 value and group number 13 and record this value in the group cell number 99 which are for the total annual expenditure in this table.

9. Be sure to record for every row total for every item from the income tables for every individual in the cell annual totals, for example:
Table Number 2, clear the annual net income from wages and salaries
Table Number 5, clear the net annual income from land, properties and real estate
Table Number 6, clear the net financial assets
Table Number 7, clear the net annual income from the other regular returns
and make sure that the column totals are correct for all income tables. These tables are Number 2 to Number 7 for Net Annual Income for every household.

10. Verify column totals in Table Number 8, Changes in Savings and household Ownership.

Second: Editing the Consistency and Correlation Between Data

1. Number of Individuals on the questionnaire cover males plus females must equal total members in the household. This total must be equal to the last sequence number in the basic data for all individuals.

2. If the reply to the question "Is this questionnaire complete?" is "yes", then there must be a reply to the question "Is this household original or replaced?".

3. If the answer is "no" to the question "Is this questionnaire complete?" then the reason for incompleteness must be given, and the "original or replaced?" question is left blank.

Basic Data for all individuals between record questions Numbered

1 through 20:

4. If the reply to question Number 3 (age) is nine years or less, then the reply for question Number 4 (education status) should be below age, and code it "1".

5. If the reply to question Number 3 (age) is ten years or more, then the reply to question Number 4 (education status) can be from "2" to "8". Match the age for every individual with his or her education.

6. If the reply of question Number 5 (enrolled) is "yes," then question Numbers 6, 7, and 8 must be filled, and also Number 9 and 10 must be filled.

7. If the reply to question Number 5 (enrolled) is "No," then there must be a reply in question Numbers 9 and 10, and no reply in question Numbers 6, 7, and 8.

8. If the reply in question Number 7 (education level) is "primary stage," then the reply for question Number 8 (number of years successfully completed in that education level) must be less than 5.

9. If the reply in question Number 7 (education level) is "preparatory stage," then the reply to question Number 8 must be less than 3 years.

10. If the reply of question Number 7 is "seconday stage," then the reply to question Number 8 must be less than 3 years.

11. If the reply to question Number 7 is "university stage," then the reply to question Number 8 must be less than 4 years.

12. If there is a difference between the education stage and and the number of study years completed successfully in this stage, put the reason on the bottom of the page, for example, the individual has "Azhar" education, engineer, or medical.

13. If the reply to question Number 3 (age) is "17 years or less" and the sex is "male" in question Number 2, then the reply to question Number 9 (marital status) must be "below age."

14. If the reply to question Number 3 (age) is "15 years or less" and the sex is "female" in question Number 2, then the reply to question Number 9 (marital status) must be "below age."

15. If the reply to question Number 3 (age) is "18 years or more" and the sex is "male" then the reply to question Number 9 (marital status) can be from "2-never married" to "6-widowed."

16. If the reply to question Number 3 (age) is "16 or more" and the sex is "female" then the reply in question Number 9

(marital status) can be from "2" to "6".

17. If the reply to question Number 10 (working status during the previous week) is "employed," then there must be a reply to questions Numbered 14-20, and no reply to questions Numbered 11, 12, and 13.

18. If the reply to question Number 10 (working status during the previous week) is "unemployed," then the reply to questions Numbered 11, 12, and 13 cannot be blank and questions Numbered 16-20 cannot be blank, but question Number 14 and 15 should be blank. Take care of the skipping instructions.

19. If the reply to question Number 10 is "out of the labor force," or "out of the human force," then there must be a reply to question Number 19 and question Number 20, and question Numbers 11-18 should be blank.

20. If the reply in question Number 19 (is the individual an income earner) is "yes," then there must be one reply or more according to income sources in question Number 20.

21. Given the reply to income sources for individuals, fill in the corresponding income tables. For example, if question Number 20 is filled in as "1" and "3", income sources for individuals are 1) wages and salaries and 3) non-agriculture projects, so there must be information filled in for income table Number 2 (income from wages and salaries) and income Table Number 4 (non-agriculture projects).

Instructions for Office Coding

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The 1995/1996 HIECS
CAPMAS

Instructions for Data Coding

Data which requires coding:

1 - Common geographic (area) data on the questionnaire cover
2 - Main Occupation of persons employed and unemployed (having previous jobs).
3 - Economic Activity for persons employed and unemployed (having previous jobs).

This data requires detailed writing by enumerators when she visits the household the first time. Then this data is coded according to coding documents available in the CAPMAS headquarters.

- Geographic data on the questionnaire cover is coded according to the documents in the administrative units, according to manual number 901/92. The field editor and field supervisors write this code inside the boxes provided in the front of every item, according to:

1. Governorate code, consisting of two (2) digits
2. Kism/Markaz code consists of two (2) digits
3. Shiakha/city/village code consists of two (2) digits
4. The rest of the common data
   a. Survey Round Number consists of one (1) digit:
      first round takes code "1"
      second round takes code "2"
      third round takes code "3"
      fourth round takes code "4"

We classify the twelve months of the survey months into four (4) rounds, each round consisting of three (3) months.
The first round includes the household data through months October, November, December, 1995
The second round includes household data through months January, February, March, 1996
The third round includes household data for April, May, and June, 1996.
And the fourth round includes household data for July, August, and September, 1996.

b. PSU code number consists of three (3) digits. We copy it from the target sample of 503 PSUs in all of Egypt, including 227 urban PSUs and 276 rural PSUs.

If the number of the PSU, for example, is eight (8), we write it on the questionnaire cover as "008"

If the number of the PSU is fifteen (15), for example, we write it as "015."

If the number of the PSU is 235 we write it as "235"

c. The Month of the Survey code consists of two (2) digits according to the survey month sequence (Gregorian calendar).

If the survey month is October, we write the code "10," and November takes code "11" and December takes code "12" and

January takes code "01" etc.

d. Rural/Urban code consists of one (1) digit. Urban takes code "1" and rural takes code "2"

- Main Occupation is coded using six (6) digits according to the occupation classification manual number 98-93/12014 which is coded on the questionnaire at the time of response in the field.

If individual number "01" responds that he is a "building engineer", write code "231101" in the specified occupation code cell for this individual.

If individual number "03" is a "manufacturer of luggage", write the code "743205"

- Economic Activity is coded using four (4) digits according to the arabic classification for economic activity manual number 113/03, from the classification response written on the questionnaire. Write the economic activity code in the cell provided.

If individual "01" says he or she is working in an establishment whose activity is "construction" then code "5202" in the specified cell for that individual.

If individual number "03" works in an establishment whose activity is "the leather (and other) baggage industry" then code "3233" in the economic activity code cell for that individual.

All procedures for data coding must be completed by field editors and field supervisors by the first week of the survey month. Collect this data during the first visit and complete editing and coding immediately.

Occupation Codes

011100 Member of military (male)
121101 Head of sector
122103 Governor (pillar)
131102 Management director in the Governorate
131103 Planning director
131105 Account director
131106 Financial director
131108 Members affairs director
131109 Laws affairs directors
131199 Other directors
132101 Agriculture product in governorate
132299 Production and operation directors in reform industries
132402 Management of parts director
132501 Restaurant director
132701 Production and operation directors in services sector
132911 School director
132913 Public management director
141101 Production agriculture director (private sector)
141201 Production and operation director in industries
141301 Production and operation director in agriculture private sector
141402 Management of parts director (private)
141501 Restaurant director (private sector)
141905 Library culture director
141911 Private school director
142101 Self-employed and occupied in agriculture and fishing sector
142102 Self-employed and occupied in reform industries
142103 Self-employed and occupied in wholesales
142104 Self-employed and occupied in restaurants and hotels
142106 Self-employed and occupied in services sector
142107 Self-employed and occupied in services establishments
142199 Other self-employed and occupied in private sector stablishments
151101 Financial Administration Director
151102 Management Matters Director
151103 Individuals Director
151104 Warehouses Director
151199 Other Financial, Mangement Directors
151201 Director of The Administration of Personal Affairs
151302 Marketing Director
151402 Public relations Director
151501 Purchasing Manager
151900 Other Administration Directors
161101 Department Chief (Gov.)
161102 Supervisor (Gov.)
161103 Writing Unit Chief (Gov.)
161104 Serving Unit Chief (Gov.)
161201 Department Chief (Public Sec.)
161202 Supervisor (Public Sec..)
161299 Executive Chiefs in the Public Sector
161301 Department Chief (Private Sec.)

171101	General Manager (Gov.)
181101	Chairman of the Board in the private Sector
211401	Chemist
222201	Programmer
231101	Building Engineer
231201	Civil Engineer
231208	Bridge Engineer
231210	Irrigation, Hydrolic Engineer
231301	General Electric Engineer
231307	Air Condition, Heat Devices Engineer
231401	General Communications Electronic Engineer
231402	Electronic Devices Engineer
231403	Electronic Computers Engineer
231406	Wire and Wireless Comunications Engineer
231501	General Machinist Engineer
231502	Mechanic of Instruments and Machines
231506	Mechanic of Yarn and Textile Machines
231507	Flight Engineer
231508	Weapons and Munitions Engineer
231601	General Chemical Engineer
231707	Petroleum and Natural Gas Engineer
231801	General Land Registry (Surveying) Engineer
231902	Industrial Production Waste Engineer
231904	Productions Quality Control Engineer
241101	Biologist
241102	Botanist
241199	Others(Anthropologist, Zoologist, Botanist)
241301	Agronomist
251101	Physician
251102	Internist
251105	Pediatrician
251109	Surgeon
251111	General Clinic Doctor
251119	Obstetrician
251120	Otolaryngologist
251121	Chest Doctor
251125	Anesthesiologist
251136	Radiologist
251201	Dentist
251301	Veterinarian
251401	Pharmacist
251499	Druggist, Apothecary, Chemist
261101	Professor of Arabic Language
261102	Professor of the Arabic literature
261107	Professor of Economics
261110	Professor of History
261116	Professor of Mechanical Engineering
261139	Professor of Metal Mechanics
261140	Professor of Mathematics
261145	Professor of Physics
261146	Professor of Chemistry
261174	Professor of Nursing

261176	Professor of Crops and Gardens
261183	Professor of Arts Practices
261199	Other Professor
262101	ArabicTeachers in secondary schools
262102	Foreign Language Teachers in secondary schools
262103	History Teachers in secondary schools
262104	Geography Teachers in secondary schools
262105	Social science Teachers in secondary schools
262106	Mathematics Teachers in secondary schools
262108	Natural History Teachers in secondary schools
262109	Chemistry Teachers in secondary schools
262110	Commercial secretary science Teachers
262111	Art Teachers for secondary schools
262113	Artisan Teachers
262114	Home Economics Teachers
262115	Agriculture science Teachers
262116	Teachers of Religion
262117	Sports Teachers
262199	Others Teachers in the secondary stage
263101	Arabic Teachers
263102	Foreign Teachers
263103	Mathematics Teachers
263104	Science Teachers in secondary schools
263105	Art Teachers
263106	Artisan Teachers
263108	Teachers of Religion
263109	Agriculture science Teachers
263121	Primary Stage Teachers
263199	Other Initial Education Teachers
263201	School Garden Teacher for kids
263202	School Garden Supervisor
264199	Technician for different types of education (blind, etc)
269201	Education section supervisor
269202	Supervisor of one subject
269299	Other supervisors
269901	Reciter of the Koran
291101	General Accounter
291102	Finance Accountant
291104	Editing Accounting
291105	Cashier
291199	Other Accountants
291201	Technician for workers affairs
291204	Trainer
291206	Technician for labour force planning
291999	Specialists in other svcs, nec
292101	Lawyer
292901	Public Prosecutor
292903	Consultative member of Parliament
292904	Investigator in company or ministry
292905	Legal Investigator
292908	Marriage Official
292910	Records keeper in legal office

293201	Librarian
294202	Technician in sociology
294403	Geographer
294601	General social researcher
294605	Social researcher in school
294900	Other social technicians
295103	Journalist
295107	Journalist Superior
295109	Advertising
295199	Other Journalistic and writers
295205	Dig artist
295501	Actress
295505	Director in Radio and TV
296101	Religious man
296103	Reciter of the Koran
296202	Religious Leader
299199	Other technicians in Tourism
299202	Tourism Guidance
311301	Technician in Chemistry
311302	Chemist Laboratory worker
311504	Technician in Natural Gas and Oil
322203	Computer Operator
323101	Painter
323107	TV Photojournalist
323105	Operator of wire and wireless comunication machines
323301	Medical Radiologist
331104	Land - Surveyor
331107	Technician in Irrigation
331108	Aquafer Technician
331109	Builder, Mason
331199	Other builders and architects
331201	General electrician
331202	Technician in electric machines and transformers
331299	Other technicians in electricity
331301	General electronics worker
331302	Wire comunication technician (Telephone & Telegraph)
331303	Nonwire comunications technician
331306	TV technician
331401	General technician in mechanical engineering
331405	Automobile engineering technician
331406	Technician in equipment and agriculture tools
331407	Mechanical technician in air conditioning
331410	Repair technician railway cars
331501	Technical Chemist engineering
331603	Oil and natural gas Exploration
331701	Draughtsman
331702	Technician in engineering painting for buildings
331717	Interior Decorator
331901	Technician in product engineering
331907	Textile technician
331909	Scrap - Iron technician
331910	Formed iron technician

331911	Smelt technician iron
331916	Print technician
331917	Medical maintenance technician
331919	Technician for equopation rays maintenance
331999	Other engineerig assistants and Technicians
332102	Ships engineer
332103	Ocean Mechanic/Technician
332599	Other Technician airline safety
333201	Quality control worker for health
333205	Quality control worker for final product
333206	Quality control worker for services
341201	General Technician in agriculture
341202	Arborist
341301	General agriculture supervisor
341302	Agriculture lands supervisors
341399	Other supervisors on agriculture lands and forests
351101	Medical tests Technician
351102	Laboratory Technician (bacteriologist - pathologist)
351201	Public health supervisor
351202	Technician in health affairs
351301	Nutrition supervisor
351399	Other assistants for nutrition specialists
351700	Veterinary assistants
351800	Pharmacy doctors assistants
351904	Dresser
352101	Public nurse
352102	Chief nurse
352103	Doctor assistant
352105	Public health nurse
352107	Nurse assistant
352108	Health Outreach Visitor
352109	Dresser or nurse without qualification
361101	Teacher assistant for adult education
391101	Financial broker
391199	Other financial workers and brokers
391201	Insurance representative
391299	Other Insurance representatives
391501	Technician for sales
391601	Buyer
392101	Commercial services Broker
392199	Other Commercial services Brokers
392201	Commerical traveller broker
392301	General Contractor
392399	General Contracting Agent
393101	Secretary
393102	Letter and report writer for managers work
393103	Membership affairs writer
393199	Other managment assistant
393203	Bailiff
393299	Other assistant to judge
393303	Writer
393901	Executive secretary

394201	Government tax inspectors
394202	Government tax representative
394902	Government goods representative
394905	Government management inspectors
394999	Other government statistician assistant
395101	Social Researcher assistant
396103	Commercial advertisement designer
396105	General decorator/designer
396202	Announcer
396302	Eastern instrument musician
396505	Coach/Trainer
411101	Typist
411201	Secretary
411301	Word processor
411402	Manual typist
411900	Other typists and secretaries
412102	Storage records keeper
412103	Storage worker
412104	Loan Payment Enforcer
412105	Heavy Scale Repairer
412202	Production planning register
412301	Customs underwriter
413101	Archive Writer
413102	Librarian register
413199	Other Librarian and files registers
413201	Mail clerk - Separator
413202	Postal clerks
413203	Mail delivery
413299	Other postal worker
421101	General accounts
421102	Cost accountant
421103	Wages register
421199	Other accounts assistants
421201	Manual calculater operator
431101	Card machine operator
431199	Other data entry operator
431201	Statistician assistant
431202	Insurance assistant
431204	Finance assistant
431205	Currency paper assistant
441101	Office cashier
441102	Bank cashier
441103	Market cashier
441104	Government cashier
441105	Meter money collector
441106	Ticket clerk
442101	Tourism assistant
442102	Travel agents assistant
442199	Other tourism and travel agents assistants
442201	Information office clerk
442202	Hotel Reception clerk
442203	Reception clerk - hospital or clinic

442301	Switch telephone operator
442302	Telephonist assistant
442303	Telegraph assistant
491101	Ticket-taker on trains and busses
491103	Meter reader
491104	Vending machine money collector
491105	Legal clerk
491119	Other clerks
491199	Other clerical workers
511206	Hotel Host/Hostess
512101	Host/Hostess chief (home, hotel, hospital)
512102	Servant
512199	Other Services supervisors and servants
512202	House Chef
512203	Restaurant Chef
512204	Hotel Chef
512205	Hospital Chef
512206	Bean Chef
512207	Fish Chef
512208	Koushary Chef
512301	Head Waiter
512302	Waiter
512303	Coffee maker - Housekeeper
512304	Barman
512305	Waiter assistant
512399	Other waiters
512402	Washerman
512403	Iron worker
513101	Building supervisor
513102	Ordinary worker
513104	Mosque, Church servant
513202	Buildings cleaner
513299	Other Buildings cleaners
514101	Kindergarten supervisor
514102	Kindergarten tutoress
515101	Hair dresser
515102	Barber
515901	Tent maker
515907	Septic Tank Sewage Remover
515909	Street wetter
515999	Other personal services workers
516201	Fortune-Teller
521101	Police officer
521201	Police officer assistant
521202	Police assistant
521299	Other Police assistants
521301	Warder
521901	Sentry warden
521902	Watchman - Guard
521999	Other security services workers
531101	Sales supervisor
531201	Wholesale of meat and milk production

531202	Wholesale of cattle, sheep and birds
531203	Wholesale of beans and seeds
531204	Wholesale of vegetables and fruits
531205	Wholesale of cigarettes and children toys
531208	Wholesale of leather production and shoes
531211	Furniture wholesale
531212	Wholesale of house furnishings
531213	Health equipment wholesale
531301	Retail Seller of grocery and feed production
531302	Retail Seller of meat and birds meat
531303	Retail Seller of cattle, sheep and birds
531304	Retail Seller of milk products
531305	Retail Seller of cold drinks
531306	Retail Seller of vegetables and fruits
531307	Reatil Book seller
531308	Retail Seller of small seeds and dry plants
531309	Retail Seller of beans and seeds
531310	Retail Seller of cigarettes and entertainment goods
531311	Retail Seller of sweets and bakery products
531312	Seller of ready-made clothes
531313	Retail Seller of leather products and shoes
531314	Retail Seller of iron equipment except house furnishings
531315	Retail Seller of electrical and electronic equipment
531317	Retail Seller of spare car parts
531318	Retail Furniture seller
531320	Retail Housing equipments seller
531321	Retail Health equipments seller
531322	Retail Jeweller
531324	Retail Sales worker in gas station
531399	Other retail sellers and their assistants
531501	Peddler
531502	Marketing representative
532101	Small merchant
532102	Sales worker in market
539999	Other sellers
611101	Farmer (own)
612101	Vegetable and crops farmer (own)
612104	Fruits farmer (own)
612105	Animal trainer
612107	Beekeeper
621101	Public Agricultural Worker
621104	Ordinary farmer
621199	Other agriculture worker and not qualified
621201	Vegetable and crops farmer (qualified)
621202	Fruits farmer (qualified)
621203	Gardener (qualified)
621401	Farmer of animal feeds
621402	Sheepherder
621405	Veterinary dresser
521406	Animal sheerer
521499	Other animal trainers
621501	Dairy Farmer

621502 Milker
621601 Chickens farm maker
621604 Egg examiner
621903 Insecticides Applicator
621905 Tree-Trimmer
621907 Land Surveyor
621908 Irrigation levels maker
621999 Agriculture and animals educator workers
631201 Hook fisher
631202 Ship fisher
702101 Production building supervisor
702102 Building supervisor
703101 Foundry Supervisor
703103 Iron forming supervisor
703301 Supervisor of repair and maintenance of technology equipment
703303 Supervisor of repair and maintenance of ag mach equipt
703404 Telegraph and telephone supervisor
704201 Supervisor of china goods industry
706102 Supervisor of the bread industry
706106 Supervisor of tobacco industry
706302 Hand weaving supervisor
706402 Supervisor preparing leather production and shoes
707105 Supervisor of operating gas agents
707106 Supervisor of operating drug agents
708101 Supervisor of industrial workers and machine operators
708301 Supervisor of auto tires industry
708601 Supervisor of spinning/textiles
708602 Supervisor of tricot workers
708703 Supervisor of seeds production
708900 Other equipment operator supervisors
709103 Supervisor of transportation production
709199 Other production supervisors
721101 Mud and Husk Brick maker
721199 Building Worker, nec
721201 Builder by stone
721299 Other masons/ stone builders
721301 Blacksmith
721302 Brickmaker
721401 Building carpenter
721402 Doors and windows carpenter
721403 Ships and airplanes carpenter
721404 Boats carpenter
721405 Flooring carpenter
721902 Pipe Fitter
721907 Buildings Demolisher
722203 Paving worker
722301 Painter (Engraver)
722303 Whitewasher
722399 Other painters
722601 Plumber
722701 General electrician

722702 Building electrician
722799 Other building electricians
723101 Building painter by oil and other materials
723201 Automobile painters
731101 General founder
731201 Welder by oxygen and electricity
731202 Welder by oxygen
731203 Welder by electricty
731208 Welder by iron and copper
731210 Metals smelt workers
731299 Other metal smelting workers and welders
731301 Worker of shaping sheetmetal
731303 Worker of shaping thin sheetmetal (planes)
731306 Worker of shaping tin plates (plumber)
731307 Worker of shaping aluminium plates
731401 Worker of shaping steel
731402 Metal fabricator shaper
732102 Metal Stamper
732104 Decorative smithy (door - window - furniture)
732106 Waterwheel smithy
732201 Tool rasper - general
732302 Turner (lather) of metal
732303 Cylinder turner
732307 Operater of metal cutting machine
732403 Tool and die worker
733101 Car mechanic
733102 Tractor mechanic
733103 Motorbike mechanic
733104 Diesel engine mechanic
733301 Mechanic of agricultural machines
734101 Electrician of electrical equipment
734102 Electrician of generators and engines
734103 Electrician of assembling & fixing convertors
734108 Electrician of air cooling and conditioning
734109 Electrician of car assembly & repair
734110 Electrician of ship assembly & repair
734115 Electrician of dometic instrument assembly & repair
734199 Other electricians for electronic equipment assembly & repair
734201 Electrician of assembly & repair of electronic equipments - general
734202 Electrician of assembly & repair of transmitters
734399 Other electricians svcng & maint of elec & electronic instruments
734401 Workers for assembly of telephones
734501 Electrician in high tension lines
734502 Electrician in low lension lines
741103 Watch repairer
742101 Pottery & crockery maker - general
742103 Pottery & porcelain molds maker
742110 Clay brick maker
742111 Manual honing wheel shaper

742112	Floor tile maker
742209	Optics & glass honer & polisher
742214	Glass cutter
742301	Glass inscriptor/etcher
742302	Glass inscriber and decorator
743101	Carpenter
743208	Saddle maker
751101	General printing worker
751402	Automatic photographing worker
751603	Worker of printing by silkscreen
751699	Silk, cloth and other solid materials printing workers
791101	General butcher
791201	General baker
791202	Bread kneader
791203	Bread turner
791204	Pastry maker
791207	Sweets maker
791208	Macaroni maker
791212	Biscuit maker
791301	Milk product maker - general
791404	Sauce maker
791406	Worker of drying food materials
791412	Machine operator - purification of oils & fats
791417	Worker of preparing soda water & canning it
791602	Hand-maker of tobacco products
792201	General furniture carpenter
792202	House furniture carpenter
792206	Wood inscriber
792208	Wood painter
792209	Furniture inscriber
792301	Saw miller
792401	Basket maker
792402	Cage maker
792405	Straw Carpet maker
793101	Cotton separating worker
793105	Jute separating worker
793111	Fiber comber
793201	Weaver
793204	Cloth weaver on manual loom
793205	Manual silk weaver
793208	Carpet weaver
793209	Kilim weaver
793210	Weaver of blankets
793212	Worker of textile investigations
793213	Manual tricot worker
793299	Other manual workers of textile & tricot
793301	Tailor
793303	Trousers tailor
793304	Special tailor of shirts & pyjamas
793305	Tailor of readymade shirts & pyjamas
793306	Tailor of readymade women's clothes
793307	Tailor of readymade children's clothes

793308	Tailor of readymade ordinary clothes
793399	Other tailors, dress & hat makers
793504	Worker of cutting readymade clothing
793601	Manual sewing worker - general
793604	Manual embroidery worker
793699	Sewing & embroidery workers - others
793601	Upholsterer (furniture)
793602	Auto upholsterer
793703	Public upholsterer
793904	Sackcloth tailor
794104	Tanning worker
794201	Shoe maker
794205	Shoe fixing maker
794206	Car upholstery worker
794304	Shoe leather preparer
795105	Cotton Gin Worker
797101	Rubber welding
799105	Toymaker
799109	Manual canning worker
799199	Other artisans
811301	Well digger (except oil & gas wells)
812203	Arc welder
812206	Metal furnace operator
813104	Brick Furnace Operator
813901	Maker & mixer of glass materials
813903	Clay crusher
814202	Paper pulping machine operator
815199	Crunching, mixing and grinding machine operators
815304	Crude oil refinery worker
815903	Acetylene gas liquifier/canner
816203	Assistant train driver
816902	Water tap operator
817101	Electrician equipments collector
817103	Electrical wire collector
821107	Metal polishing machine operators
821117	Metal shaping machine operators
821201	Rock breaking machine operators
821203	Worker of cement & asbestos products industry
821212	Marble cutter
822303	Worker of painting metals by electricity
822399	Metal painting & finishing machine operators - others
822999	Chemical product industry machine operators - others
823201	Injection plastic machine operators
823202	Compression plastic machine operators
823299	Other plastic production process machine workers
824101	Wood lathing machine operators
824105	Automatic wood saw operators
826101	Spinning machine operators
826102	Textile fiber mixing machine operators
826103	Textile string combing machine operators
826104	Textile string producing machine operators
826106	Special flax machine operators

826107 Operator of machines for cleaning cotton
826199 Other Operator of machines for spinning & circling
826203 Operator of machines for producing carpet
826204 Operator of machines for producing clothes
826206 Operator of machines for producing tricot
826211 Operator of making strings for textile
826213 Operator of textile mechanical loom
826299 Operator of textile & tricot machines- other
826301 Operator of sewing machines - general
826302 Operator of embroidery machines
826304 Operator of machines for sewing readymade clothes
826307 Sewing furnishings operator
826408 Cloth dyer
826409 Operator of cloth dyeing machine
826699 Operator of industry of shoes & leather products - others
827302 Operator of machines for husking cereals
827303 Operator of machines for crushing cereals
827305 Operator of machines for preparing rice
827308 Operator of machines for packing, canning, or crushing cereals
827402 Operator of machines for making bread
827406 Operator of machines for crushing spices
827519 Operator of machines for hydrogenation of oils & fats
827999 Operator of machines for making beer, wine, drinks - others
828106 Workers of collecting & assembling car engines
828111 Workers of collecting & assembling metallic works
828401 Workers of collecting & assembling metallic furniture
828403 Workers of collecting & assembling plastic products
829104 Operator of machines for tarps, covers
831101 Train driver
831201 Railway Brake worker
831202 Railway Signals worker
831203 Railway Switch worker
831299 Switch, signal, braes workers - others
832101 Motorcycle driver
832201 Taxi driver
832202 Car driver
832203 Microbus driver
832205 Driver of covered lorry
832299 Other drivers of cars, taxis, lightweight lorries
832301 Bus driver
832403 Lorry driver (local transmission)
832404 Lorry driver for long distances
832499 Heavyweight lorry drivers (trucks) - others
833101 Operator of machines for plowing, planting & harvesting
833102 Agriculture tractor driver
833201 Operator of digging machine - general
833204 Operator of tractor machine
833299 Other drivers of machines for moving sand
833301 Operator of winch - general

833308 Operator of winch with a roller
834101 Sea captain
911101 Food hawker in a cinema
911199 Food peddlers - others
911201 Distributing seller (milk , bread)
911202 Newspaper hawker
911203 Hawker in the sea
911299 Hawker for other products
912102 Public Roads worker
913101 Correspondence worker
913102 Porter
913103 Carrier
913199 Other correspondence workers, porters and carriers
913201 Guard (house - hospital)
913202 Doorkeeper
913301 Special security guard
914201 Sweeper
914202 Road sprinklers
921101 Transport equpiment oiler, luber, greaser
921102 Freighting & branching worker in ports, airports, railways
921201 Tricycle driver
921302 Carter driver (coach worker)

Economic Activity Codes

1110	Plant, animal production
1120	Agricultural services
1130	Hunting and gathering of land animals
1210	Production of plant coal
1220	Cutting up trees
1301	Fishing from seas, oceans and coastal waters
1302	Sea fishing nec
2100	Coal extraction
2200	Crude oil & natural gas production
2301	Extraction of iron ore
2302	Extraction of non-iron ore
2901	Extraction of stones, clay and sand
2902	Extraction of chemical compounds and natural fertilizers
2903	Extraction of salt
2909	Exploitation of other mines and quarries nec
3111	Slaughtering, preparing, preserving meat of animals and poultry
3112	Industry and production of milk products
3113	Canning and preserving fruits, vegetables and legumes
3114	Canning, preserving and preparing fish, crustaceans, similar food
3115	Industry of plant & animal oils and fats
3116	Crops grinding and preparing grains
3117	Industry of Bakery products
3118	Sugar industry and refinement
3119	Cocoa , chocolate and sugary sweets industry
3121	Industries of other food materials nec
3122	Fodder and animal food industry
3131	Industry of purifying, distilling and mixing alcoholic beverages
3132	Industry of wine
3133	Industry of beer and malt
3134	Industry of nonalcoholic drinks and carbonated beverages
3140	Industry of tobacco products
3211	Spinning, textile, dyeing and preparing
3212	Industry of fabric products except clothes
3213	Industry of tricot and needle work
3214	Industry of carpet, rugs and like
3215	Industry of ropes, strings and nets
3216	Ginning and pressing cotton
3217	Retting and separating fibers
3218	Industry of mats
3219	Spinning & textile industry nec
3221	Industry of readymade clothes except shoes
3222	Cutting out and sewing clothes
3231	Tanning and preparing leather
3232	Preparing and dyeing furs
3233	Industry of leather products substitutes except shoes
3240	Shoe industry excepting rubber, plastic or wood
3311	Wood industry and employment
3312	Industry of wooden vessels, containers and small goods of bamboo
3319	Industry of wood and cork products nec
3321	Industry of furniture and installations except metallics
3322	Upholstery
3411	Industry of paper and carton pulp
3412	Industry of paper and carton containers
3419	Industry of goods of paper past, paper and carton nec
3420	Printing, propaganda and assoc inds
3511	Industry of main industrial chemicals except fertilizers
3512	Industry of fertilizers and herbicides
3513	Industry of artificial resins, plastic materials and artifical

fibers except glass
3521 Industry of other chemical products
3522 Industry of drugs and medicines
3523 Industry of soap, cleaning confections, perfumes and cosmetics
3529 Industry of other chemical products nec
3530 Laboratories of oil (petrol) refining
3540 Industry of different oil and coal products
3551 Industry of tires and inner tubes
3559 Industry of other rubber products nec
3560 Industry of other plastic products nec
3610 Industry of pottery, porcelain, crockery products
3620 Industry of glass and its products
3691 Industry of building products of clay
3692 Industry of cement and lime
3699 Industry of non metalic mining material products nec
3710 Main industry of iron and steel
3720 Industry of main non iron metals
3811 Industry of cutting tools, manual eqpts & general metallic ironmongery
3812 Industry of metallic furniture and installations
3813 Industry of metalic establishing products
3819 Industry of metal products nec except machines and equipments
3821 Industry of engines and turbines
3822 Industry of machines and agricultural equipments
3823 Industry of machines for employing metals and wood
3824 Industry of machines and specialized industrial equipt, not 3823
3825 Industry of office writing machines and calculators
3829 Industry of non-electric machines and equipments, nec
3832 Industry of machines and elec industrial instruments
3833 Industry of radio, TV, instruments and communication equipment
3839 Industry of instruments and domestic electrical equipment
3841 Industry of instruments, nec
3842 Manufacturing and repair of ships
3843 Industry of railway transport equipment
3844 Automobile industry
3845 Industry of motorcycles and bicycles
3846 Airplane industry
3849 Industry of transport equipments, nec
3851 Industry of prof, scientific measuring and controlling eqpt, nec
3852 Industry of optical photographic goods
3852 Clocks industry
3902 Industry of jewellers and similar
3902 Industry of musical instruments
3903 Industry of sport and gymnastic tools
3909 Converting industries, nec
4101 Production and distribution of lighting electricity and bulbs
4102 Production and distribution of gas
4103 Producing vapour and hot water
4200 Water operations
5110 General building contracting
5121 General contracting for roadworking
5122 General non-buildings contracting
5201 Contracting of digging and concrete work
5202 Contracting of building work
5203 Contracting of carpentry work and assembling floors
5204 Contracting of health affairs
5205 Contracting of electricity works
5206 Contracting of warming and air cooling works

5207 Contracting of sculpture and ornamentation
5209 Partial contracting, nec
6111 Wholesale of agricultural crops
6112 Wholesale of cattle, sheep, poultry and fish
6113 Wholesale of non-elementary animal products
6114 Wholesale fodder
6115 Wholesale elementary materials and drinks
6116 Wholesale smoke and its industrial products
6117 Wholesale of spinning, textile, and ready-made clothes
6118 Wholesale tanned leather, products, and shoes
6119 Wholesale of domestics tools
6121 Wholesale of oil and fuel substances
6122 Wholesale paper, products, prints, and desk tools
6123 Wholesale wood and products
6124 Wholesale buildings materials
6125 Wholesale medicines, medicative chemical and cosmetics
6126 Wholesale chemical substances
6127 Wholesale metals and industrial products
6128 Wholesale agriculture machines, tools, and equipments
6129 Wholesale machines, tools, and equipments, non-agriculture
6131 Wholesale of means of transportation
6132 Wholesale of clocks, masterpieces and jewellry
6133 Wholesale of hardware, toys, sports, fishing, music, photo, & ornament eqpts
6134 Wholesale, nec
6135 Cooperative marketing
6136 Wholesale services
6211 Retail of agricultural crops
6212 Retail of cattle, sheep, poultry and fish
6213 Retail of fodder
6214 Retail of elementary materials, drinks and smoke products
6215 Retail of string, textiles, and readymade clothes
6216 Retail of leather products and shoes
6217 Retail of domestic tools and instruments
6218 Retail of fuel substances
6219 Retail of paper, products, prints, and writing tools
6221 Retail of wood and products
6222 Retail of building materials
6223 Retail of medicines, medicative chemicals, and cosmetics
6224 Retail of chemicals, nec
6225 Retail of metals and products
6226 Retail of agriculture machine tools, and equipment
6227 Retail of machines, tools, and equipments, non-agriculture
6228 Retail of means of transport
6229 Retail of clocks, masterpieces, and jewellry
6231 Retail of hardware, toys, sport, fishing, music, photo and ornament eqpt
6232 Other kinds of retail
6233 Subsidy shop retail
6234 Retail services
6310 Restaurant, coffee shops, and other, for food and drink
6320 Hotels, pensions, camps, other places for sojourning
7111 Transport by railway
7112 Transport of passengers inside cities, villages, and betw main routes
7113 Passenger land transport, by other means
7114 Transporting goods along routes
7115 Transport by pipelines

7166	Assistance services for land transport
7121	Marine transport
7122	Inner Marine transport
7123	Assistance services for marine transport
7131	Air transport activities
7132	Assistance services for air transport
7191	Transport services, nec
7192	Storing
7200	Transportation
8101	Monetary associations
8102	Financial associations, nec
8103	Financial services
8200	Insurance
8310	Landed property
8321	Legal services
8322	Accounting, revising, and editing
8323	Preparing and data archiving services
8324	Geometric, architectural and technician svc
8325	Advertizement svcs
8329	Other svcs, nec, except hiring machines and equipment
8330	Hiring machines and equipment
9100	General admin and defense
9200	General cleaning services, and associated
9310	Educational services
9320	Research, and educational institutes
9331	Medical services, dentistry, and other health services
9332	Veterinary svcs
9340	Social care associations
9350	Work, job, and workers' organizations
9391	Religious services
9399	Social services, and related, nec
9411	Producing movies and videofilms
9412	Distributing and showing films
9413	Radio and TV broadcasting
9424	Theatre production and entertaining services
9415	Self-employed author, music composers and dependent artists, nec
9420	Libraries, museums, zoos, gardens, and cultural svcs, nec
9490	Other amusement and recreational services, nec
9511	Shoes and other leather products repairing
9512	Electrical and other equipment repair
9513	Car repair
9514	Jewelry and watch repair
9519	Other repairing shops
9520	Laundry and cleaning and dying services
9530	House services or building cleaning activities
9592	Photographic studio activity
9599	Personal services nec
9600	Regional and international authorities

CPI Item Codes

CONSUMPTION	8888
EXPENDITURE	9999
WHEAT-HH-PROD	101
WHEAT-NON-PROD	102
MAIZE-HH-PROD	103
MAIZE-NON-PROD	104
OTH-CER-HH-PROD	105
OTH-CER-NON-PROD	106
WHEAT-FLOUR	107
SEMEAD-FLOUR	108
STARCH	109
RICE-HH-PROD	110
RICE-NON-PROD	111
MACARONI	112
KONAFA-CATAIF	113
GOLASH-ROUKAK	114
FERICK	115
BALADY-BREADS	116
SHAMI-BREADS	117
BREAD-LOAVES	118
DRIED-BAKERY	119
FINE-BAKERY	120
PASTRIES	121
TARTS	122
CAKES-BISQUITS	123
OTHER-STARCHES	124
CEREALS-PREP	125
CEREALS-TOTAL	199
WBEANS-HH-PROD	201
WBEANS-NON-PROD	202
SPLIT-BEANS	203
WLENTILS-HH	204
WLENTILS-NON	205
SPLIT-LENTILS	206
KIDNEY-BEANS	207
HARICOTS	208
PEAS	209
FENUGREEK	210
OTH-DRIED-PULSES	211
PULSES-TOTAL	299
TOMATO-HH-PROD	301
TOMATO-NON-PROD	302
POTATO-HH-PROD	303
POTATO-NON-PROD	304
SWEPOT-HH-PROD	305

HEADCOVER-FEM	1620
SOCKS-FEM	1621
READY-MADE-TOT-A	1622
UNDERWEAR-MALE	1623
UNDERWEAR-FEM	1624
UNDERWEAR-CHILD	1625
UNDERWEAR-TOT-B	1626
OTHER-READY-MADE	1627
READY-MADE-TOTAL	1628
MALE-TEXT-SUITS	1629
MALE-TEXT-SHIRTS	1630
MALE-TEXT-GALAB	1631
MALE-TEXT-OTHER	1632
MALE-TEXT-TOT-A	1633
FEM-TEXT-DRESSES	1634
FEM-TEXT-BLOUSE	1635
FEM-TEXT-GALABIA	1636
FEM-TEXT-OTHERS	1637
FEM-TEXT-TOT-B	1638
TEXTILES-TOTAL	1639
CLOTHING-ACC	1640
TRICOT	1641
YARNS	1642
LACE-SVC	1643
TAILORING	1644
REPAIR	1645
TRICOT-SVCS	1646
TOTAL-ACC-CLOTH	1647
TOT-R-TEXT-ACC	1699
MALE-FOOTWEAR	1701
FEM-FOOTWEAR	1702
CHILD-FOOTWEAR	1703
OTHER	1704
FOOTWEAR-REPAIR	1705
FOOTWEAR-POLISH	1706
TOTAL-FOOTWEAR	1799
OWNER-IMP-RENT	1801
ORD-RENT	1802
FURN-IMP-RENT	1803
GARD-PAYM	1804
GARDENER	1805
WATER-EXP	1806
MAINT-REPAIR	1807
INSUR-PREMIUM	1808
TRASH-COLLECTION	1809

SWEPOT-NON-PROD	306
ONION-HH-PROD	307
ONION-NON-PROD	308
GARLIC-HH-PROD	309
GARLIC-NON-PROD	310
EGGPL-HH-PROD	311
EGGPL-NON-PROD	312
CONGRETS-HH-PRO	313
CONGRETS-NON-PRO	314
OKRA-HH-PROD	315
OKRA-NON-PROD	316
MELOKIA-HH-PROD	317
MELOKIA-NON-PROD	318
PEPPERS-HH-PROD	319
PEPPERS-NON-PROD	320
KIDNEY-HH-PROD	321
KIDNEY-NON-PROD	322
HARICOT-HH-PROD	323
HARICOT-NON-PROD	324
PEAS-HH-PROD	325
PEAS-NON-PROD	326
CUCUMBER-HH-PR	327
CUCUMBER-NON-PR	328
SNAKEMELLON-HH	329
SNAKEMELLON-NON	330
CABBAGE-HH-PROD	331
CABBAGE-NON-PROD	332
TURNIPS-HH-PROD	333
TURNIPS-NON-PROD	334
SPINACH-HH-PROD	335
SPINACH-NON-PROD	336
COLOCARIA-HH-PR	337
COLOCARIA-NON-PR	338
ARTICHOKE-HH-PR	339
ARTICHOKE-NON-PR	340
GR-BEANS-HH-PR	341
GR-BEANS-NON-PR	342
SQUASH-HH-PROD	343
SQUASH-NON-PROD	344
CARROTS-HH-PROD	345
CARROTS-NON-PROD	346
KHOBEZA-HH-PROD	347
KHOBEZA-NON-PROD	348
OTH-VEG-HH-PROD	349
OTH-VEG-NON-PROD	350

OTHER-EXP	1810
TOTAL-HOUSING	1899
ELEC-EXP	1901
BUTAGAS	1902
NATURAL-GAS	1903
KEROSINE	1904
COAL-WOOD	1905
SEPERTO	1906
BATTERIES	1907
WAX-MATCHES	1908
TOTAL-FUELIGHT	1999
WOOD-FURN	2001
METAL-FURN	2002
LIGHTING-IMPL	2003
HH-DECOR-ITEMS	2004
GLASSES-MATTERS	2005
CHINA-MATTERS	2006
PLASTIC-MATTERS	2007
METAL-MATTERS	2008
UTENSILS	2009
KERO-COOKER	2010
REFRIGERATOR	2011
DEEP-FREEZER	2012
COOKING-OVEN	2013
WASHING-MACHINE	2014
DRYER	2015
DISH-WASH-MACH	2016
WATER-HEATER	2017
VACCUM-CLEANER	2018
CARPET-SWEEPER	2019
SEWING-MACHINE	2020
AIR-COND	2021
ELEC-FAN	2022
HEATER	2023
ELEC-IRON	2024
WATER-PUMP	2025
OTHER-ELEC-APP	2026
IRONING-BOARD	2027
OTH-HH-MATTERS	2028
FLOOR-COVERING	2029
BEDSPREADS	2030
TOWELS	2031
TABLE-CLOTHS	2032
SHEETS-PCASES	2033
BLANKETS	2034

FRESH-VEG-TOTAL	359
FROZEN-OKRA	360
FROZEN-MELOKIA	361
FROZEN-PEAS	362
FROZEN-MIXED-VEG	363
GRAPE-LEAVES	364
OTH-FROZEN-VEG	365
FROZEN-VEG-TOTAL	366
CANNED-TOMS	367
CANNED-BEANS	368
OTH-CANNED-VEG	369
CANNED-VEG-TOTAL	370
DRIED-OKRA	371
DRIED-MELOKIA	372
DRIED-VEG-TOTAL	373
VEGETABLES-TOTAL	399
ORANGE-HH-PROD	401
ORANGE-NON-PROD	402
MANDERINE-HH-PR	403
MANDARINE-NON-PR	404
GRAPEFR-HH-PROD	405
GRAPEFR-NON-PROD	406
SW-LEMON-HH-PR	407
SW-LEMON-NON-PRO	408
BANANA-HH-PROD	409
BANANA-NON-PROD	410
GRAPES-HH-PROD	411
GRAPES-NON-PROD	412
MELLON-HH-PROD	413
MELLON-NON-PROD	414
WATERMEL-HH	415
WATERMEL-NON	416
CANTALOUPE-HH	417
CANTALOUPE-NON	418
APRICOT-HH-PROD	419
APRICOT-NON-PROD	420
PLUMS-HH-PROD	421
PLUMS-NON-PROD	422
APPLES-HH-PROD	423
APPLES-NON-PROD	424
PEACH-HH-PROD	425
PEACH-NON-PROD	426
PEAR-HH-PROD	427
PEAR-NON-PROD	428
MANGO-HH-PROD	429

BLANKETS-COTTON	2035
MATTRESS	2036
CURTAINS	2037
MATTRESS-COVER	2038
COTTON-FILLING	2039
FEES-FOR-BEDDER	2040
FURN-MAINT-REP	2041
COPPER-POLISHNG	2042
TOTAL-FURN	2099
SOLID-SOAP	2101
LIQUID-SOAP	2102
POWDER-SOAP	2103
BLEACH-MATL	2104
INSECTICIDES	2105
PAPER-TOWELS	2106
OTH-CLEAN-MATLS	2107
CLEANG-UTENSIL	2108
TOTAL-CLEAN	2199
LAUNDRY	2201
DRY-CLEANING	2202
PUBLIC-LAUNDRY	2203
CARPETS-MAINT	2204
FUMIGATION	2205
OTHER-SVCS	2206
TOTAL-SVCS	2299
SERVANTS-PERM	2301
SERVANTS-TEMP	2302
SERVANTS-INS	2303
TOTAL-SERVANTS	2399
PRESCRIP-MED	2401
NON-PRESCRIP	2402
DOCTOR-FEES	2403
LAB-FEES	2404
X-RAY	2405
ARTHROSCOPIC	2406
EKG-EEG	2407
MED-TREAT-EQUIP	2408
DIALYSIS	2409
MED-TOOLS-COST	2410
DENTIST	2411
GOV-HOSP	2412
PRIVATE-HOSP	2413
HOSP-INS	2414
OBSTETRIC	2415
OTHER-MED-SVCS	2416

MANGO-NON-PROD	430
FIGS-HH-PROD	431
FIGS-NON-PROD	432
GUAVA-HH-PROD	433
GUAVA-NON-PROD	434
DATES-HH-PROD	435
DATES-NON-PROD	436
STRAWBERRY-HH	437
STRAWBERRY-NON	438
LEMON-HH-PROD	439
LEMON-NON-PROD	440
OLIVE-HH-PROD	441
OLIVE-NON-PROD	442
PINEAPPLE	443
OTH-FRUIT-HH	444
OTH-FRUIT-NON	445
DRDATES-HH-PROD	446
DRDATES-NON-PROD	447
MINCED-DATES	448
RAISINS	449
DRIED-FIGS	450
APRICOTS-FRESH	451
APRICOTS-DRIED	452
PRUNES	453
DRIED-FRUITS	454
ALMONDS	455
HAZEL-NUTS	456
PISTACCIOS	457
WALNUT-PECAN-OTH	458
PEANUTS	459
HOMMOUS	460
SALTY-SEEDS	461
OTHER-SNACKS	462
FRUITS-TOTAL	499
VEAL	501
BUFFALO	502
MUTTON	503
CAMEL	504
OTHER-MEATS	505
FROZEN-MEATS	506
LIVER-BRAIN	507
CANNED-MEATS	508
MANUF-MEATS	509
KIDNEY-LEGS	510
MEATS-PREP	511

HEALTH-INS	2417
HERBAL-REMEDY	2418
CONTRACEPTIVES	2419
TOTAL-MED	2499
NEW-CAR	2501
USED-CAR	2502
NEW-BICYCLE	2503
USED-BICYCLE	2504
NEW-MBIKE-VESPA	2505
USED-MBIK-VESPA	2506
TOTAL-PRIV-TR	2599
CAR-LICENSE	2601
DRIVING-LICENSE	2602
INSURANCE	2603
FUEL	2604
LUBRICATION	2605
CAR-WASHING	2606
CAR-REPAIRING	2607
GARAGE	2608
PARKING-FEES	2609
DRIVER	2610
OTHER-CAR	2611
TOTAL-CAR	2699
PUBLIC-TRANS	2701
AIR-MARINE	2702
OTHER-TRANS	2703
TOTAL-PUBTRANS	2799
TELEPHONE-EQPT	2801
TELEPHONE-BILL	2802
POST-STAMPS	2803
TELEGRAM	2804
WIRE-WIRELESS	2805
STATIONARY	2806
TOTAL-COMM	2899
PRIM-SCH-FEES	2901
PREP-SCH-FEES	2902
SEC-SCH-FEES	2903
UNIV-FEES	2904
PRIM-BOOKS-FEES	2905
PREP-BOOKS-FEES	2906
SEC-BOOKS-FEES	2907
UNIV-BOOKS-FEES	2908
REFERENCE-BOOKS	2909
STATIONERY	2910
PRIV-LESSONS	2911

MEATS-TOTAL	515
CHICKEN-HH-PROD	516
CHICKEN-NON-PROD	517
DUCKS-GEESE-HH	518
DUCKS-GEESE-NON	519
PIDGEON-HH-PROD	520
PIDGEON-NON-PROD	521
TURKEY-HH-PROD	522
TURKEY-NON-PROD	523
RABBIT-HH-PROD	524
RABBIT-NON-PROD	525
POULTRY-OTH-HH	526
POULTRY-OTH-NON	527
FROZEN-CHICKEN	528
CHICKEN-LIVER	529
POULTRY-PREP	530
POULTRY-TOTAL	535
MEAT-POULTRY-TOT	599
FISH-HH-PROD	601
FISH-NON-PROD	602
FROZEN-FISH	603
CANNED-FISH	604
SMOKED-FISH	605
SALTED-FISH	606
SHELLFISH	607
FISH-PREP	608
FISH-TOTAL	699
EGGS-HH-PROD	701
EGGS-NON-PROD	702
EGGS-TOTAL	799
MILK-HH-PROD	801
MILK-NON-PROD	802
PASTEURIZED-MILK	803
SOURMILK-HH	804
SOURMILK-NON	805
YOGOURT-HH-PROD	806
YOGOURT-NON-PROD	807
CONCENTRATED-MIL	808
ADULT-POWDERED	809
INFANT-POWDERED	810
WHITE-CHEESE-HH	811
WHITE-CHEESE-NON	812
DRIED-CHEESE	813
FELAMENCK-CHEESE	814
PROCESSED-CHEESE	815

SCHOOL-TRANS	2912
UNIFORMS	2913
NURSRY-SCH-FEES	2914
ENDOWMENTS-FEES	2915
TOTAL-EDUC	2999
COLOR-TV	3001
BLACK-WHITE-TV	3002
VIDEO	3003
CASSETTE	3004
RADIO	3005
VCR-TAPES	3006
PERSONAL-COMP	3007
VIDEO-GAMES	3008
MUSICAL-INSTRUM	3009
VIDEO-CAMERA	3010
CAMERA	3011
VCR-TAPE-REWIND	3012
PHOTO-FILMS	3013
ENTRTNMNT-EQ	3014
SPORT-EQ	3015
BALLS	3016
SPORTS-INSTR	3017
INSTRUM-MAINT	3018
TOTAL-ENT	3099
NEWSPAPERS-MAG	3101
BOOKS-ENT	3102
VIDEO-TAPE-RENT	3103
CINEMA-TICKETS	3104
SPORTS-EVENTS	3105
FILM-DEVELOPING	3106
CLUB-FEES	3107
POCKET-MONEY	3108
SCHOOL-PICNIC	3109
WEEKEND-PICNIC	3110
TRAVEL-ENT	3111
HOTELING-FEES	3112
PER-DIEM	3113
ENTERTAIN-FEES	3114
TOTAL-CULTURE	3199
FOOD-BOARDS	3201
SANDWICHES	3202
NON-ALC-DRINKS	3203
ALC-DRINKS	3204
SMOKING	3205
ACCOMODATION	3206

CURD-HH-PROD	816
CURD-NON-PROD	817
OTHER-CHEESE	818
MESH-HH-PROD	819
MESH-NON-PROD	820
CREAM-HH-PROD	821
CREAM-NON-PROD	822
MILK-TOTAL	899
BUTTER-HH-PROD	901
BUTTER-NON-PROD	902
IMPORTED-BUTTER	903
BUTTEROIL-HH	904
BUTTEROIL-NON	905
IMPORT-BUTTEROIL	906
ANIMAL-FATS	907
VEG-OIL-SUBSID	908
VEG-OIL-NONSUB	909
MARGARINE-BUTTER	910
MARG-BUTTEROIL	911
TAHINA	912
OILS-TOTAL	999
SUGAR-SUBSID	1001
SUGAR-NONSUB	1002
MOLASSES	1003
HONEY	1004
HALAWA-TAHINIA	1005
JAM	1006
SYRUP	1007
FRUIT-JUICE	1008
POWDERED-FRUITS	1009
CANNED-FRUITS	1010
SOFT-CANDY	1011
HARD-CANDY	1012
CHICKLETS-GUM	1013
ICE-CREAM	1014
OTHER-SUGARY	1015
SUGAR-TOTAL	1099
SALT	1101
SPICES	1102
VINEGAR	1103
OTHER-FOOD-MATLS	1104
FUUL-MIDAMES	1105
SANDWICHES	1106
KABAB-KOFTA	1107
GRILLED-CHICKEN	1108

OTHER-REST	3207
TOTAL-FOODAWAY	3299
WATCHES	3301
CLOCKS	3302
ACCESSORIES	3303
FEM-HANDBAGS	3304
MALE-SCHOOLBAGS	3305
LUGGAGE	3306
JEWELLERY-GOLD	3307
ACCESS-NONGOLD	3308
OTHERS-MISC	3309
MAINT-REPAIR	3310
TOTAL-PERS-APP	3399
TOILET-SOAP	3401
SHAMPOO	3402
SHAVING	3403
DENTAL-CARE	3404
PERS-CARE-EQ	3405
MALE-COLOGNES	3406
FEMALE-PERFUMES	3407
BARBER-FEES	3408
FEM-HAIR-DRESS	3409
PEDI-MANICURE	3410
SAUNA-MASSAGE	3411
FLOWERS	3412
PETS	3413
TOTAL-PERS-CARE	3499
COURT-FEES	3501
LEGAL-FEES	3502
DOCUMENTING	3503
BANKING-SVCS	3504
DEATH-EXPENSES	3505
MARRIAGE	3506
FEES-DUES-UNION	3507
OTHER-NEC	3508
DOMESTIC-TOT	3520
MEDTREAT-ABROAD	3530
REL-TOURISM	3531
ENTER-TOURISM	3532
FOREIGN-NEC	3533
FOREIGN-TOT	3550
TOT-DOM-FOR	3599
INCOME-TAXES	3601
LIFE-INS-PREM	3602
DOWRY-INCL-GOLD	3603

GRILLED-FISH	1109	GIFTS	3604
PICKLE	1110	CHARITY	3605
OTHER-PREP-FOOD	1111	ALIMONY	3606
OTH-FOODS-TOTAL	1199	DOMESTIC-TRANS	3607
TEA	1201	FOREIGN-TRANS	3608
ROASTED-COFFEE	1202	TRANSF-TOTAL	3699
GREEN-COFFEE	1203	PREMIUMS	3701
COCOA	1204	ADVANCES	3702
CINNAMIN	1205	PREM-TOTAL	3799
ANISE	1206	WAGESAL-INC	4005
KARKADEH	1207	LANDS-INC	4307
OTH-DRINK-STUFF	1208	FIN-INC	4408
DRINKS-TOTAL	1299	OTH-INC	4505
SOFT-DRINKS	1301	CROPS	4100
MINERAL-WATER	1302	VEGETABLES	4101
OTHER-NONALC	1303	FRUITS	4102
NON-ALC-TOTAL	1399	NURSURY	4103
BEER	1401	PREVENTIVE	4104
WINE	1402	WOOD-TREES	4105
OTH-ALC-DRINKS	1403	LIVESTOCK	4106
ALC-DRINKS-TOTAL	1499	POULTRY-HH	4107
CIGARETTES	1501	CATTLE	4108
CIG-LOOSE	1502	BEEHIVES	4109
TOB-WET-LEAF	1503	FISH-FARMS	4110
TOMBAC	1504	POULTRY-FARMS	4111
CIGARS	1505	HATCHERY	4112
OTHER-TOB	1506	MACH-RENT	4113
NASHOOK	1507	OTH-AGRI	4114
TOB-DRY-LEAF	1508	TOTAL-AGRI-INC	4115
TOB-TOTAL	1509	BUSINESS-PROJ	4200
DRUGS	1510	INDUST-PROJ	4201
TOTAL-TOB-DRUGS	1599	SERVICES-PROJ	4202
SUITS-MALE	1601	OTH-PROJECTS	4203
TROUSERS-MALE	1602	ANN-NONAG-TOTINC	4204
SWEATERS-MALE	1603	AGRI-LANDS	5000
SHIRST-MALE	1604	NON-AGRI-LANDS	5001
T-SHIRTS-MALE	1605	BUILDINGS	5002
SPORTCL-MALE	1606	MACH-EQ	5003
PYJAMAS-MALE	1607	TRANSP-MEANS	5004
GALABEYA-MALE	1608	FURN	5005
ROBES-MALE	1609	LIVESTOCK	5006
HEADCOVER-MALE	1610	CASH	5007
SOCKS-MALE	1611	STOCKS	5008
SUITS-FEM	1612	SVGS-CURR-ACCT	5009
SKIRTS-FEM	1613	SAVING-INV-CO	5010

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DRESSES-FEM	1614	CDS	5011
SWEATERS-FEM	1615	PO-SAVING	5012
BLOUSES-FEM	1616	JEWELLERY-GOLD	5013
T-SHIRTS-FEM	1617	DURABLES	5014
PYJAMAS-FEM	1618	LOANS-NET	5015
ROBES-FEM	1619	OTHER-ASSETS	5016
		TOTAL-CHG-SVG	5017

The HIECS
Data Dictionary

Data Dictionary: HIECS
Created: 23/03/96 10:46:58

IMPS Version 3.1

Record Length: 84

The following records have been defined:

Record Name	Record Type Value (RECTYPE)	Required	Max. Records
COVER	01	Y	1
DEMOGRAPHIC	02	Y	30
HOUSING	03	Y	1
INVENTORY	04	Y	1
EXPTOT	05	Y	46
FOODBEV	06	Y	299
CIGS-TOBACCO	07	N	11
CLOTHING	08	N	48
FTWEAR	09	N	7
UTILITIES	10	Y	11
LIGHT-FUEL	11	N	9
FURNITURE	12	N	43
MAINT-CLEAN	13	N	20
MEDICAL-SVCS	14	N	20
EQPT-TRANS	15	N	7
TRANS-PRIV-PUB	16	N	16
COMMUNICATION	17	N	7
EDUCATION	18	N	16
VAL-ENT	19	N	19
CULTURE	20	N	15
RESTAURANT	21	N	8
ACCESORIES	22	N	11
PERS-SVCS	23	N	14
SVCS-TRANSF-PREM	24	N	27
NET-ANN-INCOME	25	Y	7
WAGESAL	26	N	10
AGRICULTURE	27	N	16
ADIST	28	N	10
NON-AGRI	29	N	5
NDIST	30	N	10
LANDS	31	N	10
FINANCIAL	32	N	10
INCOME-OTHER	33	N	10
SAVINGS	34	N	18

The following COMMON items have been defined. They occur on all records.

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Value Name	Values
(record type)	A	1-2	2		
HHNUM-GOV	N	3-6	4		
VIL-HHNUM	N	7-10	4	OK	0001:0015

The following COMMON items have been defined. They occur on all records.

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Value Name	Values
FRAME-HHNUM	N	11-12	2	OK	01:30
ROUND-NUM	N	13	1	OK	1:4
MONTH	N	14-15	2	OK	01:12
GOV	N	16-17	2	URBAN-GOVS	01:04
				LOWER-EGYPT-GOVS	11:19
				UPPER-EGYPT	21:28
				BORDER-GOVS	31:34
URBRUR	N	18	1	URBAN	1
				RURAL	2
KISM-MARKAZ	N	19-20	2	OK	01:36
SHIAKHA-VILL-SP	N	21-23	3		
SH-VILL	N	21-22	2	OK	01:79
SPLIT	N	23	1	NO-SPLIT	0
				SPLIT-1	1
				SPLIT-2	2
CHUNK-NUM	N	24-26	3	OK	001:280

Record Name: COVER Record Type: 01

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
CV01-FILL-OK	N	27	1	0	YES	1
					NO	2
CV02-RESP-TYPE	N	28	1	0	ORIGINAL	1
					REPLACEMENT	2
CV03-NONRESP-REA	N	29	1	0	NOT-FOUND	1
					BLDG-DESTROYED	2
					CHANGE-TO-EST	3
					UNINHABITED	4
					ABSENT	5
					PARTLY-COMPLETED	6
					OUT-OF-SCOPE	7
					REFUSED	8
					OTHERS	9
CV04-MALES	N	30-31	2	0	ZERO	00
					OK	01:30
CV05-FEMALES	N	32-33	2	0	ZERO	00
					OK	01:30
CV06-TOTAL	N	34-35	2	0	OK	01:30

Record Name: DEMOGRAPHIC Record Type: 02

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
DEAA-RESPONDENT	N	27	1	0	YES	1
					NO	2
DE00-INDNUM	N	28-29	2	0	OK	01:30
DE01-RELATION	N	30	1	0	HH-HEAD	1
					SPOUSE	2
					SON-DAUGHTER	3
					CHILD-IN-LAW	4
					PARENT	5
					GRAND-CHILD	6
					BROTHER-SISTER	7
					OTHER-RELATION	8
					NO-RELATION	9
DE02-SEX	N	31	1	0	MALE	1
					FEMALE	2
DE03-AGE	N	32-33	2	0	INFANT	00
					GE1-LE5	01:05
					GT5-LE10	06:10
					GT10-LE15	11:15
					GT15-LE20	16:20
					GT20-LE25	21:25
					GT25-LE30	26:30
					GT30-LE35	31:35
					GT35-LE40	36:40
					GT40-LE45	41:45
					GT45-LE50	46:50
					GT50-LE55	51:55
					GT55-LE60	56:60
					GT60-LE65	61:65
					GT65-LE70	66:70
					GT70-LE75	71:75
					GT75	76:99
DE04-EDUC	N	34	1	0	BELOW-AGE	1
					ILLITERATE	2
					READ-WRITE	3
					PRIMARY-CERT	4
					SECONDARY-CERT	5
					POST-SECONDARY	6
					UNIV-GRAD	7
					POST-UNIV	8
DE05-LAST-YEAR	N	35	1	0	YES	1
					NO	2

Record Name: DEMOGRAPHIC Record Type: 02

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
DE06-EDUC-TYPE	N	36	1	0	NA	/
					ORDINARY-GOV	1
					LANGUAGE-GOV	2
					ORDINARY-PRIVATE	3
					LANGUAGE-PRIVATE	4
DE07-STAGE	N	37	1	0	NA	/
					PRIMARY	1
					PREPARATORY	2
					SECONDARY	3
					UNIVERSITY	4
DE08-NO-OF-YEARS	N	38	1	0	NA	/
					OK	0:8
DE09-MARSTAT	N	39	1	0	BELOW-AGE	1
					NEVER-MARRIED	2
					ENGAGED	3
					MARRIED	4
					DIVORCED	5
					WIDOWED	6
DE10-WORKSTAT	N	40	1	0	EMPLOYED	1
					UNEMPLOYED	2
					OUT-LABOUR-FORCE	3
					OUT-HUMAN-FORCE	4
DE11-UNEMPL-TYPE	N	41	1	0	NEW-UNEMPL	1
					OLD-UNEMPL	2
DE12-LOOK-WORK	N	42	1	0	YES	1
					NO	2
DE13-MAIN-REASON	N	43	1	0	GOV-JOB-WAITING	1
					CONTRACTED-WAIT	2
					NO-JOBS-AVAIL	3
					LOST-HOPE	4
					HOUSEWIFE	5
					STUDENT	6
					RETIRED-PENSION	7
					UNABLE-TO-WORK	8
DE14-EMPSTAT	N	44	1	0	NA	/
					WAGE-EARNER	1
					SELF-WITH-EMP	2
					SELF-NO-EMP	3
					FAM-LABOR	4

Note: / represents a blank character.

Record Name: DEMOGRAPHIC Record Type: 02

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
DE15-NO-OF-DAYS	N	45	1	0	OK	0:7
DE16-OCCUPATION	A	46-51	6			
DE17-ACTIVITY	A	52-55	4			
DE18-SECTOR	N	56	1	0	NA	/
					GOVERNMENT	1
					PUBLIC	2
					PRIVATE	3
					INVESTMENT	4
					COOPERATIVE	5
					NGO	6
					FOREIGN-JV	7
DE19-HAS-INCOME	N	57	1	0	YES	1
					NO	2
DE20-SOURCES	A	58-63	6			
DE20A-WAGES	N	58	1	0	YES	1
					NO	/
DE20B-AGRI	N	59	1	0	YES	2
					NO	/
DE20C-NONAGRI	N	60	1	0	YES	3
					NO	/
DE20D-LANDS	N	61	1	0	YES	4
					NO	/
DE20E-FINANCE	N	62	1	0	YES	5
					NO	/
DE20F-OTHERS	N	63	1	0	YES	6
					NO	/

Note: / represents a blank character.

Record Name: HOUSING Record Type: 03

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
HOAA-LIVE-ABROAD	N	27	1	0	YES	1
					NO	2
HOBB-ABROAD-PERS	N	28-29	2	0	NA	//
					OK	01:30
HOCC-ABROAD-INC	N	30	1	0	YES	1
					NO	2
HODD-RATION	N	31	1	0	YES	1
					NO	2
HOEE-ON-CARD	N	32-33	2	0	NA	//
					OK	01:30
HO01-TYPE	N	34	1	0	APARTMENT	1
					MORE-ONE-APT	2
					VILLA	3
					RURAL-HOUSE	4
					ONE-MOR-IND-ROOM	5
					ONE-MOR-SEP-ROOM	6
					UNTRADITIONAL	7
HO02-TENURE	N	35	1	0	ORD-RENT	1
					FURN-RENT	2
					OWNED	3
					PURCHASED	4
					GIFT	5
					IN-KIND	6
					OTHER	7
HO03-NUM-ROOMS	N	36-37	2	0	OK	01:20
HO04-WATER-SRC	N	38	1	0	NETWORK	1
					PUMP	2
					WELL	3
					OTHER	4
HO05-NETWORK-CON	N	39	1	0	TAP-INSIDE-DWEL	1
					TAP-INSIDE-BLDG	2
					NO-CONNECTION	3
HO06-SEWERAGE	N	40	1	0	CONNECTED	1
					NOT-CONNECTED	2
HO07-LIGHTING	N	41	1	0	ELECTRICITY	1
					KEROSINE	2
					BUTAGAS	3
					OTHER	4

Note: / represents a blank character.

Record Name: HOUSING Record Type: 03

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
H008-COOK-FUEL	N	42	1	0	BUTAGAS	1
					NATURAL-GAS	2
					KEROSINE	3
					ELECTRICITY	4
					WOOD-CHARCOAL	5
					OTHER	6
H009-WALL-MATL	N	43	1	0	CEMENT-BRICK	1
					CONCRETE	2
					STONES	3
					UNFIRED-BRICK	4
					WOOD	5
					SHEET-ASB	6
					THATCH	7
					CANVAS	8
					OTHER	9
H010-HOUSE-AREA	N	44-47	4	0	LE10	0001:0010
					GT10-LE20	0011:0020
					GT20-LE30	0021:0030
					GT30-LE40	0031:0040
					GT40-LE100	0041:0100
					GT100-LE400	0101:0400
					GT400-LE1000	0401:1000
					GT1000	1001:9999
H011-CONST-YEAR	N	48-51	4	0	<1800	1700:1799
					GE1800-LT1900	1800:1899
					1900S	1900:1909
					1910S	1910:1919
					1920S	1920:1929
					1930S	1930:1939
					1940S	1940:1949
					1950S	1950:1959
					1960S	1960:1969
					1970S	1970:1979
					1980S	1980:1989
					1990S	1990:1995
H012-CURR-RENT	N	52-55	4	0	LE10	0001:0010
					GT10-LE20	0011:0020
					GT20-LE30	0021:0030
					GT30-LE40	0031:0040
					GT40-LE50	0041:0050
					GT50-LE60	0051:0060
					GT60-LE70	0061:0070
					GT70-LE80	0071:0080
					GT80-LE90	0081:0090

Record Name: HOUSING Record Type: 03

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT90-LE100	0091:0100
					GT100-LE125	0101:0125
					GT125-LE150	0126:0150
					GT150-LE200	0151:0200
					GT200-LE300	0201:0300
					GT300-LE500	0301:0500
					GT500-LE1000	0501:1000
					GT1000-LE2000	1001:2000
					GT2000-LE5000	2001:5000
					GT5000	5001:9999
HO13-KITCHEN	N	56	1	0	PRIVATE	1
					SHARED	2
					NONE	3
HO14-BATH-TOILET	N	57	1	0	PRIVATE	1
					SHARED	2
					NONE	3
HO15-SEP-BATH	N	58	1	0	PRIVATE	1
					SHARED	2
					NONE	3
HO16-SEP-TOILET	N	59	1	0	PRIVATE	1
					SHARED	2
					NONE	3
HO17-TOILET-TYPE	N	60	1	0	MODERN-FLUSH	1
					NO-FLUSH	2
					NONE	3
HO18-GARBAGE	N	61	1	0	COLLECTED	1
					PUBLIC-GAR-BOX	2
					OTHER	3
HO19-SURROUND	N	62	1	0	DRY-LAND	1
					MOIST-LEAKAGE	2
					WET-SEWAGE	3
HO20-HH-WORK-DIS	N	63-68	6	3	NA	//////
					OK	000000:999999
HO20A-HH-W-DIS-K	N	63-65	3	0		
HO20B-HH-W-DIS-M	N	66-68	3	0		
HO21-HH-MARKET-D	N	69-74	6	3	NA	//////
					OK	000000:999999

Note: / represents a blank character.

Record Name: HOUSING Record Type: 03

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
H021A-HH-MARK-K	N	69-71	3	0		
H021B-HH-MARK-M	N	72-74	3	0		

Record Name: INVENTORY Record Type: 04

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
IN01-PRIVATE-CAR	N	27	1	0	YES	1
					NO	2
IN02-BICYCLE	N	28	1	0	YES	1
					NO	2
IN03-MOTORCYCLE	N	29	1	0	YES	1
					NO	2
IN04-PHONE	N	30	1	0	YES	1
					NO	2
IN05-REFRIG	N	31	1	0	YES	1
					NO	2
IN06-DEEP-FREEZ	N	32	1	0	YES	1
					NO	2
IN07-COOKER	N	33	1	0	YES	1
					NO	2
IN08-WASHMACH	N	34	1	0	YES	1
					NO	2
IN09-DISHWASH	N	35	1	0	YES	1
					NO	2
IN10-WATR-HTR	N	36	1	0	YES	1
					NO	2
IN11-VACUUM	N	37	1	0	YES	1
					NO	2
IN12-AC	N	38	1	0	YES	1
					NO	2
IN13-ELEC-FAN	N	39	1	0	YES	1
					NO	2
IN14-HEATER	N	40	1	0	YES	1
					NO	2
IN15-IRON	N	41	1	0	YES	1
					NO	2
IN16-COLOR-TV	N	42	1	0	YES	1
					NO	2

Record Name: INVENTORY Record Type: 04

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
IN17-BW-TV	N	43	1	0	YES	1
					NO	2
IN18-VCR	N	44	1	0	YES	1
					NO	2
IN19-RECORDER	N	45	1	0	YES	1
					NO	2
IN20-PERS-COMP	N	46	1	0	YES	1
					NO	2

Record Name: EXPTOT Record Type: 05

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
EX01-MAIN-GRP	N	27-28	2	0	FOOD-BEVERAGES	01
					TOBACCO	02
					CLOTHING	03
					HOUSING	04
					FURNISHINGS	05
					MEDICAL	06
					TRANSPORT	07
					EDUCATION	08
					ENTERTAINMENT	09
					REST-HOTELS	10
					OTHERS	11
					TRANSFERS	12
					PREMIUMS	13
					CONS-EXP-TOTAL	98
					ANN-EXP-TOTAL	99
EX02-CODE	N	29-32	4	0	NA	////
					CEREALS-STARCHES	0199
					DRIED-PULSES	0299
					VEGETABLES	0399
					FRUITS	0499
					MEATS	0599
					FISH	0699
					EGGS	0799
					MILK-DAIRY	0899
					OILS	0999
					SUGAR	1099
					OTHER-FOODSTUFF	1199
					BEVERAGES	1299
					NON-ALCOHOLIC	1399
					ALCOHOLIC	1499
					CIGARETTES	1599
					CLOTHES	1699
					FOOTWEAR	1799
					HOUSING	1899
					FUEL-LIGHTING	1999
					FURNITURE	2099
					CLEANING-MATLS	2199
					DOMESTIC-SVCS	2299
					HSG-SERVICES	2399
					MEDICAL-SERVICES	2499
					TRANS-EQ	2599
					PRIVATE-TRANS	2699
					PUBLIC-TRANS	2799
					COMMUNICATION	2899
					EDUCATION	2999
					ENTERTAINMT-EQ	3099
					ENTERTAINMT	3199

Note: / represents a blank character.

400

Record Name: EXPTOT Record Type: 05

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					REST-HOTELS	3299
					PERSONAL-CARE	3399
					COSMETICS	3499
					OTHER-SERVICES	3599
					TRANSF-PAYMENTS	3699
					PREMIUM-PAYMENTS	3799
EX03-VALUE	N	33-40	8	2		
EX03A-VAL-POUND	N	33-38	6	0	GE0-LT1000	000000:000999
					GE1000-LT1200	001000:001199
					GE1200-LT1600	001200:001599
					GE1600-LT2400	001600:002399
					GE2400-LT3200	002400:003199
					GE3200-LT4000	003200:003999
					GE4000-LT4800	004000:004799
					GE4800-LT5600	004800:005599
					GE5600-LT6800	005600:006799
					GE6800-LT8000	006800:007999
					GE8000-LT10000	008000:009999
					GE10000-LT12000	010000:011999
					GE12000-LT14000	012000:013999
					GE14000	014000:999999
EX03B-VAL-PIAS	N	39-40	2	0	OK	00:99

401

Record Name: FOODBEV Record Type: 06

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
F001-CODE	N	27-30	4	0	WHEAT-HH-PROD	0101
					WHEAT-NON-PROD	0102
					MAIZE-HH-PROD	0103
					MAIZE-NON-PROD	0104
					OTH-CER-HH-PROD	0105
					OTH-CER-NON-PROD	0106
					WHEAT-FLOUR	0107
					SEMEAD-FLOUR	0108
					STARCH	0109
					RICE-HH-PROD	0110
					RICE-NON-PROD	0111
					MACARONI	0112
					KONAFA-CATAIF	0113
					GOLASH-ROUKAK	0114
					FERICK	0115
					BALADY-BREADS	0116
					SHAMI-BREADS	0117
					BREAD-LOAVES	0118
					DRIED-BAKERY	0119
					FINE-BAKERY	0120
					PASTRIES	0121
					TARTS	0122
					CAKES-BISQUITS	0123
					OTHER-STARCHES	0124
					CEREALS-PREP	0125
					CEREALS-TOTAL	0199
					WBEANS-HH-PROD	0201
					WBEANS-NON-PROD	0202
					SPLIT-BEANS	0203
					WLENTILS-HH	0204
					WLENTILS-NON	0205
					SPLIT-LENTILS	0206
					KIDNEY-BEANS	0207
					HARICOTS	0208
					PEAS	0209
					FENUGREEK	0210
					OTH-DRIED-PULSES	0211
					PULSES-TOTAL	0299
					TOMATO-HH-PROD	0301
					TOMATO-NON-PROD	0302
					POTATO-HH-PROD	0303
					POTATO-NON-PROD	0304
					SWEPOT-HH-PROD	0305
					SWEPOT-NON-PROD	0306
					ONION-HH-PROD	0307
					ONION-NON-PROD	0308
					GARLIC-HH-PROD	0309
					GARLIC-NON-PROD	0310

Record Name: FOODBEV Record Type: 06

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					EGGPL-HH-PROD	0311
					EGGPL-NON-PROD	0312
					CONGRETS-HH-PRO	0313
					CONGRETS-NON-PRO	0314
					OKRA-HH-PROD	0315
					OKRA-NON-PROD	0316
					MELOKIA-HH-PROD	0317
					MELOKIA-NON-PROD	0318
					PEPPERS-HH-PROD	0319
					PEPPERS-NON-PROD	0320
					KIDNEY-HH-PROD	0321
					KIDNEY-NON-PROD	0322
					HARICOT-HH-PROD	0323
					HARICOT-NON-PROD	0324
					PEAS-HH-PROD	0325
					PEAS-NON-PROD	0326
					CUCUMBER-HH-PR	0327
					CUCUMBER-NON-PR	0328
					SNAKEMELLON-HH	0329
					SNAKEMELLON-NON	0330
					CABBAGE-HH-PROD	0331
					CABBAGE-NON-PROD	0332
					TURNIPS-HH-PROD	0333
					TURNIPS-NON-PROD	0334
					SPINACH-HH-PROD	0335
					SPINACH-NON-PROD	0336
					COLOCARIA-HH-PR	0337
					COLOCARIA-NON-PR	0338
					ARTICHOKE-HH-PR	0339
					ARTICHOKE-NON-PR	0340
					GR-BEANS-HH-PR	0341
					GR-BEANS-NON-PR	0342
					SQUASH-HH-PROD	0343
					SQUASH-NON-PROD	0344
					CARROTS-HH-PROD	0345
					CARROTS-NON-PROD	0346
					KHOBEZA-HH-PROD	0347
					KHOBEZA-NON-PROD	0348
					OTH-VEG-HH-PROD	0349
					OTH-VEG-NON-PROD	0350
					FRESH-VEG-TOTAL	0359
					FROZEN-OKRA	0360
					FROZEN-MELOKIA	0361
					FROZEN-PEAS	0362
					FROZEN-MIXED-VEG	0363
					GRAPE-LEAVES	0364
					OTH-FROZEN-VEG	0365
					FROZEN-VEG-TOTAL	0366

Record Name: FOODBEV Record Type: 06

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					CANNED-TOMS	0367
					CANNED-BEANS	0368
					OTH-CANNED-VEG	0369
					CANNED-VEG-TOTAL	0370
					DRIED-OKRA	0371
					DRIED-MELOKIA	0372
					DRIED-VEG-TOTAL	0373
					VEGETABLES-TOTAL	0399
					ORANGE-HH-PROD	0401
					ORANGE-NON-PROD	0402
					MANDERINE-HH-PR	0403
					MANDARINE-NON-PR	0404
					GRAPEFR-HH-PROD	0405
					GRAPEFR-NON-PROD	0406
					SW-LEMON-HH-PR	0407
					SW-LEMON-NON-PRO	0408
					BANANA-HH-PROD	0409
					BANANA-NON-PROD	0410
					GRAPES-HH-PROD	0411
					GRAPES-NON-PROD	0412
					MELLON-HH-PROD	0413
					MELLON-NON-PROD	0414
					WATERMEL-HH	0415
					WATERMEL-NON	0416
					CANTALOUPE-HH	0417
					CANTALOUPE-NON	0418
					APRICOT-HH-PROD	0419
					APRICOT-NON-PROD	0420
					PLUMS-HH-PROD	0421
					PLUMS-NON-PROD	0422
					APPLES-HH-PROD	0423
					APPLES-NON-PROD	0424
					PEACH-HH-PROD	0425
					PEACH-NON-PROD	0426
					PEAR-HH-PROD	0427
					PEAR-NON-PROD	0428
					MANGO-HH-PROD	0429
					MANGO-NON-PROD	0430
					FIGS-HH-PROD	0431
					FIGS-NON-PROD	0432
					GUAVA-HH-PROD	0433
					GUAVA-NON-PROD	0434
					DATES-HH-PROD	0435
					DATES-NON-PROD	0436
					STRAWBERRY-HH	0437
					STRAWBERRY-NON	0438
					LEMON-HH-PROD	0439
					LEMON-NON-PROD	0440

Record Name: FOODBEV Record Type: 06

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					OLIVE-HH-PROD	0441
					OLIVE-NON-PROD	0442
					PINEAPPLE	0443
					OTH-FRUIT-HH	0444
					OTH-FRUIT-NON	0445
					DRDATES-HH-PROD	0446
					DRDATES-NON-PROD	0447
					MINCED-DATES	0448
					RAISINS	0449
					DRIED-FIGS	0450
					APRICOTS-FRESH	0451
					APRICOTS-DRIED	0452
					PRUNES	0453
					DRIED-FRUITS	0454
					ALMONDS	0455
					HAZEL-NUTS	0456
					PISTACCIOS	0457
					WALNUT-PECAN-OTH	0458
					PEANUTS	0459
					HOMMOUS	0460
					SALTY-SEEDS	0461
					OTHER-SNACKS	0462
					FRUITS-TOTAL	0499
					VEAL	0501
					BUFFALO	0502
					MUTTON	0503
					CAMEL	0504
					OTHER-MEATS	0505
					FROZEN-MEATS	0506
					LIVER-BRAIN	0507
					CANNED-MEATS	0508
					MANUF-MEATS	0509
					KIDNEY-LEGS	0510
					MEATS-PREP	0511
					MEATS-TOTAL	0515
					CHICKEN-HH-PROD	0516
					CHICKEN-NON-PROD	0517
					DUCKS-GEESE-HH	0518
					DUCKS-GEESE-NON	0519
					PIDGEON-HH-PROD	0520
					PIDGEON-NON-PROD	0521
					TURKEY-HH-PROD	0522
					TURKEY-NON-PROD	0523
					RABBIT-HH-PROD	0524
					RABBIT-NON-PROD	0525
					POULTRY-OTH-HH	0526
					POULTRY-OTH-NON	0527
					FROZEN-CHICKEN	0528

Record Name: FOODBEV Record Type: 06

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					CHICKEN-LIVER	0529
					POULTRY-PREP	0530
					POULTRY-TOTAL	0535
					MEAT-POULTRY-TOT	0599
					FISH-HH-PROD	0601
					FISH-NON-PROD	0602
					FROZEN-FISH	0603
					CANNED-FISH	0604
					SMOKED-FISH	0605
					SALTED-FISH	0606
					SHELLFISH	0607
					FISH-PREP	0608
					FISH-TOTAL	0699
					EGGS-HH-PROD	0701
					EGGS-NON-PROD	0702
					EGGS-TOTAL	0799
					MILK-HH-PROD	0801
					MILK-NON-PROD	0802
					PASTEURIZED-MILK	0803
					SOURMILK-HH	0804
					SOURMILK-NON	0805
					YOGOURT-HH-PROD	0806
					YOGOURT-NON-PROD	0807
					CONCENTRATED-MIL	0808
					ADULT-POWDERED	0809
					INFANT-POWDERED	0810
					WHITE-CHEESE-HH	0811
					WHITE-CHEESE-NON	0812
					DRIED-CHEESE	0813
					FELAMENCK-CHEESE	0814
					PROCESSED-CHEESE	0815
					CURD-HH-PROD	0816
					CURD-NON-PROD	0817
					OTHER-CHEESE	0818
					MESH-HH-PROD	0819
					MESH-NON-PROD	0820
					CREAM-HH-PROD	0821
					CREAM-NON-PROD	0822
					MILK-TOTAL	0899
					BUTTER-HH-PROD	0901
					BUTTER-NON-PROD	0902
					IMPORTED-BUTTER	0903
					BUTTEROIL-HH	0904
					BUTTEROIL-NON	0905
					IMPORT-BUTTEROIL	0906
					ANIMAL-FATS	0907
					VEG-OIL-SUBSID	0908
					VEG-OIL-NONSUB	0909

Record Name: FOODBEV Record Type: 06

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					MARGARINE-BUTTER	0910
					MARG-BUTTEROIL	0911
					TAHINA	0912
					OILS-TOTAL	0999
					SUGAR-SUBSID	1001
					SUGAR-NONSUB	1002
					MOLASSES	1003
					HONEY	1004
					HALAWA-TAHINIA	1005
					JAM	1006
					SYRUP	1007
					FRUIT-JUICE	1008
					POWDERED-FRUITS	1009
					CANNED-FRUITS	1010
					SOFT-CANDY	1011
					HARD-CANDY	1012
					CHICKLETS-GUM	1013
					ICE-CREAM	1014
					OTHER-SUGARY	1015
					SUGAR-TOTAL	1099
					SALT	1101
					SPICES	1102
					VINEGAR	1103
					OTHER-FOOD-MATLS	1104
					FUUL-MIDAMES	1105
					SANDWICHES	1106
					KABAB-KOFTA	1107
					GRILLED-CHICKEN	1108
					GRILLED-FISH	1109
					PICKLE	1110
					OTHER-PREP-FOOD	1111
					OTH-FOODS-TOTAL	1199
					TEA	1201
					ROASTED-COFFEE	1202
					GREEN-COFFEE	1203
					COCOA	1204
					CINNAMIN	1205
					ANISE	1206
					KARKADEH	1207
					OTH-DRINK-STUFF	1208
					DRINKS-TOTAL	1299
					SOFT-DRINKS	1301
					MINERAL-WATER	1302
					OTHER-NONALC	1303
					NON-ALC-TOTAL	1399
					BEER	1401
					WINE	1402
					OTH-ALC-DRINKS	1403
					ALC-DRINKS-TOTAL	1499

Record Name: FOODBEV Record Type: 06

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
FO02-MONTH-QTY	N	31-36	6	3		
FO02A-MON-QTY-K	N	31-33	3	0	OK	000:999
FO02B-MON-QTY-G	N	34-36	3	0	OK	000:999
FO03-MONTH-VALUE	N	37-41	5	2		
FO03A-MON-VAL-PO	N	37-39	3	0	GE0-LT50	000:049
					GE50-LT150	050:149
					GE150-LT300	150:299
					GE300-LT500	300:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LTi000	900:999
FO03B-MON-VAL-PI	N	40-41	2	0	OK	00:99
FO04-ANN-QTY	N	42-48	7	3		
FO04A-ANN-QTY-K	N	42-45	4	0	OK	0000:9999
FO04B-ANN-QTY-G	N	46-48	3	0	OK	000:999
FO05-ANN-VALUE	N	49-55	7	2		
FO05A-ANN-VAL-PO	N	49-53	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
FO05B-ANN-VAL-PI	N	54-55	2	0	OK	00:99

Record Name: CIGS-TOBACCO Record Type: 07

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
CI01-CODE	N	27-30	4	0	CIGARETTES	1501
					CIG-LOOSE	1502
					TOB-WET-LEAF	1503
					TOMBAC	1504
					CIGARS	1505
					OTHER-TOB	1506
					NASHOOK	1507
					TOB-DRY-LEAF	1508
					TOB-TOTAL	1509
					DRUGS	1510
					TOTAL-TOB-DRUGS	1599
CI02-MONTH-VALUE	N	31-35	5	2		
CI02A-MONTH-POUN	N	31-33	3	0	GE0-LT50	000:049
					GE50-LT150	050:149
					GE150-LT300	150:299
					GE300-LT500	300:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LT1000	900:999
CI02B-MONTH-PIAS	N	34-35	2	0	OK	00:99
CI03-ANN-VALUE	N	36-42	7	2		
CI03A-ANN-POUNDS	N	36-40	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
CI03B-ANN-PIAS	N	41-42	2	0	OK	00:99

Record Name: CLOTHING Record Type: 08

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
CL01-CODE	N	27-30	4	0	SUITS-MALE	1601
					TROUSERS-MALE	1602
					SWEATERS-MALE	1603
					SHIRST-MALE	1604
					T-SHIRTS-MALE	1605
					SPORTCL-MALE	1606
					PYJAMAS-MALE	1607
					GALABEYA-MALE	1608
					ROBES-MALE	1609
					HEADCOVER-MALE	1610
					SOCKS-MALE	1611
					SUITS-FEM	1612
					SKIRTS-FEM	1613
					DRESSES-FEM	1614
					SWEATERS-FEM	1615
					BLOUSES-FEM	1616
					T-SHIRTS-FEM	1617
					PYJAMAS-FEM	1618
					ROBES-FEM	1619
					HEADCOVER-FEM	1620
					SOCKS-FEM	1621
					READY-MADE-TOT-A	1622
					UNDERWEAR-MALE	1623
					UNDERWEAR-FEM	1624
					UNDERWEAR-CHILD	1625
					UNDERWEAR-TOT-B	1626
					OTHER-READY-MADE	1627
					READY-MADE-TOTAL	1628
					MALE-TEXT-SUITS	1629
					MALE-TEXT-SHIRTS	1630
					MALE-TEXT-GALAB	1631
					MALE-TEXT-OTHER	1632
					MALE-TEXT-TOT-A	1633
					FEM-TEXT-DRESSES	1634
					FEM-TEXT-BLOUSE	1635
					FEM-TEXT-GALABIA	1636
					FEM-TEXT-OTHERS	1637
					FEM-TEXT-TOT-B	1638
					TEXTILES-TOTAL	1639
					CLOTHING-ACC	1640
					TRICOT	1641
					YARNS	1642
					LACE-SVC	1643
					TAILORING	1644
					REPAIR	1645
					TRICOT-SVCS	1646
					TOTAL-ACC-CLOTH	1647
					TOT-R-TEXT-ACC	1699

Record Name: CLOTHING Record Type: 08

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
CL02-ANN-QTY	N	31-36	6	2		
CL02A-ANN-QTY-M	N	31-34	4	0	OK	0000:9999
CL02B-ANN-QTY-CM	N	35-36	2	0	OK	00:99
CL03-ANN-VALUE	N	37-43	7	2		
CL03A-ANN-VAL-PO	N	37-41	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
CL03B-ANN-VAL-PI	N	42-43	2	0	OK	00:99

Record Name: FTWEAR Record Type: 09

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
FT01-CODE	N	27-30	4	0	MALE-FOOTWEAR	1701
					FEM-FOOTWEAR	1702
					CHILD-FOOTWEAR	1703
					OTHER	1704
					FOOTWEAR-REPAIR	1705
					FOOTWEAR-POLISH	1706
					TOTAL-FOOTWEAR	1799
FT02-ANN-QTY	N	31-33	3	0	OK	000:999
FT03-ANN-VALUE	N	34-40	7	2		
FT03A-ANN-VAL-PO	N	34-38	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
FT03B-ANN-VAL-PI	N	39-40	2	0	OK	00:99

Record Name: UTILITIES Record Type: 10

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
UT01-CODE	N	27-30	4	0	OWNER-IMP-RENT	1801
					ORD-RENT	1802
					FURN-IMP-RENT	1803
					GARD-PAYM	1804
					GARDENER	1805
					WATER-EXP	1806
					MAINT-REPAIR	1807
					INSUR-PREMIUM	1808
					TRASH-COLLECTION	1809
					OTHER-EXP	1810
					TOTAL	1899
UT02-ANN-VALUE	N	31-37	7	2		
UT02A-ANN-VAL-PO	N	31-35	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
UT02B-ANN-VAL-PI	N	36-37	2	0	OK	00:99

413

Record Name: LIGHT-FUEL Record Type: 11

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
LI01-CODE	N	27-30	4	0	ELEC-EXP	1901
					BUTAGAS	1902
					NATURAL-GAS	1903
					KEROSINE	1904
					COAL-WOOD	1905
					SEPERTO	1906
					BATTERIES	1907
					WAX-MATCHES	1908
					TOTAL	1999
LI02-MONTH-QTY	N	31-34	4	0	OK	0000:9999
LI03-MONTH-VALUE	N	35-40	6	2		
LI03A-MON-VAL-PO	N	35-38	4	0	GE0-LT10	0000:0009
					GE10-LT20	0010:0019
					GE20-LT30	0020:0029
					GE30-LT40	0030:0039
					GE40-LT50	0040:0049
					GE50-LT60	0050:0059
					GE60-LT70	0060:0069
					GE70-LT80	0070:0079
					GE80-LT90	0080:0089
					GE90-LT100	0090:0099
					GE100-LT200	0100:0199
					GE200-LT300	0200:0299
					GE300-LT400	0300:0399
					GE400-LT500	0400:0499
					GE500-LT750	0500:0749
					GE750-LT1000	0750:0999
					GE1000-LT1500	1000:1499
					GE1500-LT2000	1500:1999
					GE2000-LT3000	2000:2999
					GE3000-LT5000	3000:4999
					GE5000	5000:9999
LI03B-MON-VAL-PI	N	39-40	2	0	OK	00:99
LI04-ANN-QTY	N	41-45	5	0	OK	00000:99999
LI05-ANN-VALUE	N	46-52	7	2		
LI05A-ANN-VAL-PO	N	46-50	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499

Record Name: LIGHT-FUEL Record Type: 11

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
LI05B-ANN-VAL-PI	N	51-52	2	0	OK	00:99

415

Record Name: FURNITURE Record Type: 12

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
FU01-CODE	N	27-30	4	0	WOOD-FURN	2001
					METAL-FURN	2002
					LIGHTING-IMPL	2003
					HH-DECOR-ITEMS	2004
					GLASSES-MATTERS	2005
					CHINA-MATTERS	2006
					PLASTIC-MATTERS	2007
					METAL-MATTERS	2008
					UTENSILS	2009
					KERO-COOKER	2010
					REFRIGERATOR	2011
					DEEP-FREEZER	2012
					COOKING-OVEN	2013
					WASHING-MACHINE	2014
					DRYER	2015
					DISH-WASH-MACH	2016
					WATER-HEATER	2017
					VACCUM-CLEANER	2018
					CARPET-SWEEPER	2019
					SEWING-MACHINE	2020
					AIR-COND	2021
					ELEC-FAN	2022
					HEATER	2023
					ELEC-IRON	2024
					WATER-PUMP	2025
					OTHER-ELEC-APP	2026
					IRONING-BOARD	2027
					OTHER-HH-MATTERS	2028
					FLOOR-COVERING	2029
					BEDSPREADS	2030
					TOWELS	2031
					TABLE-CLOTHS	2032
					SHEETS-PCASES	2033
					BLANKETS	2034
					BLANKETS-COTTON	2035
					MATTRESS	2036
					CURTAINS	2037
					MATTRESS-COVER	2038
					COTTON-FILLING	2039
					FEES-FOR-BEDDER	2040
					FURN-MAINT-REP	2041
					COPPER-POLISHING	2042
					TOTAL-FURN	2099
FU02-TOTAL-VALUE	N	31-37	7	2		
FU02A-TOT-VAL-PO	N	31-35	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249

Record Name: FURNITURE Record Type: 12

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
FU02B-TOT-VAL-PI	N	36-37	2	0	OK	00:99
FU03-ANN-PREMIUM	N	38-44	7	2		
FU03A-ANN-PRM-PO	N	38-42	5	0	ZERO	00000
					LT100	00001:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
FU03B-ANN-PRM-PI	N	43-44	2	0	OK	00:99
FU04-REMAINING	N	45-51	7	2		
FU04A-REM-PO	N	45-49	5	0	ZERO	00000
					LT100	00001:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
FU04B-REM-PI	N	50-51	2	0	OK	00:99

Record Name: MAINT-CLEAN Record Type: 13

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
MA01-CODE	N	27-30	4	0	SOLID-SOAP	2101
					LIQUID-SOAP	2102
					POWDER-SOAP	2103
					BLEACH-MATL	2104
					INSECTICIDES	2105
					PAPER-TOWELS	2106
					OTH-CLEAN-MATLS	2107
					CLEANING-UTENSIL	2108
					TOTAL-CLEAN	2199
					LAUNDRY	2201
					DRY-CLEANING	2202
					PUBLIC-LAUNDRY	2203
					CARPETS-MAINT	2204
					FUMIGATION	2205
					OTHER-SVCS	2206
					TOTAL-SVCS	2299
					SERVANTS-PERM	2301
					SERVANTS-TEMP	2302
					SERVANTS-INS	2303
					TOTAL-SERVANTS	2399
MA02-MONTH-VALUE	N	31-35	5	2		
MA02A-MON-VAL-PO	N	31-33	3	0	GE0-LT50	000:049
					GE50-LT150	050:149
					GE150-LT300	150:299
					GE300-LT500	300:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LT1000	900:999
MA02B-MON-VAL-PI	N	34-35	2	0	OK	00:99
MA03-ANN-VALUE	N	36-42	7	2		
MA03A-ANN-VAL-PO	N	36-40	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999

Record Name: MAINT-CLEAN Record Type: 13

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
MA03B-ANN-VAL-PI	N	41-42	2	0	OK	00:99

Record Name: MEDICAL-SVCS Record Type: 14

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
ME01-CODE	N	27-30	4	0	PRESCRIP-MED	2401
					NON-PRESCRIP	2402
					DOCTOR-FEES	2403
					LAB-FEES	2404
					X-RAY	2405
					ARTHROSCOPIC	2406
					EKG-EEG	2407
					MED-TREAT-EQUIP	2408
					DIALYSIS	2409
					MED-TOOLS-COST	2410
					DENTIST	2411
					GOV-HOSP	2412
					PRIVATE-HOSP	2413
					HOSP-INS	2414
					OBSTETRIC	2415
					OTHER-MED-SVCS	2416
					HEALTH-INS	2417
					HERBAL-REMEDY	2418
					CONTRACEPTIVES	2419
					TOTAL	2499
ME02-MONTH-VALUE	N	31-35	5	2		
ME02A-MON-VAL-PO	N	31-33	3	0	GE0-LT50	000:049
					GE50-LT150	050:149
					GE150-LT300	150:299
					GE300-LT500	300:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LT1000	900:999
ME02B-MON-VAL-PI	N	34-35	2	0	OK	00:99
ME03-QUARTERLY	N	36-42	7	2		
ME03A-QUARTER-PO	N	36-40	5	0	OK	00000:99999
ME03B-QUARTER-PI	N	41-42	2	0	OK	00:99
ME04-ANN-VALUE	N	43-50	8	2		
ME04A-ANN-VAL-PO	N	43-48	6	0	OK	000000:999999
ME04B-ANN-VAL-PI	N	49-50	2	0	OK	00:99

Record Name: EQPT-TRANS Record Type: 15

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
EQ01-CODE	N	27-30	4	0	NEW-CAR	2501
					USED-CAR	2502
					NEW-BICYCLE	2503
					USED-BICYCLE	2504
					NEW-MBIKE-VESPA	2505
					USED-MBIKE-VESPA	2506
					TOTAL	2599
EQ02-TOTAL-VAL	N	31-36	6	0	GT0	000001:999999
EQ03-ANN-PREMIUM	N	37-42	6	0	OK	000000:999999
EQ04-REMAINING	N	43-48	6	0	OK	000000:999999

Record Name: TRANS-PRIV-PUB Record Type: 16

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
TR01-CODE	N	27-30	4	0	CAR-LICENSE	2601
					DRIVING-LICENSE	2602
					INSURANCE	2603
					FUEL	2604
					LUBRICATION	2605
					CAR-WASHING	2606
					CAR-REPAIRING	2607
					GARAGE	2608
					PARKING-FEES	2609
					DRIVER	2610
					OTHER-CAR	2611
					TOTAL-CAR	2699
					PUBLIC-TRANS	2701
					AIR-MARINE	2702
					OTHER-TRANS	2703
					TOTAL-PUBTRANS	2799
TR02-MONTH-VALUE	N	31-35	5	2		
TR02A-MON-VAL-PO	N	31-33	3	0	GE0-LT50	000:049
					GE50-LT150	050:149
					GE150-LT300	150:299
					GE300-LT500	300:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LT1000	900:999
TR02B-MON-VAL-PI	N	34-35	2	0	OK	00:99
TR03-ANN-VALUE	N	36-42	7	2		
TR03A-ANN-VAL-PO	N	36-40	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
TR03B-ANN-VAL-PI	N	41-42	2	0	OK	00:99

422

Record Name: COMMUNICATION Record Type: 17

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
CO01-CODE	N	27-30	4	0	TELEPHONE-EQPT	2801
					TELEPHONE-BILL	2802
					POST-STAMPS	2803
					TELEGRAM	2804
					WIRE-WIRELESS	2805
					STATIONARY-COSTS	2806
					TOTAL	2899
CO02-QUARTERLY	N	31-35	5	2		
CO02A-QUARTER-PO	N	31-33	3	0	GE0-LT50	000:049
					GE50-LT100	050:099
					GE100-LT200	100:199
					GE200-LT300	200:299
					GE300-LT400	300:399
					GE400-LT500	400:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LT1000	900:999
CO02B-QUARTER-PI	N	34-35	2	0	OK	00:99
CO03-ANN-VALUE	N	36-42	7	2		
CO03A-ANN-VAL-PO	N	36-40	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
CO03B-ANN-VAL-PI	N	41-42	2	0	OK	00:99

Record Name: EDUCATION Record Type: 18

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
ED01-CODE	N	27-30	4	0	PRIM-SCH-FEES	2901
					PREP-SCH-FEES	2902
					SEC-SCH-FEES	2903
					UNIV-FEES	2904
					PRIM-BOOKS-FEES	2905
					PREP-BOOKS-FEES	2906
					SEC-BOOKS-FEES	2907
					UNIV-BOOKS-FEES	2908
					REFERENCE-BOOKS	2909
					STATIONERY	2910
					PRIV-LESSONS	2911
					SCHOOL-TRANSPORT	2912
					UNIFORMS	2913
					NURSERY-SCH-FEES	2914
					ENDOWMENTS-FEES	2915
					TOTAL-EDUC	2999
ED02-ANN-VALUE	N	31-37	7	2		
ED02A-ANN-VAL-PO	N	31-35	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
ED02B-ANN-VAL-PI	N	36-37	2	0	OK	00:99

Record Name: VAL-ENT Record Type: 19

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
VA01-CODE	N	27-30	4	0	COLOR-TV	3001
					BLACK-WHITE-TV	3002
					VIDEO	3003
					CASSETTE	3004
					RADIO	3005
					VCR-TAPES	3006
					PERSONAL-COMP	3007
					VIDEO-GAMES	3008
					MUSICAL-INSTRUM	3009
					VIDEO-CAMERA	3010
					CAMERA	3011
					VCR-TAPE-REWIND	3012
					PHOTO-FILMS	3013
					ENTERTAINMENT-EQ	3014
					SPORT-EQ	3015
					BALLS	3016
					SPORTS-INSTR	3017
					INSTRUM-MAINTAIN	3018
					TOTAL-ENT	3099
VA02-TOTAL-VALUE	N	31-37	7	2		
VA02A-TOT-VAL-PO	N	31-35	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
VA02B-TOT-VAL-PI	N	36-37	2	0	OK	00:99
VA03-PREMIUM-VAL	N	38-44	7	2		
VA03A-PRM-VAL-PO	N	38-42	5	0	ZERO	00000
					LT100	00001:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999

Record Name: VAL-ENT Record Type: 19

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
VA03B-PRM-VAL-PI	N	43-44	2	0	OK	00:99
VA04-REMAINING	N	45-51	7	2		
VA04A-REM-VAL-PO	N	45-49	5	0	ZERO	00000
					LT100	00001:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
VA04B-REM-VAL-PI	N	50-51	2	0	OK	00:99

Record Name: CULTURE Record Type: 20

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
CU01-CODE	N	27-30	4	0	NEWSPAPERS-MAG	3101
					BOOKS-ENT	3102
					VIDEO-TAPES-RENT	3103
					CINEMA-TICKETS	3104
					SPORTS-EVENTS	3105
					FILM-DEVELOPING	3106
					CLUB-FEES	3107
					POCKET-MONEY	3108
					SCHOOL-PICNIC	3109
					WEEKEND-PICNIC	3110
					TRAVEL-ENT	3111
					HOTELING-FEES	3112
					PER-DIEM	3113
					ENTERTAIN-FEES	3114
					TOTAL	3199
CU02-MONTH-VALUE	N	31-35	5	2		
CU02A-MON-VAL-PO	N	31-33	3	0	GE0-LT50	000:049
					GE50-LT100	050:099
					GE100-LT200	100:199
					GE200-LT300	200:299
					GE300-LT400	300:399
					GE400-LT500	400:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LT1000	900:999
CU02B-MON-VAL-PI	N	34-35	2	0	OK	00:99
CU03-QUARTERLY	N	36-42	7	2		
CU03A-QUARTER-PO	N	36-40	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
CU03B-QUARTER-PI	N	41-42	2	0	OK	00:99
CU04-ANN-VALUE	N	43-50	8	2		

Record Name: CULTURE Record Type: 20

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
CU04A-ANN-VAL-PO	N	43-48	6	0	OK	000000:999999
CU04B-ANN-VAL-PI	N	49-50	2	0	OK	00:99

Record Name: RESTAURANT Record Type: 21

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
RE01-CODE	N	27-30	4	0	FOOD-BOARDS	3201
					SANDWICHES	3202
					NON-ALC-DRINKS	3203
					ALC-DRINKS	3204
					SMOKING	3205
					ACCOMODATION	3206
					OTHER-REST	3207
					TOTAL	3299
RE02-MONTH-VALUE	N	31-35	5	2		
RE02A-MON-VAL-PO	N	31-33	3	0	OK	000:999
RE02B-MON-VAL-PI	N	34-35	2	0	OK	00:99
RE03-ANN-VALUE	N	36-42	7	2		
RE03A-ANN-VAL-PO	N	36-40	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
RE03B-ANN-VAL-PI	N	41-42	2	0	OK	00:99

Record Name: ACCESORIES Record Type: 22

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
AC01-CODE	N	27-30	4	0	WATCHES	3301
					CLOCKS	3302
					ACCESSORIES	3303
					FEM-HANDBAGS	3304
					MALE-SCHOOLBAGS	3305
					LUGGAGE	3306
					JEWELLERY-GOLD	3307
					ACCESS-NONGOLD	3308
					OTHERS-MISC	3309
					MAINT-REPAIR	3310
					TOTAL	3399
AC02-ANN-VALUE	N	31-38	8	2		
AC02A-ANN-VAL-PO	N	31-36	6	0	OK	000000:999999
AC02B-ANN-VAL-PI	N	37-38	2	0	OK	00:99

Record Name: PERS-SVCS Record Type: 23

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
PE01-CODE	N	27-30	4	0	TOILET-SOAP	3401
					SHAMPOO	3402
					SHAVING	3403
					DENTAL-CARE	3404
					PERS-CARE-EQ	3405
					MALE-COLOGNES	3406
					FEMALE-PERFUMES	3407
					BARBER-FEES	3408
					WOMEN-HAIR-DRESS	3409
					PEDI-MANICURE	3410
					SAUNA-MASSAGE	3411
					FLOWERS	3412
					PETS	3413
					TOTAL	3499
PE02-MONTH-VALUE	N	31-35	5	2		
PE02A-MON-VAL-PO	N	31-33	3	0	GE0-LT50	000:049
					GE50-LT100	050:099
					GE100-LT200	100:199
					GE200-LT300	200:299
					GE300-LT400	300:399
					GE400-LT500	400:499
					GE500-LT600	500:599
					GE600-LT700	600:699
					GE700-LT800	700:799
					GE800-LT900	800:899
					GE900-LT1000	900:999
PE02B-MON-VAL-PI	N	34-35	2	0	OK	00:99
PE03-QUARTERLY	N	36-42	7	2		
PE03A-QUARTER-PO	N	36-40	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
PE03B-QUARTER-PI	N	41-42	2	0	OK	00:99
PE04-ANN-VALUE	N	43-49	7	2		

431

Record Name: PERS-SVCS Record Type: 23

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
PE04A-ANN-VAL-PO	N	43-47	5	0	GE0-LT100	00000:00099
					GE100-LT250	00100:00249
					GE250-LT500	00250:00499
					GE500-LT750	00500:00749
					GE750-LT1000	00750:00999
					GE1000-LT1500	01000:01499
					GE1500-LT2000	01500:01999
					GE2000-LT3000	02000:02999
					GE3000-LT5000	03000:04999
					GE5000-LT10000	05000:09999
					GE10000	10000:99999
PE04B-ANN-VAL-PI	N	48-49	2	0	OK	00:99

432

Record Name: SVCS-TRANSF-PREM Record Type: 24

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
SV01-CODE	N	27-30	4	0	COURT-FEES	3501
					LEGAL-FEES	3502
					DOCUMENTING	3503
					BANKING-SERVICES	3504
					DEATH-EXPENSES	3505
					MARRIAGE	3506
					FEES-DUES-UNION	3507
					OTHER-NEC	3508
					DOMESTIC-TOT	3520
					MED-TREAT-ABROAD	3530
					REL-TOURISM	3531
					ENTER-TOURISM	3532
					FOREIGN-NEC	3533
					FOREIGN-TOT	3550
					TOT-DOM-FOR	3599
					INCOME-TAXES	3601
					LIFE-INS-PREM	3602
					DOWRY-INCL-GOLD	3603
					GIFTS	3604
					CHARITY	3605
					ALIMONY	3606
					DOMESTIC-TRANS	3607
					FOREIGN-TRANS	3608
					TRANSF-TOTAL	3699
					PREMIUMS	3701
					ADVANCES	3702
					PREM-TOTAL	3799
SV02-ANN-VALUE	N	31-38	8	2		
SV02A-ANN-VAL-PO	N	31-36	6	0	OK	000000:999999
SV02B-ANN-VAL-PI	N	37-38	2	0	OK	00:99

433

Record Name: NET-ANN-INCOME Record Type: 25

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
NE01-CODE	N	27-30	4	0	WAGESAL-INC	4005
					AGRI-INC	4115
					NON-AGRI-INC	4204
					LANDS-INC	4307
					FIN-INC	4408
					OTH-INC	4505
					TOTAL	9999
NE02-ANN-TOTAL	N	31-36	6	0	LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999

Record Name: WAGESAL Record Type: 26

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
WA00-EARNER-NUM	N	27-28	2	0	OK	01:30
					TOTAL	99
WA01-VAL-4000	N	29-33	5	0	LE10	00001:00010
					GT10-LE20	00011:00020
					GT20-LE30	00021:00030
					GT30-LE40	00031:00040
					GT40-LE50	00041:00050
					GT50-LE60	00051:00060
					GT60-LE70	00061:00070
					GT70-LE80	00071:00080
					GT80-LE90	00081:00090
					GT90-LE100	00091:00100
					GT100-LE150	00101:00150
					GT150-LE200	00151:00200
					GT200-LE250	00201:00250
					GT250-LE300	00251:00300
					GT300-LE400	00301:00400
					GT400-LE500	00401:00500
					GT500-LE750	00501:00750
					GT750	00751:99999
WA02-VAL-4001	N	34-38	5	0	NA	/////
					LE10	00001:00010
					GT10-LE20	00011:00020
					GT20-LE30	00021:00030
					GT30-LE40	00031:00040
					GT40-LE50	00041:00050
					GT50-LE60	00051:00060
					GT60-LE70	00061:00070
					GT70-LE80	00071:00080
					GT80-LE90	00081:00090
					GT90-LE100	00091:00100
					GT100-LE150	00101:00150
					GT150-LE200	00151:00200
					GT200-LE250	00201:00250
					GT250-LE300	00251:00300
					GT300-LE400	00301:00400
					GT400-LE500	00401:00500
					GT500-LE750	00501:00750
					GT750	00751:99999
WA03-VAL-4002	N	39-43	5	0	NA	/////
					LE10	00001:00010
					GT10-LE20	00011:00020
					GT20-LE30	00021:00030
					GT30-LE40	00031:00040
					GT40-LE50	00041:00050

Note: / represents a blank character.

435

Record Name: WAGESAL Record Type: 26

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT50-LE60	00051:00060
					GT60-LE70	00061:00070
					GT70-LE80	00071:00080
					GT80-LE90	00081:00090
					GT90-LE100	00091:00100
					GT100-LE150	00101:00150
					GT150-LE200	00151:00200
					GT200-LE250	00201:00250
					GT250-LE300	00251:00300
					GT300-LE400	00301:00400
					GT400-LE500	00401:00500
					GT500-LE750	00501:00750
					GT750	00751:99999
WA04-VAL-4003	N	44-48	5	0	NA	/////
					LE10	00001:00010
					GT10-LE20	00011:00020
					GT20-LE30	00021:00030
					GT30-LE40	00031:00040
					GT40-LE50	00041:00050
					GT50-LE60	00051:00060
					GT60-LE70	00061:00070
					GT70-LE80	00071:00080
					GT80-LE90	00081:00090
					GT90-LE100	00091:00100
					GT100-LE150	00101:00150
					GT150-LE200	00151:00200
					GT200-LE250	00201:00250
					GT250-LE300	00251:00300
					GT300-LE400	00301:00400
					GT400-LE500	00401:00500
					GT500-LE750	00501:00750
					GT750	00751:99999
WA05-VAL-4004	N	49-53	5	0	NA	/////
					LE10	00001:00010
					GT10-LE20	00011:00020
					GT20-LE30	00021:00030
					GT30-LE40	00031:00040
					GT40-LE50	00041:00050
					GT50-LE60	00051:00060
					GT60-LE70	00061:00070
					GT70-LE80	00071:00080
					GT80-LE90	00081:00090
					GT90-LE100	00091:00100
					GT100-LE150	00101:00150
					GT150-LE200	00151:00200
					GT200-LE250	00201:00250

Note: / represents a blank character.

Record Name: WAGESAL Record Type: 26

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT250-LE300	00251:00300
					GT300-LE400	00301:00400
					GT400-LE500	00401:00500
					GT500-LE750	00501:00750
					GT750	00751:99999
WA06-VAL-4005	N	54-60	7	0	LT25	0000001:000002
					GT25-LE50	0000026:000005
					GT50-LE100	0000051:000010
					GT100-LE150	0000101:000015
					GT150-LE200	0000151:000020
					GT200-LE250	0000201:000025
					GT250-LE300	0000251:000030
					GT300-LE350	0000301:000035
					GT350-LE400	0000351:000040
					GT400-LE450	0000401:000045
					GT450-LE500	0000451:000050
					GT500-LE550	0000501:000055
					GT550-LE600	0000551:000060
					GT600-LE650	0000601:000065
					GT650-LE700	0000651:000070
					GT700-LE750	0000701:000075
					GT750-LE800	0000751:000080
					GT800-LE850	0000801:000085
					GT850-LE900	0000851:000090
					GT900-LE1000	0000901:000100
					GT1000-LE2000	0001001:000200
					GT2000-LE3000	0002001:000300
					GT3000	0003001:999999

Record Name: AGRICULTURE Record Type: 27

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
AG01-CODE	N	27-30	4	0	CROPS	4100
					VEGETABLES	4101
					FRUITS	4102
					NURSURY	4103
					PREVENTIVE	4104
					WOOD-TREES	4105
					LIVESTOCK	4106
					POULTRY-HH	4107
					CATTLE	4108
					BEEHIVES	4109
					FISH-FARMS	4110
					POULTRY-FARMS	4111
					HATCHERY	4112
					MACH-RENT	4113
					OTH-AGRI	4114
					TOTAL-AGRI	4115
AG02-ANN-VALUE	N	31-36	6	0	LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999

Record Name: ADIST Record Type: 28

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
AD01-EARNER-NUM	N	27-28	2	0	OK	01:30
					TOTAL	99
AD02-PERCENT	N	29-31	3	0	LE10	001:010
					GT10-LE20	011:020
					GT20-LE30	021:030
					GT30-LE40	031:040
					GT40-LE50	041:050
					GT50-LE60	051:060
					GT60-LE70	061:070
					GT70-LE80	071:080
					GT80-LE90	081:090
					GT90-LE100	091:100
AD03-VALUE	N	32-37	6	0	LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999

Record Name: NON-AGRI Record Type: 29

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
NO01-CODE	N	27-30	4	0	BUSINESS-PROJECT	4200
					INDUST-PROJECTS	4201
					SERVICES-PROJECT	4202
					OTH-PROJECTS	4203
					ANN-NON-AGRI-TOT	4204
NO02-ANN-VALUE	N	31-36	6	0	LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999

Record Name: NDIST Record Type: 30

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
ND01-EARNER-NUM	N	27-28	2	0	OK	01:30
					TOTAL	99
ND02-PERC	N	29-31	3	0	LE10	001:010
					GT10-LE20	011:020
					GT20-LE30	021:030
					GT30-LE40	031:040
					GT40-LE50	041:050
					GT50-LE60	051:060
					GT60-LE70	061:070
					GT70-LE80	071:080
					GT80-LE90	081:090
					GT90-LE100	091:100
ND03-VALUE	N	32-37	6	0	LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999

Record Name: LANDS Record Type: 31

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
LA00-EARNER-NUM	N	27-28	2	0	OK	01:30
					TOTAL	99
LA01-VAL-4300	N	29-34	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
LA02-VAL-4301	N	35-40	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500

Note: / represents a blank character.

Record Name: LANDS Record Type: 31

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
LA03-VAL-4302	N	41-46	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
LA04-VAL-4303	N	47-52	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200

Note: / represents a blank character.

Record Name: LANDS Record Type: 31

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
LA05-VAL-4304	N	53-58	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500

Note: / represents a blank character.

Record Name: LANDS Record Type: 31

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
LA06-VAL-4305	N	59-64	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
LA07-VAL-4306	N	65-70	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800

Note: / represents a blank character.

Record Name: LANDS Record Type: 31

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
LA08-VAL-4307	N	71-78	8	0	OK	00000001: 999999

Record Name: FINANCIAL Record Type: 32

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
FI00-EARNER-NUM	N	27-28	2	0	OK	01:30
					TOTAL	99
FI01-VAL-4400	N	29-34	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI02-VAL-4401	N	35-40	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500

Note: / represents a blank character.

Record Name: FINANCIAL Record Type: 32

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI03-VAL-4402	N	41-46	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI04-VAL-4403	N	47-52	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200

Note: / represents a blank character.

Record Name: FINANCIAL Record Type: 32

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI05-VAL-4404	N	53-58	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500

Note: / represents a blank character.

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Record Name: FINANCIAL Record Type: 32

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI06-VAL-4405	N	59-64	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI07-VAL-4406	N	65-70	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800

Note: / represents a blank character.

Record Name: FINANCIAL Record Type: 32

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI08-VAL-4407	N	71-76	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000

Note: / represents a blank character.

Record Name: FINANCIAL Record Type: 32

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
FI09-VAL-4408	N	77-84	8	0	OK	00000001: 999999

Record Name: INCOME-OTHER Record Type: 33

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
NC00-EARNER-NUM	N	27-28	2	0	OK	01:30
					TOTAL	99
NC01-VAL-4500	N	29-34	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
NC02-VAL-4501	N	35-40	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500

Note: / represents a blank character.

Record Name: INCOME-OTHER Record Type: 33

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
NC03-VAL-4502	N	41-46	6	0	NA	//////
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999
NC04-VAL-4503	N	47-52	6	0	NA	//////
					OK	000001:999999

Note: / represents a blank character.

Record Name: INCOME-OTHER Record Type: 33

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
NC05-VAL-4504	N	53-58	6	0	NA OK	////// 000001:999999
NC06-VAL-4505	N	59-66	8	0	OK	00000001: 999999

Note: / represents a blank character.

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Record Name: SAVINGS Record Type: 34

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
SA01-CODE	N	27-30	4	0	AGRI-LANDS	5000
					NON-AGRI-LANDS	5001
					BUILDINGS	5002
					MACH-EQ	5003
					TRANSP-MEANS	5004
					FURN	5005
					LIVESTOCK	5006
					CASH	5007
					STOCKS	5008
					SAVING-CURR-ACCT	5009
					SAVING-INV-CO	5010
					CDS	5011
					PO-SAVING	5012
					JEWELLERY-GOLD	5013
					DURABLES	5014
					LOANS-NET	5015
					OTHER-ASSETS	5016
					TOTAL	5017
SA02-APPRECIAT	N	31-36	6	0	ZERO	000000
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999

Record Name: SAVINGS Record Type: 34

Item (occurs) Subitem (occurs)	Data Type	Position	Item Len.	Dec.	Value Name	Values
SA03-DEPRECIAT	N	37-42	6	0	ZERO	000000
					LE100	000001:000100
					GT100-LE200	000101:000200
					GT200-LE300	000201:000300
					GT300-LE400	000301:000400
					GT400-LE500	000401:000500
					GT500-LE600	000501:000600
					GT600-LE700	000601:000700
					GT700-LE800	000701:000800
					GT800-LE900	000801:000900
					GT900-LE1000	000901:001000
					GT1000-LE1250	001001:001250
					GT1250-LE1500	001251:001500
					GT1500-LE2000	001501:002000
					GT2000-LE2500	002001:002500
					GT2500-LE3000	002501:003000
					GT3000-LE3500	003001:003500
					GT3500-LE4000	003501:004000
					GT4000-LE4500	004001:004500
					GT4500-LE5000	004501:005000
					GT5000-LE5500	005001:005500
					GT5500-LE6000	005501:006000
					GT6000-LE7000	006001:007000
					GT7000-LE8000	007001:008000
					GT8000-LE9000	008001:009000
					GT9000-LE10000	009001:010000
					GT10000-LE50000	010001:050000
					GT50000-LE100000	050001:100000
					GT100000	100001:999999

SAS
Data Reformat File

```
options pagesize=60;
libname in 'c:\process\';
filename a1 'c:\process\cov.out';
/*******last three digits of quantities are grams***********/;
/*******last two digits of values are piastres*************/;
/*******for expenditures, only rectype 15 has no decimals***/;
/*******for all income records, there are no decimals*******/;
/*******dichotomous variables coded 2 were recoded 0********/;
data in.cov;
infile a1 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        fill 27 typer 28 reasonnr 29 males 30-31 females 32-33 total 34-35;
if fill=2 then fill=0;
if typer=2 then typer=0;
if urbrur=2 then urbrur=0;
title 'SUMMARY STATS FROM THE COVER RECORD';
proc means; run;
;
filename a2 'c:\process\dem.out';
data in.dem;
infile a2 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26 resp 27
        indno 28-29 rel 30 sex 31 age 32-33 educ 34 lastyr 35 eductype 36
        stage 37 yrs 38 marstat 39 workstat 40 untype 41 look 42
        reason 43 empstat 44 days 45 occu $ 46-51 econact $ 52-55 sector 56
        earner 57 source1 58 source2 59 source3 60 source4 61 source5 62
        source6 63;
if urbrur=2 then urbrur=0;
/*      DEMOGRAPHICS    */;
if rel=1 then head=1; else head=0;
if rel=2 then spouse=1; else spouse=0;
if rel=3 then kid=1; else kid=0;
if rel=4 then kidinlaw=1; else kidinlaw=0;
if rel=5 then parent=1; else parent=0;
if rel=6 then grandkid=1; else grandkid=0;
if rel=7 then sibling=1; else sibling=0;
if rel=8 then othrel=1; else othrel=0;
if rel=9 then norel=1; else norel=0;
if sex=2 then sex=0;
if age < 20 then lt20=1; else lt20=0;
if 20 < age le 30 then gt20le30=1; else gt20le30=0;
if age > 50 then gt50=1; else gt50=0;
if educ=1 then underage=1; else underage=0;
if educ=2 then illit=1; else illit=0;
if educ=3 then readrite=1; else readrite=0;
if educ=4 then prim=1; else prim=0;
if educ=5 then sec=1; else sec=0;
if educ=6 then secplus=1; else secplus=0;
if educ=7 then univ=1; else univ=0;
if educ=8 then univplus=1; else univplus=0;
if eductype=1 then govnorm=1; else govnorm=0;
if eductype=2 then govlang=1; else govlang=0;
if eductype=3 then privnorm=1; else privnorm=0;
if eductype=4 then privlang=1; else privlang=0;
if stage=1 then primlev=1; else primlev=0;
if stage=2 then preplev=1; else preplev=0;
```

```
if stage=3 then seclev=1; else seclev=0;
if stage=4 then univlev=1; else univlev=0;
if marstat=1 then belowage=1; else belowage=0;
if marstat=2 then never=1; else never=0;
if marstat=3 then engaged=1; else engaged=0;
if marstat=4 then married=1; else married=0;
if marstat=5 then divorced=1; else divorced=0;
if marstat=6 then widowed=1; else widowed=0;
/*      HUMAN CAPITAL   */;
if workstat=1 then employed=1; else employed=0;
if workstat=2 then unempld=1; else unempld=0;
if workstat=3 then olf=1; else olf=0;
if workstat=4 then ohf=1; else ohf=0;
if untype=2 then untype=0;
if look=2 then look=0;
if reason=1 then waiting=1; else waiting=0;
if reason=2 then contract=1; else contract=0;
if reason=3 then nojob=1; else nojob=0;
if reason=4 then gaveup=1; else gaveup=0;
if reason=5 then houswife=1; else houswife=0;
if reason=6 then student=1; else student=0;
if reason=7 then retired=1; else retired=0;
if reason=8 then unable=1; else unable=0;
if empstat=1 then wagemp=1; else wagemp=0;
if empstat=2 then selfwith=1; else selfwith=0;
if empstat=3 then selfonly=1; else selfonly=0;
if empstat=4 then famemp=1; else famemp=0;
if substr(occu,1,1)='9' then genwork=1; else genwork=0;
if substr(occu,1,1)='8' then indlab=1; else indlab=0;
if substr(occu,1,1)='7' then crafts=1; else crafts=0;
if substr(occu,1,1)='6' then agfish=1; else agfish=0;
if substr(occu,1,1)='5' then svcsret=1; else svcsret=0;
if substr(occu,1,1)='4' then clerical=1; else clerical=0;
if substr(occu,1,1)='3' then techaid=1; else techaid=0;
if substr(occu,1,1)='2' then scitech=1; else scitech=0;
if substr(occu,1,1)='1' then proflaw=1; else proflaw=0;
if substr(occu,1,1)='0' then defense=1; else defense=0;
if substr(occu,1,1)='X' then occunec=1; else occunec=0;
if substr(econact,1,1)='1' then primextr=1; else primextr=0;
if substr(econact,1,1)='2' then primind=1; else primind=0;
if substr(econact,1,1)='3' then secind=1; else secind=0;
if substr(econact,1,1)='4' then machind=1; else machind=0;
if substr(econact,1,1)='5' then const=1; else const=0;
if substr(econact,1,1)='6' then retrade=1; else retrade=0;
if substr(econact,1,1)='7' then transp=1; else transp=0;
if substr(econact,1,1)='8' then privsvc=1; else privsvc=0;
if substr(econact,1,1)='9' then pubsvc=1; else pubsvc=0;
if sector=1 then workgov=1; else workgov=0;
if sector=2 then public=1; else public=0;
if sector=3 then private=1; else private=0;
if sector=4 then investmt=1; else investmt=0;
if sector=5 then coop=1; else coop=0;
if sector=6 then ngo=1; else ngo=0;
if sector=7 then forjv=1; else forjv=0;
if earner=2 then earner=0;
if source1=1 then source1=1; else source1=0;
if source2=2 then source2=1; else source2=0;
if source3=3 then source3=1; else source3=0;
```

```
if source4=4 then source4=1; else source4=0;
if source5=5 then source5=1; else source5=0;
if source6=6 then source6=1; else source6=0;
title 'SUMMARY STATS FROM THE DEMOGRAPHIC RECORD';
proc means; run;
;
filename a3 'c:\process\hous.out';
data in.hous;
infile a3 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26 liveaway 27
        awaynum 28-29 awayinc 30 card 31 oncard 32-33 type 34 tenure 35
        rooms 36-37 watsrc 38 access 39 sewerage 40 lighting 41
        cookfuel 42 wallmatl 43 area 44-47 constyr 48-51 keyrent 52-55
        kitchen 56 bathtoi 57 sepbath 58 septoi 59 toitype 60 garbage 61
        surround 62 distwkm 63-65 distwm 66-68 distmkm 69-71 distmm 72-74;
if urbrur=2 then urbrur=0;
/*      REMITTANCES, SUBSIDIES  */;
if liveaway=2 then liveaway=0;
if awayinc=2 then awayinc=0;
if card=2 then card=0;
/*      AMENITIES, WITH SUSPECTED NUMERAIRES    */;
if type=1 then apt=1; else apt=0;          /*apt, rurhous*/
if type=2 then moreapt=1; else moreapt=0;
if type=3 then villa=1; else villa=0;
if type=4 then rurhous=1; else rurhous=0;
if type=5 then roomsin=1; else roomsin=0;
if type=6 then indroom=1; else indroom=0;
if type=7 then nontrad=1; else nontrad=0;
if tenure=1 then ordrent=1; else ordrent=0;  /*ordrent, owned*/
if tenure=2 then furnrent=1; else furnrent=0;
if tenure=3 then owned=1; else owned=0;
if tenure=4 then bought=1; else bought=0;
if tenure=5 then gift=1; else gift=0;
if tenure=6 then inkind=1; else inkind=0;
if tenure=7 then othten=1; else othten=0;
if watsrc=1 then network=1; else network=0;   /*network, pump*/
if watsrc=2 then pump=1; else pump=0;
if watsrc=3 then well=1; else well=0;
if watsrc=4 then othsrc=1; else othsrc=0;
if access=1 then tapdwel=1; else tapdwel=0;   /*tapdwel tapnone*/
if access=2 then tapbldg=1; else tapbldg=0;
if access=3 then tapnone=1; else tapnone=0;
if sewerage=2 then sewerage=0;
if lighting=1 then elec=1; else elec=0;         /*elec*/
if lighting=2 then kero=1; else kero=0;
if lighting=3 then buta=1; else buta=0;
if lighting=4 then othlgt=1; else othlgt=0;
/*cookbuta,cookgas,cookkero*/;
if cookfuel=1 then cookbuta=1; else cookbuta=0;
if cookfuel=2 then cookgas=1; else cookgas=0;
if cookfuel=3 then cookkero=1; else cookkero=0;
if cookfuel=4 then cookelec=1; else cookelec=0;
if cookfuel=5 then cookwood=1; else cookwood=0;
if cookfuel=6 then cookoth=1; else cookoth=0;
if wallmatl=1 then brick=1; else brick=0;       /*brick,concrete*/
if wallmatl=2 then concrete=1; else concrete=0;
if wallmatl=3 then stone=1; else stone=0;
```

```
if wallmatl=4 then mud=1; else mud=0;
if wallmatl=5 then wood=1; else wood=0;
if wallmatl=6 then asbes=1; else asbes=0;
if wallmatl=7 then thatch=1; else thatch=0;
if wallmatl=8 then cloth=1; else cloth=0;
if wallmatl=9 then walloth=1; else walloth=0;
if kitchen=1 then kitpriv=1; else kitpriv=0;   /*kitpriv, kitnone*/
if kitchen=2 then kitshar=1; else kitshar=0;
if kitchen=3 then kitnone=1; else kitnone=0;
if bathtoi=1 then bathpriv=1; else bathpriv=0; /*bathpriv, bathshar*/
if bathtoi=2 then bathshar=1; else bathshar=0;
if bathtoi=3 then bathnone=1; else bathnone=0;
if sepbath=1 then sepbpriv=1; else sepbpriv=0;
if sepbath=2 then sepbshar=1; else sepbshar=0;
if sepbath=3 then sepbnone=1; else sepbnone=0;
if septoi=1 then septpriv=1; else septpriv=0;
if septoi=2 then septshar=1; else septshar=0;
if septoi=3 then septnone=1; else septnone=0;
if toitype=1 then wflush=1; else wflush=0;
if toitype=2 then notflush=1; else notflush=0;
if toitype=3 then notoi=1; else notoi=0;
if garbage=1 then zabal=1; else zabal=0;
if garbage=2 then garput=1; else garput=0;
if garbage=3 then garoth=1; else garoth=0;
if surround=1 then dry=1; else dry=0;          /*dry*/
if surround=2 then moist=1; else moist=0;
if surround=3 then wet=1; else wet=0;
distwork=distwkm+(distwm/1000);
distmrkt=distmkm+(distmm/1000);
title 'SUMMARY STATS FROM THE HOUSING RECORD';
proc means; run;
;
filename a4 'c:\process\inv.out';
data in.inv;
infile a4 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26 car 27 bike 28
        cycle 29 phone 30 fridge 31 freezer 32 cooker 33 washmach 34
        dishwash 35 wathtr 36 vacuum 37 ac 38 fan 39
        heater 40 iron 41 colortv 42 bwtv 43 video 44 cassrec 45 pc 46;
if urbrur=2 then urbrur=0;
/*      INVENTORY       */;
if car=2 then car=0;
if bike=2 then bike=0;
if cycle=2 then cycle=0;
if phone=2 then phone=0;
if fridge=2 then fridge=0;
if freezer=2 then freezer=0;
if cooker=2 then cooker=0;
if washmach=2 then washmach=0;
if dishwash=2 then dishwash=0;
if wathtr=2 then wathtr=0;
if vacuum=2 then vacuum=0;
if ac=2 then ac=0;
if fan=2 then fan=0;
if heater=2 then heater=0;
if iron=2 then iron=0;
if colortv=2 then colortv=0;
```

```
if bwtv=2 then bwtv=0;
if video=2 then video=0;
if cassrec=2 then cassrec=0;
if pc=2 then pc=0;
title 'SUMMARY STATS FROM THE INVENTORY RECORD';
proc means; run;
;
filename a5 'c:\process\exp.out';
data in.exp;
infile a5 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        maincode 27-28 code 29-32 annval 33-40;
if urbrur=2 then urbrur=0;
annval=annval/100;
/*      MAINCODE=98 IS TOTAL CONSUMPTION EXPENDITURES   */;
/*      MAINCODE=99 IS TOTAL EXPENDITURES   */;
proc summary;
class maincode code;
var annval;
output out=exps;
title 'SUMMARY STATS TOT ANN HH EXP RECORD - 2 & 4 DIGIT LEVEL';
proc print data=exps;
run;
;
filename a6 'c:\process\food.out';
data in.food;
infile a6 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monq 31-36 monval 37-41 annq 42-48 annval 49-55;
if urbrur=2 then urbrur=0;
annval=annval/100;
monval=monval/100;
/*Most all quantities kgs, except eggs, pidgeons, fried chicken  */;
/* are in units, eg. 1.000 therefore div by 1000 for whole value */;
annq=annq/1000;
monq=monq/1000;
proc summary;
class code;
var annval;
output out=codefood;
title 'SUMMARY STATS FROM THE FOOD AND BEVERAGES RECORD';
proc print data=codefood;
run;
;
filename a7 'c:\process\cigs.out';
data in.cigs;
infile a7 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monval 31-35 annval 36-42;
if urbrur=2 then urbrur=0;
annval=annval/100;
monval=monval/100;
proc summary;
class code;
var annval;
```

```
output out=codecigs;
title 'SUMMARY STATS FROM THE CIGARETTES AND TOBACCO RECORD';
proc print data=codecigs;
run;
;
filename a8 'c:\process\clo.out';
data in.clo;
infile a8 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annq 31-36 annval 37-43;
if urbrur=2 then urbrur=0;
annval=annval/100;
/*The only quantity info is m/cm of cloth, get full meters   */;
annq=annq/100;
proc summary;
class code;
var annval;
output out=codeclo;
title 'SUMMARY STATS FROM THE CLOTHING RECORD';
proc print data=codeclo;
run;
;
filename a9 'c:\process\foot.out';
/*********no decimal for quantity here***************/;
data in.foot;
infile a9 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annq 31-33 annval 34-40;
if urbrur=2 then urbrur=0;
annval=annval/100;
proc summary;
class code;
var annval;
output out=codeft;
title 'SUMMARY STATS FROM THE FOOTWEAR RECORD';
proc print data=codeft;
run;
;
filename a10 'c:\process\util.out';
data in.util;
infile a10 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annval 31-37;
if urbrur=2 then urbrur=0;
annval=annval/100;
proc summary;
class code;
var annval;
output out=codeutil;
title 'SUMMARY STATS FROM THE HOUSING AND UTILITIES RECORD';
proc print data=codeutil;
run;
;
filename a11 'c:\process\lf.out';
/*********no decimal for quantity here***************/;
```

```
data in.lf;
infile a11 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monq 31-34 monval 35-40 annq 41-45 annval 46-52;
if urbrur=2 then urbrur=0;
annval=annval/100;
monval=monval/100;
proc summary;
class code;
var annval;
output out=codelf;
title 'SUMMARY STATS FROM THE HOUSEHOLD LIGHTING AND FUEL RECORD';
proc print data=codelf;
run;
;
filename a12 'c:\process\furn.out';
data in.furn;
infile a12 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 anntot 31-37 annpre 38-44 annrest 45-51;
if urbrur=2 then urbrur=0;
anntot=anntot/100;
annpre=annpre/100;
annrest=annrest/100;
proc summary;
class code;
/*The premium payments are actual consumption payments during year*/;
var annpre;
output out=codefurn;
title 'SUMMARY STATS FROM THE HOUSEHOLD FURNISHINGS RECORD';
proc print data=codefurn;
run;
;
filename a13 'c:\process\main.out';
data in.main;
infile a13 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monval 31-35 annval 36-42;
if urbrur=2 then urbrur=0;
annval=annval/100;
monval=monval/100;
proc summary;
class code;
var annval;
output out=codemain;
title 'SUMMARY STATS FROM THE HOUSEHOLD CLEANING RECORD';
proc print data=codemain;
run;
;
filename a14 'c:\process\med.out';
data in.med;
infile a14 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monval 31-35 qval 36-42 annval 43-50;
```

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```
if urbrur=2 then urbrur=0;
annval=annval/100;
monval=monval/100;
qval=qval/100;
proc summary;
class code;
var annval;
output out=codemed;
title 'SUMMARY STATS FROM THE MEDICAL RECORD';
proc print data=codemed;
run;
;
filename a15 'c:\process\eqpt.out';
data in.eqpt;
infile a15 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 anntot 31-36 annpre 37-42 annrest 43-48;
if urbrur=2 then urbrur=0;
/*      RECALL THIS IS ONLY EXP RECORD WITHOUT DECIMALS */;
proc summary;
class code;
/*The premium payments are actual consumption payments during year*/;
var annpre;
output out=codeeqpt;
title 'SUMMARY STATS FROM THE PRIVATE TRANSPORT/EQUIPMENT RECORD';
proc print data=codeeqpt;
run;
;
filename a16 'c:\process\tran.out';
data in.tran;
infile a16 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monval 31-35 annval 36-42;
if urbrur=2 then urbrur=0;
monval=monval/100;
annval=annval/100;
proc summary;
class code;
var annval;
output out=codetran;
title 'SUMMARY STATS FROM THE PUBLIC TRANSPORT RECORD';
proc print data=codetran;
run;
;
filename a17 'c:\process\comm.out';
data in.comm;
infile a17 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 qval 31-35 annval 36-42;
if urbrur=2 then urbrur=0;
qval=qval/100;
annval=annval/100;
proc summary;
class code;
var annval;
```

```
output out=codecomm;
title 'SUMMARY STATS FROM THE COMMUNICATIONS RECORD';
proc print data=codecomm;
run;
;
filename a18 'c:\process\educ.out';
data in.educ;
infile a18 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annval 31-37;
if urbrur=2 then urbrur=0;
annval=annval/100;
proc summary;
class code;
var annval;
output out=codeeduc;
title 'SUMMARY STATS FROM THE EDUCATION RECORD';
proc print data=codeeduc;
run;
;
filename a19 'c:\process\ent.out';
data in.ent;
infile a19 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 anntot 31-37 annpre 38-44 annrest 45-51;
if urbrur=2 then urbrur=0;
anntot=anntot/100;
annpre=annpre/100;
annrest=annrest/100;
proc summary;
class code;
/*The premium payments are actual consumption payments during year*/;
var annpre;
output out=codeent;
title 'SUMMARY STATS FROM THE CULTURE, SPORT AND ENTERTAINMENT RECORD';
proc print data=codeent;
run;
;
filename a20 'c:\process\cult.out';
data in.cult;
infile a20 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monval 31-35 qval 36-42 annval 43-50;
if urbrur=2 then urbrur=0;
monval=monval/100;
qval=qval/100;
annval=annval/100;
proc summary;
class code;
var annval;
output out=codecult;
title 'SUMMARY STATS FROM THE CSE (OTHER) RECORD';
proc print data=codecult;
run;
;
```

```
filename a21 'c:\process\rest.out';
data in.rest;
infile a21 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monval 31-35 annval 36-42;
if urbrur=2 then urbrur=0;
monval=monval/100;
annval=annval/100;
proc summary;
class code;
var annval;
output out=coderest;
title 'SUMMARY STATS FROM THE HOTEL, COFFEE HOUSE AND RESTAURANT RECORD';
proc print data=coderest;
run;
;
filename a22 'c:\process\acc.out';
data in.acc;
infile a22 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annval 31-38;
if urbrur=2 then urbrur=0;
annval=annval/100;
proc summary;
class code;
var annval;
output out=codeacc;
title 'SUMMARY STATS FROM THE PERSONAL APPLIANCES RECORD';
proc print data=codeacc;
run;
;
filename a23 'c:\process\per.out';
data in.per;
infile a23 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 monval 31-35 qval 36-42 annval 43-49;
if urbrur=2 then urbrur=0;
annval=annval/100;
monval=monval/100;
qval=qval/100;
proc summary;
class code;
var annval;
output out=codeper;
title 'SUMMARY STATS FROM THE PERSONAL CARE AND COSMETICS RECORD';
proc print data=codeper;
run;
;
filename a24 'c:\process\svc.out';
data in.svc;
infile a24 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annval 31-38;
if urbrur=2 then urbrur=0;
```

```
annval=annval/100;
proc summary;
class code;
var annval;
output out=codesvc;
title 'SUMMARY STATS FROM THE SERVICES NEC, TRANSFERS AND PREMIUMS RECORD';
proc print data=codesvc;
run;
;
filename a25 'c:\process\net.out';
data in.net;
infile a25 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annval 31-36;
/*      CODE 9999 IS THE SUM OF HH NET ANNUAL INCOME FROM SOURCES      */;
if urbrur=2 then urbrur=0;
proc summary;
class code;
var annval;
output out=codenet;
title 'SUMMARY STATS FROM THE NET ANNUAL INCOMES RECORD';
proc print data=codenet;
run;
;
filename a26 'c:\process\wage.out';
data in.wage;
infile a26 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        earner 27-28 val4000 29-33 val4001 34-38 val4002 39-43
        val4003 44-48 val4004 49-53 val4005 54-60;
if urbrur=2 then urbrur=0;
/*      EARNER 99 IS THE SOURCE (ROW) SUM FOR ALL INC EARNERS     */;
/*      VAL4005 IS THE EARNER (COLUMN) SUM FOR ALL INC SOURCES      */;
title 'SUMMARY STATS FROM THE WAGE AND SALARIES INCOME RECORD';
proc means;
run;
;
filename a27 'c:\process\ag.out';
data in.ag;
infile a27 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annval 31-36;
/*      CODE 4115 IS THE SUM OF HH INCOME FROM AGRICULTURE ACTIVITIES  */;
if urbrur=2 then urbrur=0;
proc summary;
class code;
var annval;
output out=codeag;
title 'SUMMARY STATS FROM THE AGRICULTURE INCOME RECORD';
proc print data=codeag;
run;
;
filename a28 'c:\process\adis.out';
data in.adis;
infile a28 missover;
```

```
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        earner 27-28 percent 29-31 annval 32-37;
if urbrur=2 then urbrur=0;
proc summary;
class earner;
var percent;
output out=earnpct1;
title 'AVERAGE PERCENT CONTRIBUTION OF SEPARATE AG ACTIVITY SHARERS';
/*      A POOR PROXY FOR INTENSITY OF FARM LABOR        */;
proc print data=earnpct1;
run;
;
filename a29 'c:\process\nag.out';
data in.nag;
infile a29 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 annval 31-36;
/*      CODE 4204 IS THE SUM OF HH INCOME FROM NON-AG ACTIVITIES  */;
if urbrur=2 then urbrur=0;
proc summary;
class code;
var annval;
output out=codenag;
title 'SUMMARY STATS FROM THE NON-AGRICULTURE PROJECTS RECORD';
proc print data=codenag;
run;
;
filename a30 'c:\process\ndis.out';
data in.ndis;
infile a30 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        earner 27-28 percent 29-31 annval 32-37;
if urbrur=2 then urbrur=0;
proc summary;
class earner;
var percent;
output out=earnpct2;
title 'AVERAGE PERCENT CONTRIBUTION OF SEPARATE NON-AG ACTIVITY SHARERS';
/*      A POOR PROXY FOR INTENSITY OF LABOR INPUT IN NON-AG       */;
proc print data=earnpct2;
run;
;
filename a31 'c:\process\land.out';
data in.land;
infile a31 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        earner 27-28 val4300 29-34 val4301 35-40 val4302 41-46
        val4303 47-52 val4304 53-58 val4305 59-64 val4306 65-70
        val4307 71-78;
if urbrur=2 then urbrur=0;
/*      EARNER 99 IS THE SOURCE (ROW) SUM FOR ALL LAND-INC EARNERS     */;
/*      VAL4307 IS THE EARNER (COLUMN) SUM FOR ALL LAND-INC SOURCES
*/;
title 'SUMMARY STATS FROM THE LANDS RECORD';
```

```
proc means;
var earner val4300-val4307;
run;
;
filename a32 'c:\process\fin.out';
data in.fin;
infile a32 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        earner 27-28 val4400 29-34 val4401 35-40 val4402 41-46
        val4403 47-52 val4404 53-58 val4405 59-64 val4406 65-70
        val4407 71-76 val4408 77-84;
if urbrur=2 then urbrur=0;
/*      EARNER 99 IS THE SOURCE (ROW) SUM FOR ALL FIN-INC EARNERS     */;
/*      VAL4408 IS THE EARNER (COLUMN) SUM FOR ALL FIN-INC SOURCES      */;
title 'SUMMARY STATS FROM THE FINANCE INCOME RECORD';
proc means;
var earner val4400-val4408;
run;
;
filename a33 'c:\process\inco.out';
data in.inco;
infile a33 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        earner 27-28 val4500 29-34 val4501 35-40 val4502 41-46
        val4503 47-52 val4504 53-58 val4505 59-66;
if urbrur=2 then urbrur=0;
/*      EARNER 99 IS THE SOURCE (ROW) SUM FOR ALL OTH-INC EARNERS     */;
/*      VAL4505 IS THE EARNER (COLUMN) SUM FOR ALL OTH-INC SOURCES      */;
title 'SUMMARY STATS FROM THE OTHER SOURCES OF INCOME RECORD';
proc means;
var earner val4500-val4505;
run;
;
filename a34 'c:\process\save.out';
data in.save;
infile a34 missover;
input   rectype 1-2 numgov 3-6 numsv 7-10 numfr 11-12 round 13 month 14-15
        gov 16-17 urbrur 18 km 19-20 sv 21-23 psu 24-26
        code 27-30 app 31-36 dep 37-42;
/*      CODE 5017 IS COL SUM OF HH AP(DE)PRECIATION  */;
if urbrur=2 then urbrur=0;
net=app-dep;
proc summary;
class code;
var net;
output out=codenet;
title 'SUMMARY STATS NET CHANGES TO HH SAVINGS AND OWNERSHIP';
proc print data=codenet;
run;
;
```

HIECS
Weight Construction SAS File

```
options pagesize=60;
libname out 'c:\temp';
filename a0 'c:\process\sampchk.txt';
filename a1 'c:\process\sample1.txt';
/*First get all the actual data from validated final */;
/*Get the household values for cumulative age/sex vars */;
/*Persons is the total number of persons in the k-th sample HH */;
/*in the j-th sample chunk in the i-th sample sv in the h-th stratum*/;
/*sampchk.txt came from sorting the cov rectype by gov urbrur */;
/*km sv, then proc summary var males females by same key */;
/*The actual data has 14 wrong SV or KM codes in the second */;
/*half sample. To attach the weights, these must be corrected */;
/*first.  Do this to the raw data first with the program below */;
/*************************************************************
Data sortsamp;
set in.cov;
proc sort; by gov urbrur km sv; run;
data _null_;
set sortsamp;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
proc summary; var males females; by gov urbrur km sv; run;
output out=sampchk sum=; run;
*************************************************************/;
DATA first;
infile a0 missover;
input   gov 1-8 urbrur 9-17 km 18-26 sv 27-35 psu 36-44
        completd 45-53 males 54-62 females 63-71;
persons=males+females;
proc sort;
by gov urbrur km sv psu;
run;
;
data second;
/*      Weighting of Survey data based on Megill(95)                    */;
/*      urpop is 1986 Census governorate/urban or rural population      */;
/*      chunks is the number of sample chunks in the stratum            */;
/*      svpop is the 1986 Census shiakha or village population          */;
/*      svhhs is the 1986 Census frame # HHs in the shiakha or village  */;
infile a1 missover;
input   gov 1-2 urbrur 3-4 km 5-7 sv 9-11 name $ 13-36 psu 37-39
        urpop 40-47 chunks 48-50 svpop 51-57 svhhs 58-63;
run;
data one;
set second;
if urbrur=2 then urbrur=0;
```

```
if      (gov=33 and urbrur=0 and km=1 and sv=020 and psu=277)  or
        (gov=33 and urbrur=0 and km=1 and sv=090 and psu=277)  or
        (gov=34 and urbrur=0 and km=9 and sv=050 and psu=280)  or
        (gov=34 and urbrur=0 and km=9 and sv=100 and psu=280)  then
selected=15;
else selected=30;
if _n_>505 then delete;
proc sort;
by gov urbrur km sv psu;
run;
;
data third(keep=gov urbrur km sv psu persons selected completd
        urpop chunks svpop svhhs);
merge first one;
by gov urbrur km sv psu;
run;
;
data misfit;
set third;
if urpop=.;
proc print;
run;
;
data fourth;
set third;
/*****************************************************************/;
/*Now deal with the incomplete hhs missing due to reason=2,3,4,7*/;
/*demolished, changed to est., vacant, and out-of-scope.  These */;
/*are ineligible, and are subtracted from the selected hhs.     */;
/*Raw data for this comes from MISSINGS.XLS, subfile REMOVE.XLS */;
/*There are 102 ineligible cases of 285 missing questionnaires  */;
if gov=1 and urbrur=1 then do;
        if km=5 and sv=010 and psu=7 then minus=1;
        if km=7 and sv=080 and psu=13 then minus=3;
        if km=8 and sv=040 and psu=14 then minus=2;
        if km=10 and sv=040 and psu=57 then minus=2;
        if km=11 and sv=110 and psu=222 then minus=1;
        if km=23 and sv=051 and psu=38 then minus=1;
        if km=24 and sv=050 and psu=42 then minus=1;
        if km=24 and sv=070 and psu=43 then minus=1;
        end;
else if gov=2 and urbrur=1 then do;
        if km=6 and sv=060 and psu=84 then minus=1;
        if km=8 and sv=080 and psu=86 then minus=1;
        if km=10 and sv=130 and psu=93 then minus=1;
        if km=11 and sv=060 and psu=90 then minus=1;
        if km=12 and sv=030 and psu=87 then minus=1; end;
else if gov=3 and urbrur=1 and km=2 and sv=020
                and psu=94 then minus=1;
else if gov=11 then do;
        if urbrur=1 then do;
        if km=1 and sv=030 and psu=101 then minus=2; end;
        if urbrur=0 then do;
        if km=2 and sv=060 and psu=1 then minus=1; end; end;
else if gov=12 and urbrur=0 and km=13 and sv=200
                and psu=29 then minus=1;
else if gov=13 and urbrur=1 and km=1 and sv=070
                and psu=114 then minus=1;
```

```
else if gov=13 and urbrur=0 then do;
        if km=4 and sv=100 and psu=38 then minus=1;
        if km=15 and sv=040 and psu=53 then minus=1; end;
else if gov=14 then do;
        if urbrur=1 then do;
        if km=1 and sv=030 and psu=120 then minus=2;
        if km=4 and sv=010 and psu=121 then minus=1;
        if km=6 and sv=030 and psu=125 then minus=1;
        if km=7 and sv=011 and psu=126 then minus=1;
        if km=7 and sv=020 and psu=128 then minus=1;
        if km=11 and sv=010 and psu=130 then minus=1; end;
        if urbrur=0 then do;
        if km=3 and sv=110 and psu=65 then minus=1;
        if km=4 and sv=130 and psu=67 then minus=1;
        if km=8 and sv=070 and psu=70 then minus=1; end; end;
else if gov=15 and urbrur=0 then do;
        if km=4 and sv=110 and psu=79 then minus=1;
        if km=10 and sv=030 and psu=87 then minus=2; end;
else if gov=16 then do;
        if urbrur=1 then do;
        if km=1 and sv=030 and psu=135 then minus=1;
        if km=1 and sv=070 and psu=136 then minus=4;
        if km=2 and sv=030 and psu=137 then minus=4;
        if km=2 and sv=080 and psu=138 then minus=4; end;
        if urbrur=0 then do;
        if km=3 and sv=230 and psu=91 then minus=1;
        if km=8 and sv=040 and psu=99 then minus=1;
        if km=8 and sv=130 and psu=100 then minus=1;
        if km=12 and sv=080 and psu=107 then minus=3; end; end;
else if gov=17 then do;
        if urbrur=1 then do;
        if km=9 and sv=010 and psu=149 then minus=1; end;
        if urbrur=0 then do;
        if km=2 and sv=020 and psu=111 then minus=1;
        if km=6 and sv=040 and psu=119 then minus=1; end; end;
else if gov=21 and urbrur=1 then do;
        if km=1 and sv=011 and psu=161 then minus=1;
        if km=2 and sv=020 and psu=165 then minus=1;
        if km=2 and sv=040 and psu=166 then minus=1;
        if km=5 and sv=041 and psu=175 then minus=1;
        if km=5 and sv=042 and psu=176 then minus=2; end;
else if gov=21 and urbrur=0 then do;
        if km=13 and sv=390 and psu=168 then minus=1; end;
else if gov=22 and urbrur=1 and km=1 and sv=020
                and psu=183 then minus=1;
else if gov=23 and urbrur=1 then do;
        if km=1 and sv=030 and psu=189 then minus=1;
        if km=4 and sv=010 and psu=190 then minus=1; end;
else if gov=24 then do;
        if urbrur=1 then do;
        if km=1 and sv=030 and psu=191 then minus=2;
        if km=11 and sv=020 and psu=195 then minus=1; end;
        if urbrur=0 then do;
        if km=12 and sv=190 and psu=214 then minus=2; end; end;
else if gov=25 then do;
        if urbrur=1 then do;
        if km=1 and sv=010 and psu=196 then minus=3; end;
        if urbrur=0 then do;
```

```
        if km=3 and sv=060 and psu=218 then minus=1;
        if km=10 and sv=030 and psu=227 then minus=1; end; end;
else if gov=26 then do;
        if urbrur=1 then do;
        if km=4 and sv=010 and psu=206 then minus=1;
        if km=1 and sv=030 and psu=202 then minus=1;
        if km=2 and sv=010 and psu=203 then minus=1;
        if km=5 and sv=010 and psu=204 then minus=2;
        if km=13 and sv=010 and psu=205 then minus=1;
        if km=14 and sv=010 and psu=207 then minus=1; end;
        if urbrur=0 then do;
        if km=6 and sv=020 and psu=240 then minus=1;
        if km=14 and sv=300 and psu=253 then minus=1; end; end;
else if gov=27 and urbrur=1 then do;
        if km=10 and sv=010 and psu=209 then minus=2;
        if km=13 and sv=010 and psu=208 then minus=1; end;
else if gov=31 then do;
        if urbrur=1 then do;
        if km=2 and sv=010 and psu=219 then minus=1; end;
        if urbrur=0 then do;
        if km=2 and sv=020 and psu=279 then minus=8; end; end;
else if gov=32 and urbrur=0 and km=1 and sv=050
                and psu=278 then minus=1;
else do;
minus=0;
end;
run;
;
/*Eligible households don't include demolished, changed*/;
/*to establishment, vacant, or out-of-scope conditions.*/;
data for(keep=gov urbrur km sv psu eligible selected persons
  minus completd basicwt adjwt1 );
set fourth;
if minus=. then minus=0;
eligible=selected-minus;
basicwt=(urpop*svhhs)/(chunks*svpop*selected);
adjwt1=(eligible/completd)*basicwt;
title 'Summary Statistics for First-Stage Basic Weight, and Adjusted';
proc means; var basicwt adjwt1;
run;
;
/*Sum the denominator for equation on p. 9 Megill(95)  */;
/*to account for pop change in the governorate since 86*/;
data gov1;
set for;
if gov > 30 then gov=30;
fact=adjwt1*persons;
proc summary;
var fact;
class gov;
output out=govs sum=den;
run;
;
data govpops;
set govs(drop=_type_ _freq_);
if gov ne .;
/*Now account for the second stage adjustment factor for pop proj*/;
/*Source: Population Projections for the Republic of Egypt       */;
```

```
/*CAPMAS and Cairo Demographic Center, Sept., 1992, mid-year 1996*/;
/*estimates.  Note: *includes* prisoners, nomads, etc.          */;
if gov=1 then est=7059000;
if gov=2 then est=3558000;
if gov=3 then est=563000;
if gov=4 then est=501000;
if gov=11 then est=908000;
if gov=12 then est=4259000;
if gov=13 then est=4258000;
if gov=14 then est=3492000;
if gov=15 then est=2230000;
if gov=16 then est=3494000;
if gov=17 then est=2755000;
if gov=18 then est=4079000;
if gov=19 then est=773000;
if gov=21 then est=5297000;
if gov=22 then est=1804000;
if gov=23 then est=2001000;
if gov=24 then est=3260000;
if gov=25 then est=2763000;
if gov=26 then est=2988000;
if gov=27 then est=2841000;
if gov=28 then est=1013000;
if gov=30 then est=707000;
adjwt2=est/den;
proc sort; by gov;
run;
;
data lastsort;
set gov1;
proc sort;
by gov;
run;
data out.wgts(keep=gov urbrur km sv psu finlwt normwt);
merge lastsort govpops;
by gov;
/*rename the frontier governorate codes as original  */;
if gov=30 then do;
        if psu=279 or psu=219 then gov=31;
        if psu=278 or psu=218 then gov=32;
        if psu=277 or psu=217 then gov=33;
        if psu=280 or psu=220 then gov=34;
                end;
finlwt=adjwt1*adjwt2;
normwt=finlwt/421380.36;
title 'Summary Statistics for the Final and Normalized Final Weights';
proc means; var normwt finlwt;
run;
title 'The 1995/1996 HIECS Final Weights';
proc print data=out.wgts;
run;
data ok;
set out.wgts;
proc summary;
var finlwt normwt;
output out=all sum=;
run;
title 'Proof that the Normalized Weights Sum to 1.00';
```

```
proc print data=all;
run;
```

SAS
Occupation and Economic Activity Code
Reformat Patches

```
options pagesize=60;
libname in 'c:\process';
data occufix;
set in.dem;
if occu=151119 then occu=251119;
if occu=291106 then occu=291101;
if occu=321305 then occu=331305;
if occu=6121 then occu=612101;
if occu=132111 then occu=132911;
if occu=362106 then occu=262106;
if occu=362105 then occu=262105;
if occu=491119 then occu=491199;
if occu=104107 then occu=515102;
if occu=121401 then occu=621401;
if occu=62168 then occu=621601;
if occu=162101 then occu=161101;
if occu=42101 then occu=421101;
if occu=832104 then occu=732104;
if occu=72233 then occu=722303;
if occu=761203 then occu=791203;
if occu=295605 then occu=295305;
if occu=191101 then occu=161101;
if occu=532303 then occu=512303;
if occu=733109 then occu=734109;
if occu=521192 then occu=521901;
if occu=731190 then occu=731105;
if occu=296505 then occu=396505;
if occu=641202 then occu=621402;
if occu=131911 then occu=132911;
if occu=413301 then occu=413201;
if occu=363109 then occu=363199;
if occu=395306 then occu=396302;
if occu=581902 then occu=521901;
if occu=532302 then occu=512302;
if occu=323603 then occu=396103;
if occu=531112 then occu=531207;
if occu=704303 then occu=702101;
if occu=512308 then occu=512306;
if occu=517102 then occu=513102;
if occu=611601 then occu=611101;
if occu=823200 then occu=823202;
if occu=72233 then occu=722303;
if occu=721199 then occu=721399;
if occu=293109 then occu=263109;
if occu=621106 then occu=620601;
if occu=296399 then occu=296299;
if occu=417199 then occu=413199;
if occu=591101 then occu=291101;
if occu=512411 then occu=512499;
if occu=723200 then occu=513102;
if occu=421001 then occu=413202;
if occu=352299 then occu=351102;
```

```
if occu=413109 then occu=413199;
if occu=728101 then occu=733199;
if occu=491119 then occu=491101;
if occu=131911 then occu=132911;
if occu=491110 and gov=3 then occu=291101;
if occu=39301 then occu=393101;
if occu=513399 then occu=531399;
if occu=131201 then occu=631201;
if occu=413196 then occu=394905;
if occu=716302 then occu=793299;
if occu=512103 then occu=512102;
if occu=612111 then occu=621101;
if occu=621111 then occu=621101;
if occu=363109 then occu=363199;
if occu=491119 then occu=491199;
if occu=532301 then occu=512203;
if occu=773101 then occu=733101;
if occu=191999 then occu=291999;
if occu=520201 then occu=521201;
if occu=797308 then occu=793308;
if occu=721199 then occu=721201;
if occu=161298 then occu=161299;
if occu=413301 then occu=413201;
if occu=532301 then occu=511206;
if occu=627101 then occu=621101;
if occu=626601 then occu=621601;
if occu=612201 then occu=612101;
if occu=613201 then occu=631201;
if occu=72203 then occu=722203;
if occu=833213 then occu=721302;
if occu=393106 then occu=393101;
if occu=421201 then occu=393101;
if occu=229108 then occu=292908;
if occu=263151 then occu=263121;
if occu=611201 then occu=612101;
if occu=413301 then occu=413201;
if occu=395505 then occu=295505;
if occu=141403 then occu=142103;
if occu=296302 then occu=293201;
if occu=413302 then occu=413202;
if occu=628304 then occu=826304;
if occu=413103 then occu=412103;
if (econact=0520 or econact=2502 or econact=5101 or econact=520)
        then econact=5202;
if econact=1 then econact=8324;
if (econact=1010 or econact=1100 or econact=1230) then
econact=1110;
if econact=1310 then econact=9310;
if econact=1324 then econact=5203;
if econact=1829 then econact=8324;
if econact=2631 then econact=9310;
if econact=2710 then econact=9513;
```

```
if econact=2832 then econact=3832;
if econact=3910 then econact=9310;
if econact=3918 then econact=3829;
if econact=3999 then econact=9331;
if econact=4844 then econact=3844;
if econact=6299 then econact=6229;
if econact=6301 then econact=1130;
if econact=6315 then econact=6215;
if econact=7911 then econact=7113;
if (econact=8231 or econact=8331) then econact=8321;
if (econact=8320 or econact=8332 or econact=9301) then
econact=9310;
if econact=8391 then econact=9391;
if econact=9110 then econact=9339;
if econact=9219 then econact=6218;
if econact=9300 then econact=8322;
if econact=9319 then econact=8329;
if econact=9329 then econact=8325;
if econact=9330 then econact=7200;
if econact=9424 then econact=9420;
run;
```

Summary Statistics of All Questionnaire Items by Record

SUMMARY STATS FROM THE COVER RECORD

Variable	N	Mean	Std Dev	Minimum	Maximum
RECTYPE	14805	1.0000000	0	1.0000000	1.0000000
NUMGOV	14804	40.4047555	32.3415626	1.0000000	165.0000000
NUMSV	14805	7.9929753	4.3170993	1.0000000	15.0000000
NUMFR	14805	15.5026005	8.6553744	1.0000000	30.0000000
ROUND	14805	2.5110436	1.1167779	1.0000000	4.0000000
MONTH	14805	6.4816616	3.4472153	1.0000000	12.0000000
GOV	14805	15.5046268	8.6861848	1.0000000	34.0000000
URBRUR	14805	0.4472813	0.4972298	0	1.0000000
KM	14805	8.3632557	6.7279337	1.0000000	36.0000000
SV	14805	112.3552178	127.3174400	10.0000000	790.0000000
PSU	14805	127.8622763	75.6418756	1.0000000	280.0000000
FILL	14805	0.9999325	0.0082186	0	1.0000000
TYPER	14804	0.9263037	0.2612848	0	1.0000000
REASONNR	2	2.5000000	0.7071068	2.0000000	3.0000000
MALES	14805	2.5306315	1.5960502	0	17.0000000
FEMALES	14805	2.4635596	1.4844413	0	21.0000000
TOTAL	14805	4.9941912	2.4976279	1.0000000	38.0000000

Variable	N	Mean	Std Dev	Minimum	Maximum
RECTYPE	73939	2.0000000	0	2.0000000	2.0000000
NUMGOV	73936	39.3737151	31.0288667	1.0000000	165.0000000
NUMSV	73939	8.0049365	4.3344566	1.0000000	15.0000000
NUMFR	73939	15.4431356	8.6680916	1.0000000	30.0000000
ROUND	73939	2.4971801	1.1181529	1.0000000	4.0000000
MONTH	73939	6.4932715	3.4642683	1.0000000	12.0000000
GOV	73939	16.3065635	8.4012339	1.0000000	34.0000000
URBRUR	73939	0.3910115	0.4879803	0	1.0000000
KM	73939	8.1334884	6.3720185	1.0000000	36.0000000
SV	73939	119.2274713	130.5660818	10.0000000	790.0000000
PSU	73939	132.3539134	75.6150040	1.0000000	280.0000000
RESP	73939	1.7929645	0.4051840	1.0000000	2.0000000
INDNO	73939	3.6216070	2.4104546	1.0000000	38.0000000
REL	73939	2.7221493	1.3524414	1.0000000	9.0000000
SEX	73939	0.5067150	0.4999583	0	1.0000000
AGE	73939	25.5027523	19.1854214	0	99.0000000
EDUC	73939	2.9074372	1.6420887	1.0000000	8.0000000
LASTYR	73938	1.7226731	0.4476823	1.0000000	2.0000000
EDUCTYPE	20505	1.0822238	0.4305770	1.0000000	4.0000000
STAGE	20505	1.9077786	1.0005512	1.0000000	4.0000000
YRS	20505	1.6682273	1.2598413	0	6.0000000
MARSTAT	73939	2.5049974	1.5500386	1.0000000	6.0000000
WORKSTAT	73939	2.5774760	1.0851201	1.0000000	4.0000000
UNTYPE	1806	0.9407530	0.2361517	0	1.0000000
LOOK	1806	0.3172757	0.4655447	0	1.0000000
REASON	1233	1.8507705	1.4331822	1.0000000	8.0000000
EMPSTAT	21315	1.7958715	1.0900791	1.0000000	4.0000000
DAYS	21315	6.0995543	0.8326957	0	7.0000000
SECTOR	21416	2.4223011	0.8971564	1.0000000	7.0000000
EARNER	73939	0.3373592	0.4728118	0	1.0000000
SOURCE1	73939	0.1713845	0.3768472	0	1.0000000
SOURCE2	73939	0.0879509	0.2832254	0	1.0000000
SOURCE3	73939	0.0496085	0.2171361	0	1.0000000
SOURCE4	73939	0.1561287	0.3629798	0	1.0000000
SOURCE5	73939	0.0066541	0.0813016	0	1.0000000
SOURCE6	73939	0.0861386	0.2805705	0	1.0000000
HEAD	73939	0.2002326	0.4001771	0	1.0000000
SPOUSE	73939	0.1559394	0.3628003	0	1.0000000
KID	73939	0.5476271	0.4977299	0	1.0000000
KIDINLAW	73939	0.0158915	0.1250566	0	1.0000000
PARENT	73939	0.0169464	0.1290715	0	1.0000000
GRANDKID	73939	0.0366113	0.1878067	0	1.0000000
SIBLING	73939	0.0152423	0.1225160	0	1.0000000
OTHREL	73939	0.0110902	0.1047253	0	1.0000000
NOREL	73939	0.000419265	0.0204718	0	1.0000000
LT20	73939	0.4873477	0.4998433	0	1.0000000
GT20LE30	73939	0.1510840	0.3581332	0	1.0000000
GT50	73939	0.1269425	0.3329108	0	1.0000000
UNDERAGE	73939	0.2288779	0.4201133	0	1.0000000
ILLIT	73939	0.2750781	0.4465566	0	1.0000000
READRITE	73939	0.1442540	0.3513495	0	1.0000000
PRIM	73939	0.1670161	0.3729927	0	1.0000000
SEC	73939	0.1246839	0.3303623	0	1.0000000
SECPLUS	73939	0.0177308	0.1319723	0	1.0000000

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Variable	N	Mean	Std Dev	Minimum	Maximum
UNIV	73939	0.0411014	0.1985262	0	1.0000000
UNIVPLUS	73939	0.0012578	0.0354433	0	1.0000000
GOVNORM	73939	0.2667063	0.4422406	0	1.0000000
GOVLANG	73939	0.0014877	0.0385424	0	1.0000000
PRIVNORM	73939	0.0060726	0.0776903	0	1.0000000
PRIVLANG	73939	0.0030566	0.0552021	0	1.0000000
PRIMLEV	73939	0.1287954	0.3349756	0	1.0000000
PREPLEV	73939	0.0692868	0.2539430	0	1.0000000
SECLEV	73939	0.0552618	0.2284920	0	1.0000000
UNIVLEV	73939	0.0239792	0.1529854	0	1.0000000
BELOWAGE	73939	0.4173170	0.4931195	0	1.0000000
NEVER	73939	0.1699103	0.3755565	0	1.0000000
ENGAGED	73939	0.0045984	0.0676558	0	1.0000000
MARRIED	73939	0.3548871	0.4784823	0	1.0000000
DIVORCED	73939	0.0052070	0.0719719	0	1.0000000
WIDOWED	73939	0.0480802	0.2139371	0	1.0000000
EMPLOYED	73939	0.2882782	0.4529643	0	1.0000000
UNEMPLD	73939	0.0244255	0.1543673	0	1.0000000
OLF	73939	0.5088384	0.4999253	0	1.0000000
OHF	73939	0.1784579	0.3829003	0	1.0000000
WAITING	73939	0.0112660	0.1055427	0	1.0000000
CONTRACT	73939	0.000229919	0.0151614	0	1.0000000
NOJOB	73939	0.0036381	0.0602075	0	1.0000000
GAVEUP	73939	0.000324592	0.0180136	0	1.0000000
HOUSWIFE	73939	0.000906152	0.0300889	0	1.0000000
STUDENT	73939	0.000040574	0.0063697	0	1.0000000
RETIRED	73939	0.000013525	0.0036776	0	1.0000000
UNABLE	73939	0.000256969	0.0160283	0	1.0000000
WAGEMP	73939	0.1695993	0.3752829	0	1.0000000
SELFWITH	73939	0.0450236	0.2073573	0	1.0000000
SELFONLY	73939	0.0365572	0.1876732	0	1.0000000
FAMEMP	73939	0.0370981	0.1890036	0	1.0000000
GENWORK	73939	0.0069517	0.0830870	0	1.0000000
INDLAB	73939	0.0168382	0.1286659	0	1.0000000
CRAFTS	73939	0.0431842	0.2032730	0	1.0000000
AGFISH	73939	0.0929280	0.2903334	0	1.0000000
SVCSRET	73939	0.0279014	0.1646914	0	1.0000000
CLERICAL	73939	0.0182718	0.1339336	0	1.0000000
TECHAID	73939	0.0179472	0.1327605	0	1.0000000
SCITECH	73939	0.0358268	0.1858595	0	1.0000000
PROFLAW	73939	0.0274821	0.1634846	0	1.0000000
DEFENSE	73939	0.0023127	0.0480354	0	1.0000000
OCCUNEC	73939	0	0	0	0
PRIMEXTR	73939	0.0968636	0.2957740	0	1.0000000
PRIMIND	73939	0.0010414	0.0322541	0	1.0000000
SECIND	73939	0.0377473	0.1905858	0	1.0000000
MACHIND	73939	0.0021369	0.0461775	0	1.0000000
CONST	73939	0.0196108	0.1386594	0	1.0000000
RETRADE	73939	0.0334330	0.1797655	0	1.0000000
TRANSP	73939	0.0161349	0.1259952	0	1.0000000
PRIVSVC	73939	0.0060320	0.0774319	0	1.0000000
PUBSVC	73939	0.0766307	0.2660064	0	1.0000000
WORKGOV	73939	0.0747238	0.2629469	0	1.0000000
PUBLIC	73939	0.0219235	0.1464347	0	1.0000000

Variable	N	Mean	Std Dev	Minimum	Maximum
PRIVATE	73939	0.1905625	0.3927474	0	1.0000000
INVESTMT	73939	0.0014336	0.0378362	0	1.0000000
COOP	73939	0.000635659	0.0252044	0	1.0000000
NGO	73939	0.000121722	0.0110322	0	1.0000000
FORJV	73939	0.000243444	0.0156009	0	1.0000000

Variable	N	Mean	Std Dev	Minimum	Maximum
RECTYPE	14805	3.0000000	0	3.0000000	3.0000000
NUMGOV	14804	40.4047555	32.3415626	1.0000000	165.0000000
NUMSV	14805	7.9929753	4.3170993	1.0000000	15.0000000
NUMFR	14805	15.5026005	8.6553744	1.0000000	30.0000000
ROUND	14805	2.5110436	1.1167779	1.0000000	4.0000000
MONTH	14805	6.4816616	3.4472153	1.0000000	12.0000000
GOV	14805	15.5046268	8.6861848	1.0000000	34.0000000
URBRUR	14805	0.4472813	0.4972298	0	1.0000000
KM	14805	8.3632557	6.7279337	1.0000000	36.0000000
SV	14805	112.3552178	127.3174400	10.0000000	790.0000000
PSU	14805	127.8622763	75.6418756	1.0000000	280.0000000
LIVEAWAY	14805	0.0632894	0.2434910	0	1.0000000
AWAYNUM	937	1.0693703	0.2895822	1.0000000	4.0000000
AWAYINC	937	0.7950907	0.4038509	0	1.0000000
CARD	14804	0.8676709	0.3388597	0	1.0000000
ONCARD	12846	4.3375370	2.1218697	1.0000000	20.0000000
TYPE	14805	2.6963188	1.6537776	1.0000000	7.0000000
TENURE	14805	2.6862546	1.0642572	1.0000000	7.0000000
ROOMS	14805	3.7148261	1.4251570	1.0000000	17.0000000
WATSRC	14805	1.2586288	0.6182572	1.0000000	4.0000000
ACCESS	14805	1.5538669	0.8321870	1.0000000	3.0000000
SEWERAGE	14805	0.4877406	0.4998666	0	1.0000000
LIGHTING	14805	1.0341101	0.1859301	1.0000000	4.0000000
COOKFUEL	14805	1.6845660	0.9526383	1.0000000	6.0000000
WALLMATL	14805	1.7009119	1.2295239	1.0000000	9.0000000
AREA	14805	91.0231678	52.3505071	4.0000000	1500.00
CONSTYR	14805	1968.33	17.4653309	1790.00	1996.00
KEYRENT	14805	72.2464708	53.0074628	1.0000000	2500.00
KITCHEN	14805	1.7523134	0.9555344	1.0000000	3.0000000
BATHTOI	14805	1.5612969	0.8620627	1.0000000	3.0000000
SEPBATH	14805	2.9023303	0.4249044	1.0000000	3.0000000
SEPTOI	14805	2.5672408	0.8042843	1.0000000	3.0000000
TOITYPE	14805	1.7307666	0.5309164	1.0000000	3.0000000
GARBAGE	14805	2.4394461	0.7808746	1.0000000	3.0000000
SURROUND	14805	1.0546437	0.2534274	1.0000000	3.0000000
DISTWKM	14769	6.0800325	31.0980993	0	975.0000000
DISTWM	14769	106.1400907	199.1590675	0	950.0000000
DISTMKM	14803	0.9262987	12.7929015	0	700.0000000
DISTMM	14803	203.4571371	199.4392354	0	950.0000000
APT	14805	0.4613982	0.4985245	0	1.0000000
MOREAPT	14805	0.0223573	0.1478477	0	1.0000000
VILLA	14805	0.0017562	0.0418712	0	1.0000000
RURHOUS	14805	0.4189801	0.4934088	0	1.0000000
ROOMSIN	14805	0.0643701	0.2454194	0	1.0000000
INDROOM	14805	0.0308004	0.1727824	0	1.0000000
NONTRAD	14805	0.000337724	0.0183748	0	1.0000000
ORDRENT	14805	0.2333671	0.4229882	0	1.0000000
FURNRENT	14805	0.000540358	0.0232401	0	1.0000000
OWNED	14805	0.6790274	0.4668661	0	1.0000000
BOUGHT	14805	0.0255995	0.1579424	0	1.0000000
GIFT	14805	0.0567376	0.2313483	0	1.0000000
INKIND	14805	0.0044580	0.0666212	0	1.0000000
OTHTEN	14805	0.000270179	0.0164355	0	1.0000000
NETWORK	14805	0.8052009	0.3960593	0	1.0000000

Variable	N	Mean	Std Dev	Minimum	Maximum
PUMP	14805	0.1623776	0.3688093	0	1.0000000
WELL	14805	0.0010132	0.0318153	0	1.0000000
OTHSRC	14805	0.0314083	0.1744244	0	1.0000000
TAPDWEL	14805	0.6688281	0.4706507	0	1.0000000
TAPBLDG	14805	0.1084769	0.3109922	0	1.0000000
TAPNONE	14805	0.2226950	0.4160693	0	1.0000000
ELEC	14805	0.9664303	0.1801250	0	1.0000000
KERO	14805	0.0332996	0.1794237	0	1.0000000
BUTA	14805	0	0	0	0
OTHLGT	14805	0.000270179	0.0164355	0	1.0000000
COOKBUTA	14805	0.6417427	0.4795045	0	1.0000000
COOKGAS	14805	0.0448497	0.2069809	0	1.0000000
COOKKERO	14805	0.3069909	0.4612612	0	1.0000000
COOKELEC	14805	0	0	0	0
COOKWOOD	14805	0.0063492	0.0794312	0	1.0000000
COOKOTH	14805	0.000067545	0.0082186	0	1.0000000
BRICK	14805	0.7390071	0.4391909	0	1.0000000
CONCRETE	14805	0.0276258	0.1639037	0	1.0000000
STONE	14805	0.0290442	0.1679362	0	1.0000000
MUD	14805	0.2031071	0.4023251	0	1.0000000
WOOD	14805	0.000878082	0.0296204	0	1.0000000
ASBES	14805	0.000067545	0.0082186	0	1.0000000
THATCH	14805	0.000067545	0.0082186	0	1.0000000
CLOTH	14805	0	0	0	0
WALLOTH	14805	0.000202634	0.0142340	0	1.0000000
KITPRIV	14805	0.6110098	0.4875376	0	1.0000000
KITSHAR	14805	0.0256670	0.1581452	0	1.0000000
KITNONE	14805	0.3633232	0.4809731	0	1.0000000
BATHPRIV	14805	0.6871327	0.4636765	0	1.0000000
BATHSHAR	14805	0.0644377	0.2455393	0	1.0000000
BATHNONE	14805	0.2484296	0.4321168	0	1.0000000
SEPBPRIV	14805	0.0462006	0.2099264	0	1.0000000
SEPBSHAR	14805	0.0052685	0.0723954	0	1.0000000
SEPBNONE	14805	0.9485309	0.2209600	0	1.0000000
SEPTPRIV	14805	0.2006754	0.4005192	0	1.0000000
SEPTSHAR	14805	0.0314083	0.1744244	0	1.0000000
SEPTNONE	14805	0.7679162	0.4221764	0	1.0000000
WFLUSH	14805	0.3117866	0.4632388	0	1.0000000
NOTFLUSH	14805	0.6456602	0.4783289	0	1.0000000
NOTOI	14805	0.0425532	0.2018543	0	1.0000000
ZABAL	14805	0.1816954	0.3856063	0	1.0000000
GARPUT	14805	0.1971631	0.3978700	0	1.0000000
GAROTH	14805	0.6211415	0.4851192	0	1.0000000
DRY	14805	0.9516380	0.2145373	0	1.0000000
MOIST	14805	0.0420804	0.2007793	0	1.0000000
WET	14805	0.0062817	0.0790103	0	1.0000000
DISTWORK	14769	6.1861726	31.0799555	0	975.0000000
DISTMRKT	14803	1.1297559	12.7810365	0	700.0000000

Variable	N	Mean	Std Dev	Minimum	Maximum
RECTYPE	14805	4.0000000	0	4.0000000	4.0000000
NUMGOV	14804	40.4047555	32.3415626	1.0000000	165.0000000
NUMSV	14805	7.9929753	4.3170993	1.0000000	15.0000000
NUMFR	14805	15.5026005	8.6553744	1.0000000	30.0000000
ROUND	14805	2.5110436	1.1167779	1.0000000	4.0000000
MONTH	14805	6.4816616	3.4472153	1.0000000	12.0000000
GOV	14805	15.5046268	8.6861848	1.0000000	34.0000000
URBRUR	14805	0.4472813	0.4972298	0	1.0000000
KM	14805	8.3632557	6.7279337	1.0000000	36.0000000
SV	14805	112.3552178	127.3174400	10.0000000	790.0000000
PSU	14805	127.8622763	75.6418756	1.0000000	280.0000000
CAR	14805	0.0389733	0.1935379	0	1.0000000
BIKE	14805	0.0829450	0.2758083	0	1.0000000
CYCLE	14805	0.0097264	0.0981453	0	1.0000000
PHONE	14805	0.1662276	0.3722974	0	1.0000000
FRIDGE	14805	0.5908815	0.4916878	0	1.0000000
FREEZER	14805	0.0358663	0.1859629	0	1.0000000
COOKER	14805	0.6754475	0.4682232	0	1.0000000
WASHMACH	14805	0.7895981	0.4076078	0	1.0000000
DISHWASH	14805	0.0082405	0.0904052	0	1.0000000
WATHTR	14805	0.2405268	0.4274179	0	1.0000000
VACUUM	14805	0.0851739	0.2791498	0	1.0000000
AC	14805	0.0157379	0.1244640	0	1.0000000
FAN	14805	0.5797366	0.4936178	0	1.0000000
HEATER	14805	0.0554542	0.2288725	0	1.0000000
IRON	14804	0.5714672	0.4948828	0	1.0000000
COLORTV	14805	0.4345154	0.4957100	0	1.0000000
BWTV	14805	0.4353934	0.4958252	0	1.0000000
VIDEO	14805	0.0701790	0.2554571	0	1.0000000
CASSREC	14805	0.6726781	0.4692517	0	1.0000000
PC	14805	0.0078352	0.0881721	0	1.0000000

OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	.	0	362230	N	362230.00
2	.	.	0	362230	MIN	0.00
3	.	.	0	362230	MAX	76000.00
4	.	.	0	362230	MEAN	272.15
5	.	.	0	362230	STD	455.56
6	.	199	1	14804	N	14804.00
7	.	199	1	14804	MIN	8.40
8	.	199	1	14804	MAX	5541.00
9	.	199	1	14804	MEAN	659.63
10	.	199	1	14804	STD	397.57
11	.	299	1	13705	N	13705.00
12	.	299	1	13705	MIN	2.76
13	.	299	1	13705	MAX	1260.00
14	.	299	1	13705	MEAN	96.22
15	.	299	1	13705	STD	80.81
16	.	399	1	14798	N	14798.00
17	.	399	1	14798	MIN	6.00
18	.	399	1	14798	MAX	2968.80
19	.	399	1	14798	MEAN	350.36
20	.	399	1	14798	STD	211.61
21	.	499	1	14572	N	14572.00
22	.	499	1	14572	MIN	1.80
23	.	499	1	14572	MAX	4064.40
24	.	499	1	14572	MEAN	208.83
25	.	499	1	14572	STD	216.43
26	.	599	1	14719	N	14719.00
27	.	599	1	14719	MIN	9.60
28	.	599	1	14719	MAX	10440.00
29	.	599	1	14719	MEAN	833.43
30	.	599	1	14719	STD	575.75
31	.	699	1	11716	N	11716.00
32	.	699	1	11716	MIN	3.00
33	.	699	1	11716	MAX	2856.00
34	.	699	1	11716	MEAN	219.57
35	.	699	1	11716	STD	210.65
36	.	799	1	13912	N	13912.00
37	.	799	1	13912	MIN	3.60
38	.	799	1	13912	MAX	936.00
39	.	799	1	13912	MEAN	100.59
40	.	799	1	13912	STD	75.21
41	.	899	1	14402	N	14402.00
42	.	899	1	14402	MIN	6.00
43	.	899	1	14402	MAX	2808.00
44	.	899	1	14402	MEAN	269.36
45	.	899	1	14402	STD	264.25
46	.	999	1	14793	N	14793.00
47	.	999	1	14793	MIN	3.60
48	.	999	1	14793	MAX	1824.00
49	.	999	1	14793	MEAN	279.60
50	.	999	1	14793	STD	170.71
51	.	1099	1	14803	N	14803.00
52	.	1099	1	14803	MIN	6.00
53	.	1099	1	14803	MAX	2266.80
54	.	1099	1	14803	MEAN	154.78
55	.	1099	1	14803	STD	120.66

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OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	.	1199	1	14803	N	14803.00
57	.	1199	1	14803	MIN	0.60
58	.	1199	1	14803	MAX	2736.00
59	.	1199	1	14803	MEAN	140.95
60	.	1199	1	14803	STD	140.18
61	.	1299	1	14785	N	14785.00
62	.	1299	1	14785	MIN	4.20
63	.	1299	1	14785	MAX	840.00
64	.	1299	1	14785	MEAN	82.41
65	.	1299	1	14785	STD	53.75
66	.	1399	1	3636	N	3636.00
67	.	1399	1	3636	MIN	4.20
68	.	1399	1	3636	MAX	1800.00
69	.	1399	1	3636	MEAN	83.26
70	.	1399	1	3636	STD	88.02
71	.	1499	1	10	N	10.00
72	.	1499	1	10	MIN	6.00
73	.	1499	1	10	MAX	600.00
74	.	1499	1	10	MEAN	192.00
75	.	1499	1	10	STD	184.33
76	.	1599	1	7573	N	7573.00
77	.	1599	1	7573	MIN	6.00
78	.	1599	1	7573	MAX	4464.00
79	.	1599	1	7573	MEAN	476.53
80	.	1599	1	7573	STD	306.82
81	.	1699	1	14572	N	14572.00
82	.	1699	1	14572	MIN	0.25
83	.	1699	1	14572	MAX	8310.00
84	.	1699	1	14572	MEAN	485.37
85	.	1699	1	14572	STD	477.54
86	.	1799	1	14544	N	14544.00
87	.	1799	1	14544	MIN	0.75
88	.	1799	1	14544	MAX	2810.00
89	.	1799	1	14544	MEAN	119.86
90	.	1799	1	14544	STD	115.54
91	.	1899	1	14805	N	14805.00
92	.	1899	1	14805	MIN	3.00
93	.	1899	1	14805	MAX	11104.00
94	.	1899	1	14805	MEAN	409.43
95	.	1899	1	14805	STD	464.14
96	.	1999	1	14804	N	14804.00
97	.	1999	1	14804	MIN	24.00
98	.	1999	1	14804	MAX	2004.00
99	.	1999	1	14804	MEAN	247.85
100	.	1999	1	14804	STD	126.55
101	.	2099	1	10776	N	10776.00
102	.	2099	1	10776	MIN	0.00
103	.	2099	1	10776	MAX	13000.00
104	.	2099	1	10776	MEAN	164.61
105	.	2099	1	10776	STD	465.14
106	.	2199	1	14802	N	14802.00
107	.	2199	1	14802	MIN	4.20
108	.	2199	1	14802	MAX	2184.00
109	.	2199	1	14802	MEAN	149.84
110	.	2199	1	14802	STD	117.54

OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
111	.	2299	1	1308	N	1308.00
112	.	2299	1	1308	MIN	0.50
113	.	2299	1	1308	MAX	3360.00
114	.	2299	1	1308	MEAN	112.37
115	.	2299	1	1308	STD	175.46
116	.	2399	1	348	N	348.00
117	.	2399	1	348	MIN	24.00
118	.	2399	1	348	MAX	7200.00
119	.	2399	1	348	MEAN	683.21
120	.	2399	1	348	STD	783.17
121	.	2499	1	14219	N	14219.00
122	.	2499	1	14219	MIN	1.00
123	.	2499	1	14219	MAX	25460.00
124	.	2499	1	14219	MEAN	258.58
125	.	2499	1	14219	STD	466.60
126	.	2599	1	132	N	132.00
127	.	2599	1	132	MIN	15.00
128	.	2599	1	132	MAX	76000.00
129	.	2599	1	132	MEAN	4136.60
130	.	2599	1	132	STD	9087.36
131	.	2699	1	1283	N	1283.00
132	.	2699	1	1283	MIN	2.00
133	.	2699	1	1283	MAX	13830.00
134	.	2699	1	1283	MEAN	949.49
135	.	2699	1	1283	STD	1385.61
136	.	2799	1	12195	N	12195.00
137	.	2799	1	12195	MIN	3.60
138	.	2799	1	12195	MAX	14000.00
139	.	2799	1	12195	MEAN	182.43
140	.	2799	1	12195	STD	273.26
141	.	2899	1	3674	N	3674.00
142	.	2899	1	3674	MIN	1.00
143	.	2899	1	3674	MAX	3000.00
144	.	2899	1	3674	MEAN	141.61
145	.	2899	1	3674	STD	206.09
146	.	2999	1	8886	N	8886.00
147	.	2999	1	8886	MIN	12.00
148	.	2999	1	8886	MAX	18797.00
149	.	2999	1	8886	MEAN	431.01
150	.	2999	1	8886	STD	640.19
151	.	3099	1	1684	N	1684.00
152	.	3099	1	1684	MIN	1.00
153	.	3099	1	1684	MAX	7060.00
154	.	3099	1	1684	MEAN	136.34
155	.	3099	1	1684	STD	350.33
156	.	3199	1	9692	N	9692.00
157	.	3199	1	9692	MIN	2.00
158	.	3199	1	9692	MAX	9784.00
159	.	3199	1	9692	MEAN	331.12
160	.	3199	1	9692	STD	483.35
161	.	3299	1	4143	N	4143.00
162	.	3299	1	4143	MIN	5.40
163	.	3299	1	4143	MAX	6156.00
164	.	3299	1	4143	MEAN	276.38
165	.	3299	1	4143	STD	342.62

OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
166	.	3399	1	7455	N	7455.00
167	.	3399	1	7455	MIN	0.35
168	.	3399	1	7455	MAX	7340.00
169	.	3399	1	7455	MEAN	91.61
170	.	3399	1	7455	STD	243.59
171	.	3499	1	14746	N	14746.00
172	.	3499	1	14746	MIN	0.50
173	.	3499	1	14746	MAX	2905.00
174	.	3499	1	14746	MEAN	159.98
175	.	3499	1	14746	STD	168.63
176	.	3599	1	3047	N	3047.00
177	.	3599	1	3047	MIN	0.50
178	.	3599	1	3047	MAX	30000.00
179	.	3599	1	3047	MEAN	234.90
180	.	3599	1	3047	STD	1086.51
181	.	3699	1	11614	N	11614.00
182	.	3699	1	11614	MIN	2.00
183	.	3699	1	11614	MAX	53950.00
184	.	3699	1	11614	MEAN	173.57
185	.	3699	1	11614	STD	918.75
186	.	3799	1	470	N	470.00
187	.	3799	1	470	MIN	6.00
188	.	3799	1	470	MAX	13000.00
189	.	3799	1	470	MEAN	442.72
190	.	3799	1	470	STD	1087.13
191	1	.	2	175458	N	175458.00
192	1	.	2	175458	MIN	0.60
193	1	.	2	175458	MAX	10440.00
194	1	.	2	175458	MEAN	281.93
195	1	.	2	175458	STD	339.69
196	2	.	2	7573	N	7573.00
197	2	.	2	7573	MIN	6.00
198	2	.	2	7573	MAX	4464.00
199	2	.	2	7573	MEAN	476.53
200	2	.	2	7573	STD	306.82
201	3	.	2	29116	N	29116.00
202	3	.	2	29116	MIN	0.25
203	3	.	2	29116	MAX	8310.00
204	3	.	2	29116	MEAN	302.80
205	3	.	2	29116	STD	392.68
206	4	.	2	29609	N	29609.00
207	4	.	2	29609	MIN	3.00
208	4	.	2	29609	MAX	11104.00
209	4	.	2	29609	MEAN	328.65
210	4	.	2	29609	STD	349.64
211	5	.	2	27234	N	27234.00
212	5	.	2	27234	MIN	0.00
213	5	.	2	27234	MAX	13000.00
214	5	.	2	27234	MEAN	160.70
215	5	.	2	27234	STD	325.69
216	6	.	2	14219	N	14219.00
217	6	.	2	14219	MIN	1.00
218	6	.	2	14219	MAX	25460.00
219	6	.	2	14219	MEAN	258.58
220	6	.	2	14219	STD	466.60

OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
221	7	.	2	17284	N	17284.00
222	7	.	2	17284	MIN	1.00
223	7	.	2	17284	MAX	76000.00
224	7	.	2	17284	MEAN	260.89
225	7	.	2	17284	STD	993.65
226	8	.	2	8886	N	8886.00
227	8	.	2	8886	MIN	12.00
228	8	.	2	8886	MAX	18797.00
229	8	.	2	8886	MEAN	431.01
230	8	.	2	8886	STD	640.19
231	9	.	2	11376	N	11376.00
232	9	.	2	11376	MIN	1.00
233	9	.	2	11376	MAX	9784.00
234	9	.	2	11376	MEAN	302.29
235	9	.	2	11376	STD	471.15
236	10	.	2	4143	N	4143.00
237	10	.	2	4143	MIN	5.40
238	10	.	2	4143	MAX	6156.00
239	10	.	2	4143	MEAN	276.38
240	10	.	2	4143	STD	342.62
241	11	.	2	25248	N	25248.00
242	11	.	2	25248	MIN	0.35
243	11	.	2	25248	MAX	30000.00
244	11	.	2	25248	MEAN	148.83
245	11	.	2	25248	STD	422.48
246	12	.	2	11614	N	11614.00
247	12	.	2	11614	MIN	2.00
248	12	.	2	11614	MAX	53950.00
249	12	.	2	11614	MEAN	173.57
250	12	.	2	11614	STD	918.75
251	13	.	2	470	N	470.00
252	13	.	2	470	MIN	6.00
253	13	.	2	470	MAX	13000.00
254	13	.	2	470	MEAN	442.72
255	13	.	2	470	STD	1087.13
256	1	199	3	14804	N	14804.00
257	1	199	3	14804	MIN	8.40
258	1	199	3	14804	MAX	5541.00
259	1	199	3	14804	MEAN	659.63
260	1	199	3	14804	STD	397.57
261	1	299	3	13705	N	13705.00
262	1	299	3	13705	MIN	2.76
263	1	299	3	13705	MAX	1260.00
264	1	299	3	13705	MEAN	96.22
265	1	299	3	13705	STD	80.81
266	1	399	3	14798	N	14798.00
267	1	399	3	14798	MIN	6.00
268	1	399	3	14798	MAX	2968.80
269	1	399	3	14798	MEAN	350.36
270	1	399	3	14798	STD	211.61
271	1	499	3	14572	N	14572.00
272	1	499	3	14572	MIN	1.80
273	1	499	3	14572	MAX	4064.40
274	1	499	3	14572	MEAN	208.83
275	1	499	3	14572	STD	216.43

OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
276	1	599	3	14719	N	14719.00
277	1	599	3	14719	MIN	9.60
278	1	599	3	14719	MAX	10440.00
279	1	599	3	14719	MEAN	833.43
280	1	599	3	14719	STD	575.75
281	1	699	3	11716	N	11716.00
282	1	699	3	11716	MIN	3.00
283	1	699	3	11716	MAX	2856.00
284	1	699	3	11716	MEAN	219.57
285	1	699	3	11716	STD	210.65
286	1	799	3	13912	N	13912.00
287	1	799	3	13912	MIN	3.60
288	1	799	3	13912	MAX	936.00
289	1	799	3	13912	MEAN	100.59
290	1	799	3	13912	STD	75.21
291	1	899	3	14402	N	14402.00
292	1	899	3	14402	MIN	6.00
293	1	899	3	14402	MAX	2808.00
294	1	899	3	14402	MEAN	269.36
295	1	899	3	14402	STD	264.25
296	1	999	3	14793	N	14793.00
297	1	999	3	14793	MIN	3.60
298	1	999	3	14793	MAX	1824.00
299	1	999	3	14793	MEAN	279.60
300	1	999	3	14793	STD	170.71
301	1	1099	3	14803	N	14803.00
302	1	1099	3	14803	MIN	6.00
303	1	1099	3	14803	MAX	2266.80
304	1	1099	3	14803	MEAN	154.78
305	1	1099	3	14803	STD	120.66
306	1	1199	3	14803	N	14803.00
307	1	1199	3	14803	MIN	0.60
308	1	1199	3	14803	MAX	2736.00
309	1	1199	3	14803	MEAN	140.95
310	1	1199	3	14803	STD	140.18
311	1	1299	3	14785	N	14785.00
312	1	1299	3	14785	MIN	4.20
313	1	1299	3	14785	MAX	840.00
314	1	1299	3	14785	MEAN	82.41
315	1	1299	3	14785	STD	53.75
316	1	1399	3	3636	N	3636.00
317	1	1399	3	3636	MIN	4.20
318	1	1399	3	3636	MAX	1800.00
319	1	1399	3	3636	MEAN	83.26
320	1	1399	3	3636	STD	88.02
321	1	1499	3	10	N	10.00
322	1	1499	3	10	MIN	6.00
323	1	1499	3	10	MAX	600.00
324	1	1499	3	10	MEAN	192.00
325	1	1499	3	10	STD	184.33
326	2	1599	3	7573	N	7573.00
327	2	1599	3	7573	MIN	6.00
328	2	1599	3	7573	MAX	4464.00
329	2	1599	3	7573	MEAN	476.53
330	2	1599	3	7573	STD	306.82

OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
331	3	1699	3	14572	N	14572.00
332	3	1699	3	14572	MIN	0.25
333	3	1699	3	14572	MAX	8310.00
334	3	1699	3	14572	MEAN	485.37
335	3	1699	3	14572	STD	477.54
336	3	1799	3	14544	N	14544.00
337	3	1799	3	14544	MIN	0.75
338	3	1799	3	14544	MAX	2810.00
339	3	1799	3	14544	MEAN	119.86
340	3	1799	3	14544	STD	115.54
341	4	1899	3	14805	N	14805.00
342	4	1899	3	14805	MIN	3.00
343	4	1899	3	14805	MAX	11104.00
344	4	1899	3	14805	MEAN	409.43
345	4	1899	3	14805	STD	464.14
346	4	1999	3	14804	N	14804.00
347	4	1999	3	14804	MIN	24.00
348	4	1999	3	14804	MAX	2004.00
349	4	1999	3	14804	MEAN	247.85
350	4	1999	3	14804	STD	126.55
351	5	2099	3	10776	N	10776.00
352	5	2099	3	10776	MIN	0.00
353	5	2099	3	10776	MAX	13000.00
354	5	2099	3	10776	MEAN	164.61
355	5	2099	3	10776	STD	465.14
356	5	2199	3	14802	N	14802.00
357	5	2199	3	14802	MIN	4.20
358	5	2199	3	14802	MAX	2184.00
359	5	2199	3	14802	MEAN	149.84
360	5	2199	3	14802	STD	117.54
361	5	2299	3	1308	N	1308.00
362	5	2299	3	1308	MIN	0.50
363	5	2299	3	1308	MAX	3360.00
364	5	2299	3	1308	MEAN	112.37
365	5	2299	3	1308	STD	175.46
366	5	2399	3	348	N	348.00
367	5	2399	3	348	MIN	24.00
368	5	2399	3	348	MAX	7200.00
369	5	2399	3	348	MEAN	683.21
370	5	2399	3	348	STD	783.17
371	6	2499	3	14219	N	14219.00
372	6	2499	3	14219	MIN	1.00
373	6	2499	3	14219	MAX	25460.00
374	6	2499	3	14219	MEAN	258.58
375	6	2499	3	14219	STD	466.60
376	7	2599	3	132	N	132.00
377	7	2599	3	132	MIN	15.00
378	7	2599	3	132	MAX	76000.00
379	7	2599	3	132	MEAN	4136.60
380	7	2599	3	132	STD	9087.36
381	7	2699	3	1283	N	1283.00
382	7	2699	3	1283	MIN	2.00
383	7	2699	3	1283	MAX	13830.00
384	7	2699	3	1283	MEAN	949.49
385	7	2699	3	1283	STD	1385.61

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OBS	MAINCODE	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
386	7	2799	3	12195	N	12195.00
387	7	2799	3	12195	MIN	3.60
388	7	2799	3	12195	MAX	14000.00
389	7	2799	3	12195	MEAN	182.43
390	7	2799	3	12195	STD	273.26
391	7	2899	3	3674	N	3674.00
392	7	2899	3	3674	MIN	1.00
393	7	2899	3	3674	MAX	3000.00
394	7	2899	3	3674	MEAN	141.61
395	7	2899	3	3674	STD	206.09
396	8	2999	3	8886	N	8886.00
397	8	2999	3	8886	MIN	12.00
398	8	2999	3	8886	MAX	18797.00
399	8	2999	3	8886	MEAN	431.01
400	8	2999	3	8886	STD	640.19
401	9	3099	3	1684	N	1684.00
402	9	3099	3	1684	MIN	1.00
403	9	3099	3	1684	MAX	7060.00
404	9	3099	3	1684	MEAN	136.34
405	9	3099	3	1684	STD	350.33
406	9	3199	3	9692	N	9692.00
407	9	3199	3	9692	MIN	2.00
408	9	3199	3	9692	MAX	9784.00
409	9	3199	3	9692	MEAN	331.12
410	9	3199	3	9692	STD	483.35
411	10	3299	3	4143	N	4143.00
412	10	3299	3	4143	MIN	5.40
413	10	3299	3	4143	MAX	6156.00
414	10	3299	3	4143	MEAN	276.38
415	10	3299	3	4143	STD	342.62
416	11	3399	3	7455	N	7455.00
417	11	3399	3	7455	MIN	0.35
418	11	3399	3	7455	MAX	7340.00
419	11	3399	3	7455	MEAN	91.61
420	11	3399	3	7455	STD	243.59
421	11	3499	3	14746	N	14746.00
422	11	3499	3	14746	MIN	0.50
423	11	3499	3	14746	MAX	2905.00
424	11	3499	3	14746	MEAN	159.98
425	11	3499	3	14746	STD	168.63
426	11	3599	3	3047	N	3047.00
427	11	3599	3	3047	MIN	0.50
428	11	3599	3	3047	MAX	30000.00
429	11	3599	3	3047	MEAN	234.90
430	11	3599	3	3047	STD	1086.51
431	12	3699	3	11614	N	11614.00
432	12	3699	3	11614	MIN	2.00
433	12	3699	3	11614	MAX	53950.00
434	12	3699	3	11614	MEAN	173.57
435	12	3699	3	11614	STD	918.75
436	13	3799	3	470	N	470.00
437	13	3799	3	470	MIN	6.00
438	13	3799	3	470	MAX	13000.00
439	13	3799	3	470	MEAN	442.72
440	13	3799	3	470	STD	1087.13

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	805729	N	805729.00
2	.	0	805729	MIN	0.00
3	.	0	805729	MAX	21600.00
4	.	0	805729	MEAN	144.44
5	.	0	805729	STD	234.46
6	101	1	2027	N	2027.00
7	101	1	2027	MIN	22.80
8	101	1	2027	MAX	3240.00
9	101	1	2027	MEAN	338.58
10	101	1	2027	STD	258.01
11	102	1	1521	N	1521.00
12	102	1	1521	MIN	3.60
13	102	1	1521	MAX	1999.20
14	102	1	1521	MEAN	235.20
15	102	1	1521	STD	177.97
16	103	1	1633	N	1633.00
17	103	1	1633	MIN	7.20
18	103	1	1633	MAX	1843.20
19	103	1	1633	MEAN	181.49
20	103	1	1633	STD	155.82
21	104	1	1564	N	1564.00
22	104	1	1564	MIN	7.20
23	104	1	1564	MAX	1344.00
24	104	1	1564	MEAN	136.12
25	104	1	1564	STD	130.08
26	105	1	55	N	55.00
27	105	1	55	MIN	93.60
28	105	1	55	MAX	714.00
29	105	1	55	MEAN	264.84
30	105	1	55	STD	144.64
31	106	1	65	N	65.00
32	106	1	65	MIN	2.40
33	106	1	65	MAX	600.00
34	106	1	65	MEAN	138.18
35	106	1	65	STD	140.22
36	107	1	8730	N	8730.00
37	107	1	8730	MIN	1.44
38	107	1	8730	MAX	2400.00
39	107	1	8730	MEAN	183.51
40	107	1	8730	STD	224.18
41	108	1	322	N	322.00
42	108	1	322	MIN	5.40
43	108	1	322	MAX	1008.00
44	108	1	322	MEAN	39.61
45	108	1	322	STD	77.91
46	109	1	1204	N	1204.00
47	109	1	1204	MIN	1.20
48	109	1	1204	MAX	144.00
49	109	1	1204	MEAN	17.73
50	109	1	1204	STD	14.80
51	110	1	1379	N	1379.00
52	110	1	1379	MIN	8.40
53	110	1	1379	MAX	2880.00
54	110	1	1379	MEAN	409.22
55	110	1	1379	STD	298.76

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	111	1	13116	N	13116.00
57	111	1	13116	MIN	6.00
58	111	1	13116	MAX	1512.00
59	111	1	13116	MEAN	158.97
60	111	1	13116	STD	152.29
61	112	1	11464	N	11464.00
62	112	1	11464	MIN	3.00
63	112	1	11464	MAX	960.00
64	112	1	11464	MEAN	59.65
65	112	1	11464	STD	43.62
66	113	1	2297	N	2297.00
67	113	1	2297	MIN	2.04
68	113	1	2297	MAX	450.00
69	113	1	2297	MEAN	58.88
70	113	1	2297	STD	44.57
71	114	1	809	N	809.00
72	114	1	809	MIN	2.52
73	114	1	809	MAX	240.00
74	114	1	809	MEAN	42.45
75	114	1	809	STD	29.79
76	115	1	781	N	781.00
77	115	1	781	MIN	2.40
78	115	1	781	MAX	402.00
79	115	1	781	MEAN	22.01
80	115	1	781	STD	28.00
81	116	1	10041	N	10041.00
82	116	1	10041	MIN	1.20
83	116	1	10041	MAX	1902.00
84	116	1	10041	MEAN	202.34
85	116	1	10041	STD	159.73
86	117	1	1401	N	1401.00
87	117	1	1401	MIN	6.00
88	117	1	1401	MAX	1020.00
89	117	1	1401	MEAN	155.28
90	117	1	1401	STD	119.82
91	118	1	2514	N	2514.00
92	118	1	2514	MIN	2.40
93	118	1	2514	MAX	930.00
94	118	1	2514	MEAN	133.33
95	118	1	2514	STD	115.75
96	119	1	811	N	811.00
97	119	1	811	MIN	3.60
98	119	1	811	MAX	720.00
99	119	1	811	MEAN	76.15
100	119	1	811	STD	75.73
101	120	1	77	N	77.00
102	120	1	77	MIN	12.00
103	120	1	77	MAX	720.00
104	120	1	77	MEAN	113.07
105	120	1	77	STD	114.67
106	121	1	174	N	174.00
107	121	1	174	MIN	15.00
108	121	1	174	MAX	1571.40
109	121	1	174	MEAN	302.69
110	121	1	174	STD	212.85

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
111	122	1	46	N	46.00
112	122	1	46	MIN	36.00
113	122	1	46	MAX	720.00
114	122	1	46	MEAN	304.17
115	122	1	46	STD	137.54
116	123	1	172	N	172.00
117	123	1	172	MIN	12.00
118	123	1	172	MAX	1200.00
119	123	1	172	MEAN	268.84
120	123	1	172	STD	225.57
121	124	1	1326	N	1326.00
122	124	1	1326	MIN	2.40
123	124	1	1326	MAX	540.00
124	124	1	1326	MEAN	51.09
125	124	1	1326	STD	55.49
126	125	1	4102	N	4102.00
127	125	1	4102	MIN	1.20
128	125	1	4102	MAX	504.00
129	125	1	4102	MEAN	47.90
130	125	1	4102	STD	46.88
131	199	1	14804	N	14804.00
132	199	1	14804	MIN	8.40
133	199	1	14804	MAX	5541.00
134	199	1	14804	MEAN	659.63
135	199	1	14804	STD	397.57
136	201	1	406	N	406.00
137	201	1	406	MIN	9.00
138	201	1	406	MAX	540.00
139	201	1	406	MEAN	72.96
140	201	1	406	STD	58.40
141	202	1	4764	N	4764.00
142	202	1	4764	MIN	4.20
143	202	1	4764	MAX	540.00
144	202	1	4764	MEAN	50.03
145	202	1	4764	STD	37.46
146	203	1	6077	N	6077.00
147	203	1	6077	MIN	4.20
148	203	1	6077	MAX	180.00
149	203	1	6077	MEAN	27.73
150	203	1	6077	STD	19.71
151	204	1	48	N	48.00
152	204	1	48	MIN	3.60
153	204	1	48	MAX	84.00
154	204	1	48	MEAN	29.60
155	204	1	48	STD	20.08
156	205	1	2986	N	2986.00
157	205	1	2986	MIN	3.60
158	205	1	2986	MAX	720.00
159	205	1	2986	MEAN	25.41
160	205	1	2986	STD	23.46
161	206	1	11192	N	11192.00
162	206	1	11192	MIN	2.76
163	206	1	11192	MAX	543.00
164	206	1	11192	MEAN	39.92
165	206	1	11192	STD	29.24

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
166	207	1	3460	N	3460.00
167	207	1	3460	MIN	4.80
168	207	1	3460	MAX	336.00
169	207	1	3460	MEAN	39.13
170	207	1	3460	STD	29.39
171	208	1	4811	N	4811.00
172	208	1	4811	MIN	4.20
173	208	1	4811	MAX	264.00
174	208	1	4811	MEAN	31.79
175	208	1	4811	STD	25.08
176	209	1	146	N	146.00
177	209	1	146	MIN	6.00
178	209	1	146	MAX	228.00
179	209	1	146	MEAN	39.68
180	209	1	146	STD	35.05
181	210	1	1186	N	1186.00
182	210	1	1186	MIN	3.00
183	210	1	1186	MAX	162.00
184	210	1	1186	MEAN	26.48
185	210	1	1186	STD	18.96
186	211	1	1167	N	1167.00
187	211	1	1167	MIN	2.40
188	211	1	1167	MAX	780.00
189	211	1	1167	MEAN	27.87
190	211	1	1167	STD	28.09
191	299	1	13705	N	13705.00
192	299	1	13705	MIN	2.76
193	299	1	13705	MAX	1260.00
194	299	1	13705	MEAN	96.22
195	299	1	13705	STD	80.81
196	301	1	122	N	122.00
197	301	1	122	MIN	6.00
198	301	1	122	MAX	576.00
199	301	1	122	MEAN	126.37
200	301	1	122	STD	99.54
201	302	1	14619	N	14619.00
202	302	1	14619	MIN	3.60
203	302	1	14619	MAX	900.00
204	302	1	14619	MEAN	102.35
205	302	1	14619	STD	78.62
206	303	1	164	N	164.00
207	303	1	164	MIN	6.00
208	303	1	164	MAX	480.00
209	303	1	164	MEAN	86.76
210	303	1	164	STD	77.94
211	304	1	13628	N	13628.00
212	304	1	13628	MIN	2.40
213	304	1	13628	MAX	720.00
214	304	1	13628	MEAN	56.02
215	304	1	13628	STD	43.44
216	305	1	31	N	31.00
217	305	1	31	MIN	9.00
218	305	1	31	MAX	144.00
219	305	1	31	MEAN	39.99
220	305	1	31	STD	29.99

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
221	306	1	1954	N	1954.00
222	306	1	1954	MIN	2.40
223	306	1	1954	MAX	336.00
224	306	1	1954	MEAN	28.65
225	306	1	1954	STD	21.08
226	307	1	933	N	933.00
227	307	1	933	MIN	3.00
228	307	1	933	MAX	216.00
229	307	1	933	MEAN	24.43
230	307	1	933	STD	20.49
231	308	1	13642	N	13642.00
232	308	1	13642	MIN	0.60
233	308	1	13642	MAX	336.00
234	308	1	13642	MEAN	19.24
235	308	1	13642	STD	14.89
236	309	1	853	N	853.00
237	309	1	853	MIN	1.20
238	309	1	853	MAX	360.00
239	309	1	853	MEAN	15.19
240	309	1	853	STD	21.58
241	310	1	13271	N	13271.00
242	310	1	13271	MIN	0.60
243	310	1	13271	MAX	600.00
244	310	1	13271	MEAN	11.40
245	310	1	13271	STD	12.10
246	311	1	186	N	186.00
247	311	1	186	MIN	2.40
248	311	1	186	MAX	192.00
249	311	1	186	MEAN	38.95
250	311	1	186	STD	28.76
251	312	1	9667	N	9667.00
252	312	1	9667	MIN	1.20
253	312	1	9667	MAX	362.40
254	312	1	9667	MEAN	28.45
255	312	1	9667	STD	21.83
256	313	1	112	N	112.00
257	313	1	112	MIN	3.60
258	313	1	112	MAX	120.00
259	313	1	112	MEAN	35.76
260	313	1	112	STD	22.15
261	314	1	8630	N	8630.00
262	314	1	8630	MIN	1.80
263	314	1	8630	MAX	288.00
264	314	1	8630	MEAN	26.10
265	314	1	8630	STD	19.60
266	315	1	256	N	256.00
267	315	1	256	MIN	4.80
268	315	1	256	MAX	300.00
269	315	1	256	MEAN	48.86
270	315	1	256	STD	37.83
271	316	1	4743	N	4743.00
272	316	1	4743	MIN	3.00
273	316	1	4743	MAX	396.00
274	316	1	4743	MEAN	33.97
275	316	1	4743	STD	24.06

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
276	317	1	419	N	419.00
277	317	1	419	MIN	2.40
278	317	1	419	MAX	102.00
279	317	1	419	MEAN	19.12
280	317	1	419	STD	12.70
281	318	1	6845	N	6845.00
282	318	1	6845	MIN	1.20
283	318	1	6845	MAX	270.00
284	318	1	6845	MEAN	18.65
285	318	1	6845	STD	15.90
286	319	1	156	N	156.00
287	319	1	156	MIN	1.80
288	319	1	156	MAX	186.00
289	319	1	156	MEAN	32.86
290	319	1	156	STD	28.51
291	320	1	6725	N	6725.00
292	320	1	6725	MIN	1.20
293	320	1	6725	MAX	264.00
294	320	1	6725	MEAN	22.47
295	320	1	6725	STD	19.64
296	321	1	43	N	43.00
297	321	1	43	MIN	4.80
298	321	1	43	MAX	216.00
299	321	1	43	MEAN	43.93
300	321	1	43	STD	40.02
301	322	1	4757	N	4757.00
302	322	1	4757	MIN	2.40
303	322	1	4757	MAX	336.00
304	322	1	4757	MEAN	23.52
305	322	1	4757	STD	17.98
306	323	1	23	N	23.00
307	323	1	23	MIN	9.00
308	323	1	23	MAX	360.00
309	323	1	23	MEAN	56.50
310	323	1	23	STD	76.33
311	324	1	471	N	471.00
312	324	1	471	MIN	3.60
313	324	1	471	MAX	336.00
314	324	1	471	MEAN	31.76
315	324	1	471	STD	28.84
316	325	1	93	N	93.00
317	325	1	93	MIN	4.20
318	325	1	93	MAX	230.40
319	325	1	93	MEAN	36.53
320	325	1	93	STD	35.30
321	326	1	4166	N	4166.00
322	326	1	4166	MIN	3.00
323	326	1	4166	MAX	294.00
324	326	1	4166	MEAN	30.18
325	326	1	4166	STD	23.54
326	327	1	192	N	192.00
327	327	1	192	MIN	7.20
328	327	1	192	MAX	360.00
329	327	1	192	MEAN	51.15
330	327	1	192	STD	46.78

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
331	328	1	5354	N	5354.00
332	328	1	5354	MIN	3.00
333	328	1	5354	MAX	480.00
334	328	1	5354	MEAN	42.79
335	328	1	5354	STD	39.40
336	329	1	39	N	39.00
337	329	1	39	MIN	12.00
338	329	1	39	MAX	178.80
339	329	1	39	MEAN	43.22
340	329	1	39	STD	32.59
341	330	1	2474	N	2474.00
342	330	1	2474	MIN	2.40
343	330	1	2474	MAX	151.20
344	330	1	2474	MEAN	28.04
345	330	1	2474	STD	19.52
346	331	1	193	N	193.00
347	331	1	193	MIN	6.00
348	331	1	193	MAX	162.00
349	331	1	193	MEAN	41.49
350	331	1	193	STD	25.59
351	332	1	5933	N	5933.00
352	332	1	5933	MIN	3.00
353	332	1	5933	MAX	240.00
354	332	1	5933	MEAN	36.31
355	332	1	5933	STD	24.29
356	333	1	113	N	113.00
357	333	1	113	MIN	3.60
358	333	1	113	MAX	120.00
359	333	1	113	MEAN	18.17
360	333	1	113	STD	15.21
361	334	1	1856	N	1856.00
362	334	1	1856	MIN	1.20
363	334	1	1856	MAX	120.00
364	334	1	1856	MEAN	13.33
365	334	1	1856	STD	10.23
366	335	1	53	N	53.00
367	335	1	53	MIN	6.00
368	335	1	53	MAX	60.00
369	335	1	53	MEAN	17.66
370	335	1	53	STD	11.98
371	336	1	3865	N	3865.00
372	336	1	3865	MIN	1.20
373	336	1	3865	MAX	720.00
374	336	1	3865	MEAN	18.07
375	336	1	3865	STD	18.56
376	337	1	31	N	31.00
377	337	1	31	MIN	8.40
378	337	1	31	MAX	63.00
379	337	1	31	MEAN	25.45
380	337	1	31	STD	15.26
381	338	1	4484	N	4484.00
382	338	1	4484	MIN	2.40
383	338	1	4484	MAX	384.00
384	338	1	4484	MEAN	22.69
385	338	1	4484	STD	17.87

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
386	339	1	1	N	1.00
387	339	1	1	MIN	6.00
388	339	1	1	MAX	6.00
389	339	1	1	MEAN	6.00
390	339	1	1	STD	.
391	340	1	175	N	175.00
392	340	1	175	MIN	3.60
393	340	1	175	MAX	108.00
394	340	1	175	MEAN	21.93
395	340	1	175	STD	15.30
396	341	1	136	N	136.00
397	341	1	136	MIN	3.00
398	341	1	136	MAX	648.00
399	341	1	136	MEAN	49.65
400	341	1	136	STD	62.25
401	342	1	1252	N	1252.00
402	342	1	1252	MIN	2.40
403	342	1	1252	MAX	360.00
404	342	1	1252	MEAN	28.24
405	342	1	1252	STD	22.32
406	343	1	3	N	3.00
407	343	1	3	MIN	24.00
408	343	1	3	MAX	145.20
409	343	1	3	MEAN	68.40
410	343	1	3	STD	66.78
411	344	1	12	N	12.00
412	344	1	12	MIN	12.00
413	344	1	12	MAX	102.00
414	344	1	12	MEAN	34.70
415	344	1	12	STD	31.62
416	345	1	17	N	17.00
417	345	1	17	MIN	6.00
418	345	1	17	MAX	144.00
419	345	1	17	MEAN	37.45
420	345	1	17	STD	36.60
421	346	1	4033	N	4033.00
422	346	1	4033	MIN	1.20
423	346	1	4033	MAX	514.80
424	346	1	4033	MEAN	11.59
425	346	1	4033	STD	14.18
426	347	1	47	N	47.00
427	347	1	47	MIN	3.00
428	347	1	47	MAX	60.00
429	347	1	47	MEAN	15.00
430	347	1	47	STD	10.91
431	348	1	546	N	546.00
432	348	1	546	MIN	1.80
433	348	1	546	MAX	51.60
434	348	1	546	MEAN	10.28
435	348	1	546	STD	7.17
436	349	1	511	N	511.00
437	349	1	511	MIN	1.80
438	349	1	511	MAX	360.00
439	349	1	511	MEAN	26.57
440	349	1	511	STD	30.38

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
441	350	1	11603	N	11603.00
442	350	1	11603	MIN	0.60
443	350	1	11603	MAX	360.00
444	350	1	11603	MEAN	18.64
445	350	1	11603	STD	16.56
446	359	1	14782	N	14782.00
447	359	1	14782	MIN	0.00
448	359	1	14782	MAX	2618.40
449	359	1	14782	MEAN	344.31
450	359	1	14782	STD	208.47
451	360	1	162	N	162.00
452	360	1	162	MIN	12.00
453	360	1	162	MAX	216.00
454	360	1	162	MEAN	38.96
455	360	1	162	STD	27.38
456	361	1	70	N	70.00
457	361	1	70	MIN	6.00
458	361	1	70	MAX	97.20
459	361	1	70	MEAN	30.30
460	361	1	70	STD	19.42
461	362	1	43	N	43.00
462	362	1	43	MIN	6.00
463	362	1	43	MAX	172.80
464	362	1	43	MEAN	34.03
465	362	1	43	STD	26.23
466	363	1	13	N	13.00
467	363	1	13	MIN	9.00
468	363	1	13	MAX	108.00
469	363	1	13	MEAN	39.92
470	363	1	13	STD	23.22
471	364	1	262	N	262.00
472	364	1	262	MIN	3.60
473	364	1	262	MAX	81.00
474	364	1	262	MEAN	21.96
475	364	1	262	STD	14.47
476	365	1	8	N	8.00
477	365	1	8	MIN	6.00
478	365	1	8	MAX	90.00
479	365	1	8	MEAN	42.15
480	365	1	8	STD	28.95
481	366	1	476	N	476.00
482	366	1	476	MIN	3.60
483	366	1	476	MAX	358.20
484	366	1	476	MEAN	35.22
485	366	1	476	STD	34.65
486	367	1	530	N	530.00
487	367	1	530	MIN	3.60
488	367	1	530	MAX	525.00
489	367	1	530	MEAN	39.05
490	367	1	530	STD	40.19
491	368	1	60	N	60.00
492	368	1	60	MIN	12.00
493	368	1	60	MAX	216.00
494	368	1	60	MEAN	53.80
495	368	1	60	STD	43.59

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
496	369	1	4	N	4.00
497	369	1	4	MIN	12.00
498	369	1	4	MAX	192.00
499	369	1	4	MEAN	62.25
500	369	1	4	STD	86.65
501	370	1	535	N	535.00
502	370	1	535	MIN	3.60
503	370	1	535	MAX	525.00
504	370	1	535	MEAN	41.00
505	370	1	535	STD	42.61
506	371	1	272	N	272.00
507	371	1	272	MIN	1.80
508	371	1	272	MAX	96.00
509	371	1	272	MEAN	30.16
510	371	1	272	STD	18.85
511	372	1	2797	N	2797.00
512	372	1	2797	MIN	1.20
513	372	1	2797	MAX	120.00
514	372	1	2797	MEAN	14.22
515	372	1	2797	STD	11.32
516	373	1	2917	N	2917.00
517	373	1	2917	MIN	1.20
518	373	1	2917	MAX	457.20
519	373	1	2917	MEAN	18.34
520	373	1	2917	STD	25.65
521	399	1	14798	N	14798.00
522	399	1	14798	MIN	6.00
523	399	1	14798	MAX	2968.80
524	399	1	14798	MEAN	350.36
525	399	1	14798	STD	211.61
526	401	1	32	N	32.00
527	401	1	32	MIN	14.40
528	401	1	32	MAX	360.00
529	401	1	32	MEAN	114.69
530	401	1	32	STD	98.95
531	402	1	6743	N	6743.00
532	402	1	6743	MIN	3.00
533	402	1	6743	MAX	720.00
534	402	1	6743	MEAN	66.63
535	402	1	6743	STD	60.13
536	403	1	30	N	30.00
537	403	1	30	MIN	12.00
538	403	1	30	MAX	228.00
539	403	1	30	MEAN	65.46
540	403	1	30	STD	44.81
541	404	1	2993	N	2993.00
542	404	1	2993	MIN	1.80
543	404	1	2993	MAX	597.00
544	404	1	2993	MEAN	53.44
545	404	1	2993	STD	44.76
546	405	1	2	N	2.00
547	405	1	2	MIN	21.60
548	405	1	2	MAX	36.00
549	405	1	2	MEAN	28.80
550	405	1	2	STD	10.18

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
551	406	1	6	N	6.00
552	406	1	6	MIN	12.00
553	406	1	6	MAX	144.00
554	406	1	6	MEAN	45.00
555	406	1	6	STD	49.44
556	407	1	8	N	8.00
557	407	1	8	MIN	6.00
558	407	1	8	MAX	108.00
559	407	1	8	MEAN	34.28
560	407	1	8	STD	34.72
561	408	1	448	N	448.00
562	408	1	448	MIN	3.00
563	408	1	448	MAX	216.00
564	408	1	448	MEAN	16.36
565	408	1	448	STD	15.25
566	409	1	30	N	30.00
567	409	1	30	MIN	18.00
568	409	1	30	MAX	300.00
569	409	1	30	MEAN	84.28
570	409	1	30	STD	68.41
571	410	1	3113	N	3113.00
572	410	1	3113	MIN	4.80
573	410	1	3113	MAX	1518.00
574	410	1	3113	MEAN	76.74
575	410	1	3113	STD	75.06
576	411	1	46	N	46.00
577	411	1	46	MIN	9.00
578	411	1	46	MAX	180.00
579	411	1	46	MEAN	61.53
580	411	1	46	STD	41.94
581	412	1	4801	N	4801.00
582	412	1	4801	MIN	4.80
583	412	1	4801	MAX	477.00
584	412	1	4801	MEAN	58.56
585	412	1	4801	STD	43.39
586	413	1	15	N	15.00
587	413	1	15	MIN	18.00
588	413	1	15	MAX	210.00
589	413	1	15	MEAN	63.28
590	413	1	15	STD	52.62
591	414	1	2784	N	2784.00
592	414	1	2784	MIN	7.20
593	414	1	2784	MAX	852.00
594	414	1	2784	MEAN	66.24
595	414	1	2784	STD	56.67
596	415	1	2	N	2.00
597	415	1	2	MIN	12.00
598	415	1	2	MAX	96.00
599	415	1	2	MEAN	54.00
600	415	1	2	STD	59.40
601	416	1	812	N	812.00
602	416	1	812	MIN	6.00
603	416	1	812	MAX	384.00
604	416	1	812	MEAN	40.26
605	416	1	812	STD	31.50

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
606	417	1	5	N	5.00
607	417	1	5	MIN	36.00
608	417	1	5	MAX	78.00
609	417	1	5	MEAN	53.28
610	417	1	5	STD	17.15
611	418	1	993	N	993.00
612	418	1	993	MIN	6.00
613	418	1	993	MAX	352.80
614	418	1	993	MEAN	60.17
615	418	1	993	STD	43.13
616	419	1	5	N	5.00
617	419	1	5	MIN	24.00
618	419	1	5	MAX	150.00
619	419	1	5	MEAN	69.60
620	419	1	5	STD	48.11
621	420	1	534	N	534.00
622	420	1	534	MIN	9.00
623	420	1	534	MAX	307.20
624	420	1	534	MEAN	59.10
625	420	1	534	STD	38.70
626	421	1	5	N	5.00
627	421	1	5	MIN	15.00
628	421	1	5	MAX	72.00
629	421	1	5	MEAN	40.80
630	421	1	5	STD	22.31
631	422	1	532	N	532.00
632	422	1	532	MIN	6.00
633	422	1	532	MAX	415.20
634	422	1	532	MEAN	50.68
635	422	1	532	STD	39.52
636	423	1	11	N	11.00
637	423	1	11	MIN	9.60
638	423	1	11	MAX	108.00
639	423	1	11	MEAN	44.84
640	423	1	11	STD	31.54
641	424	1	2185	N	2185.00
642	424	1	2185	MIN	6.00
643	424	1	2185	MAX	1008.00
644	424	1	2185	MEAN	80.90
645	424	1	2185	STD	84.93
646	425	1	15	N	15.00
647	425	1	15	MIN	18.00
648	425	1	15	MAX	180.00
649	425	1	15	MEAN	70.56
650	425	1	15	STD	46.85
651	426	1	1353	N	1353.00
652	426	1	1353	MIN	8.40
653	426	1	1353	MAX	408.00
654	426	1	1353	MEAN	57.48
655	426	1	1353	STD	40.79
656	427	1	6	N	6.00
657	427	1	6	MIN	36.00
658	427	1	6	MAX	216.00
659	427	1	6	MEAN	96.00
660	427	1	6	STD	69.97

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
661	428	1	522	N	522.00
662	428	1	522	MIN	8.40
663	428	1	522	MAX	240.00
664	428	1	522	MEAN	51.34
665	428	1	522	STD	32.59
666	429	1	6	N	6.00
667	429	1	6	MIN	36.00
668	429	1	6	MAX	216.00
669	429	1	6	MEAN	90.00
670	429	1	6	STD	68.20
671	430	1	705	N	705.00
672	430	1	705	MIN	15.00
673	430	1	705	MAX	1752.00
674	430	1	705	MEAN	118.31
675	430	1	705	STD	111.92
676	431	1	3	N	3.00
677	431	1	3	MIN	12.00
678	431	1	3	MAX	54.00
679	431	1	3	MEAN	30.00
680	431	1	3	STD	21.63
681	432	1	1118	N	1118.00
682	432	1	1118	MIN	4.80
683	432	1	1118	MAX	216.00
684	432	1	1118	MEAN	46.56
685	432	1	1118	STD	29.43
686	433	1	29	N	29.00
687	433	1	29	MIN	12.00
688	433	1	29	MAX	163.20
689	433	1	29	MEAN	47.28
690	433	1	29	STD	36.98
691	434	1	3232	N	3232.00
692	434	1	3232	MIN	2.40
693	434	1	3232	MAX	492.00
694	434	1	3232	MEAN	44.88
695	434	1	3232	STD	35.03
696	435	1	83	N	83.00
697	435	1	83	MIN	6.00
698	435	1	83	MAX	360.00
699	435	1	83	MEAN	71.80
700	435	1	83	STD	57.94
701	436	1	2848	N	2848.00
702	436	1	2848	MIN	3.00
703	436	1	2848	MAX	336.00
704	436	1	2848	MEAN	48.56
705	436	1	2848	STD	36.38
706	437	1	9	N	9.00
707	437	1	9	MIN	6.00
708	437	1	9	MAX	120.00
709	437	1	9	MEAN	43.33
710	437	1	9	STD	34.57
711	438	1	1261	N	1261.00
712	438	1	1261	MIN	6.00
713	438	1	1261	MAX	240.00
714	438	1	1261	MEAN	44.09
715	438	1	1261	STD	29.40

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
716	439	1	129	N	129.00
717	439	1	129	MIN	3.00
718	439	1	129	MAX	180.00
719	439	1	129	MEAN	16.55
720	439	1	129	STD	17.84
721	440	1	9520	N	9520.00
722	440	1	9520	MIN	0.60
723	440	1	9520	MAX	384.00
724	440	1	9520	MEAN	16.11
725	440	1	9520	STD	14.96
726	441	1	30	N	30.00
727	441	1	30	MIN	12.00
728	441	1	30	MAX	360.00
729	441	1	30	MEAN	99.80
730	441	1	30	STD	83.09
731	442	1	874	N	874.00
732	442	1	874	MIN	6.00
733	442	1	874	MAX	336.00
734	442	1	874	MEAN	53.10
735	442	1	874	STD	42.19
736	443	1	375	N	375.00
737	443	1	375	MIN	6.00
738	443	1	375	MAX	336.00
739	443	1	375	MEAN	54.98
740	443	1	375	STD	42.67
741	444	1	17	N	17.00
742	444	1	17	MIN	3.00
743	444	1	17	MAX	138.00
744	444	1	17	MEAN	40.94
745	444	1	17	STD	38.80
746	445	1	302	N	302.00
747	445	1	302	MIN	3.00
748	445	1	302	MAX	360.00
749	445	1	302	MEAN	40.08
750	445	1	302	STD	41.41
751	446	1	53	N	53.00
752	446	1	53	MIN	6.00
753	446	1	53	MAX	252.00
754	446	1	53	MEAN	61.21
755	446	1	53	STD	49.70
756	447	1	1887	N	1887.00
757	447	1	1887	MIN	6.00
758	447	1	1887	MAX	558.00
759	447	1	1887	MEAN	70.85
760	447	1	1887	STD	57.46
761	448	1	1577	N	1577.00
762	448	1	1577	MIN	3.00
763	448	1	1577	MAX	360.00
764	448	1	1577	MEAN	29.33
765	448	1	1577	STD	24.09
766	449	1	1262	N	1262.00
767	449	1	1262	MIN	2.40
768	449	1	1262	MAX	648.00
769	449	1	1262	MEAN	43.31
770	449	1	1262	STD	33.65

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
771	450	1	150	N	150.00
772	450	1	150	MIN	7.92
773	450	1	150	MAX	540.00
774	450	1	150	MEAN	101.45
775	450	1	150	STD	70.81
776	451	1	84	N	84.00
777	451	1	84	MIN	30.00
778	451	1	84	MAX	240.00
779	451	1	84	MEAN	93.39
780	451	1	84	STD	47.30
781	452	1	832	N	832.00
782	452	1	832	MIN	4.56
783	452	1	832	MAX	576.00
784	452	1	832	MEAN	96.56
785	452	1	832	STD	64.53
786	453	1	43	N	43.00
787	453	1	43	MIN	48.00
788	453	1	43	MAX	264.00
789	453	1	43	MEAN	123.07
790	453	1	43	STD	52.03
791	454	1	307	N	307.00
792	454	1	307	MIN	6.00
793	454	1	307	MAX	144.00
794	454	1	307	MEAN	33.49
795	454	1	307	STD	23.47
796	455	1	63	N	63.00
797	455	1	63	MIN	33.00
798	455	1	63	MAX	408.00
799	455	1	63	MEAN	108.76
800	455	1	63	STD	62.03
801	456	1	110	N	110.00
802	456	1	110	MIN	6.00
803	456	1	110	MAX	408.00
804	456	1	110	MEAN	111.60
805	456	1	110	STD	65.97
806	457	1	14	N	14.00
807	457	1	14	MIN	48.00
808	457	1	14	MAX	408.00
809	457	1	14	MEAN	147.00
810	457	1	14	STD	107.56
811	458	1	191	N	191.00
812	458	1	191	MIN	4.56
813	458	1	191	MAX	432.00
814	458	1	191	MEAN	69.61
815	458	1	191	STD	67.99
816	459	1	2336	N	2336.00
817	459	1	2336	MIN	2.40
818	459	1	2336	MAX	396.00
819	459	1	2336	MEAN	42.18
820	459	1	2336	STD	36.27
821	460	1	148	N	148.00
822	460	1	148	MIN	2.04
823	460	1	148	MAX	192.00
824	460	1	148	MEAN	31.21
825	460	1	148	STD	30.40

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
826	461	1	1552	N	1552.00
827	461	1	1552	MIN	1.20
828	461	1	1552	MAX	360.00
829	461	1	1552	MEAN	34.55
830	461	1	1552	STD	32.53
831	462	1	175	N	175.00
832	462	1	175	MIN	3.60
833	462	1	175	MAX	240.00
834	462	1	175	MEAN	28.62
835	462	1	175	STD	34.61
836	499	1	14572	N	14572.00
837	499	1	14572	MIN	1.80
838	499	1	14572	MAX	4064.40
839	499	1	14572	MEAN	208.83
840	499	1	14572	STD	216.43
841	501	1	9941	N	9941.00
842	501	1	9941	MIN	27.00
843	501	1	9941	MAX	5184.00
844	501	1	9941	MEAN	475.64
845	501	1	9941	STD	347.68
846	502	1	2770	N	2770.00
847	502	1	2770	MIN	25.20
848	502	1	2770	MAX	3588.00
849	502	1	2770	MEAN	460.80
850	502	1	2770	STD	307.34
851	503	1	755	N	755.00
852	503	1	755	MIN	60.00
853	503	1	755	MAX	5880.00
854	503	1	755	MEAN	525.36
855	503	1	755	STD	562.93
856	504	1	938	N	938.00
857	504	1	938	MIN	18.00
858	504	1	938	MAX	1500.00
859	504	1	938	MEAN	213.04
860	504	1	938	STD	163.86
861	505	1	543	N	543.00
862	505	1	543	MIN	36.00
863	505	1	543	MAX	3456.00
864	505	1	543	MEAN	383.11
865	505	1	543	STD	276.92
866	506	1	1329	N	1329.00
867	506	1	1329	MIN	12.00
868	506	1	1329	MAX	1260.00
869	506	1	1329	MEAN	160.66
870	506	1	1329	STD	118.60
871	507	1	1548	N	1548.00
872	507	1	1548	MIN	16.80
873	507	1	1548	MAX	1428.00
874	507	1	1548	MEAN	156.01
875	507	1	1548	STD	124.28
876	508	1	584	N	584.00
877	508	1	584	MIN	6.00
878	508	1	584	MAX	564.00
879	508	1	584	MEAN	83.33
880	508	1	584	STD	73.00

SUMMARY STATS FROM THE FOOD AND BEVERAGES RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
881	509	1	787	N	787.00
882	509	1	787	MIN	6.00
883	509	1	787	MAX	768.00
884	509	1	787	MEAN	119.60
885	509	1	787	STD	102.18
886	510	1	1792	N	1792.00
887	510	1	1792	MIN	12.00
888	510	1	1792	MAX	1080.00
889	510	1	1792	MEAN	136.75
890	510	1	1792	STD	90.51
891	511	1	64	N	64.00
892	511	1	64	MIN	6.00
893	511	1	64	MAX	240.00
894	511	1	64	MEAN	35.53
895	511	1	64	STD	43.48
896	515	1	14191	N	14191.00
897	515	1	14191	MIN	9.60
898	515	1	14191	MAX	6222.00
899	515	1	14191	MEAN	539.22
900	515	1	14191	STD	417.45
901	516	1	3733	N	3733.00
902	516	1	3733	MIN	36.00
903	516	1	3733	MAX	5040.00
904	516	1	3733	MEAN	310.76
905	516	1	3733	STD	228.60
906	517	1	9301	N	9301.00
907	517	1	9301	MIN	27.00
908	517	1	9301	MAX	2520.00
909	517	1	9301	MEAN	260.42
910	517	1	9301	STD	183.45
911	518	1	1423	N	1423.00
912	518	1	1423	MIN	60.00
913	518	1	1423	MAX	2316.00
914	518	1	1423	MEAN	328.93
915	518	1	1423	STD	214.81
916	519	1	725	N	725.00
917	519	1	725	MIN	36.00
918	519	1	725	MAX	1800.00
919	519	1	725	MEAN	285.65
920	519	1	725	STD	159.98
921	520	1	438	N	438.00
922	520	1	438	MIN	36.00
923	520	1	438	MAX	1800.00
924	520	1	438	MEAN	184.70
925	520	1	438	STD	133.78
926	521	1	499	N	499.00
927	521	1	499	MIN	60.00
928	521	1	499	MAX	1200.00
929	521	1	499	MEAN	228.17
930	521	1	499	STD	168.85
931	522	1	4	N	4.00
932	522	1	4	MIN	384.00
933	522	1	4	MAX	1200.00
934	522	1	4	MEAN	786.00
935	522	1	4	STD	364.18

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
936	523	1	31	N	31.00
937	523	1	31	MIN	240.00
938	523	1	31	MAX	1080.00
939	523	1	31	MEAN	479.23
940	523	1	31	STD	221.61
941	524	1	140	N	140.00
942	524	1	140	MIN	48.00
943	524	1	140	MAX	1200.00
944	524	1	140	MEAN	245.57
945	524	1	140	STD	147.35
946	525	1	256	N	256.00
947	525	1	256	MIN	72.00
948	525	1	256	MAX	984.00
949	525	1	256	MEAN	219.38
950	525	1	256	STD	123.61
951	526	1	5	N	5.00
952	526	1	5	MIN	36.00
953	526	1	5	MAX	360.00
954	526	1	5	MEAN	228.00
955	526	1	5	STD	152.26
956	527	1	8	N	8.00
957	527	1	8	MIN	60.00
958	527	1	8	MAX	348.00
959	527	1	8	MEAN	183.38
960	527	1	8	STD	98.22
961	528	1	41	N	41.00
962	528	1	41	MIN	36.00
963	528	1	41	MAX	480.00
964	528	1	41	MEAN	178.26
965	528	1	41	STD	111.05
966	529	1	314	N	314.00
967	529	1	314	MIN	12.00
968	529	1	314	MAX	540.00
969	529	1	314	MEAN	87.21
970	529	1	314	STD	53.76
971	530	1	1303	N	1303.00
972	530	1	1303	MIN	1.20
973	530	1	1303	MAX	138.00
974	530	1	1303	MEAN	11.43
975	530	1	1303	STD	10.36
976	535	1	13091	N	13091.00
977	535	1	13091	MIN	12.00
978	535	1	13091	MAX	21600.00
979	535	1	13091	MEAN	352.05
980	535	1	13091	STD	337.27
981	599	1	14719	N	14719.00
982	599	1	14719	MIN	9.60
983	599	1	14719	MAX	10440.00
984	599	1	14719	MEAN	833.43
985	599	1	14719	STD	575.75
986	601	1	326	N	326.00
987	601	1	326	MIN	24.00
988	601	1	326	MAX	2628.00
989	601	1	326	MEAN	300.05
990	601	1	326	STD	391.08

SUMMARY STATS FROM THE FOOD AND BEVERAGES RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
991	602	1	8545	N	8545.00
992	602	1	8545	MIN	12.00
993	602	1	8545	MAX	1980.00
994	602	1	8545	MEAN	219.67
995	602	1	8545	STD	189.96
996	603	1	3145	N	3145.00
997	603	1	3145	MIN	6.00
998	603	1	3145	MAX	960.00
999	603	1	3145	MEAN	110.15
1000	603	1	3145	STD	73.65
1001	604	1	524	N	524.00
1002	604	1	524	MIN	12.00
1003	604	1	524	MAX	360.00
1004	604	1	524	MEAN	52.71
1005	604	1	524	STD	40.47
1006	605	1	1137	N	1137.00
1007	605	1	1137	MIN	12.00
1008	605	1	1137	MAX	360.00
1009	605	1	1137	MEAN	63.48
1010	605	1	1137	STD	40.16
1011	606	1	1487	N	1487.00
1012	606	1	1487	MIN	3.00
1013	606	1	1487	MAX	1620.00
1014	606	1	1487	MEAN	70.16
1015	606	1	1487	STD	82.27
1016	607	1	168	N	168.00
1017	607	1	168	MIN	6.00
1018	607	1	168	MAX	1440.00
1019	607	1	168	MEAN	221.38
1020	607	1	168	STD	212.92
1021	608	1	393	N	393.00
1022	608	1	393	MIN	3.00
1023	608	1	393	MAX	120.00
1024	608	1	393	MEAN	25.12
1025	608	1	393	STD	17.07
1026	699	1	11716	N	11716.00
1027	699	1	11716	MIN	3.00
1028	699	1	11716	MAX	2856.00
1029	699	1	11716	MEAN	219.57
1030	699	1	11716	STD	210.65
1031	701	1	4616	N	4616.00
1032	701	1	4616	MIN	3.60
1033	701	1	4616	MAX	732.00
1034	701	1	4616	MEAN	98.67
1035	701	1	4616	STD	73.55
1036	702	1	9574	N	9574.00
1037	702	1	9574	MIN	3.60
1038	702	1	9574	MAX	936.00
1039	702	1	9574	MEAN	98.59
1040	702	1	9574	STD	74.79
1041	799	1	13912	N	13912.00
1042	799	1	13912	MIN	3.60
1043	799	1	13912	MAX	936.00
1044	799	1	13912	MEAN	100.59
1045	799	1	13912	STD	75.21

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1046	801	1	1752	N	1752.00
1047	801	1	1752	MIN	7.20
1048	801	1	1752	MAX	1800.00
1049	801	1	1752	MEAN	175.98
1050	801	1	1752	STD	159.38
1051	802	1	7107	N	7107.00
1052	802	1	7107	MIN	4.80
1053	802	1	7107	MAX	2616.00
1054	802	1	7107	MEAN	171.54
1055	802	1	7107	STD	152.14
1056	803	1	25	N	25.00
1057	803	1	25	MIN	6.00
1058	803	1	25	MAX	864.00
1059	803	1	25	MEAN	153.29
1060	803	1	25	STD	214.85
1061	804	1	457	N	457.00
1062	804	1	457	MIN	6.00
1063	804	1	457	MAX	480.00
1064	804	1	457	MEAN	65.19
1065	804	1	457	STD	65.21
1066	805	1	496	N	496.00
1067	805	1	496	MIN	3.00
1068	805	1	496	MAX	450.00
1069	805	1	496	MEAN	39.75
1070	805	1	496	STD	43.19
1071	806	1	55	N	55.00
1072	806	1	55	MIN	15.60
1073	806	1	55	MAX	604.80
1074	806	1	55	MEAN	108.41
1075	806	1	55	STD	113.07
1076	807	1	2120	N	2120.00
1077	807	1	2120	MIN	3.00
1078	807	1	2120	MAX	1488.00
1079	807	1	2120	MEAN	109.83
1080	807	1	2120	STD	101.40
1081	808	1	4	N	4.00
1082	808	1	4	MIN	84.00
1083	808	1	4	MAX	360.00
1084	808	1	4	MEAN	216.00
1085	808	1	4	STD	115.52
1086	809	1	258	N	258.00
1087	809	1	258	MIN	54.00
1088	809	1	258	MAX	588.00
1089	809	1	258	MEAN	187.82
1090	809	1	258	STD	94.15
1091	810	1	47	N	47.00
1092	810	1	47	MIN	36.00
1093	810	1	47	MAX	540.00
1094	810	1	47	MEAN	166.01
1095	810	1	47	STD	105.67
1096	811	1	157	N	157.00
1097	811	1	157	MIN	15.00
1098	811	1	157	MAX	960.00
1099	811	1	157	MEAN	127.51
1100	811	1	157	STD	115.56

SUMMARY STATS FROM THE FOOD AND BEVERAGES RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1101	812	1	6255	N	6255.00
1102	812	1	6255	MIN	6.00
1103	812	1	6255	MAX	1470.00
1104	812	1	6255	MEAN	116.63
1105	812	1	6255	STD	92.87
1106	813	1	1789	N	1789.00
1107	813	1	1789	MIN	6.00
1108	813	1	1789	MAX	1122.00
1109	813	1	1789	MEAN	134.24
1110	813	1	1789	STD	112.65
1111	814	1	200	N	200.00
1112	814	1	200	MIN	24.00
1113	814	1	200	MAX	960.00
1114	814	1	200	MEAN	130.11
1115	814	1	200	STD	122.00
1116	815	1	627	N	627.00
1117	815	1	627	MIN	7.20
1118	815	1	627	MAX	480.00
1119	815	1	627	MEAN	73.58
1120	815	1	627	STD	55.29
1121	816	1	1856	N	1856.00
1122	816	1	1856	MIN	7.20
1123	816	1	1856	MAX	600.00
1124	816	1	1856	MEAN	95.46
1125	816	1	1856	STD	71.52
1126	817	1	7362	N	7362.00
1127	817	1	7362	MIN	3.60
1128	817	1	7362	MAX	1116.00
1129	817	1	7362	MEAN	71.69
1130	817	1	7362	STD	54.13
1131	818	1	127	N	127.00
1132	818	1	127	MIN	18.00
1133	818	1	127	MAX	637.20
1134	818	1	127	MEAN	90.75
1135	818	1	127	STD	85.54
1136	819	1	1668	N	1668.00
1137	819	1	1668	MIN	3.00
1138	819	1	1668	MAX	600.00
1139	819	1	1668	MEAN	51.29
1140	819	1	1668	STD	49.60
1141	820	1	2286	N	2286.00
1142	820	1	2286	MIN	3.00
1143	820	1	2286	MAX	360.00
1144	820	1	2286	MEAN	39.46
1145	820	1	2286	STD	36.33
1146	821	1	235	N	235.00
1147	821	1	235	MIN	12.00
1148	821	1	235	MAX	720.00
1149	821	1	235	MEAN	108.99
1150	821	1	235	STD	86.73
1151	822	1	287	N	287.00
1152	822	1	287	MIN	12.00
1153	822	1	287	MAX	288.00
1154	822	1	287	MEAN	79.88
1155	822	1	287	STD	62.30

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1156	899	1	14402	N	14402.00
1157	899	1	14402	MIN	6.00
1158	899	1	14402	MAX	2808.00
1159	899	1	14402	MEAN	269.36
1160	899	1	14402	STD	264.25
1161	901	1	608	N	608.00
1162	901	1	608	MIN	24.00
1163	901	1	608	MAX	1728.00
1164	901	1	608	MEAN	263.05
1165	901	1	608	STD	199.92
1166	902	1	1693	N	1693.00
1167	902	1	1693	MIN	7.92
1168	902	1	1693	MAX	1680.00
1169	902	1	1693	MEAN	203.40
1170	902	1	1693	STD	150.43
1171	903	1	807	N	807.00
1172	903	1	807	MIN	11.40
1173	903	1	807	MAX	1530.00
1174	903	1	807	MEAN	172.82
1175	903	1	807	STD	119.64
1176	904	1	1167	N	1167.00
1177	904	1	1167	MIN	21.12
1178	904	1	1167	MAX	1152.00
1179	904	1	1167	MEAN	249.52
1180	904	1	1167	STD	140.47
1181	905	1	2699	N	2699.00
1182	905	1	2699	MIN	6.00
1183	905	1	2699	MAX	1404.00
1184	905	1	2699	MEAN	206.82
1185	905	1	2699	STD	118.46
1186	906	1	837	N	837.00
1187	906	1	837	MIN	12.00
1188	906	1	837	MAX	828.00
1189	906	1	837	MEAN	211.30
1190	906	1	837	STD	109.04
1191	907	1	1068	N	1068.00
1192	907	1	1068	MIN	6.00
1193	907	1	1068	MAX	720.00
1194	907	1	1068	MEAN	78.57
1195	907	1	1068	STD	57.60
1196	908	1	12739	N	12739.00
1197	908	1	12739	MIN	1.20
1198	908	1	12739	MAX	162.00
1199	908	1	12739	MEAN	18.92
1200	908	1	12739	STD	11.06
1201	909	1	11521	N	11521.00
1202	909	1	11521	MIN	3.00
1203	909	1	11521	MAX	630.00
1204	909	1	11521	MEAN	69.77
1205	909	1	11521	STD	46.64
1206	910	1	102	N	102.00
1207	910	1	102	MIN	21.00
1208	910	1	102	MAX	720.00
1209	910	1	102	MEAN	116.82
1210	910	1	102	STD	99.90

SUMMARY STATS FROM THE FOOD AND BEVERAGES RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1211	911	1	11202	N	11202.00
1212	911	1	11202	MIN	3.60
1213	911	1	11202	MAX	840.00
1214	911	1	11202	MEAN	112.47
1215	911	1	11202	STD	63.35
1216	912	1	1611	N	1611.00
1217	912	1	1611	MIN	1.80
1218	912	1	1611	MAX	288.00
1219	912	1	1611	MEAN	40.72
1220	912	1	1611	STD	27.60
1221	999	1	14793	N	14793.00
1222	999	1	14793	MIN	3.60
1223	999	1	14793	MAX	1824.00
1224	999	1	14793	MEAN	279.60
1225	999	1	14793	STD	170.71
1226	1001	1	12818	N	12818.00
1227	1001	1	12818	MIN	3.00
1228	1001	1	12818	MAX	600.00
1229	1001	1	12818	MEAN	27.67
1230	1001	1	12818	STD	16.22
1231	1002	1	13525	N	13525.00
1232	1002	1	13525	MIN	3.00
1233	1002	1	13525	MAX	1080.00
1234	1002	1	13525	MEAN	86.22
1235	1002	1	13525	STD	65.36
1236	1003	1	3633	N	3633.00
1237	1003	1	3633	MIN	3.00
1238	1003	1	3633	MAX	264.00
1239	1003	1	3633	MEAN	27.23
1240	1003	1	3633	STD	18.61
1241	1004	1	765	N	765.00
1242	1004	1	765	MIN	1.92
1243	1004	1	765	MAX	960.00
1244	1004	1	765	MEAN	145.65
1245	1004	1	765	STD	100.19
1246	1005	1	3994	N	3994.00
1247	1005	1	3994	MIN	3.00
1248	1005	1	3994	MAX	540.00
1249	1005	1	3994	MEAN	60.21
1250	1005	1	3994	STD	40.78
1251	1006	1	1072	N	1072.00
1252	1006	1	1072	MIN	7.80
1253	1006	1	1072	MAX	378.00
1254	1006	1	1072	MEAN	59.15
1255	1006	1	1072	STD	42.98
1256	1007	1	20	N	20.00
1257	1007	1	20	MIN	24.00
1258	1007	1	20	MAX	192.00
1259	1007	1	20	MEAN	67.41
1260	1007	1	20	STD	43.65
1261	1008	1	69	N	69.00
1262	1008	1	69	MIN	6.00
1263	1008	1	69	MAX	567.00
1264	1008	1	69	MEAN	74.59
1265	1008	1	69	STD	88.26

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1266	1009	1	21	N	21.00
1267	1009	1	21	MIN	16.80
1268	1009	1	21	MAX	168.00
1269	1009	1	21	MEAN	96.14
1270	1009	1	21	STD	37.96
1271	1010	1	9	N	9.00
1272	1010	1	9	MIN	60.00
1273	1010	1	9	MAX	420.00
1274	1010	1	9	MEAN	135.67
1275	1010	1	9	STD	116.59
1276	1011	1	651	N	651.00
1277	1011	1	651	MIN	3.60
1278	1011	1	651	MAX	1080.00
1279	1011	1	651	MEAN	81.20
1280	1011	1	651	STD	85.77
1281	1012	1	862	N	862.00
1282	1012	1	862	MIN	2.40
1283	1012	1	862	MAX	624.00
1284	1012	1	862	MEAN	115.86
1285	1012	1	862	STD	91.28
1286	1013	1	1158	N	1158.00
1287	1013	1	1158	MIN	1.80
1288	1013	1	1158	MAX	720.00
1289	1013	1	1158	MEAN	53.38
1290	1013	1	1158	STD	63.27
1291	1014	1	501	N	501.00
1292	1014	1	501	MIN	2.40
1293	1014	1	501	MAX	720.00
1294	1014	1	501	MEAN	45.31
1295	1014	1	501	STD	65.83
1296	1015	1	156	N	156.00
1297	1015	1	156	MIN	3.60
1298	1015	1	156	MAX	420.00
1299	1015	1	156	MEAN	57.84
1300	1015	1	156	STD	72.92
1301	1099	1	14803	N	14803.00
1302	1099	1	14803	MIN	6.00
1303	1099	1	14803	MAX	2266.80
1304	1099	1	14803	MEAN	154.78
1305	1099	1	14803	STD	120.66
1306	1101	1	14762	N	14762.00
1307	1101	1	14762	MIN	0.60
1308	1101	1	14762	MAX	72.00
1309	1101	1	14762	MEAN	6.55
1310	1101	1	14762	STD	4.73
1311	1102	1	13804	N	13804.00
1312	1102	1	13804	MIN	1.20
1313	1102	1	13804	MAX	216.00
1314	1102	1	13804	MEAN	20.15
1315	1102	1	13804	STD	14.68
1316	1103	1	3105	N	3105.00
1317	1103	1	3105	MIN	1.20
1318	1103	1	3105	MAX	48.00
1319	1103	1	3105	MEAN	13.02
1320	1103	1	3105	STD	5.08

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1321	1104	1	4941	N	4941.00
1322	1104	1	4941	MIN	0.60
1323	1104	1	4941	MAX	228.00
1324	1104	1	4941	MEAN	16.33
1325	1104	1	4941	STD	18.47
1326	1105	1	10280	N	10280.00
1327	1105	1	10280	MIN	3.00
1328	1105	1	10280	MAX	1200.00
1329	1105	1	10280	MEAN	132.18
1330	1105	1	10280	STD	111.01
1331	1106	1	234	N	234.00
1332	1106	1	234	MIN	6.00
1333	1106	1	234	MAX	816.00
1334	1106	1	234	MEAN	138.00
1335	1106	1	234	STD	149.25
1336	1107	1	99	N	99.00
1337	1107	1	99	MIN	24.00
1338	1107	1	99	MAX	1440.00
1339	1107	1	99	MEAN	297.73
1340	1107	1	99	STD	236.96
1341	1108	1	193	N	193.00
1342	1108	1	193	MIN	60.00
1343	1108	1	193	MAX	720.00
1344	1108	1	193	MEAN	184.82
1345	1108	1	193	STD	111.30
1346	1109	1	390	N	390.00
1347	1109	1	390	MIN	18.00
1348	1109	1	390	MAX	1116.00
1349	1109	1	390	MEAN	157.98
1350	1109	1	390	STD	169.08
1351	1110	1	2145	N	2145.00
1352	1110	1	2145	MIN	1.20
1353	1110	1	2145	MAX	384.00
1354	1110	1	2145	MEAN	30.26
1355	1110	1	2145	STD	28.05
1356	1111	1	107	N	107.00
1357	1111	1	107	MIN	9.00
1358	1111	1	107	MAX	360.00
1359	1111	1	107	MEAN	71.93
1360	1111	1	107	STD	59.54
1361	1199	1	14803	N	14803.00
1362	1199	1	14803	MIN	0.60
1363	1199	1	14803	MAX	2736.00
1364	1199	1	14803	MEAN	140.95
1365	1199	1	14803	STD	140.18
1366	1201	1	14753	N	14753.00
1367	1201	1	14753	MIN	3.60
1368	1201	1	14753	MAX	600.00
1369	1201	1	14753	MEAN	67.23
1370	1201	1	14753	STD	43.62
1371	1202	1	1010	N	1010.00
1372	1202	1	1010	MIN	7.80
1373	1202	1	1010	MAX	468.00
1374	1202	1	1010	MEAN	55.94
1375	1202	1	1010	STD	41.89

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1376	1203	1	7	N	7.00
1377	1203	1	7	MIN	36.00
1378	1203	1	7	MAX	144.00
1379	1203	1	7	MEAN	72.00
1380	1203	1	7	STD	39.95
1381	1204	1	1117	N	1117.00
1382	1204	1	1117	MIN	3.00
1383	1204	1	1117	MAX	144.00
1384	1204	1	1117	MEAN	24.18
1385	1204	1	1117	STD	15.85
1386	1205	1	263	N	263.00
1387	1205	1	263	MIN	3.00
1388	1205	1	263	MAX	96.00
1389	1205	1	263	MEAN	16.28
1390	1205	1	263	STD	12.05
1391	1206	1	1484	N	1484.00
1392	1206	1	1484	MIN	1.20
1393	1206	1	1484	MAX	75.00
1394	1206	1	1484	MEAN	11.58
1395	1206	1	1484	STD	7.25
1396	1207	1	2096	N	2096.00
1397	1207	1	2096	MIN	1.68
1398	1207	1	2096	MAX	288.00
1399	1207	1	2096	MEAN	29.90
1400	1207	1	2096	STD	23.10
1401	1208	1	3286	N	3286.00
1402	1208	1	3286	MIN	1.80
1403	1208	1	3286	MAX	504.00
1404	1208	1	3286	MEAN	17.77
1405	1208	1	3286	STD	20.92
1406	1299	1	14785	N	14785.00
1407	1299	1	14785	MIN	4.20
1408	1299	1	14785	MAX	840.00
1409	1299	1	14785	MEAN	82.41
1410	1299	1	14785	STD	53.75
1411	1301	1	3610	N	3610.00
1412	1301	1	3610	MIN	4.20
1413	1301	1	3610	MAX	1800.00
1414	1301	1	3610	MEAN	82.86
1415	1301	1	3610	STD	87.51
1416	1302	1	22	N	22.00
1417	1302	1	22	MIN	18.00
1418	1302	1	22	MAX	360.00
1419	1302	1	22	MEAN	127.72
1420	1302	1	22	STD	108.20
1421	1303	1	13	N	13.00
1422	1303	1	13	MIN	6.00
1423	1303	1	13	MAX	330.00
1424	1303	1	13	MEAN	61.71
1425	1303	1	13	STD	92.38
1426	1399	1	3636	N	3636.00
1427	1399	1	3636	MIN	4.20
1428	1399	1	3636	MAX	1800.00
1429	1399	1	3636	MEAN	83.26
1430	1399	1	3636	STD	88.02

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1431	1401	1	10	N	10.000
1432	1401	1	10	MIN	6.000
1433	1401	1	10	MAX	600.000
1434	1401	1	10	MEAN	192.000
1435	1401	1	10	STD	184.326
1436	1499	1	10	N	10.000
1437	1499	1	10	MIN	6.000
1438	1499	1	10	MAX	600.000
1439	1499	1	10	MEAN	192.000
1440	1499	1	10	STD	184.326

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	23174	N	23174.00
2	.	0	23174	MIN	3.00
3	.	0	23174	MAX	4464.00
4	.	0	23174	MEAN	466.77
5	.	0	23174	STD	304.42
6	1501	1	6095	N	6095.00
7	1501	1	6095	MIN	15.00
8	1501	1	6095	MAX	4464.00
9	1501	1	6095	MEAN	525.13
10	1501	1	6095	STD	298.76
11	1502	1	175	N	175.00
12	1502	1	175	MIN	30.00
13	1502	1	175	MAX	1260.00
14	1502	1	175	MEAN	219.63
15	1502	1	175	STD	131.73
16	1503	1	1683	N	1683.00
17	1503	1	1683	MIN	12.00
18	1503	1	1683	MAX	1440.00
19	1503	1	1683	MEAN	209.96
20	1503	1	1683	STD	118.57
21	1504	1	8	N	8.00
22	1504	1	8	MIN	90.00
23	1504	1	8	MAX	600.00
24	1504	1	8	MEAN	303.75
25	1504	1	8	STD	169.55
26	1505	1	9	N	9.00
27	1505	1	9	MIN	180.00
28	1505	1	9	MAX	840.00
29	1505	1	9	MEAN	340.00
30	1505	1	9	STD	241.87
31	1506	1	1	N	1.00
32	1506	1	1	MIN	372.00
33	1506	1	1	MAX	372.00
34	1506	1	1	MEAN	372.00
35	1506	1	1	STD	.
36	1507	1	13	N	13.00
37	1507	1	13	MIN	3.00
38	1507	1	13	MAX	180.00
39	1507	1	13	MEAN	48.05
40	1507	1	13	STD	53.22
41	1508	1	62	N	62.00
42	1508	1	62	MIN	12.00
43	1508	1	62	MAX	465.00
44	1508	1	62	MEAN	154.15
45	1508	1	62	STD	86.90
46	1509	1	7554	N	7554.00
47	1509	1	7554	MIN	6.00
48	1509	1	7554	MAX	4464.00
49	1509	1	7554	MEAN	476.48
50	1509	1	7554	STD	306.66
51	1510	1	1	N	1.00
52	1510	1	1	MIN	240.00
53	1510	1	1	MAX	240.00
54	1510	1	1	MEAN	240.00
55	1510	1	1	STD	.

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	1599	1	7573	N	7573.00
57	1599	1	7573	MIN	6.00
58	1599	1	7573	MAX	4464.00
59	1599	1	7573	MEAN	476.53
60	1599	1	7573	STD	306.82

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	258034	N	258034.00
2	.	0	258034	MIN	0.00
3	.	0	258034	MAX	11000.00
4	.	0	258034	MEAN	107.86
5	.	0	258034	STD	234.79
6	1601	1	821	N	821.00
7	1601	1	821	MIN	6.00
8	1601	1	821	MAX	2000.00
9	1601	1	821	MEAN	217.89
10	1601	1	821	STD	194.76
11	1602	1	8041	N	8041.00
12	1602	1	8041	MIN	3.00
13	1602	1	8041	MAX	1600.00
14	1602	1	8041	MEAN	84.99
15	1602	1	8041	STD	73.05
16	1603	1	5745	N	5745.00
17	1603	1	5745	MIN	5.00
18	1603	1	5745	MAX	1020.00
19	1603	1	5745	MEAN	74.44
20	1603	1	5745	STD	65.89
21	1604	1	7841	N	7841.00
22	1604	1	7841	MIN	3.00
23	1604	1	7841	MAX	800.00
24	1604	1	7841	MEAN	60.32
25	1604	1	7841	STD	50.21
26	1605	1	1820	N	1820.00
27	1605	1	1820	MIN	3.00
28	1605	1	1820	MAX	750.00
29	1605	1	1820	MEAN	44.73
30	1605	1	1820	STD	38.20
31	1606	1	1052	N	1052.00
32	1606	1	1052	MIN	4.00
33	1606	1	1052	MAX	520.00
34	1606	1	1052	MEAN	59.32
35	1606	1	1052	STD	51.81
36	1607	1	3003	N	3003.00
37	1607	1	3003	MIN	2.50
38	1607	1	3003	MAX	900.00
39	1607	1	3003	MEAN	63.88
40	1607	1	3003	STD	53.79
41	1608	1	3932	N	3932.00
42	1608	1	3932	MIN	3.00
43	1608	1	3932	MAX	1000.00
44	1608	1	3932	MEAN	57.21
45	1608	1	3932	STD	47.25
46	1609	1	184	N	184.00
47	1609	1	184	MIN	3.00
48	1609	1	184	MAX	350.00
49	1609	1	184	MEAN	67.43
50	1609	1	184	STD	52.26
51	1610	1	2818	N	2818.00
52	1610	1	2818	MIN	1.00
53	1610	1	2818	MAX	170.00
54	1610	1	2818	MEAN	12.49
55	1610	1	2818	STD	13.76

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	1611	1	10003	N	10003.00
57	1611	1	10003	MIN	0.75
58	1611	1	10003	MAX	252.00
59	1611	1	10003	MEAN	11.91
60	1611	1	10003	STD	11.05
61	1612	1	2432	N	2432.00
62	1612	1	2432	MIN	10.00
63	1612	1	2432	MAX	2500.00
64	1612	1	2432	MEAN	129.43
65	1612	1	2432	STD	125.68
66	1613	1	3047	N	3047.00
67	1613	1	3047	MIN	7.00
68	1613	1	3047	MAX	600.00
69	1613	1	3047	MEAN	66.04
70	1613	1	3047	STD	51.19
71	1614	1	4841	N	4841.00
72	1614	1	4841	MIN	5.00
73	1614	1	4841	MAX	1500.00
74	1614	1	4841	MEAN	83.44
75	1614	1	4841	STD	73.26
76	1615	1	2438	N	2438.00
77	1615	1	2438	MIN	4.00
78	1615	1	2438	MAX	800.00
79	1615	1	2438	MEAN	58.14
80	1615	1	2438	STD	50.06
81	1616	1	3207	N	3207.00
82	1616	1	3207	MIN	5.00
83	1616	1	3207	MAX	700.00
84	1616	1	3207	MEAN	55.31
85	1616	1	3207	STD	45.00
86	1617	1	1158	N	1158.00
87	1617	1	1158	MIN	3.00
88	1617	1	1158	MAX	500.00
89	1617	1	1158	MEAN	43.79
90	1617	1	1158	STD	35.95
91	1618	1	6164	N	6164.00
92	1618	1	6164	MIN	5.00
93	1618	1	6164	MAX	1060.00
94	1618	1	6164	MEAN	65.73
95	1618	1	6164	STD	55.57
96	1619	1	796	N	796.00
97	1619	1	796	MIN	3.00
98	1619	1	796	MAX	300.00
99	1619	1	796	MEAN	49.30
100	1619	1	796	STD	34.53
101	1620	1	9812	N	9812.00
102	1620	1	9812	MIN	1.00
103	1620	1	9812	MAX	300.00
104	1620	1	9812	MEAN	24.19
105	1620	1	9812	STD	21.90
106	1621	1	7934	N	7934.00
107	1621	1	7934	MIN	0.75
108	1621	1	7934	MAX	375.00
109	1621	1	7934	MEAN	10.28
110	1621	1	7934	STD	12.34

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
111	1622	1	13478	N	13478.00
112	1622	1	13478	MIN	1.00
113	1622	1	13478	MAX	7310.00
114	1622	1	13478	MEAN	337.08
115	1622	1	13478	STD	422.41
116	1623	1	12046	N	12046.00
117	1623	1	12046	MIN	1.25
118	1623	1	12046	MAX	500.00
119	1623	1	12046	MEAN	33.94
120	1623	1	12046	STD	30.00
121	1624	1	11404	N	11404.00
122	1624	1	11404	MIN	1.30
123	1624	1	11404	MAX	370.00
124	1624	1	11404	MEAN	31.20
125	1624	1	11404	STD	29.08
126	1625	1	7539	N	7539.00
127	1625	1	7539	MIN	2.00
128	1625	1	7539	MAX	700.00
129	1625	1	7539	MEAN	23.64
130	1625	1	7539	STD	24.75
131	1626	1	13451	N	13451.00
132	1626	1	13451	MIN	1.25
133	1626	1	13451	MAX	1300.00
134	1626	1	13451	MEAN	69.99
135	1626	1	13451	STD	62.69
136	1627	1	1457	N	1457.00
137	1627	1	1457	MIN	0.00
138	1627	1	1457	MAX	500.00
139	1627	1	1457	MEAN	34.43
140	1627	1	1457	STD	45.77
141	1628	1	14220	N	14220.00
142	1628	1	14220	MIN	2.00
143	1628	1	14220	MAX	11000.00
144	1628	1	14220	MEAN	388.01
145	1628	1	14220	STD	466.99
146	1629	1	2169	N	2169.00
147	1629	1	2169	MIN	3.00
148	1629	1	2169	MAX	600.00
149	1629	1	2169	MEAN	43.85
150	1629	1	2169	STD	42.88
151	1630	1	1219	N	1219.00
152	1630	1	1219	MIN	3.00
153	1630	1	1219	MAX	260.00
154	1630	1	1219	MEAN	34.70
155	1630	1	1219	STD	25.96
156	1631	1	6648	N	6648.00
157	1631	1	6648	MIN	3.00
158	1631	1	6648	MAX	800.00
159	1631	1	6648	MEAN	61.61
160	1631	1	6648	STD	52.14
161	1632	1	1185	N	1185.00
162	1632	1	1185	MIN	2.00
163	1632	1	1185	MAX	250.00
164	1632	1	1185	MEAN	16.67
165	1632	1	1185	STD	14.00

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
166	1633	1	7651	N	7651.00
167	1633	1	7651	MIN	3.00
168	1633	1	7651	MAX	841.95
169	1633	1	7651	MEAN	74.03
170	1633	1	7651	STD	63.96
171	1634	1	3454	N	3454.00
172	1634	1	3454	MIN	4.50
173	1634	1	3454	MAX	600.00
174	1634	1	3454	MEAN	53.34
175	1634	1	3454	STD	49.17
176	1635	1	605	N	605.00
177	1635	1	605	MIN	5.00
178	1635	1	605	MAX	240.00
179	1635	1	605	MEAN	32.44
180	1635	1	605	STD	23.88
181	1636	1	8020	N	8020.00
182	1636	1	8020	MIN	3.00
183	1636	1	8020	MAX	420.00
184	1636	1	8020	MEAN	43.94
185	1636	1	8020	STD	35.40
186	1637	1	1192	N	1192.00
187	1637	1	1192	MIN	1.05
188	1637	1	1192	MAX	200.00
189	1637	1	1192	MEAN	17.23
190	1637	1	1192	STD	14.85
191	1638	1	9351	N	9351.00
192	1638	1	9351	MIN	3.00
193	1638	1	9351	MAX	800.00
194	1638	1	9351	MEAN	61.44
195	1638	1	9351	STD	55.69
196	1639	1	10229	N	10229.00
197	1639	1	10229	MIN	3.00
198	1639	1	10229	MAX	1240.00
199	1639	1	10229	MEAN	112.53
200	1639	1	10229	STD	102.15
201	1640	1	3226	N	3226.00
202	1640	1	3226	MIN	0.20
203	1640	1	3226	MAX	100.00
204	1640	1	3226	MEAN	4.70
205	1640	1	3226	STD	5.95
206	1641	1	224	N	224.00
207	1641	1	224	MIN	0.25
208	1641	1	224	MAX	200.00
209	1641	1	224	MEAN	20.10
210	1641	1	224	STD	31.24
211	1642	1	5379	N	5379.00
212	1642	1	5379	MIN	0.10
213	1642	1	5379	MAX	200.00
214	1642	1	5379	MEAN	2.17
215	1642	1	5379	STD	4.24
216	1643	1	59	N	59.00
217	1643	1	59	MIN	0.45
218	1643	1	59	MAX	50.00
219	1643	1	59	MEAN	6.33
220	1643	1	59	STD	8.81

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
221	1644	1	10005	N	10005.00
222	1644	1	10005	MIN	1.00
223	1644	1	10005	MAX	500.00
224	1644	1	10005	MEAN	35.60
225	1644	1	10005	STD	31.08
226	1645	1	472	N	472.00
227	1645	1	472	MIN	0.50
228	1645	1	472	MAX	60.00
229	1645	1	472	MEAN	7.67
230	1645	1	472	STD	8.56
231	1646	1	61	N	61.00
232	1646	1	61	MIN	3.00
233	1646	1	61	MAX	100.00
234	1646	1	61	MEAN	23.97
235	1646	1	61	STD	17.68
236	1647	1	11629	N	11629.00
237	1647	1	11629	MIN	0.25
238	1647	1	11629	MAX	550.00
239	1647	1	11629	MEAN	33.76
240	1647	1	11629	STD	33.61
241	1699	1	14572	N	14572.00
242	1699	1	14572	MIN	0.25
243	1699	1	14572	MAX	8310.00
244	1699	1	14572	MEAN	485.37
245	1699	1	14572	STD	477.54

SUMMARY STATS FROM THE FOOTWEAR RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	65702	N	65702.00
2	.	0	65702	MIN	0.25
3	.	0	65702	MAX	2810.00
4	.	0	65702	MEAN	53.07
5	.	0	65702	STD	75.49
6	1701	1	11941	N	11941.00
7	1701	1	11941	MIN	3.00
8	1701	1	11941	MAX	880.00
9	1701	1	11941	MEAN	57.65
10	1701	1	11941	STD	57.49
11	1702	1	10931	N	10931.00
12	1702	1	10931	MIN	1.00
13	1702	1	10931	MAX	1000.00
14	1702	1	10931	MEAN	44.67
15	1702	1	10931	STD	47.58
16	1703	1	7538	N	7538.00
17	1703	1	7538	MIN	1.00
18	1703	1	7538	MAX	540.00
19	1703	1	7538	MEAN	37.67
20	1703	1	7538	STD	36.37
21	1704	1	11708	N	11708.00
22	1704	1	11708	MIN	1.00
23	1704	1	11708	MAX	1000.00
24	1704	1	11708	MEAN	18.29
25	1704	1	11708	STD	20.79
26	1705	1	6559	N	6559.00
27	1705	1	6559	MIN	0.25
28	1705	1	6559	MAX	80.00
29	1705	1	6559	MEAN	7.24
30	1705	1	6559	STD	6.56
31	1706	1	2481	N	2481.00
32	1706	1	2481	MIN	0.30
33	1706	1	2481	MAX	120.00
34	1706	1	2481	MEAN	8.49
35	1706	1	2481	STD	9.27
36	1799	1	14544	N	14544.00
37	1799	1	14544	MIN	0.75
38	1799	1	14544	MAX	2810.00
39	1799	1	14544	MEAN	119.86
40	1799	1	14544	STD	115.54

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	50436	N	50436.00
2	.	0	50436	MIN	0.50
3	.	0	50436	MAX	11104.00
4	.	0	50436	MEAN	240.37
5	.	0	50436	STD	373.81
6	1801	1	11341	N	11341.00
7	1801	1	11341	MIN	2.00
8	1801	1	11341	MAX	6000.00
9	1801	1	11341	MEAN	325.00
10	1801	1	11341	STD	361.56
11	1802	1	3455	N	3455.00
12	1802	1	3455	MIN	3.00
13	1802	1	3455	MAX	2400.00
14	1802	1	3455	MEAN	216.11
15	1802	1	3455	STD	252.71
16	1803	1	8	N	8.00
17	1803	1	8	MIN	60.00
18	1803	1	8	MAX	6000.00
19	1803	1	8	MEAN	3054.00
20	1803	1	8	STD	2227.63
21	1804	1	361	N	361.00
22	1804	1	361	MIN	2.00
23	1804	1	361	MAX	720.00
24	1804	1	361	MEAN	80.78
25	1804	1	361	STD	68.15
26	1805	1	12	N	12.00
27	1805	1	12	MIN	20.00
28	1805	1	12	MAX	360.00
29	1805	1	12	MEAN	122.08
30	1805	1	12	STD	119.08
31	1806	1	11694	N	11694.00
32	1806	1	11694	MIN	1.00
33	1806	1	11694	MAX	960.00
34	1806	1	11694	MEAN	53.60
35	1806	1	11694	STD	37.43
36	1807	1	5027	N	5027.00
37	1807	1	5027	MIN	0.50
38	1807	1	5027	MAX	10000.00
39	1807	1	5027	MEAN	163.20
40	1807	1	5027	STD	426.23
41	1808	1	15	N	15.00
42	1808	1	15	MIN	3.00
43	1808	1	15	MAX	2000.00
44	1808	1	15	MEAN	233.67
45	1808	1	15	STD	506.15
46	1809	1	2689	N	2689.00
47	1809	1	2689	MIN	1.00
48	1809	1	2689	MAX	216.00
49	1809	1	2689	MEAN	24.06
50	1809	1	2689	STD	11.26
51	1810	1	1029	N	1029.00
52	1810	1	1029	MIN	0.60
53	1810	1	1029	MAX	1200.00
54	1810	1	1029	MEAN	57.07
55	1810	1	1029	STD	87.56

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	1899	1	14805	N	14805.00
57	1899	1	14805	MIN	3.00
58	1899	1	14805	MAX	11104.00
59	1899	1	14805	MEAN	409.43
60	1899	1	14805	STD	464.14

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	69992	N	69992.00
2	.	0	69992	MIN	0.60
3	.	0	69992	MAX	2004.00
4	.	0	69992	MEAN	104.85
5	.	0	69992	STD	114.64
6	1901	1	14306	N	14306.00
7	1901	1	14306	MIN	4.20
8	1901	1	14306	MAX	1800.00
9	1901	1	14306	MEAN	119.85
10	1901	1	14306	STD	95.15
11	1902	1	9512	N	9512.00
12	1902	1	9512	MIN	12.00
13	1902	1	9512	MAX	288.00
14	1902	1	9512	MEAN	63.50
15	1902	1	9512	STD	26.63
16	1903	1	662	N	662.00
17	1903	1	662	MIN	18.00
18	1903	1	662	MAX	864.00
19	1903	1	662	MEAN	107.87
20	1903	1	662	STD	70.89
21	1904	1	9691	N	9691.00
22	1904	1	9691	MIN	3.60
23	1904	1	9691	MAX	901.80
24	1904	1	9691	MEAN	85.66
25	1904	1	9691	STD	78.20
26	1905	1	5210	N	5210.00
27	1905	1	5210	MIN	3.00
28	1905	1	5210	MAX	360.00
29	1905	1	5210	MEAN	41.07
30	1905	1	5210	STD	34.28
31	1906	1	317	N	317.00
32	1906	1	317	MIN	1.20
33	1906	1	317	MAX	120.00
34	1906	1	317	MEAN	14.29
35	1906	1	317	STD	11.86
36	1907	1	951	N	951.00
37	1907	1	951	MIN	3.00
38	1907	1	951	MAX	504.00
39	1907	1	951	MEAN	25.75
40	1907	1	951	STD	28.17
41	1908	1	14539	N	14539.00
42	1908	1	14539	MIN	0.60
43	1908	1	14539	MAX	900.00
44	1908	1	14539	MEAN	14.18
45	1908	1	14539	STD	11.48
46	1999	1	14804	N	14804.00
47	1999	1	14804	MIN	24.00
48	1999	1	14804	MAX	2004.00
49	1999	1	14804	MEAN	247.85
50	1999	1	14804	STD	126.55

SUMMARY STATS FROM THE HOUSEHOLD FURNISHINGS RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNPRE
1	.	0	48372	N	48372.00
2	.	0	48372	MIN	0.00
3	.	0	48372	MAX	13000.00
4	.	0	48372	MEAN	73.34
5	.	0	48372	STD	273.70
6	2001	1	475	N	475.00
7	2001	1	475	MIN	0.00
8	2001	1	475	MAX	10000.00
9	2001	1	475	MEAN	570.04
10	2001	1	475	STD	1037.61
11	2002	1	51	N	51.00
12	2002	1	51	MIN	2.50
13	2002	1	51	MAX	250.00
14	2002	1	51	MEAN	67.22
15	2002	1	51	STD	61.11
16	2003	1	84	N	84.00
17	2003	1	84	MIN	15.00
18	2003	1	84	MAX	750.00
19	2003	1	84	MEAN	147.35
20	2003	1	84	STD	144.62
21	2004	1	181	N	181.00
22	2004	1	181	MIN	1.00
23	2004	1	181	MAX	250.00
24	2004	1	181	MEAN	30.57
25	2004	1	181	STD	33.22
26	2005	1	8288	N	8288.00
27	2005	1	8288	MIN	0.00
28	2005	1	8288	MAX	500.00
29	2005	1	8288	MEAN	12.33
30	2005	1	8288	STD	15.46
31	2006	1	1856	N	1856.00
32	2006	1	1856	MIN	0.00
33	2006	1	1856	MAX	1400.00
34	2006	1	1856	MEAN	28.41
35	2006	1	1856	STD	87.07
36	2007	1	3459	N	3459.00
37	2007	1	3459	MIN	0.00
38	2007	1	3459	MAX	900.00
39	2007	1	3459	MEAN	19.17
40	2007	1	3459	STD	30.05
41	2008	1	2117	N	2117.00
42	2008	1	2117	MIN	0.50
43	2008	1	2117	MAX	1500.00
44	2008	1	2117	MEAN	25.45
45	2008	1	2117	STD	51.52
46	2009	1	1507	N	1507.00
47	2009	1	1507	MIN	0.50
48	2009	1	1507	MAX	185.00
49	2009	1	1507	MEAN	13.38
50	2009	1	1507	STD	17.65
51	2010	1	524	N	524.00
52	2010	1	524	MIN	0.00
53	2010	1	524	MAX	800.00
54	2010	1	524	MEAN	17.97
55	2010	1	524	STD	35.50

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNPRE
56	2011	1	114	N	114.00
57	2011	1	114	MIN	0.00
58	2011	1	114	MAX	6000.00
59	2011	1	114	MEAN	635.68
60	2011	1	114	STD	767.58
61	2012	1	21	N	21.00
62	2012	1	21	MIN	350.00
63	2012	1	21	MAX	2000.00
64	2012	1	21	MEAN	980.00
65	2012	1	21	STD	460.86
66	2013	1	159	N	159.00
67	2013	1	159	MIN	0.00
68	2013	1	159	MAX	2600.00
69	2013	1	159	MEAN	314.79
70	2013	1	159	STD	344.78
71	2014	1	199	N	199.00
72	2014	1	199	MIN	0.00
73	2014	1	199	MAX	4500.00
74	2014	1	199	MEAN	318.65
75	2014	1	199	STD	564.44
76	2015	1	2	N	2.00
77	2015	1	2	MIN	14.00
78	2015	1	2	MAX	3000.00
79	2015	1	2	MEAN	1507.00
80	2015	1	2	STD	2111.42
81	2016	1	5	N	5.00
82	2016	1	5	MIN	50.00
83	2016	1	5	MAX	3150.00
84	2016	1	5	MEAN	1658.00
85	2016	1	5	STD	1380.42
86	2017	1	42	N	42.00
87	2017	1	42	MIN	20.00
88	2017	1	42	MAX	600.00
89	2017	1	42	MEAN	261.61
90	2017	1	42	STD	132.92
91	2018	1	29	N	29.00
92	2018	1	29	MIN	30.00
93	2018	1	29	MAX	1200.00
94	2018	1	29	MEAN	483.48
95	2018	1	29	STD	314.03
96	2019	1	17	N	17.00
97	2019	1	17	MIN	1.50
98	2019	1	17	MAX	120.00
99	2019	1	17	MEAN	20.81
100	2019	1	17	STD	35.36
101	2020	1	37	N	37.00
102	2020	1	37	MIN	5.00
103	2020	1	37	MAX	1200.00
104	2020	1	37	MEAN	275.65
105	2020	1	37	STD	319.38
106	2021	1	14	N	14.00
107	2021	1	14	MIN	20.00
108	2021	1	14	MAX	5000.00
109	2021	1	14	MEAN	2030.36
110	2021	1	14	STD	1441.68

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNPRE
111	2022	1	225	N	225.00
112	2022	1	225	MIN	0.00
113	2022	1	225	MAX	600.00
114	2022	1	225	MEAN	136.31
115	2022	1	225	STD	74.42
116	2023	1	20	N	20.00
117	2023	1	20	MIN	30.00
118	2023	1	20	MAX	350.00
119	2023	1	20	MEAN	173.38
120	2023	1	20	STD	95.86
121	2024	1	179	N	179.00
122	2024	1	179	MIN	4.00
123	2024	1	179	MAX	200.00
124	2024	1	179	MEAN	77.96
125	2024	1	179	STD	39.91
126	2025	1	33	N	33.00
127	2025	1	33	MIN	3.00
128	2025	1	33	MAX	2000.00
129	2025	1	33	MEAN	139.09
130	2025	1	33	STD	358.65
131	2026	1	496	N	496.00
132	2026	1	496	MIN	0.75
133	2026	1	496	MAX	1620.00
134	2026	1	496	MEAN	52.72
135	2026	1	496	STD	137.08
136	2027	1	114	N	114.00
137	2027	1	114	MIN	1.00
138	2027	1	114	MAX	150.00
139	2027	1	114	MEAN	44.10
140	2027	1	114	STD	20.69
141	2028	1	1533	N	1533.00
142	2028	1	1533	MIN	0.25
143	2028	1	1533	MAX	400.00
144	2028	1	1533	MEAN	14.04
145	2028	1	1533	STD	23.27
146	2029	1	1196	N	1196.00
147	2029	1	1196	MIN	1.75
148	2029	1	1196	MAX	2300.00
149	2029	1	1196	MEAN	66.67
150	2029	1	1196	STD	138.45
151	2030	1	4449	N	4449.00
152	2030	1	4449	MIN	0.00
153	2030	1	4449	MAX	600.00
154	2030	1	4449	MEAN	41.62
155	2030	1	4449	STD	43.61
156	2031	1	4871	N	4871.00
157	2031	1	4871	MIN	1.00
158	2031	1	4871	MAX	250.00
159	2031	1	4871	MEAN	18.13
160	2031	1	4871	STD	17.24
161	2032	1	253	N	253.00
162	2032	1	253	MIN	0.75
163	2032	1	253	MAX	170.00
164	2032	1	253	MEAN	22.10
165	2032	1	253	STD	25.19

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNPRE
166	2033	1	359	N	359.00
167	2033	1	359	MIN	1.50
168	2033	1	359	MAX	320.00
169	2033	1	359	MEAN	28.74
170	2033	1	359	STD	37.29
171	2034	1	2541	N	2541.00
172	2034	1	2541	MIN	0.00
173	2034	1	2541	MAX	1000.00
174	2034	1	2541	MEAN	99.24
175	2034	1	2541	STD	80.89
176	2035	1	27	N	27.00
177	2035	1	27	MIN	20.00
178	2035	1	27	MAX	250.00
179	2035	1	27	MEAN	92.89
180	2035	1	27	STD	71.19
181	2036	1	35	N	35.00
182	2036	1	35	MIN	20.00
183	2036	1	35	MAX	700.00
184	2036	1	35	MEAN	135.66
185	2036	1	35	STD	140.71
186	2037	1	175	N	175.00
187	2037	1	175	MIN	4.00
188	2037	1	175	MAX	2000.00
189	2037	1	175	MEAN	96.78
190	2037	1	175	STD	188.26
191	2038	1	286	N	286.00
192	2038	1	286	MIN	4.00
193	2038	1	286	MAX	1500.00
194	2038	1	286	MEAN	172.62
195	2038	1	286	STD	205.77
196	2039	1	173	N	173.00
197	2039	1	173	MIN	4.50
198	2039	1	173	MAX	1500.00
199	2039	1	173	MEAN	239.85
200	2039	1	173	STD	240.15
201	2040	1	228	N	228.00
202	2040	1	228	MIN	5.00
203	2040	1	228	MAX	200.00
204	2040	1	228	MEAN	49.35
205	2040	1	228	STD	44.91
206	2041	1	1211	N	1211.00
207	2041	1	1211	MIN	2.00
208	2041	1	1211	MAX	1000.00
209	2041	1	1211	MEAN	34.76
210	2041	1	1211	STD	51.06
211	2042	1	11	N	11.00
212	2042	1	11	MIN	3.00
213	2042	1	11	MAX	33.00
214	2042	1	11	MEAN	16.05
215	2042	1	11	STD	9.16
216	2099	1	10776	N	10776.00
217	2099	1	10776	MIN	0.00
218	2099	1	10776	MAX	13000.00
219	2099	1	10776	MEAN	164.61
220	2099	1	10776	STD	465.14

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SUMMARY STATS FROM THE HOUSEHOLD CLEANING RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	83916	N	83916.00
2	.	0	83916	MIN	0.50
3	.	0	83916	MAX	7200.00
4	.	0	83916	MEAN	62.03
5	.	0	83916	STD	120.52
6	2101	1	13331	N	13331.00
7	2101	1	13331	MIN	1.80
8	2101	1	13331	MAX	720.00
9	2101	1	13331	MEAN	47.42
10	2101	1	13331	STD	34.58
11	2102	1	5024	N	5024.00
12	2102	1	5024	MIN	3.00
13	2102	1	5024	MAX	360.00
14	2102	1	5024	MEAN	29.67
15	2102	1	5024	STD	25.71
16	2103	1	14640	N	14640.00
17	2103	1	14640	MIN	1.80
18	2103	1	14640	MAX	1080.00
19	2103	1	14640	MEAN	53.99
20	2103	1	14640	STD	53.19
21	2104	1	9593	N	9593.00
22	2104	1	9593	MIN	0.60
23	2104	1	9593	MAX	240.00
24	2104	1	9593	MEAN	12.81
25	2104	1	9593	STD	11.90
26	2105	1	4028	N	4028.00
27	2105	1	4028	MIN	3.00
28	2105	1	4028	MAX	300.00
29	2105	1	4028	MEAN	34.24
30	2105	1	4028	STD	25.90
31	2106	1	2467	N	2467.00
32	2106	1	2467	MIN	3.00
33	2106	1	2467	MAX	1800.00
34	2106	1	2467	MEAN	38.51
35	2106	1	2467	STD	56.60
36	2107	1	4436	N	4436.00
37	2107	1	4436	MIN	1.20
38	2107	1	4436	MAX	840.00
39	2107	1	4436	MEAN	18.92
40	2107	1	4436	STD	21.73
41	2108	1	12048	N	12048.00
42	2108	1	12048	MIN	1.20
43	2108	1	12048	MAX	312.00
44	2108	1	12048	MEAN	17.15
45	2108	1	12048	STD	19.78
46	2199	1	14802	N	14802.00
47	2199	1	14802	MIN	4.20
48	2199	1	14802	MAX	2184.00
49	2199	1	14802	MEAN	149.84
50	2199	1	14802	STD	117.54
51	2201	1	1008	N	1008.00
52	2201	1	1008	MIN	6.00
53	2201	1	1008	MAX	1200.00
54	2201	1	1008	MEAN	88.45
55	2201	1	1008	STD	103.22

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	2202	1	367	N	367.00
57	2202	1	367	MIN	5.04
58	2202	1	367	MAX	1200.00
59	2202	1	367	MEAN	120.03
60	2202	1	367	STD	120.56
61	2203	1	62	N	62.00
62	2203	1	62	MIN	12.00
63	2203	1	62	MAX	960.00
64	2203	1	62	MEAN	139.87
65	2203	1	62	STD	164.38
66	2204	1	32	N	32.00
67	2204	1	32	MIN	7.00
68	2204	1	32	MAX	1000.00
69	2204	1	32	MEAN	106.84
70	2204	1	32	STD	235.93
71	2205	1	64	N	64.00
72	2205	1	64	MIN	0.50
73	2205	1	64	MAX	70.00
74	2205	1	64	MEAN	23.45
75	2205	1	64	STD	14.78
76	2206	1	4	N	4.00
77	2206	1	4	MIN	9.00
78	2206	1	4	MAX	72.00
79	2206	1	4	MEAN	45.00
80	2206	1	4	STD	26.27
81	2299	1	1308	N	1308.00
82	2299	1	1308	MIN	0.50
83	2299	1	1308	MAX	3360.00
84	2299	1	1308	MEAN	112.37
85	2299	1	1308	STD	175.46
86	2301	1	55	N	55.00
87	2301	1	55	MIN	120.00
88	2301	1	55	MAX	4800.00
89	2301	1	55	MEAN	1445.45
90	2301	1	55	STD	1148.58
91	2302	1	296	N	296.00
92	2302	1	296	MIN	24.00
93	2302	1	296	MAX	7200.00
94	2302	1	296	MEAN	532.42
95	2302	1	296	STD	573.33
96	2303	1	3	N	3.00
97	2303	1	3	MIN	180.00
98	2303	1	3	MAX	240.00
99	2303	1	3	MEAN	220.00
100	2303	1	3	STD	34.64
101	2399	1	348	N	348.00
102	2399	1	348	MIN	24.00
103	2399	1	348	MAX	7200.00
104	2399	1	348	MEAN	683.21
105	2399	1	348	STD	783.17

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	61851	N	61851.00
2	.	0	61851	MIN	0.40
3	.	0	61851	MAX	25460.00
4	.	0	61851	MEAN	118.89
5	.	0	61851	STD	299.91
6	2401	1	3409	N	3409.00
7	2401	1	3409	MIN	12.00
8	2401	1	3409	MAX	9000.00
9	2401	1	3409	MEAN	284.06
10	2401	1	3409	STD	361.44
11	2402	1	12499	N	12499.00
12	2402	1	12499	MIN	0.80
13	2402	1	12499	MAX	12000.00
14	2402	1	12499	MEAN	83.32
15	2402	1	12499	STD	147.65
16	2403	1	10948	N	10948.00
17	2403	1	10948	MIN	2.00
18	2403	1	10948	MAX	2000.00
19	2403	1	10948	MEAN	48.71
20	2403	1	10948	STD	57.10
21	2404	1	1701	N	1701.00
22	2404	1	1701	MIN	2.00
23	2404	1	1701	MAX	4000.00
24	2404	1	1701	MEAN	78.06
25	2404	1	1701	STD	170.11
26	2405	1	515	N	515.00
27	2405	1	515	MIN	2.40
28	2405	1	515	MAX	1000.00
29	2405	1	515	MEAN	65.38
30	2405	1	515	STD	105.66
31	2406	1	27	N	27.00
32	2406	1	27	MIN	25.00
33	2406	1	27	MAX	1360.00
34	2406	1	27	MEAN	167.70
35	2406	1	27	STD	271.25
36	2407	1	169	N	169.00
37	2407	1	169	MIN	5.00
38	2407	1	169	MAX	600.00
39	2407	1	169	MEAN	58.34
40	2407	1	169	STD	80.25
41	2408	1	291	N	291.00
42	2408	1	291	MIN	2.00
43	2408	1	291	MAX	785.00
44	2408	1	291	MEAN	116.57
45	2408	1	291	STD	93.76
46	2409	1	11	N	11.00
47	2409	1	11	MIN	5.00
48	2409	1	11	MAX	24000.00
49	2409	1	11	MEAN	3721.45
50	2409	1	11	STD	7172.53
51	2410	1	4449	N	4449.00
52	2410	1	4449	MIN	0.40
53	2410	1	4449	MAX	360.00
54	2410	1	4449	MEAN	14.74
55	2410	1	4449	STD	19.95

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	2411	1	1402	N	1402.00
57	2411	1	1402	MIN	0.60
58	2411	1	1402	MAX	1000.00
59	2411	1	1402	MEAN	37.57
60	2411	1	1402	STD	61.39
61	2412	1	748	N	748.00
62	2412	1	748	MIN	0.50
63	2412	1	748	MAX	3000.00
64	2412	1	748	MEAN	75.98
65	2412	1	748	STD	206.79
66	2413	1	186	N	186.00
67	2413	1	186	MIN	4.00
68	2413	1	186	MAX	12000.00
69	2413	1	186	MEAN	681.59
70	2413	1	186	STD	1255.15
71	2414	1	178	N	178.00
72	2414	1	178	MIN	1.20
73	2414	1	178	MAX	1000.00
74	2414	1	178	MEAN	53.87
75	2414	1	178	STD	128.36
76	2415	1	481	N	481.00
77	2415	1	481	MIN	3.00
78	2415	1	481	MAX	200.00
79	2415	1	481	MEAN	31.16
80	2415	1	481	STD	23.07
81	2416	1	2061	N	2061.00
82	2416	1	2061	MIN	0.50
83	2416	1	2061	MAX	1000.00
84	2416	1	2061	MEAN	11.58
85	2416	1	2061	STD	33.30
86	2417	1	5850	N	5850.00
87	2417	1	5850	MIN	3.00
88	2417	1	5850	MAX	1440.00
89	2417	1	5850	MEAN	80.90
90	2417	1	5850	STD	74.22
91	2418	1	317	N	317.00
92	2418	1	317	MIN	1.20
93	2418	1	317	MAX	180.00
94	2418	1	317	MEAN	27.60
95	2418	1	317	STD	28.02
96	2419	1	2390	N	2390.00
97	2419	1	2390	MIN	0.60
98	2419	1	2390	MAX	600.00
99	2419	1	2390	MEAN	19.08
100	2419	1	2390	STD	30.59
101	2499	1	14219	N	14219.00
102	2499	1	14219	MIN	1.00
103	2499	1	14219	MAX	25460.00
104	2499	1	14219	MEAN	258.58
105	2499	1	14219	STD	466.60

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNPRE
1	.	0	267	N	267.00
2	.	0	267	MIN	15.00
3	.	0	267	MAX	76000.00
4	.	0	267	MEAN	4090.12
5	.	0	267	STD	9026.85
6	2501	1	10	N	10.00
7	2501	1	10	MIN	800.00
8	2501	1	10	MAX	76000.00
9	2501	1	10	MEAN	20470.00
10	2501	1	10	STD	22514.79
11	2502	1	31	N	31.00
12	2502	1	31	MIN	600.00
13	2502	1	31	MAX	28000.00
14	2502	1	31	MEAN	10261.29
15	2502	1	31	STD	5858.02
16	2503	1	37	N	37.00
17	2503	1	37	MIN	15.00
18	2503	1	37	MAX	600.00
19	2503	1	37	MEAN	242.68
20	2503	1	37	STD	139.52
21	2504	1	50	N	50.00
22	2504	1	50	MIN	15.00
23	2504	1	50	MAX	600.00
24	2504	1	50	MEAN	116.04
25	2504	1	50	STD	94.11
26	2505	1	2	N	2.00
27	2505	1	2	MIN	2100.00
28	2505	1	2	MAX	2500.00
29	2505	1	2	MEAN	2300.00
30	2505	1	2	STD	282.84
31	2506	1	5	N	5.00
32	2506	1	5	MIN	200.00
33	2506	1	5	MAX	1400.00
34	2506	1	5	MEAN	770.00
35	2506	1	5	STD	506.95
36	2599	1	132	N	132.00
37	2599	1	132	MIN	15.00
38	2599	1	132	MAX	76000.00
39	2599	1	132	MEAN	4136.60
40	2599	1	132	STD	9087.36

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	29768	N	29768.00
2	.	0	29768	MIN	1.80
3	.	0	29768	MAX	14000.00
4	.	0	29768	MEAN	231.32
5	.	0	29768	STD	455.66
6	2601	1	432	N	432.00
7	2601	1	432	MIN	7.50
8	2601	1	432	MAX	1400.00
9	2601	1	432	MEAN	123.81
10	2601	1	432	STD	128.01
11	2602	1	367	N	367.00
12	2602	1	367	MIN	5.00
13	2602	1	367	MAX	900.00
14	2602	1	367	MEAN	97.27
15	2602	1	367	STD	95.77
16	2603	1	276	N	276.00
17	2603	1	276	MIN	10.00
18	2603	1	276	MAX	600.00
19	2603	1	276	MEAN	68.89
20	2603	1	276	STD	66.68
21	2604	1	671	N	671.00
22	2604	1	671	MIN	12.00
23	2604	1	671	MAX	6240.00
24	2604	1	671	MEAN	965.93
25	2604	1	671	STD	832.23
26	2605	1	598	N	598.00
27	2605	1	598	MIN	3.00
28	2605	1	598	MAX	3600.00
29	2605	1	598	MEAN	201.57
30	2605	1	598	STD	235.19
31	2606	1	377	N	377.00
32	2606	1	377	MIN	6.00
33	2606	1	377	MAX	3600.00
34	2606	1	377	MEAN	165.42
35	2606	1	377	STD	224.11
36	2607	1	1100	N	1100.00
37	2607	1	1100	MIN	2.00
38	2607	1	1100	MAX	8000.00
39	2607	1	1100	MEAN	206.92
40	2607	1	1100	STD	464.00
41	2608	1	71	N	71.00
42	2608	1	71	MIN	24.00
43	2608	1	71	MAX	1200.00
44	2608	1	71	MEAN	288.42
45	2608	1	71	STD	264.26
46	2609	1	98	N	98.00
47	2609	1	98	MIN	6.00
48	2609	1	98	MAX	600.00
49	2609	1	98	MEAN	112.44
50	2609	1	98	STD	102.04
51	2610	1	10	N	10.00
52	2610	1	10	MIN	69.60
53	2610	1	10	MAX	3600.00
54	2610	1	10	MEAN	1759.76
55	2610	1	10	STD	1271.00

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	2611	1	4	N	4.00
57	2611	1	4	MIN	42.55
58	2611	1	4	MAX	2000.00
59	2611	1	4	MEAN	560.64
60	2611	1	4	STD	959.96
61	2699	1	1283	N	1283.00
62	2699	1	1283	MIN	2.00
63	2699	1	1283	MAX	13830.00
64	2699	1	1283	MEAN	949.49
65	2699	1	1283	STD	1385.61
66	2701	1	12175	N	12175.00
67	2701	1	12175	MIN	1.80
68	2701	1	12175	MAX	5400.00
69	2701	1	12175	MEAN	175.18
70	2701	1	12175	STD	202.19
71	2702	1	53	N	53.00
72	2702	1	53	MIN	120.00
73	2702	1	53	MAX	14000.00
74	2702	1	53	MEAN	1652.58
75	2702	1	53	STD	2298.94
76	2703	1	58	N	58.00
77	2703	1	58	MIN	5.00
78	2703	1	58	MAX	1000.00
79	2703	1	58	MEAN	75.03
80	2703	1	58	STD	168.34
81	2799	1	12195	N	12195.00
82	2799	1	12195	MIN	3.60
83	2799	1	12195	MAX	14000.00
84	2799	1	12195	MEAN	182.43
85	2799	1	12195	STD	273.26

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	9227	N	9227.00
2	.	0	9227	MIN	0.20
3	.	0	9227	MAX	3000.00
4	.	0	9227	MEAN	112.77
5	.	0	9227	STD	188.77
6	2801	1	74	N	74.00
7	2801	1	74	MIN	24.00
8	2801	1	74	MAX	3000.00
9	2801	1	74	MEAN	845.17
10	2801	1	74	STD	531.13
11	2802	1	2411	N	2411.00
12	2802	1	2411	MIN	15.00
13	2802	1	2411	MAX	2800.00
14	2802	1	2411	MEAN	171.68
15	2802	1	2411	STD	165.92
16	2803	1	1082	N	1082.00
17	2803	1	1082	MIN	0.60
18	2803	1	1082	MAX	1320.00
19	2803	1	1082	MEAN	15.38
20	2803	1	1082	STD	47.95
21	2804	1	427	N	427.00
22	2804	1	427	MIN	0.40
23	2804	1	427	MAX	190.00
24	2804	1	427	MEAN	10.60
25	2804	1	427	STD	15.41
26	2805	1	442	N	442.00
27	2805	1	442	MIN	0.80
28	2805	1	442	MAX	290.00
29	2805	1	442	MEAN	22.89
30	2805	1	442	STD	32.27
31	2806	1	1117	N	1117.00
32	2806	1	1117	MIN	0.20
33	2806	1	1117	MAX	1200.00
34	2806	1	1117	MEAN	11.21
35	2806	1	1117	STD	40.49
36	2899	1	3674	N	3674.00
37	2899	1	3674	MIN	1.00
38	2899	1	3674	MAX	3000.00
39	2899	1	3674	MEAN	141.61
40	2899	1	3674	STD	206.09

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	52172	N	52172.00
2	.	0	52172	MIN	0.50
3	.	0	52172	MAX	18797.00
4	.	0	52172	MEAN	146.82
5	.	0	52172	STD	354.38
6	2901	1	5798	N	5798.00
7	2901	1	5798	MIN	1.00
8	2901	1	5798	MAX	12000.00
9	2901	1	5798	MEAN	62.17
10	2901	1	5798	STD	243.03
11	2902	1	3859	N	3859.00
12	2902	1	3859	MIN	1.00
13	2902	1	3859	MAX	12000.00
14	2902	1	3859	MEAN	56.20
15	2902	1	3859	STD	222.64
16	2903	1	3111	N	3111.00
17	2903	1	3111	MIN	1.00
18	2903	1	3111	MAX	4000.00
19	2903	1	3111	MEAN	74.32
20	2903	1	3111	STD	189.92
21	2904	1	1316	N	1316.00
22	2904	1	1316	MIN	2.00
23	2904	1	1316	MAX	18000.00
24	2904	1	1316	MEAN	179.54
25	2904	1	1316	STD	657.01
26	2905	1	1294	N	1294.00
27	2905	1	1294	MIN	0.80
28	2905	1	1294	MAX	750.00
29	2905	1	1294	MEAN	33.23
30	2905	1	1294	STD	51.61
31	2906	1	878	N	878.00
32	2906	1	878	MIN	0.80
33	2906	1	878	MAX	1000.00
34	2906	1	878	MEAN	36.25
35	2906	1	878	STD	57.67
36	2907	1	731	N	731.00
37	2907	1	731	MIN	4.50
38	2907	1	731	MAX	1100.00
39	2907	1	731	MEAN	48.82
40	2907	1	731	STD	71.93
41	2908	1	634	N	634.00
42	2908	1	634	MIN	2.40
43	2908	1	634	MAX	4000.00
44	2908	1	634	MEAN	196.89
45	2908	1	634	STD	234.10
46	2909	1	3410	N	3410.00
47	2909	1	3410	MIN	1.75
48	2909	1	3410	MAX	2000.00
49	2909	1	3410	MEAN	67.76
50	2909	1	3410	STD	96.06
51	2910	1	8311	N	8311.00
52	2910	1	8311	MIN	0.75
53	2910	1	8311	MAX	2400.00
54	2910	1	8311	MEAN	52.87
55	2910	1	8311	STD	66.87

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	2911	1	4420	N	4420.00
57	2911	1	4420	MIN	1.40
58	2911	1	4420	MAX	4500.00
59	2911	1	4420	MEAN	208.75
60	2911	1	4420	STD	325.95
61	2912	1	2354	N	2354.00
62	2912	1	2354	MIN	1.00
63	2912	1	2354	MAX	1620.00
64	2912	1	2354	MEAN	126.83
65	2912	1	2354	STD	154.78
66	2913	1	6529	N	6529.00
67	2913	1	6529	MIN	1.40
68	2913	1	6529	MAX	1000.00
69	2913	1	6529	MEAN	89.36
70	2913	1	6529	STD	87.44
71	2914	1	382	N	382.00
72	2914	1	382	MIN	1.50
73	2914	1	382	MAX	2700.00
74	2914	1	382	MEAN	162.86
75	2914	1	382	STD	225.85
76	2915	1	259	N	259.00
77	2915	1	259	MIN	0.50
78	2915	1	259	MAX	2400.00
79	2915	1	259	MEAN	47.85
80	2915	1	259	STD	163.88
81	2999	1	8886	N	8886.00
82	2999	1	8886	MIN	12.00
83	2999	1	8886	MAX	18797.00
84	2999	1	8886	MEAN	431.01
85	2999	1	8886	STD	640.19

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNPRE
1	.	0	4044	N	4044.00
2	.	0	4044	MIN	1.00
3	.	0	4044	MAX	7060.00
4	.	0	4044	MEAN	113.55
5	.	0	4044	STD	315.28
6	3001	1	139	N	139.00
7	3001	1	139	MIN	45.00
8	3001	1	139	MAX	7000.00
9	3001	1	139	MEAN	771.26
10	3001	1	139	STD	747.11
11	3002	1	41	N	41.00
12	3002	1	41	MIN	20.00
13	3002	1	41	MAX	420.00
14	3002	1	41	MEAN	213.02
15	3002	1	41	STD	96.95
16	3003	1	26	N	26.00
17	3003	1	26	MIN	100.00
18	3003	1	26	MAX	2300.00
19	3003	1	26	MEAN	1038.92
20	3003	1	26	STD	605.51
21	3004	1	118	N	118.00
22	3004	1	118	MIN	3.50
23	3004	1	118	MAX	1000.00
24	3004	1	118	MEAN	159.73
25	3004	1	118	STD	168.71
26	3005	1	42	N	42.00
27	3005	1	42	MIN	12.00
28	3005	1	42	MAX	300.00
29	3005	1	42	MEAN	38.89
30	3005	1	42	STD	44.27
31	3006	1	615	N	615.00
32	3006	1	615	MIN	1.75
33	3006	1	615	MAX	1150.00
34	3006	1	615	MEAN	34.24
35	3006	1	615	STD	59.55
36	3007	1	3	N	3.00
37	3007	1	3	MIN	150.00
38	3007	1	3	MAX	1500.00
39	3007	1	3	MEAN	766.67
40	3007	1	3	STD	682.52
41	3008	1	21	N	21.00
42	3008	1	21	MIN	5.00
43	3008	1	21	MAX	350.00
44	3008	1	21	MEAN	105.62
45	3008	1	21	STD	85.84
46	3009	1	5	N	5.00
47	3009	1	5	MIN	45.00
48	3009	1	5	MAX	600.00
49	3009	1	5	MEAN	358.00
50	3009	1	5	STD	204.96
51	3011	1	21	N	21.00
52	3011	1	21	MIN	25.00
53	3011	1	21	MAX	500.00
54	3011	1	21	MEAN	156.19
55	3011	1	21	STD	98.55

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNPRE
56	3012	1	8	N	8.00
57	3012	1	8	MIN	50.00
58	3012	1	8	MAX	80.00
59	3012	1	8	MEAN	66.25
60	3012	1	8	STD	13.56
61	3013	1	140	N	140.00
62	3013	1	140	MIN	3.00
63	3013	1	140	MAX	100.00
64	3013	1	140	MEAN	24.90
65	3013	1	140	STD	19.52
66	3014	1	432	N	432.00
67	3014	1	432	MIN	1.00
68	3014	1	432	MAX	200.00
69	3014	1	432	MEAN	26.67
70	3014	1	432	STD	27.90
71	3015	1	49	N	49.00
72	3015	1	49	MIN	2.00
73	3015	1	49	MAX	500.00
74	3015	1	49	MEAN	32.19
75	3015	1	49	STD	72.24
76	3016	1	315	N	315.00
77	3016	1	315	MIN	1.00
78	3016	1	315	MAX	300.00
79	3016	1	315	MEAN	14.07
80	3016	1	315	STD	23.94
81	3017	1	8	N	8.00
82	3017	1	8	MIN	25.00
83	3017	1	8	MAX	520.00
84	3017	1	8	MEAN	252.50
85	3017	1	8	STD	209.32
86	3018	1	377	N	377.00
87	3018	1	377	MIN	5.00
88	3018	1	377	MAX	550.00
89	3018	1	377	MEAN	31.70
90	3018	1	377	STD	34.68
91	3099	1	1684	N	1684.00
92	3099	1	1684	MIN	1.00
93	3099	1	1684	MAX	7060.00
94	3099	1	1684	MEAN	136.34
95	3099	1	1684	STD	350.33

SUMMARY STATS FROM THE CSE (OTHER) RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	25855	N	25855.00
2	.	0	25855	MIN	1.00
3	.	0	25855	MAX	9784.00
4	.	0	25855	MEAN	248.25
5	.	0	25855	STD	369.58
6	3101	1	3571	N	3571.00
7	3101	1	3571	MIN	4.80
8	3101	1	3571	MAX	1752.00
9	3101	1	3571	MEAN	99.60
10	3101	1	3571	STD	88.38
11	3102	1	568	N	568.00
12	3102	1	568	MIN	4.20
13	3102	1	568	MAX	2700.00
14	3102	1	568	MEAN	100.72
15	3102	1	568	STD	163.56
16	3103	1	493	N	493.00
17	3103	1	493	MIN	12.00
18	3103	1	493	MAX	1200.00
19	3103	1	493	MEAN	151.05
20	3103	1	493	STD	137.33
21	3104	1	379	N	379.00
22	3104	1	379	MIN	2.00
23	3104	1	379	MAX	1200.00
24	3104	1	379	MEAN	79.05
25	3104	1	379	STD	130.28
26	3105	1	19	N	19.00
27	3105	1	19	MIN	8.00
28	3105	1	19	MAX	240.00
29	3105	1	19	MEAN	55.47
30	3105	1	19	STD	53.22
31	3106	1	213	N	213.00
32	3106	1	213	MIN	5.00
33	3106	1	213	MAX	280.00
34	3106	1	213	MEAN	47.94
35	3106	1	213	STD	43.48
36	3107	1	198	N	198.00
37	3107	1	198	MIN	1.00
38	3107	1	198	MAX	3000.00
39	3107	1	198	MEAN	222.35
40	3107	1	198	STD	385.85
41	3108	1	8207	N	8207.00
42	3108	1	8207	MIN	2.40
43	3108	1	8207	MAX	7200.00
44	3108	1	8207	MEAN	279.63
45	3108	1	8207	STD	328.59
46	3109	1	623	N	623.00
47	3109	1	623	MIN	1.00
48	3109	1	623	MAX	300.00
49	3109	1	623	MEAN	26.11
50	3109	1	623	STD	30.17
51	3110	1	148	N	148.00
52	3110	1	148	MIN	4.00
53	3110	1	148	MAX	1290.00
54	3110	1	148	MEAN	166.89
55	3110	1	148	STD	205.72

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	3111	1	415	N	415.00
57	3111	1	415	MIN	4.00
58	3111	1	415	MAX	1000.00
59	3111	1	415	MEAN	89.51
60	3111	1	415	STD	101.31
61	3112	1	405	N	405.00
62	3112	1	405	MIN	21.00
63	3112	1	405	MAX	1500.00
64	3112	1	405	MEAN	190.31
65	3112	1	405	STD	134.65
66	3113	1	468	N	468.00
67	3113	1	468	MIN	5.00
68	3113	1	468	MAX	2000.00
69	3113	1	468	MEAN	278.52
70	3113	1	468	STD	236.98
71	3114	1	456	N	456.00
72	3114	1	456	MIN	5.00
73	3114	1	456	MAX	1000.00
74	3114	1	456	MEAN	123.25
75	3114	1	456	STD	116.77
76	3199	1	9692	N	9692.00
77	3199	1	9692	MIN	2.00
78	3199	1	9692	MAX	9784.00
79	3199	1	9692	MEAN	331.12
80	3199	1	9692	STD	483.35

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	11273	N	11273.00
2	.	0	11273	MIN	3.00
3	.	0	11273	MAX	6156.00
4	.	0	11273	MEAN	203.15
5	.	0	11273	STD	266.23
6	3201	1	358	N	358.00
7	3201	1	358	MIN	6.00
8	3201	1	358	MAX	3486.00
9	3201	1	358	MEAN	309.87
10	3201	1	358	STD	429.75
11	3202	1	2497	N	2497.00
12	3202	1	2497	MIN	3.60
13	3202	1	2497	MAX	3240.00
14	3202	1	2497	MEAN	183.31
15	3202	1	2497	STD	204.02
16	3203	1	3916	N	3916.00
17	3203	1	3916	MIN	3.00
18	3203	1	3916	MAX	2880.00
19	3203	1	3916	MEAN	136.02
20	3203	1	3916	STD	147.42
21	3204	1	4	N	4.00
22	3204	1	4	MIN	150.00
23	3204	1	4	MAX	576.00
24	3204	1	4	MEAN	291.00
25	3204	1	4	STD	197.21
26	3205	1	331	N	331.00
27	3205	1	331	MIN	3.60
28	3205	1	331	MAX	900.00
29	3205	1	331	MEAN	97.96
30	3205	1	331	STD	115.14
31	3206	1	21	N	21.00
32	3206	1	21	MIN	60.00
33	3206	1	21	MAX	1800.00
34	3206	1	21	MEAN	408.00
35	3206	1	21	STD	401.31
36	3207	1	3	N	3.00
37	3207	1	3	MIN	120.00
38	3207	1	3	MAX	840.00
39	3207	1	3	MEAN	520.00
40	3207	1	3	STD	366.61
41	3299	1	4143	N	4143.00
42	3299	1	4143	MIN	5.40
43	3299	1	4143	MAX	6156.00
44	3299	1	4143	MEAN	276.38
45	3299	1	4143	STD	342.62

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	18880	N	18880.00
2	.	0	18880	MIN	0.35
3	.	0	18880	MAX	7340.00
4	.	0	18880	MEAN	72.35
5	.	0	18880	STD	206.81
6	3301	1	891	N	891.00
7	3301	1	891	MIN	3.00
8	3301	1	891	MAX	500.00
9	3301	1	891	MEAN	67.85
10	3301	1	891	STD	64.78
11	3302	1	352	N	352.00
12	3302	1	352	MIN	10.00
13	3302	1	352	MAX	710.00
14	3302	1	352	MEAN	48.68
15	3302	1	352	STD	53.41
16	3303	1	419	N	419.00
17	3303	1	419	MIN	0.50
18	3303	1	419	MAX	800.00
19	3303	1	419	MEAN	70.64
20	3303	1	419	STD	102.69
21	3304	1	2008	N	2008.00
22	3304	1	2008	MIN	2.00
23	3304	1	2008	MAX	500.00
24	3304	1	2008	MEAN	42.91
25	3304	1	2008	STD	40.58
26	3305	1	5738	N	5738.00
27	3305	1	5738	MIN	3.00
28	3305	1	5738	MAX	400.00
29	3305	1	5738	MEAN	35.09
30	3305	1	5738	STD	25.36
31	3306	1	203	N	203.00
32	3306	1	203	MIN	10.00
33	3306	1	203	MAX	350.00
34	3306	1	203	MEAN	43.67
35	3306	1	203	STD	43.05
36	3307	1	499	N	499.00
37	3307	1	499	MIN	1.00
38	3307	1	499	MAX	7000.00
39	3307	1	499	MEAN	508.45
40	3307	1	499	STD	688.83
41	3308	1	606	N	606.00
42	3308	1	606	MIN	1.25
43	3308	1	606	MAX	250.00
44	3308	1	606	MEAN	27.25
45	3308	1	606	STD	33.20
46	3309	1	476	N	476.00
47	3309	1	476	MIN	0.35
48	3309	1	476	MAX	240.00
49	3309	1	476	MEAN	15.42
50	3309	1	476	STD	18.95
51	3310	1	233	N	233.00
52	3310	1	233	MIN	0.60
53	3310	1	233	MAX	50.00
54	3310	1	233	MEAN	7.93
55	3310	1	233	STD	6.97

SUMMARY STATS FROM THE PERSONAL APPLIANCES RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	3399	1	7455	N	7455.00
57	3399	1	7455	MIN	0.35
58	3399	1	7455	MAX	7340.00
59	3399	1	7455	MEAN	91.61
60	3399	1	7455	STD	243.59

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	75253	N	75253.00
2	.	0	75253	MIN	0.10
3	.	0	75253	MAX	2905.00
4	.	0	75253	MEAN	62.70
5	.	0	75253	STD	97.64
6	3401	1	14548	N	14548.00
7	3401	1	14548	MIN	4.80
8	3401	1	14548	MAX	720.00
9	3401	1	14548	MEAN	46.47
10	3401	1	14548	STD	35.81
11	3402	1	1669	N	1669.00
12	3402	1	1669	MIN	2.00
13	3402	1	1669	MAX	444.00
14	3402	1	1669	MEAN	44.50
15	3402	1	1669	STD	40.27
16	3403	1	11383	N	11383.00
17	3403	1	11383	MIN	0.60
18	3403	1	11383	MAX	360.00
19	3403	1	11383	MEAN	15.92
20	3403	1	11383	STD	16.80
21	3404	1	6421	N	6421.00
22	3404	1	6421	MIN	2.00
23	3404	1	6421	MAX	400.00
24	3404	1	6421	MEAN	19.01
25	3404	1	6421	STD	16.84
26	3405	1	5338	N	5338.00
27	3405	1	5338	MIN	0.10
28	3405	1	5338	MAX	120.00
29	3405	1	5338	MEAN	4.01
30	3405	1	5338	STD	5.61
31	3406	1	3838	N	3838.00
32	3406	1	3838	MIN	2.00
33	3406	1	3838	MAX	800.00
34	3406	1	3838	MEAN	50.27
35	3406	1	3838	STD	57.49
36	3407	1	3127	N	3127.00
37	3407	1	3127	MIN	0.40
38	3407	1	3127	MAX	800.00
39	3407	1	3127	MEAN	50.58
40	3407	1	3127	STD	63.48
41	3408	1	13439	N	13439.00
42	3408	1	13439	MIN	3.00
43	3408	1	13439	MAX	720.00
44	3408	1	13439	MEAN	63.51
45	3408	1	13439	STD	51.25
46	3409	1	575	N	575.00
47	3409	1	575	MIN	6.00
48	3409	1	575	MAX	960.00
49	3409	1	575	MEAN	120.04
50	3409	1	575	STD	118.10
51	3410	1	37	N	37.00
52	3410	1	37	MIN	3.00
53	3410	1	37	MAX	240.00
54	3410	1	37	MEAN	78.32
55	3410	1	37	STD	63.62

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	3411	1	1	N	1.00
57	3411	1	1	MIN	120.00
58	3411	1	1	MAX	120.00
59	3411	1	1	MEAN	120.00
60	3411	1	1	STD	.
61	3412	1	68	N	68.00
62	3412	1	68	MIN	2.00
63	3412	1	68	MAX	200.00
64	3412	1	68	MEAN	48.96
65	3412	1	68	STD	44.36
66	3413	1	63	N	63.00
67	3413	1	63	MIN	8.00
68	3413	1	63	MAX	360.00
69	3413	1	63	MEAN	64.05
70	3413	1	63	STD	64.14
71	3499	1	14746	N	14746.00
72	3499	1	14746	MIN	0.50
73	3499	1	14746	MAX	2905.00
74	3499	1	14746	MEAN	159.98
75	3499	1	14746	STD	168.63

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	41543	N	41543.00
2	.	0	41543	MIN	0.10
3	.	0	41543	MAX	53950.00
4	.	0	41543	MEAN	158.52
5	.	0	41543	STD	824.44
6	3501	1	114	N	114.00
7	3501	1	114	MIN	4.00
8	3501	1	114	MAX	2505.00
9	3501	1	114	MEAN	178.18
10	3501	1	114	STD	325.03
11	3502	1	177	N	177.00
12	3502	1	177	MIN	6.00
13	3502	1	177	MAX	8000.00
14	3502	1	177	MEAN	298.90
15	3502	1	177	STD	689.87
16	3503	1	1968	N	1968.00
17	3503	1	1968	MIN	0.50
18	3503	1	1968	MAX	5000.00
19	3503	1	1968	MEAN	26.97
20	3503	1	1968	STD	131.60
21	3504	1	29	N	29.00
22	3504	1	29	MIN	3.00
23	3504	1	29	MAX	120.00
24	3504	1	29	MEAN	33.86
25	3504	1	29	STD	29.83
26	3505	1	374	N	374.00
27	3505	1	374	MIN	10.00
28	3505	1	374	MAX	4000.00
29	3505	1	374	MEAN	191.02
30	3505	1	374	STD	316.99
31	3506	1	226	N	226.00
32	3506	1	226	MIN	3.40
33	3506	1	226	MAX	20000.00
34	3506	1	226	MEAN	777.51
35	3506	1	226	STD	1711.22
36	3507	1	486	N	486.00
37	3507	1	486	MIN	1.00
38	3507	1	486	MAX	500.00
39	3507	1	486	MEAN	38.05
40	3507	1	486	STD	54.61
41	3508	1	952	N	952.00
42	3508	1	952	MIN	0.10
43	3508	1	952	MAX	3400.00
44	3508	1	952	MEAN	10.98
45	3508	1	952	STD	111.25
46	3520	1	2983	N	2983.00
47	3520	1	2983	MIN	0.50
48	3520	1	2983	MAX	20000.00
49	3520	1	2983	MEAN	135.23
50	3520	1	2983	STD	578.77
51	3530	1	1	N	1.00
52	3530	1	1	MIN	200.00
53	3530	1	1	MAX	200.00
54	3530	1	1	MEAN	200.00
55	3530	1	1	STD	.

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	3531	1	88	N	88.00
57	3531	1	88	MIN	250.00
58	3531	1	88	MAX	15000.00
59	3531	1	88	MEAN	3125.97
60	3531	1	88	STD	3115.97
61	3532	1	5	N	5.00
62	3532	1	5	MIN	1000.00
63	3532	1	5	MAX	30000.00
64	3532	1	5	MEAN	7400.00
65	3532	1	5	STD	12646.15
66	3533	1	4	N	4.00
67	3533	1	4	MIN	5.00
68	3533	1	4	MAX	25.00
69	3533	1	4	MEAN	16.25
70	3533	1	4	STD	8.54
71	3550	1	92	N	92.00
72	3550	1	92	MIN	5.00
73	3550	1	92	MAX	30000.00
74	3550	1	92	MEAN	3289.67
75	3550	1	92	STD	4195.30
76	3599	1	3047	N	3047.00
77	3599	1	3047	MIN	0.50
78	3599	1	3047	MAX	30000.00
79	3599	1	3047	MEAN	234.90
80	3599	1	3047	STD	1086.51
81	3601	1	442	N	442.00
82	3601	1	442	MIN	7.00
83	3601	1	442	MAX	12000.00
84	3601	1	442	MEAN	555.38
85	3601	1	442	STD	1131.76
86	3602	1	104	N	104.00
87	3602	1	104	MIN	7.00
88	3602	1	104	MAX	5000.00
89	3602	1	104	MEAN	211.03
90	3602	1	104	STD	516.57
91	3603	1	196	N	196.00
92	3603	1	196	MIN	10.00
93	3603	1	196	MAX	30000.00
94	3603	1	196	MEAN	2815.45
95	3603	1	196	STD	4154.19
96	3604	1	6849	N	6849.00
97	3604	1	6849	MIN	3.00
98	3604	1	6849	MAX	5000.00
99	3604	1	6849	MEAN	76.04
100	3604	1	6849	STD	131.09
101	3605	1	10656	N	10656.00
102	3605	1	10656	MIN	1.00
103	3605	1	10656	MAX	10000.00
104	3605	1	10656	MEAN	52.13
105	3605	1	10656	STD	156.90
106	3606	1	74	N	74.00
107	3606	1	74	MIN	3.00
108	3606	1	74	MAX	5000.00
109	3606	1	74	MEAN	521.97
110	3606	1	74	STD	945.63

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
111	3607	1	115	N	115.00
112	3607	1	115	MIN	18.00
113	3607	1	115	MAX	22950.00
114	3607	1	115	MEAN	700.37
115	3607	1	115	STD	2192.39
116	3608	1	2	N	2.00
117	3608	1	2	MIN	400.00
118	3608	1	2	MAX	700.00
119	3608	1	2	MEAN	550.00
120	3608	1	2	STD	212.13
121	3699	1	11614	N	11614.00
122	3699	1	11614	MIN	2.00
123	3699	1	11614	MAX	53950.00
124	3699	1	11614	MEAN	173.57
125	3699	1	11614	STD	918.75
126	3701	1	453	N	453.00
127	3701	1	453	MIN	6.00
128	3701	1	453	MAX	13000.00
129	3701	1	453	MEAN	410.44
130	3701	1	453	STD	1012.60
131	3702	1	22	N	22.00
132	3702	1	22	MIN	50.00
133	3702	1	22	MAX	9000.00
134	3702	1	22	MEAN	1006.82
135	3702	1	22	STD	1996.58
136	3799	1	470	N	470.00
137	3799	1	470	MIN	6.00
138	3799	1	470	MAX	13000.00
139	3799	1	470	MEAN	442.72
140	3799	1	470	STD	1087.13

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	50565	N	50565.00
2	.	0	50565	MIN	2.00
3	.	0	50565	MAX	600000.00
4	.	0	50565	MEAN	4432.89
5	.	0	50565	STD	7540.21
6	4005	1	8795	N	8795.00
7	4005	1	8795	MIN	180.00
8	4005	1	8795	MAX	61200.00
9	4005	1	8795	MEAN	4966.19
10	4005	1	8795	STD	3743.37
11	4115	1	5943	N	5943.00
12	4115	1	5943	MIN	9.00
13	4115	1	5943	MAX	181000.00
14	4115	1	5943	MEAN	3666.96
15	4115	1	5943	STD	5254.20
16	4204	1	3428	N	3428.00
17	4204	1	3428	MIN	120.00
18	4204	1	3428	MAX	600000.00
19	4204	1	3428	MEAN	7058.72
20	4204	1	3428	STD	14770.98
21	4307	1	11456	N	11456.00
22	4307	1	11456	MIN	2.00
23	4307	1	11456	MAX	81200.00
24	4307	1	11456	MEAN	584.09
25	4307	1	11456	STD	1503.70
26	4408	1	434	N	434.00
27	4408	1	434	MIN	36.00
28	4408	1	434	MAX	70000.00
29	4408	1	434	MEAN	2991.46
30	4408	1	434	STD	5255.65
31	4505	1	5704	N	5704.00
32	4505	1	5704	MIN	2.00
33	4505	1	5704	MAX	36000.00
34	4505	1	5704	MEAN	2527.58
35	4505	1	5704	STD	2423.09
36	9999	1	14805	N	14805.00
37	9999	1	14805	MIN	336.00
38	9999	1	14805	MAX	600000.00
39	9999	1	14805	MEAN	7570.05
40	9999	1	14805	STD	9731.05

Variable	N	Mean	Std Dev	Minimum	Maximum
RECTYPE	21467	26.0000000	0	26.0000000	26.0000000
NUMGOV	21467	40.8853589	33.5217270	1.0000000	165.0000000
NUMSV	21467	8.0177016	4.3298138	1.0000000	15.0000000
NUMFR	21467	15.5130666	8.6462705	1.0000000	30.0000000
ROUND	21467	2.4774305	1.1238381	1.0000000	4.0000000
MONTH	21467	6.5719011	3.4664796	1.0000000	12.0000000
GOV	21467	14.6128010	8.8753588	1.0000000	34.0000000
URBRUR	21467	0.4990916	0.5000108	0	1.0000000
KM	21467	8.3160665	7.0734803	1.0000000	36.0000000
SV	21467	108.2818279	126.1507063	10.0000000	790.0000000
PSU	21467	121.7266036	72.8551753	1.0000000	280.0000000
EARNER	21467	41.8343504	47.6434263	1.0000000	99.0000000
VAL4000	21462	3150.04	2411.68	60.0000000	60000.00
VAL4001	6541	916.3595780	973.0329544	20.0000000	19500.00
VAL4002	11670	853.7737789	920.1847784	10.0000000	15000.00
VAL4003	2259	511.7538734	516.7517933	20.0000000	6000.00
VAL4004	2209	1193.13	1233.89	10.0000000	10000.00
VAL4005	21467	4069.28	3205.11	60.0000000	61200.00

SUMMARY STATS FROM THE AGRICULTURE INCOME RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	18753	N	18753.00
2	.	0	18753	MIN	9.00
3	.	0	18753	MAX	181000.00
4	.	0	18753	MEAN	2324.19
5	.	0	18753	STD	3994.48
6	4100	1	3736	N	3736.00
7	4100	1	3736	MIN	58.00
8	4100	1	3736	MAX	175000.00
9	4100	1	3736	MEAN	3418.01
10	4100	1	3736	STD	4119.64
11	4101	1	1046	N	1046.00
12	4101	1	1046	MIN	15.00
13	4101	1	1046	MAX	20000.00
14	4101	1	1046	MEAN	1456.30
15	4101	1	1046	STD	1966.86
16	4102	1	158	N	158.00
17	4102	1	158	MIN	50.00
18	4102	1	158	MAX	60000.00
19	4102	1	158	MEAN	3152.84
20	4102	1	158	STD	5431.03
21	4103	1	9	N	9.00
22	4103	1	9	MIN	40.00
23	4103	1	9	MAX	125000.00
24	4103	1	9	MEAN	14298.44
25	4103	1	9	STD	41517.23
26	4104	1	2	N	2.00
27	4104	1	2	MIN	6600.00
28	4104	1	2	MAX	40000.00
29	4104	1	2	MEAN	23300.00
30	4104	1	2	STD	23617.37
31	4105	1	15	N	15.00
32	4105	1	15	MIN	50.00
33	4105	1	15	MAX	4000.00
34	4105	1	15	MEAN	1280.00
35	4105	1	15	STD	1180.96
36	4106	1	2277	N	2277.00
37	4106	1	2277	MIN	10.00
38	4106	1	2277	MAX	30000.00
39	4106	1	2277	MEAN	1300.29
40	4106	1	2277	STD	1356.08
41	4107	1	4814	N	4814.00
42	4107	1	4814	MIN	9.00
43	4107	1	4814	MAX	20000.00
44	4107	1	4814	MEAN	512.51
45	4107	1	4814	STD	467.66
46	4108	1	405	N	405.00
47	4108	1	405	MIN	150.00
48	4108	1	405	MAX	20000.00
49	4108	1	405	MEAN	1596.13
50	4108	1	405	STD	1760.61
51	4109	1	15	N	15.00
52	4109	1	15	MIN	100.00
53	4109	1	15	MAX	5000.00
54	4109	1	15	MEAN	2252.00
55	4109	1	15	STD	1292.53

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
56	4110	1	13	N	13.00
57	4110	1	13	MIN	462.00
58	4110	1	13	MAX	37000.00
59	4110	1	13	MEAN	11144.00
60	4110	1	13	STD	11291.27
61	4111	1	12	N	12.00
62	4111	1	12	MIN	84.00
63	4111	1	12	MAX	8500.00
64	4111	1	12	MEAN	2556.83
65	4111	1	12	STD	2611.54
66	4112	1	4	N	4.00
67	4112	1	4	MIN	200.00
68	4112	1	4	MAX	5000.00
69	4112	1	4	MEAN	1500.00
70	4112	1	4	STD	2336.66
71	4113	1	127	N	127.00
72	4113	1	127	MIN	100.00
73	4113	1	127	MAX	35000.00
74	4113	1	127	MEAN	1467.44
75	4113	1	127	STD	3370.08
76	4114	1	177	N	177.00
77	4114	1	177	MIN	18.00
78	4114	1	177	MAX	15200.00
79	4114	1	177	MEAN	1870.28
80	4114	1	177	STD	2776.75
81	4115	1	5943	N	5943.00
82	4115	1	5943	MIN	9.00
83	4115	1	5943	MAX	181000.00
84	4115	1	5943	MEAN	3666.96
85	4115	1	5943	STD	5254.20

OBS	EARNER	_TYPE_	_FREQ_	_STAT_	PERCENT
1	.	0	12446	N	12446.00
2	.	0	12446	MIN	1.00
3	.	0	12446	MAX	100.00
4	.	0	12446	MEAN	95.50
5	.	0	12446	STD	17.35
6	1	1	4707	N	4707.00
7	1	1	4707	MIN	2.00
8	1	1	4707	MAX	100.00
9	1	1	4707	MEAN	97.30
10	1	1	4707	STD	10.70
11	2	1	1400	N	1400.00
12	2	1	1400	MIN	1.00
13	2	1	1400	MAX	100.00
14	2	1	1400	MEAN	79.68
15	2	1	1400	STD	35.97
16	3	1	148	N	148.00
17	3	1	148	MIN	2.00
18	3	1	148	MAX	100.00
19	3	1	148	MEAN	69.05
20	3	1	148	STD	35.33
21	4	1	78	N	78.00
22	4	1	78	MIN	10.00
23	4	1	78	MAX	100.00
24	4	1	78	MEAN	57.59
25	4	1	78	STD	34.42
26	5	1	50	N	50.00
27	5	1	50	MIN	6.00
28	5	1	50	MAX	100.00
29	5	1	50	MEAN	65.96
30	5	1	50	STD	37.02
31	6	1	41	N	41.00
32	6	1	41	MIN	8.00
33	6	1	41	MAX	100.00
34	6	1	41	MEAN	53.73
35	6	1	41	STD	29.62
36	7	1	30	N	30.00
37	7	1	30	MIN	10.00
38	7	1	30	MAX	100.00
39	7	1	30	MEAN	54.63
40	7	1	30	STD	32.93
41	8	1	17	N	17.00
42	8	1	17	MIN	2.00
43	8	1	17	MAX	100.00
44	8	1	17	MEAN	57.35
45	8	1	17	STD	32.66
46	9	1	14	N	14.00
47	9	1	14	MIN	20.00
48	9	1	14	MAX	100.00
49	9	1	14	MEAN	68.93
50	9	1	14	STD	34.04
51	10	1	8	N	8.00
52	10	1	8	MIN	7.00
53	10	1	8	MAX	100.00
54	10	1	8	MEAN	60.25
55	10	1	8	STD	42.90

OBS	EARNER	_TYPE_	_FREQ_	_STAT_	PERCENT
56	11	1	4	N	4.00
57	11	1	4	MIN	10.00
58	11	1	4	MAX	100.00
59	11	1	4	MEAN	48.25
60	11	1	4	STD	38.20
61	12	1	2	N	2.00
62	12	1	2	MIN	50.00
63	12	1	2	MAX	50.00
64	12	1	2	MEAN	50.00
65	12	1	2	STD	0.00
66	14	1	1	N	1.00
67	14	1	1	MIN	20.00
68	14	1	1	MAX	20.00
69	14	1	1	MEAN	20.00
70	14	1	1	STD	.
71	15	1	2	N	2.00
72	15	1	2	MIN	25.00
73	15	1	2	MAX	100.00
74	15	1	2	MEAN	62.50
75	15	1	2	STD	53.03
76	16	1	1	N	1.00
77	16	1	1	MIN	34.00
78	16	1	1	MAX	34.00
79	16	1	1	MEAN	34.00
80	16	1	1	STD	.
81	99	1	5943	N	5943.00
82	99	1	5943	MIN	100.00
83	99	1	5943	MAX	100.00
84	99	1	5943	MEAN	100.00
85	99	1	5943	STD	0.00

SUMMARY STATS FROM THE NON-AGRICULTURE PROJECTS RECORD

OBS	CODE	_TYPE_	_FREQ_	_STAT_	ANNVAL
1	.	0	6950	N	6950.00
2	.	0	6950	MIN	120.00
3	.	0	6950	MAX	600000.00
4	.	0	6950	MEAN	6963.25
5	.	0	6950	STD	14636.03
6	4200	1	1695	N	1695.00
7	4200	1	1695	MIN	200.00
8	4200	1	1695	MAX	600000.00
9	4200	1	1695	MEAN	6733.07
10	4200	1	1695	STD	16153.33
11	4201	1	497	N	497.00
12	4201	1	497	MIN	200.00
13	4201	1	497	MAX	360000.00
14	4201	1	497	MEAN	7275.92
15	4201	1	497	STD	17475.71
16	4202	1	1167	N	1167.00
17	4202	1	1167	MIN	200.00
18	4202	1	1167	MAX	300000.00
19	4202	1	1167	MEAN	6945.72
20	4202	1	1167	STD	10826.46
21	4203	1	163	N	163.00
22	4203	1	163	MIN	120.00
23	4203	1	163	MAX	72000.00
24	4203	1	163	MEAN	6521.25
25	4203	1	163	STD	8048.35
26	4204	1	3428	N	3428.00
27	4204	1	3428	MIN	120.00
28	4204	1	3428	MAX	600000.00
29	4204	1	3428	MEAN	7058.72
30	4204	1	3428	STD	14770.98

OBS	EARNER	_TYPE_	_FREQ_	_STAT_	PERCENT
1	.	0	7096	N	7096.00
2	.	0	7096	MIN	10.00
3	.	0	7096	MAX	100.00
4	.	0	7096	MEAN	96.62
5	.	0	7096	STD	13.74
6	1	1	2858	N	2858.00
7	1	1	2858	MIN	14.00
8	1	1	2858	MAX	100.00
9	1	1	2858	MEAN	97.59
10	1	1	2858	STD	10.64
11	2	1	366	N	366.00
12	2	1	366	MIN	10.00
13	2	1	366	MAX	100.00
14	2	1	366	MEAN	87.99
15	2	1	366	STD	23.68
16	3	1	218	N	218.00
17	3	1	218	MIN	12.00
18	3	1	218	MAX	100.00
19	3	1	218	MEAN	75.88
20	3	1	218	STD	30.35
21	4	1	94	N	94.00
22	4	1	94	MIN	13.00
23	4	1	94	MAX	100.00
24	4	1	94	MEAN	67.74
25	4	1	94	STD	34.54
26	5	1	48	N	48.00
27	5	1	48	MIN	14.00
28	5	1	48	MAX	100.00
29	5	1	48	MEAN	64.00
30	5	1	48	STD	33.10
31	6	1	25	N	25.00
32	6	1	25	MIN	14.00
33	6	1	25	MAX	100.00
34	6	1	25	MEAN	59.60
35	6	1	25	STD	34.37
36	7	1	19	N	19.00
37	7	1	19	MIN	20.00
38	7	1	19	MAX	100.00
39	7	1	19	MEAN	63.58
40	7	1	19	STD	33.27
41	8	1	16	N	16.00
42	8	1	16	MIN	32.00
43	8	1	16	MAX	100.00
44	8	1	16	MEAN	76.94
45	8	1	16	STD	27.54
46	9	1	7	N	7.00
47	9	1	7	MIN	20.00
48	9	1	7	MAX	100.00
49	9	1	7	MEAN	57.86
50	9	1	7	STD	33.15
51	10	1	7	N	7.00
52	10	1	7	MIN	20.00
53	10	1	7	MAX	100.00
54	10	1	7	MEAN	88.57
55	10	1	7	STD	30.24

OBS	EARNER	_TYPE_	_FREQ_	_STAT_	PERCENT
56	11	1	4	N	4.00
57	11	1	4	MIN	33.00
58	11	1	4	MAX	100.00
59	11	1	4	MEAN	83.25
60	11	1	4	STD	33.50
61	13	1	2	N	2.00
62	13	1	2	MIN	42.00
63	13	1	2	MAX	100.00
64	13	1	2	MEAN	71.00
65	13	1	2	STD	41.01
66	14	1	1	N	1.00
67	14	1	1	MIN	100.00
68	14	1	1	MAX	100.00
69	14	1	1	MEAN	100.00
70	14	1	1	STD	.
71	15	1	2	N	2.00
72	15	1	2	MIN	50.00
73	15	1	2	MAX	100.00
74	15	1	2	MEAN	75.00
75	15	1	2	STD	35.36
76	16	1	1	N	1.00
77	16	1	1	MIN	34.00
78	16	1	1	MAX	34.00
79	16	1	1	MEAN	34.00
80	16	1	1	STD	.
81	99	1	3428	N	3428.00
82	99	1	3428	MIN	100.00
83	99	1	3428	MAX	100.00
84	99	1	3428	MEAN	100.00
85	99	1	3428	STD	0.00

SUMMARY STATS FROM THE LANDS RECORD

Variable	N	Mean	Std Dev	Minimum	Maximum
EARNER	23000	49.8490000	48.9658560	1.0000000	99.0000000
VAL4300	960	2108.71	2174.81	100.0000000	15000.00
VAL4301	14	8632.57	13322.53	2000.00	40000.00
VAL4302	388	2618.46	2799.66	300.0000000	24600.00
VAL4303	1217	1786.66	2653.36	20.0000000	44400.00
VAL4304	116	1384.74	1602.34	60.0000000	11400.00
VAL4305	22552	327.2358106	363.5983139	2.0000000	6000.00
VAL4306	309	1639.44	3379.51	12.0000000	30000.00
VAL4307	23000	581.8516522	1487.39	2.0000000	81200.00

SUMMARY STATS FROM THE FINANCE INCOME RECORD

Variable	N	Mean	Std Dev	Minimum	Maximum
EARNER	926	47.1889849	48.6947239	1.0000000	99.0000000
VAL4400	483	143.6024845	1446.68	0	20000.00
VAL4401	483	88.6128364	785.9336106	0	10000.00
VAL4402	554	1001.49	3545.83	0	50000.00
VAL4403	616	1176.38	2895.71	0	35000.00
VAL4404	533	225.9136961	535.1917512	0	3500.00
VAL4405	613	1117.65	2709.60	0	28000.00
VAL4406	495	367.4666667	2253.90	0	30000.00
VAL4407	503	432.4572565	1668.21	0	15000.00
VAL4408	926	2804.09	5108.86	26.0000000	70000.00

Variable	N	Mean	Std Dev	Minimum	Maximum
EARNER	12076	47.7661477	48.5189439	1.0000000	99.0000000
VAL4500	7911	2209.57	2048.19	65.0000000	18400.00
VAL4501	1489	3391.59	2725.62	50.0000000	36000.00
VAL4502	2395	1344.15	1458.32	12.0000000	20000.00
VAL4503	251	947.9760956	948.2521054	6.0000000	6600.00
VAL4504	2700	1057.86	1392.33	2.0000000	18384.00
VAL4505	12076	2388.49	2329.69	2.0000000	36000.00

SUMMARY STATS NET CHANGES TO HH SAVINGS AND OWNERSHIP

OBS	CODE	_TYPE_	_FREQ_	_STAT_	NET
1	.	0	3910	N	3861.00
2	.	0	3910	MIN	-60000.00
3	.	0	3910	MAX	96000.00
4	.	0	3910	MEAN	741.42
5	.	0	3910	STD	5629.21
6	5000	1	36	N	35.00
7	5000	1	36	MIN	-60000.00
8	5000	1	36	MAX	96000.00
9	5000	1	36	MEAN	3229.60
10	5000	1	36	STD	23180.79
11	5001	1	7	N	7.00
12	5001	1	7	MIN	-15000.00
13	5001	1	7	MAX	50000.00
14	5001	1	7	MEAN	2357.14
15	5001	1	7	STD	22529.08
16	5002	1	34	N	34.00
17	5002	1	34	MIN	-22000.00
18	5002	1	34	MAX	44000.00
19	5002	1	34	MEAN	5461.35
20	5002	1	34	STD	11624.17
21	5003	1	10	N	10.00
22	5003	1	10	MIN	-2000.00
23	5003	1	10	MAX	16000.00
24	5003	1	10	MEAN	3660.00
25	5003	1	10	STD	6479.19
26	5004	1	9	N	9.00
27	5004	1	9	MIN	-34000.00
28	5004	1	9	MAX	20000.00
29	5004	1	9	MEAN	1160.00
30	5004	1	9	STD	15221.83
31	5005	1	12	N	6.00
32	5005	1	12	MIN	-1500.00
33	5005	1	12	MAX	2000.00
34	5005	1	12	MEAN	-91.67
35	5005	1	12	STD	1164.65
36	5006	1	164	N	164.00
37	5006	1	164	MIN	-25000.00
38	5006	1	164	MAX	7500.00
39	5006	1	164	MEAN	-19.70
40	5006	1	164	STD	2624.84
41	5007	1	1294	N	1294.00
42	5007	1	1294	MIN	-43000.00
43	5007	1	1294	MAX	71060.00
44	5007	1	1294	MEAN	461.64
45	5007	1	1294	STD	3910.05
46	5008	1	8	N	8.00
47	5008	1	8	MIN	488.00
48	5008	1	8	MAX	20000.00
49	5008	1	8	MEAN	3459.13
50	5008	1	8	STD	6761.83
51	5009	1	133	N	133.00
52	5009	1	133	MIN	-20000.00
53	5009	1	133	MAX	50000.00
54	5009	1	133	MEAN	1694.87
55	5009	1	133	STD	8386.17

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OBS	CODE	_TYPE_	_FREQ_	_STAT_	NET
56	5010	1	3	N	3.00
57	5010	1	3	MIN	-10000.00
58	5010	1	3	MAX	3850.00
59	5010	1	3	MEAN	-3983.33
60	5010	1	3	STD	7101.47
61	5011	1	19	N	19.00
62	5011	1	19	MIN	-2250.00
63	5011	1	19	MAX	14000.00
64	5011	1	19	MEAN	3362.37
65	5011	1	19	STD	4268.20
66	5012	1	75	N	75.00
67	5012	1	75	MIN	-5000.00
68	5012	1	75	MAX	23000.00
69	5012	1	75	MEAN	1587.31
70	5012	1	75	STD	3944.29
71	5013	1	49	N	14.00
72	5013	1	49	MIN	-6000.00
73	5013	1	49	MAX	4500.00
74	5013	1	49	MEAN	-783.57
75	5013	1	49	STD	2180.05
76	5014	1	62	N	62.00
77	5014	1	62	MIN	-2000.00
78	5014	1	62	MAX	13000.00
79	5014	1	62	MEAN	1095.13
80	5014	1	62	STD	1926.91
81	5015	1	20	N	20.00
82	5015	1	20	MIN	-9000.00
83	5015	1	20	MAX	10000.00
84	5015	1	20	MEAN	629.20
85	5015	1	20	STD	3374.31
86	5016	1	84	N	84.00
87	5016	1	84	MIN	-8000.00
88	5016	1	84	MAX	8000.00
89	5016	1	84	MEAN	117.52
90	5016	1	84	STD	2410.37
91	5017	1	1891	N	1884.00
92	5017	1	1891	MIN	-49000.00
93	5017	1	1891	MAX	96000.00
94	5017	1	1891	MEAN	744.85
95	5017	1	1891	STD	5619.27

SAS Files
for Construction of CENVAR Household-Level Variance Data Set

```
options pagesize=60;
libname in 'c:\process';
data mrga(keep=round month gov urbrur km sv numsv psu
        males females total);
set in.cov;
/*The first thing to do is to apply the code patches */;
/*to the data, a necessary thing whenever using wgts */;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
proc sort;
by gov urbrur km sv psu;
run;
;
data mrgb(keep=gov urbrur km sv psu finlwt);
set in.wgts(drop=normwt);
proc sort;
by gov urbrur km sv psu;
run;
;
data mrg1;
merge mrga mrgb;
by gov urbrur km sv psu;
proc sort;
by round month gov urbrur km sv numsv;
run;
/*I checked mrg1 above, and there are no cases of finlwt=0 */;
/*However, in any merges using sv, code patches must apply */;
/*Therefore code patches must exist in all mrg* files  *****/;
;
/*For the demographics, choose HH head as representative */;
data mrg2(keep=round month gov urbrur km sv numsv
        sex age educ lastyr eductype stage yrs marstat workstat
        untype look reason empstat days occu econact sector earner
        source1-source6);
set in.dem;
if rel=1;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
```

```
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
proc sort;
by round month gov urbrur km sv numsv;
run;
data mrg3(keep=round month gov urbrur km sv numsv
        liveaway awaynum awayinc card oncard
        type tenure rooms watsrc network sewerage lighting cookfuel
        wallmatl area constyr keyrent kitchen bathtoi sepbath septoi
        toitype garbage surround distwkm distwm distmkm distmm);
set in.hous;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
proc sort;
by round month gov urbrur km sv numsv;
run;
;
data mrg4(keep=round month gov urbrur km sv numsv
        car bike cycle phone fridge freezer cooker washmach dishwash
        wathtr vacuum ac fan heater iron colortv bwtv video cassrec pc);
set in.inv;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
proc sort;
by round month gov urbrur km sv numsv;
run;
;
/*******last three digits of quantities are grams***********/;
/*******last two digits of values are piastres**************/;
/*******for expenditures, only rectype 15 has no decimals***/;
/*******for all income records, there are no decimals*******/;
/*******dichotomous variables coded 2 were recoded 0********/;
```

```
data exp1(keep=round month gov urbrur km sv numsv annval)
exp2(keep=round month gov urbrur km sv psu numsv annval)
exp3(keep=round month gov urbrur km sv psu numsv annval)
exp4(keep=round month gov urbrur km sv psu numsv annval)
exp5(keep=round month gov urbrur km sv psu numsv annval)
exp6(keep=round month gov urbrur km sv psu numsv annval)
exp7(keep=round month gov urbrur km sv psu numsv annval)
exp8(keep=round month gov urbrur km sv psu numsv annval)
exp9(keep=round month gov urbrur km sv psu numsv annval)
exp10(keep=round month gov urbrur km sv psu numsv annval)
exp11(keep=round month gov urbrur km sv psu numsv annval)
exp12(keep=round month gov urbrur km sv psu numsv annval)
exp13(keep=round month gov urbrur km sv psu numsv annval)
exp14(keep=round month gov urbrur km sv psu numsv annval)
exp15(keep=round month gov urbrur km sv psu numsv annval);
set in.exp;
if maincode=01 and code=. then output exp1;
if maincode=02 and code=1599 then output exp2;
if maincode=03 and code=. then output exp3;
if maincode=04 and code=. then output exp4;
if maincode=05 and code=. then output exp5;
if maincode=06 and code=2499 then output exp6;
if maincode=07 and code=. then output exp7;
if maincode=08 and code=2999 then output exp8;
if maincode=09 and code=. then output exp9;
if maincode=10 and code=3299 then output exp10;
if maincode=11 and code=. then output exp11;
if maincode=12 and code=3699 then output exp12;
if maincode=13 and code=3799 then output exp13;
if maincode=98 and code=. then output exp14;
if maincode=99 and code=. then output exp15;
run;
data sort1; set exp1(rename=(annval=foodbev));
proc sort; by round month gov urbrur km sv numsv; run;
data sort2; set exp2(rename=(annval=tobacco));
proc sort; by round month gov urbrur km sv numsv; run;
data sort3; set exp3(rename=(annval=apparel));
proc sort; by round month gov urbrur km sv numsv; run;
data sort4; set exp4(rename=(annval=housing));
proc sort; by round month gov urbrur km sv numsv; run;
data sort5; set exp5(rename=(annval=furn));
proc sort; by round month gov urbrur km sv numsv; run;
data sort6; set exp6(rename=(annval=medical));
proc sort; by round month gov urbrur km sv numsv; run;
data sort7; set exp7(rename=(annval=trcomm));
proc sort; by round month gov urbrur km sv numsv; run;
data sort8; set exp8(rename=(annval=educatn));
proc sort; by round month gov urbrur km sv numsv; run;
data sort9; set exp9(rename=(annval=cse));
proc sort; by round month gov urbrur km sv numsv; run;
data sort10; set exp10(rename=(annval=hotel));
proc sort; by round month gov urbrur km sv numsv; run;
data sort11; set exp11(rename=(annval=other));
proc sort; by round month gov urbrur km sv numsv; run;
data sort12; set exp12(rename=(annval=transfer));
proc sort; by round month gov urbrur km sv numsv; run;
data sort13; set exp13(rename=(annval=premium));
proc sort; by round month gov urbrur km sv numsv; run;
```

```
data sort14; set exp14(rename=(annval=constot));
proc sort; by round month gov urbrur km sv numsv; run;
data sort15; set exp15(rename=(annval=exptot));
proc sort; by round month gov urbrur km sv numsv; run;
proc delete data=work.exp1; run;
proc delete data=work.exp2; run;
proc delete data=work.exp3; run;
proc delete data=work.exp4; run;
proc delete data=work.exp5; run;
proc delete data=work.exp6; run;
proc delete data=work.exp7; run;
proc delete data=work.exp8; run;
proc delete data=work.exp9; run;
proc delete data=work.exp10; run;
proc delete data=work.exp11; run;
proc delete data=work.exp12; run;
proc delete data=work.exp13; run;
proc delete data=work.exp14; run;
proc delete data=work.exp15; run;
;
data mergexp;
merge sort1 sort2 sort3 sort4 sort5 sort6 sort7 sort8 sort9
        sort10 sort11 sort12 sort13 sort14 sort15;
by round month gov urbrur km sv numsv;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
run;
;
proc delete data=work.sort1; run;
proc delete data=work.sort2; run;
proc delete data=work.sort3; run;
proc delete data=work.sort4; run;
proc delete data=work.sort5; run;
proc delete data=work.sort6; run;
proc delete data=work.sort7; run;
proc delete data=work.sort8; run;
proc delete data=work.sort9; run;
proc delete data=work.sort10; run;
proc delete data=work.sort11; run;
proc delete data=work.sort12; run;
proc delete data=work.sort13; run;
proc delete data=work.sort14; run;
proc delete data=work.sort15; run;
;
data inc1(keep=round month gov urbrur km sv numsv annval)
inc2(keep=round month gov urbrur km sv psu numsv annval)
```

```
inc3(keep=round month gov urbrur km sv psu numsv annval)
inc4(keep=round month gov urbrur km sv psu numsv annval)
inc5(keep=round month gov urbrur km sv psu numsv annval)
inc6(keep=round month gov urbrur km sv psu numsv annval)
inc7(keep=round month gov urbrur km sv psu numsv annval);
set in.net;
if code=4005 then output inc1;
if code=4115 then output inc2;
if code=4204 then output inc3;
if code=4307 then output inc4;
if code=4408 then output inc5;
if code=4505 then output inc6;
if code=9999 then output inc7;
run;
data sort1; set inc1(rename=(annval=wages));
proc sort; by round month gov urbrur km sv numsv; run;
data sort2; set inc2(rename=(annval=agrinc));
proc sort; by round month gov urbrur km sv numsv; run;
data sort3; set inc3(rename=(annval=noagrinc));
proc sort; by round month gov urbrur km sv numsv; run;
data sort4; set inc4(rename=(annval=landinc));
proc sort; by round month gov urbrur km sv numsv; run;
data sort5; set inc5(rename=(annval=fininc));
proc sort; by round month gov urbrur km sv numsv; run;
data sort6; set inc6(rename=(annval=othinc));
proc sort; by round month gov urbrur km sv numsv; run;
data sort7; set inc7(rename=(annval=totinc));
proc sort; by round month gov urbrur km sv numsv; run;
proc delete data=work.inc1; run;
proc delete data=work.inc2; run;
proc delete data=work.inc3; run;
proc delete data=work.inc4; run;
proc delete data=work.inc5; run;
proc delete data=work.inc6; run;
proc delete data=work.inc7; run;
data merginc;
merge sort1 sort2 sort3 sort4 sort5 sort6 sort7;
by round month gov urbrur km sv numsv;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
run;
;
proc delete data=work.sort1; run;
proc delete data=work.sort2; run;
proc delete data=work.sort3; run;
proc delete data=work.sort4; run;
```

```
proc delete data=work.sort5; run;
proc delete data=work.sort6; run;
proc delete data=work.sort7; run;
;
data in.varfile;
merge mrg1 mrg2 mrg3 mrg4
      mergexp merginc;
by round month gov urbrur km sv numsv;
alph1='  ';
alph1=gov;
alph2=' ';
alph2=urbrur;
stratum=alph1||alph2;
stratum=stratum+0;
cluster=psu;
proc sort;
by stratum cluster;
run;
```

```
options pagesize=60;
libname in 'c:\process\';
filename a1 'c:\process\hies.dat';
data makecats(keep=stratum cluster gov urbrur finlwt region
males females total oncard type tenure rooms watsrc sewerage
lighting cookfuel wallmatl area keyrent kitchen bathtoi
sepbath septoi toitype garbage surround network agedwell
foodbev tobacco apparel housing furn medical trcomm
educatn cse hotel other transfer premium constot exptot
wages agrinc noagrinc landinc fininc othinc totinc);
set in.varfile;
agedwell = 1996-constyr;
/*Make a separate stratum for Frontier, rural/urban only   */;
if substr(stratum,1,1)='3' and substr(stratum,3,1)='0' then stratum='300';
if substr(stratum,1,1)='3' and substr(stratum,3,1)='1' then stratum='301';
/*Now add the regions, so that we can use them as class vars */;
if gov=1 then region=1;
if gov=2 then region=2;
if gov=3 or gov=4 then region=3;
if (gov=11 or gov=12 or gov=13 or gov=14 or gov=15 or gov=16 or gov=17
or gov=18 or gov=19) and urbrur=0 then region=4;
if (gov=11 or gov=12 or gov=13 or gov=14 or gov=15 or gov=16 or gov=17
or gov=18 or gov=19) and urbrur=1 then region=5;
if (gov=21 or gov=22 or gov=23 or gov=24 or gov=25 or gov=26
or gov=27 or gov=28) and urbrur=0 then region=6;
if (gov=21 or gov=22 or gov=23 or gov=24 or gov=25 or gov=26
or gov=27 or gov=28) and urbrur=1 then region=7;
if gov=31 or gov=32 or gov=33 or gov=34 or gov=35 then region=8;
proc sort;
by stratum cluster finlwt;
run;
;
data next;
set makecats(rename=(stratum=dummy));
length stratum 3.;
if males=. then males=0;
if females=. then females=0;
if total=. then total=0;
if oncard=. then oncard=0;
if tobacco=. then tobacco=0;
if apparel=. then apparel=0;
if housing=. then housing=0;
if furn=. then furn=0;
if medical=. then medical=0;
if trcomm=. then trcomm=0;
if educatn=. then educatn=0;
if cse=. then cse=0;
if hotel=. then hotel=0;
if other=. then other=0;
if transfer=. then transfer=0;
if premium=. then premium=0;
if wages=. then wages=0;
if agrinc=. then agrinc=0;
if noagrinc=. then noagrinc=0;
if landinc=. then landinc=0;
if fininc=. then fininc=0;
if othinc=. then othinc=0;
stratum=dummy+0;
```

```
/*Total expenditure level recode  */;
if exptot le 2000 then explev=0;
if exptot gt 2000 and exptot le 3000 then explev=1;
if exptot gt 3000 and exptot le 4000 then explev=2;
if exptot gt 4000 and exptot le 5000 then explev=3;
if exptot gt 5000 and exptot le 6000 then explev=4;
if exptot gt 6000 and exptot le 7000 then explev=5;
if exptot gt 7000 and exptot le 8000 then explev=6;
if exptot gt 8000 and exptot le 9000 then explev=7;
if exptot gt 9000 and exptot le 10000 then explev=8;
if exptot gt 10000 then explev=9;
/*Total income level recode  */;
if totinc le 2000 then inclev=0;
if totinc gt 2000 and totinc le 3000 then inclev=1;
if totinc gt 3000 and totinc le 4000 then inclev=2;
if totinc gt 4000 and totinc le 5000 then inclev=3;
if totinc gt 5000 and totinc le 6000 then inclev=4;
if totinc gt 6000 and totinc le 7000 then inclev=5;
if totinc gt 7000 and totinc le 8000 then inclev=6;
if totinc gt 8000 and totinc le 9000 then inclev=7;
if totinc gt 9000 and totinc le 10000 then inclev=8;
if totinc gt 10000 then inclev=9;
/*We need to get at least 3 digits of precision for the variances*/;
finlwt=finlwt*1000;
foodbev=foodbev*1000;
tobacco=tobacco*1000;
apparel=apparel*1000;
housing=housing*1000;
furn=furn*1000;
medical=medical*1000;
trcomm=trcomm*1000;
educatn=educatn*1000;
cse=cse*1000;
hotel=hotel*1000;
other=other*1000;
transfer=transfer*1000;
premium=premium*1000;
constot=constot*1000;
exptot=exptot*1000;
wages=wages*1000;
agrinc=agrinc*1000;
noagrinc=noagrinc*1000;
landinc=landinc*1000;
fininc=fininc*1000;
othinc=othinc*1000;
totinc=totinc*1000;
keyrent=keyrent*12*1000;
/*Now do the recodes for classification variables */;
if males gt 10 then males=11;
if females gt 10 then females=11;
if total gt 11 then total=12;
if rooms gt 9 then rooms=9;
;
data last;
set next;
file a1 lrecl=247;
put  @1 stratum z3.
     @4 cluster z3.
```

```
     @7 finlwt  z8.
    @15 males   z2.
    @17 females  z2.
    @19 total    z2.
    @21 type     z1.
    @22 tenure   z1.
    @23 rooms    z1.
    @24 watsrc   z1.
    @25 sewerage z1.
    @26 lighting z1.
    @27 cookfuel z1.
    @28 wallmatl z1.
    @29 kitchen  z1.
    @30 bathtoi  z1.
    @31 sepbath  z1.
    @32 region   z1.
    @33 garbage  z1.
    @34 surround z1.
    @35 network  z1.
    @36 keyrent  z9.
    @45 foodbev  z9.
    @54 tobacco  z9.
    @63 apparel  z9.
    @72 housing  z9.
    @81 furn     z9.
    @90 medical  z9.
    @99 trcomm   z9.
    @108 educatn  z9.
    @117 cse      z9.
    @126 hotel    z9.
    @135 other    z9.
    @144 transfer z9.
    @153 premium  z9.
    @162 constot  z9.
    @171 exptot   z9.
    @180 wages    z9.
    @189 agrinc   z9.
    @198 noagrinc z9.
    @207 landinc  z9.
    @216 fininc   z9.
    @225 othinc   z9.
    @234 totinc   z9.
    @243 explev   z1.
    @244 inclev   z1.
    @245 gov      z2.
    @247 urbrur   z1.;
run;
```

SAS Files
for Construction of CENVAR Individual-Level
Variance Data Set

```
options pagesize=60;
libname in 'c:\process';
filename a1 'c:\process\hiesindv.dat';
/*This is the primary file for the calculation of variances    */;
/*at the level of individual estimates.  The household level   */;
/*variance calculation files were MAKEVAR.SAS and MAKEVAR2.SAS */;
/*Apply the final weights to the demographic and wage data     */;
data mrga(keep=round month gov urbrur km sv numsv psu resp
        indno rel sex age educ lastyr eductype stage yrs marstat
        workstat untype look reason empstat days occu econact
        sector earner source1-source6);
set in.dem;
/*The first thing to do is to apply the code patches */;
/*to the data, a necessary thing whenever using wgts */;
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
proc sort;
by gov urbrur km sv psu;
run;
;
data mrgb(keep=gov urbrur km sv psu finlwt);
set in.wgts(drop=normwt);
proc sort;
by gov urbrur km sv psu;
run;
;
data mrg1;
merge mrga mrgb;
by gov urbrur km sv psu;
proc sort;
by round month gov urbrur km sv numsv indno;
run;
/*I checked mrg1 above, and there are no cases of finlwt=0*****/;
/*However, in any merges using sv, code patches must apply*****/;
/*Therefore code patches must exist in all mrg files, as above*/;
;
data sortwage;
set in.wage(rename=(earner=indno));
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
```

```
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
if indno ne 99;
wageinc=val4005;
proc sort;
by round month gov urbrur km sv numsv indno;
run;
;
data sortland;
set in.land(rename=(earner=indno));
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
if indno ne 99;
landinc=val4307;
proc sort;
by round month gov urbrur km sv numsv indno;
run;
;
data sortfin;
set in.fin(rename=(earner=indno));
if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
if indno ne 99;
fininc=val4408;
proc sort;
by round month gov urbrur km sv numsv indno;
run;
;
data sortinco;
set in.inco(rename=(earner=indno));
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if gov=1 and urbrur=1 and km=27 and psu=48 then sv=020;
if gov=1 and urbrur=1 and km=34 and psu=60 then sv=030;
if gov=12 and urbrur=0 and km=9 and psu=21 then sv=370;
if gov=12 and urbrur=0 and km=16 and psu=11 then sv=210;
if gov=12 and urbrur=0 and km=16 and psu=12 then sv=390;
if gov=14 and urbrur=0 and km=3 and psu=65 then sv=110;
if gov=18 and urbrur=0 and km=4 and psu=134 then sv=220;
if gov=18 and urbrur=1 and sv=010 and psu=154 then km=12;
if gov=19 and urbrur=0 and km=6 and psu=156 then sv=60;
if gov=19 and urbrur=1 and km=1 and psu=227 then sv=20;
if gov=23 and urbrur=0 and km=3 and psu=186 then sv=20;
if gov=25 and urbrur=1 and km=2 and psu=198 then sv=20;
if gov=28 and urbrur=1 and km=6 and psu=216 then sv=20;
if gov=34 and urbrur=0 and sv=050 and psu=280 then km=9;
if indno ne 99;
incoinc=val4505;
proc sort;
by round month gov urbrur km sv numsv indno;
run;
;
data ok(keep= gov urbrur stratum cluster finlwt region resp
        indno rel sex age educ lastyr eductype stage yrs marstat
        workstat untype look reason empstat days occu econact
        sector earner source1-source6 wageinc landinc fininc incoinc);
merge mrg1 sortwage sortland sortfin sortinco;
by round month gov urbrur km sv numsv indno;
if wageinc=. then wageinc=0;
if landinc=. then landinc=0;
if fininc=. then fininc=0;
if incoinc=. then incoinc=0;
if resp=2 then resp=0;
if lastyr=2 then lastyr=0;
if lastyr=. then lastyr=0;
/*EDUCTYPE, STAGE and YEARS valid missing (NA) changed to zero */;
if eductype=. then eductype=0;
if stage=. then stage=0;
if yrs=. then yrs=0;
/*UNTYPE, LOOK, REASON, EMPSTAT, DAYS, SECTOR NA changed to 9  */;
if untype=. then untype=9;
if look=. then look=9;
if reason=. then reason=9;
if empstat=. then empstat=9;
if days=. then days=9;
if sector=. then sector=9;
/*Now the information from HKFIX.SAS to recode occu and econact  */;
if occu=151119 then occu=251119;
if occu=291106 then occu=291101;
if occu=321305 then occu=331305;
if occu=6121 then occu=612101;
if occu=132111 then occu=132911;
if occu=362106 then occu=262106;
if occu=362105 then occu=262105;
if occu=491119 then occu=491199;
if occu=104107 then occu=515102;
if occu=121401 then occu=621401;
if occu=62168 then occu=621601;
if occu=162101 then occu=161101;
if occu=42101 then occu=421101;
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if occu=832104 then occu=732104;
if occu=72233 then occu=722303;
if occu=761203 then occu=791203;
if occu=295605 then occu=295305;
if occu=191101 then occu=161101;
if occu=532303 then occu=512303;
if occu=733109 then occu=734109;
if occu=521192 then occu=521901;
if occu=731190 then occu=731105;
if occu=296505 then occu=396505;
if occu=641202 then occu=621402;
if occu=131911 then occu=132911;
if occu=413301 then occu=413201;
if occu=363109 then occu=363199;
if occu=395306 then occu=396302;
if occu=581902 then occu=521901;
if occu=532302 then occu=512302;
if occu=323603 then occu=396103;
if occu=531112 then occu=531207;
if occu=704303 then occu=702101;
if occu=512308 then occu=512306;
if occu=517102 then occu=513102;
if occu=611601 then occu=611101;
if occu=823200 then occu=823202;
if occu=72233 then occu=722303;
if occu=721199 then occu=721399;
if occu=293109 then occu=263109;
if occu=621106 then occu=620601;
if occu=296399 then occu=296299;
if occu=417199 then occu=413199;
if occu=591101 then occu=291101;
if occu=512411 then occu=512499;
if occu=723200 then occu=513102;
if occu=421001 then occu=413202;
if occu=352299 then occu=351102;
if occu=413109 then occu=413199;
if occu=728101 then occu=733199;
if occu=491119 then occu=491101;
if occu=131911 then occu=132911;
if occu=491110 and gov=3 then occu=291101;
if occu=39301 then occu=393101;
if occu=513399 then occu=531399;
if occu=131201 then occu=631201;
if occu=413196 then occu=394905;
if occu=716302 then occu=793299;
if occu=512103 then occu=512102;
if occu=612111 then occu=621101;
if occu=621111 then occu=621101;
if occu=363109 then occu=363199;
if occu=491119 then occu=491199;
if occu=532301 then occu=512203;
if occu=773101 then occu=733101;
if occu=191999 then occu=291999;
if occu=520201 then occu=521201;
if occu=797308 then occu=793308;
if occu=721199 then occu=721201;
if occu=161298 then occu=161299;
if occu=413301 then occu=413201;
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if occu=532301 then occu=511206;
if occu=627101 then occu=621101;
if occu=626601 then occu=621601;
if occu=612201 then occu=612101;
if occu=613201 then occu=631201;
if occu=72203 then occu=722203;
if occu=833213 then occu=721302;
if occu=393106 then occu=393101;
if occu=421201 then occu=393101;
if occu=229108 then occu=292908;
if occu=263151 then occu=263121;
if occu=611201 then occu=612101;
if occu=413301 then occu=413201;
if occu=395505 then occu=295505;
if occu=141403 then occu=142103;
if occu=296302 then occu=293201;
if occu=413302 then occu=413202;
if occu=628304 then occu=826304;
if occu=413103 then occu=412103;
if (econact=0520 or econact=2502 or econact=5101 or econact=520)
        then econact=5202;
if econact=1 then econact=8324;
if (econact=1010 or econact=1100 or econact=1230) then econact=1110;
if econact=1310 then econact=9310;
if econact=1324 then econact=5203;
if econact=1829 then econact=8324;
if econact=2631 then econact=9310;
if econact=2710 then econact=9513;
if econact=2832 then econact=3832;
if econact=3910 then econact=9310;
if econact=3918 then econact=3829;
if econact=3999 then econact=9331;
if econact=4844 then econact=3844;
if econact=6299 then econact=6229;
if econact=6301 then econact=1130;
if econact=6315 then econact=6215;
if econact=7911 then econact=7113;
if (econact=8231 or econact=8331) then econact=8321;
if (econact=8320 or econact=8332 or econact=9301) then econact=9310;
if econact=8391 then econact=9391;
if econact=9110 then econact=9339;
if econact=9219 then econact=6218;
if econact=9300 then econact=8322;
if econact=9319 then econact=8329;
if econact=9329 then econact=8325;
if econact=9330 then econact=7200;
if econact=9424 then econact=9420;
/*Now add the regions, so that we can use them as class vars */;
if gov=1 then region=1;
if gov=2 then region=2;
if gov=3 or gov=4 then region=3;
if (gov=11 or gov=12 or gov=13 or gov=14 or gov=15 or gov=16 or gov=17
or gov=18 or gov=19) and urbrur=0 then region=4;
if (gov=11 or gov=12 or gov=13 or gov=14 or gov=15 or gov=16 or gov=17
or gov=18 or gov=19) and urbrur=1 then region=5;
if (gov=21 or gov=22 or gov=23 or gov=24 or gov=25 or gov=26
or gov=27 or gov=28) and urbrur=0 then region=6;
if (gov=21 or gov=22 or gov=23 or gov=24 or gov=25 or gov=26
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or gov=27 or gov=28) and urbrur=1 then region=7;
if gov=31 or gov=32 or gov=33 or gov=34 or gov=35 then region=8;
/*Now make the STRATUM and CLUSTER variables   */;
alph1='  ';
alph1=gov;
alph2=' ';
alph2=urbrur;
stratum=alph1||alph2;
stratum=stratum+0;
cluster=psu;
/*Make a separate stratum for Frontier, rural/urban only   */;
if substr(stratum,1,1)='3' and substr(stratum,3,1)='0' then stratum='300';
if substr(stratum,1,1)='3' and substr(stratum,3,1)='1' then stratum='301';
proc sort;
by stratum cluster;
/*Do means for info only */;
proc means;
run;
;
data next;
set ok(rename=(stratum=dummy));
length stratum 3.;
stratum=dummy+0;
/*We need at least 3 digits of precision on the income sources*/;
finlwt=finlwt*1000;
wageinc=wageinc*1000;
landinc=landinc*1000;
fininc=fininc*1000;
incoinc=incoinc*1000;
run;
;
data last;
set next;
file a1 lrecl=90;
put  @1 stratum z3.
     @4 cluster z3.
     @7 finlwt  z8.
    @15 region  z1.
    @16 resp     z1.
    @17 rel      z1.
    @18 sex      z1.
    @19 age      z2.
    @21 educ     z1.
    @22 lastyr   z1.
    @23 eductype z1.
    @24 stage    z1.
    @25 yrs      z2.
    @27 marstat  z1.
    @28 workstat z1.
    @29 untype   z1.
    @30 look     z1.
    @31 reason   z1.
    @32 empstat  z1.
    @33 days     z1.
    @34 occu     $
    @40 econact  $
    @44 sector   z1.
    @45 earner   z1.
```

```
    @46 source1  z1.
    @47 source2  z1.
    @48 source3  z1.
    @49 source4  z1.
    @50 source5  z1.
    @51 source6  z1.
    @52 wageinc  z9.
    @61 landinc  z9.
    @70 fininc   z9.
    @79 incoinc  z9.
    @88 gov      z2.
    @90 urbrur   z1.;

run;
```