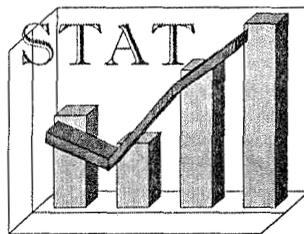


# Collected Project Reports

## Volume III

# LABOR FORCE



Statistical Assistance to the Government of Indonesia (STAT) Project  
USAID Contract No. PCE-I-00-99-00009-00

**BIDE**

Boston Institute for Developing Economies

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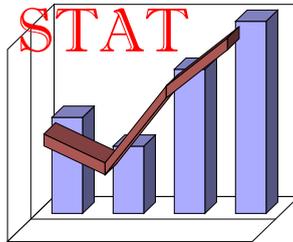


# **EMPLOYMENT DATA IN INDONESIA : A REVIEW OF EXISTING SOURCES**

Report # 5

by  
**Hananto Sigit**

June, 2000



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

## EXECUTIVE SUMMARY

**Objective.** Indonesia has faced employment problems for a long time, which were caused by the apparent inability of the economy to absorb the large and rapidly growing labor force. Even during rapid economic growth, employment conditions did not seem to improve much. On the contrary, these conditions seemed to be the worse impacted by the economic crisis, leading to a deterioration in the quality of education, health and general living conditions. The prominence of these issues in policy debates require adequate data on employment. Given increasingly limited resources, the most appropriate course of action is to analyze existing data as thoroughly as possible before new data are added. This report attempts a review and a brief evaluation of all existing employment data. Major data sources are identified and discussed, particularly with regards to the methodology, coverage and type of data collected. Strengths and weaknesses of the data are outlined, as well as consistency across sources. Finally, a brief discussion is presented about the types of data needed to satisfy current employment policy concerns.

**Employment Data Sources.** Sources of employment data are classified into five categories. First *ad-hoc surveys* are differentiated from *regular surveys*. *Ad-hoc* surveys are especially conducted to capture the extent of the impact of the economic crisis. Regular surveys are differentiated into three categories: household, establishment and community data surveys based on their unit of enumeration. The units of enumeration are households and household members, establishment, and lower administrative regions respectively. Another data source, the agricultural census, enumerates both households and establishments engaged in agriculture. In addition, the Department of Manpower keeps administrative records on job vacancies-job seekers, foreign workers and Indonesian workers abroad.

BPS conducts a number of household surveys to collect employment data. These include specially designed employment surveys as well as multi-purpose surveys. The size, area coverage and type of information vary with the objectives of the surveys. But all adopt the same "labor force approach" and collect similar basic structural data. These surveys include the population census (SP), inter-censal population surveys (Supas), the national labor force survey (Sakernas), the national socio-economic survey (Susenas), and the "one-hundred village" survey (SSD).

Population censuses are conducted every ten years to collect general information on the population with one block focusing on the labor force and employment. All information needed to measure labor force and employment structure are included. Between census years, Supas is conducted to meet the needs for more frequent data. For comparability with census data, Supas adopts the same questions included in the sample census. At the heart of employment data collection is the specially designed Sakernas. Beginning in 1994, it was conducted yearly with a more detailed questionnaire. But in 1999 the sample size was reduced to produce detailed employment information only at the national level. Similar employment data are also collected in a multi-purpose household survey called Susenas. Still another household survey collecting employment data is the "one hundred village" survey to give a picture of the different typical villages represented by the chosen one hundred villages.

BPS conducts several surveys of establishments collecting employment data related to other information. Only data on groups of workers are available. The largest such survey, the economic census, is conducted to collect data on all non-agricultural establishments. In that survey all "incorporated" establishments are organized into a directory, which is updated every year using secondary data, and once every ten years through a complete count to form a benchmark. The "unincorporated" establishments are listed using the same questionnaire as that of "incorporated" establishments, and that list is used as a frame for sample selection. As part of the economic census, a survey of *small and cottage establishments* (SUSI) was conducted in 1998 in an integrated survey enumerating sample establishments drawn from that frame. What had

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previously been collected individually for unincorporated establishments (e.g. the STKU and the SKKR) were then integrated into SUSI. Data for employment in SUSI are broken down by gender, age group, education, paid/unpaid and remuneration categories.

In addition to SUSI and data collection for the directory, three establishment surveys are conducted: one for large and medium manufacturing industry (SIBS), one for hotels and one for employee wages. SIBS is conducted yearly. As part of production costs, components of payments to employees are collected in detail, and a separate block on employment is included containing questions on employees by gender, education and type of job. The hotel establishment survey is conducted in two stages: one for stock taking and one for room occupancy. The stock taking survey is conducted every year for all classified and unclassified hotels, and is designed to collect information needed for updating the directory. Data on employees are broken down into the following categories: paid/unpaid, male/female, foreign/domestic and type and level of education. No employment data are collected in the hotel room occupancy survey. The employee wage survey is conducted quarterly to specifically obtain wage data on employees of large and medium establishments in several sectors of selected provinces. In 1992 the survey was simplified to collect only information on average and median wage of workers under the rank of "supervisor", broken down by establishment size, gender, sub-sector and capital status (i.e. whether foreign, domestic or government owned).

To capture the multitude of agricultural sub-sectors with many different commodities produced, the agricultural census was organized into separate data collection activities, which can be grouped into two categories: a complete census of *establishments* and a sample census of *households*. Separate censuses were conducted for all establishments engaged in different agricultural sub-sectors, collecting group employee data and cost structure. A number of sample censuses were conducted covering households engaged in different agricultural activities, as well as for household earnings and cost structure.

So far BPS has conducted only two community data surveys: the *village potential survey (Podes)* and the *sub-district survey (SK)*. Podes is regularly conducted as part of a big activity (such as censuses and Supas) to collect socio-economic information on all villages. Employment related information collected are limited to the percentage of households engaged in different economic sectors. A *sub-district survey* was conducted once in September 1998 covering all sub-districts in Indonesia to provide a picture of the spread and intensity of the crisis. In this survey questions on unemployment were asked. BPS also conducted "economic crisis impact surveys" (SDK), which included data on: return migration, production cost, termination of employment and urban informal sector, cost of living and retail business in urban areas. These surveys were conducted on purposively selected regencies which were the most highly affected by the crisis.

Another source of data is the administrative records kept by the Department of Manpower. These include: job openings, job seekers, participants in public works programs, training programs, foreign workers in Indonesia and Indonesian workers working overseas. Employment data associated with particular programs are also available at the Department of Public Works. Coverage is small and documents have never been processed to produce useful statistics.

**Strengths and Weaknesses.** Establishment surveys, community data surveys and household surveys have different characteristics and therefore different strengths and weaknesses. Establishment surveys contain only limited data on employees, but such data can be related to information on cost, capital and output of the establishment. Another strength of data from these surveys is that they can be used to produce more detailed sub-sectoral employment and job classifications. Thus by merging employment data from these surveys with those from household surveys one can obtain more detailed sub-sectoral and occupational classifications.

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Detailed individual data as well as general information on the establishment or the place of work and on the worker's household are available in household surveys. But the quality of the data depends on the size, objective and methodology used. There is a trade-off between the size and complexity of a survey and the quality of the data. More extensive information collected, such as in Susenas, makes it possible to conduct rich analyses. Another strength of a large sample is that it allows the provision of data for smaller administrative regions.

One serious weakness of both types of surveys is that they cannot be used for short-term comparisons. Maintaining consistency of the questionnaire, the methodology and fieldwork would undoubtedly enhance our confidence in conducting serial analysis. On the other hand, continuity and consistency in the conduct of a survey may discourage any necessary actions to correct possible mistakes in the survey. So the choice is between maintaining any existing mistakes for the sake of consistency but running the risk of data misinterpretation, or revising the questionnaire in order to come up with more accurate figures.

Data derived from community surveys are useful for providing an indicative picture for smaller regions, only if the differences between them and the standard surveys are not large. Accordingly, concepts, definitions and categorization of answers should be kept as close as possible to those of the standard ones. Finally, administrative records are useful and necessary to provide quick indicators for particular aspects of the modern labor market. Even if the data are not complete, such partial indicators remain useful.

**Data Consistency.** Employment data from various sources generally suffer from lack of comparability. There is no *absolute truth* in employment statistics. Efforts undertaken so far to find the *true* figures by changing the questions and the questionnaires have not been very successful. In fact, they have only resulted in unexplainable fluctuations in employment statistics. It is our belief that policy makers and users in general will benefit far more from obtaining *consistent* and *serially comparable* statistics using the same sources.

Comparisons of employment statistics derived from different sources are more problematic. Employment data from household surveys cannot be matched directly with data from establishment surveys for three reasons. First, one person in an establishment survey may be recorded more than once if he/she works in more than one establishment, while in a household survey he/she is considered employed in his/her main job. Secondly, persons working in *non-establishments* are not captured in establishment surveys, but are captured in household surveys. Thirdly, the definition of work is different in the two surveys. Sectoral data are also different, since in establishment surveys the sectors are predetermined based on the *type of product/output* produced, while in household surveys it depends on the interpretation of the respondents

**Currently Needed Employment Statistics.** It is ironic that a less developed economy with less resources may need more statistics than a developed economy to cope with its more serious employment problems. It is absolutely critical that a balance be found between data needs and available resources. Data must be carefully selected to serve the most urgent and immediate needs. Production of data must be efficiently conducted to come up with the best and most relevant statistics to meet the optimal requirements of the economy.

Employment has long been an important factor in Indonesian economic growth. Data are required to observe changes in the employment structure in the past thirty years of development and recently to monitor the impact of the economic crisis. It is often suggested that the recovery should be employment-led, and that future sectoral development should be strongly based on employment creation. Accordingly, data must support the needs to monitor employment structural changes. In addition, especially during crisis and recovery periods, employment statistics are needed to reflect short-term fluctuations.

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The economic crisis in Indonesia has provided indisputable evidence that the informal sector plays a prominent role in mitigating the impact of the crisis. Many people have reiterated the important role of the informal sector in providing employment for the excess supply of labor. Worsened by the crisis, the informal sector will undoubtedly exist in the Indonesian economy for a long time to come. Data on this sector must therefore be further developed and improved.

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**LIST OF ACRONYMS**

DPBH	Direktori Perusahaan Berbadan Hukum (Directory of Incorporated Establishments)
BPS	Badan Pusat Statistik (Statistics-Indonesia)
CDS	Community Data Survey
DOM	Department of Manpower
DPW	Department of Public Works
GDP	Gross Domestic Product
ILO	International Labor Office
ISIC	International Standard Industrial Classification
Podes	Potensi Desa (Village Potential Survey)
RBS	Retail Business Survey
Sakernas	Survei Angkatan Kerja Nasional (National Labor Force Survey)
SDK	Survei Dampak Krisis (Economic Crisis Impact Survey)
SE	Sensus Ekonomi (Economic Census)
SERMH	Study on Economic Resilience of Migrant Households
SI	Statistics-Indonesia
SIBS	Survei Industri Besar-Sedang (Large and Medium Manufacturing Survey )
SIVD	Studi Identifikasi Variabel Desa (Village Variable Identification Study)
SK	Survei Kecamatan (Sub-District Survey )
SKKR	Survei Industri Kecil dan Kerajinan Rumahtangga (Small and Household Cottage Industry Survey)
SOURT	Survei Struktur Ongkos Usaha Rumahtangga Pertanian (Sample Census on Cost Structure of Agricultural households)
SP	Sensus Penduduk (Population Census)
SRMH	Study on Resilience of Migrant Households
SSD	Survei Seratus Desa (One-Hundred Village Survey)
SSPR	Sensus Sampel Perkebunan Rakyat (Sample Census of People Plantation)
SSPRT	Sensus Sampel Pendapatan Rumahtangga Pertanian (Sample Census of Household Agriculture Earnings)
StRDC	Statistical Research and Development Center
ST	Sensus Pertanian (Agricultural Census)
STKU	Survei Triwulanan Kegiatan Usaha (Quarterly Establishment Survey)
SUB	Survei Upah Buruh (Employee Wage Survey)
SUIW	Study on Urban Informal Workers
Supas	Survey Penduduk Antar Sensus (Inter-Censal Population Survey)
SUPH	Sensus Perusahaan Palawija dan Hortikultura (Survey of food crops and horticulture establishment)
Susenas	Survei Sosial Ekonomi Nasional (National Socio-Economic Survey)
SUSI	Survei Usaha Terintegrasi (Small and Household Establishment Integrated Survey)
SUTBK	Sensus Perusahaan Ternak Besar/Kecil (Census of Big and Small Cattle Households)
UN	United Nations

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## I. INTRODUCTION

Excessive labor supply has been a major problem in Indonesian economic development. The large population of Indonesia has resulted in abundant labor supply, which is also rapidly growing as a consequence of the fast population increase. A large portion of this large and fast growing labor force could not be absorbed in the economy. This excess supply of labor has caused serious and widely spread employment problems, the most important of which is the existence of large segments of the informal sector and under-employment, low intensity and low productivity jobs causing low returns to employees. Consequently, the standard of living of the majority of the population remains very low. In fact a large proportion still lives in poverty.

Planners, policy makers as well as observers of the Indonesian economy have paid great attention to the problem of insufficient employment opportunity in the economy. Serious unemployment and underemployment, and low living standards have been serious problems for a long time and never became easier during the 40 years of economic development of the country. Even during the so-called "miracle" economy period (i.e. that of rapid economic growth in the nineties), the unfavorable employment structure did not change very much. Consequently, extensive employment data collection efforts have been undertaken since 1961 in response to this urgent need for solving employment problems.

The economic crisis has resulted in further worsening employment problems. Employment and income were the first affected by the crisis, which led to a deterioration in education, health and general living conditions. Alleviation of the impact of the crisis was given the highest priority in policy making. Consequently, it is becoming increasingly necessary to devise more and different types of data which would allow more adequate measurement of employment problems and monitoring of the economic crisis and recovery.

This report attempts a review and a brief evaluation of all existing employment data. Major data sources are identified and discussed, particularly with regards to the methodology, coverage and type of data collected. Strengths and weaknesses of the data are outlined, as well as consistency across sources. For ease of reference, these issues are highlighted in Table 1. Finally, a brief discussion is presented about the types of data needed to satisfy current employment policy concerns.

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Table 1  
Employment Data Sources in Indonesia and Their Main Characteristics

No.	Source	Agency	Frequency	Survey Years	Coverage	Sample Size	Availability	Design Purpose	Strengths	Weaknesses
A	Household Surveys									
1	Population Census (SP)	BPS	Every 10 years	1961	All regions and municipalities	4-5% of households	6-18 months	Demographic and employment structures	Representative and multiphase estimates, rich analysis on employment structure	Insufficient for serial analysis, incomparability with other sources
2	State-Census Population Survey (SUSPANS)	BPS	Every 10 years	1976	Aggregate data for 207,000 households		6-12 months	Demographic and employment structures	Rich analysis on employment structure, good breakdown. Comparability with census	Incomparability with other sources
3	National Socio-Economic Survey (SUJESNAS)	BPS	Quarterly, bi-annual, yearly since 1994	1963	Some questions for 200,000 households		6-12 months	Employment and expenditure structures, and wage and salaries for employed	Rich analysis of employment with socio-cultural data	Incomparability with other sources, lack of consistency in structure of questions, incomparability with other data sources
4	National Labor Force Survey (SUKERNAS)	BPS	Quarterly and data yearly since 1994	1976	All provinces	33,000 households	6-12 months	Employment structure and monitoring economic crisis impacts on employment	Specialized designed employment survey	Lack of consistency in structure of questions, incomparability with other data sources
5	One Household Village Survey (S2D)	BPS	Quarterly	1994	Selected typical villages	52,000 households	3-6 months	Village welfare indicators	Estimation at village level	Not linkable with other data
B	Establishment Surveys									
1	Economic Census (SE)	BPS	Annual	1976	Full coverage, all regions	All establishments	one year	Directory of incorporated directory and sampling frame of unincorporated establishments	Multi-sector and detailed sub-sectors	Linked employment data in paid and unpaid workers
2	Directory of Incorporated Establishments	BPS	Updated yearly	1996	All Indonesia	All incorporated establishments	Continuous improvements	Up to date directory of incorporated establishments	Multi-sector and detailed sub-sectors	Linked employment data to paid and unpaid workers
3	Large and Medium Manufacturing Survey (SBL)	BPS	Annual	1971	All regions	All large and medium manufacturing est.	3.5-2 years	Cost and output structures, capital and investment	Full coverage of SME, establishments	Long time lag, limited coverage
4	Small and Household Establishment Survey (SSES)	BPS	Quarterly	1996	All regions	90,000 establishments	6 months	Cost and output structures, capital and investment	Detailed sub-sectors, labor cost, and integrated all-sector establishments	Long time lag, limited employment data
5	Hotel Establishment Survey (SH)	BPS	Annual	1976	All regions	All hotel establishments	one year	Directory of hotels	Complete hotel coverage	Daily data on groups of employees
6	Employee Wage Survey (S2R)	BPS	Quarterly	1980	Selected provinces	Small sample of large establishments	6 months	Wage for employment groups	Good data on wage levels	Small coverage of sectors
C	Agricultural Census (AT)	BPS	Every 10 years	1971	All regions	Complete census for establishments and samples for households	1-2.2 years	Agricultural structures	Detailed job classification, labor cost, and components of labor payments	Long time interval
D	Ad-Hoc Surveys									
1	Economic Crisis Impact Survey (S2IK)	BPS	Once	1998	A number of provinces	Small samples of households and est.	6-12 months	Economic crisis impacts	Estimating socio-economic data for monitoring crisis impacts	Incomparability with other sources, no serial data
2	Sub-District Survey (S2K)	BPS	Once	1998	All sub-districts	1997 sub-districts	3 months	Spread of the crisis	Showing the spread and intensity of the crisis down to sub-districts	Incomparability with other sources
E	Community Data Survey									
1	Village Potential Survey (P2DES)	BPS	Every 2-3 years	1976	All villages	All villages	12 months	Multi-purpose uses	The only community data at village level	Incomparability with other sources
F	Administrative Records									
1	Job vacancies and job seekers	DDSM	monthly	many years	complete record		monthly	Monitoring & policy making	Direct use of the data for policy making	Small coverage, not processed
2	Employment in Public Works Programs	DDSM/BPW	yearly	many years	complete record		monthly	Monitoring & policy making	Direct use of the data for policy making	Small coverage, not processed
3	Foreign Workers in Indonesia	DDSM	monthly	many years	complete record		monthly	Monitoring & policy making	Direct use of the data for policy making	Small coverage, not processed
4	Indonesian Workers Abroad	DDSM	monthly	many years	complete record		monthly	Monitoring & policy making	Direct use of the data for policy making	Small coverage, not processed

## II. EMPLOYMENT DATA SOURCES

Sources of employment data are classified into five categories. First, *ad-hoc* surveys are differentiated from the *regular* surveys undertaken by BPS. *Add-hoc* surveys are especially conducted to capture and monitor the social and economic impacts of the economic crisis in response to concerted efforts to minimize these impacts. For this purpose, only two such surveys have so far been conducted: the *Economic Crisis Impact Survey* and the *Sub-District Survey* in 1999.

Regular surveys and censuses are commonly differentiated based on the unit of enumeration used. Three categories of surveys have been conducted: *household*, *establishment* and *community data* surveys. Household surveys are conducted with *households* and *individual household members* as the unit of enumeration. Respondents are individual household members. Accordingly, information on both the household and its individual members is collected and becomes available through direct responses. Five surveys exist in this category: the Population Census, the Inter-Censal Population Survey, the National Labor Force Survey, the National Socio-Economic Survey and “One Hundred Village Survey”.

Establishment surveys employ the *economic establishment* as the unit of enumeration, which is usually represented by relevant officers in charge as the informants to fill the questionnaire. Only information on the establishment is collected. Individual information on employees cannot be collected, but group characteristics of employees may be included in the survey. For example, information on the number of employees classified by gender, education and permanent/temporary workers may be available. Several sources of employment data belong to this category: the Economic Census, the Directory of Incorporated Establishments, the Large and Medium Manufacturing Survey, the Small and Household Establishment Integrated Survey, the Employee Wage Survey and the Hotel Survey.

Similarly to establishment surveys, employment data in community data surveys are collected indirectly through local informants. These informants provide data for particular small administrative areas (villages or sub-districts) as the units of enumeration. Accordingly detailed household and individual employment cannot be collected. In fact community data are confined to far more aggregated information than those obtained from establishment surveys. Only one survey is conducted regularly by BPS, the “Village Potential Survey”. Another survey, the “Sub-District Survey”, is conducted by BPS but not regularly.

The Agricultural Census uses both households and establishments as units of enumeration. Since economic activities of the majority of the population are in agriculture, data are mainly collected from households, although some are also collected from establishments. With many different sub-sectors and different commodities, data collection in the agricultural census is highly complex. Moreover, *regular* household agricultural activities must be separated from *economic*

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*activities* in agriculture for living and only the latter need to be included in the agricultural census. Data collection from agricultural establishments is also complex, but much easier than from agricultural households, since the definition of agricultural establishment is clearer and the number of such establishments is manageable.

Another source of employment data is administrative records. The Department of Manpower (DOM) keeps records of “job vacancies” and “job seekers” in an effort to facilitate the working of the labor market. The Department also keeps records of employment created through government labor intensive projects (public works programs). Several of these projects were developed during the economic crisis to assist those most adversely affected.

The following sections will discuss all these data sources in detail.

#### **A. Household Surveys**

These include specially designed surveys to collect labor force and employment data and surveys collecting employment data as part of/together with other information. The size and area coverage of these surveys vary depending on their objectives. Surveys conducted as part of the population census are the largest in terms of the number of sampled households, and consequently allow the provision of information for small areas. Other smaller surveys produce detailed information only at the national level, with less detail for provinces. Still smaller household surveys provide information for only typical selected regions, and are not meant to provide national information at all. Coverage of information in various surveys is also different, but all adopt the same “labor force approach” and collect similar basic structural data. Surveys that fall under this category are:

1. Population Census (Sensus Penduduk, SP)
2. Inter-Censal Population Survey (Survey Penduduk Antar Sensus, Supas)
3. National Labor Force Survey (Survei Angkatan Kerja Nasional, Sakernas)
4. National Socio-Economic Survey (Survei Sosial Ekonomi Nasional, Susenas)
5. One-Hundred Village Survey (Survey Seratus Desa = SSD)

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### **1. Population Census**

The Population Census is conducted every ten years. To date, four censuses have been undertaken in 1961, 1971, 1980 and 1990. The 2000 Census is currently underway. The past four censuses collect general information on population which allows analysis of the population structure and problems. General socio-economic characteristics of the population are collected. Some important information collected relates to “economic activities” of the population, that is labor force and employment characteristics. The same labor force approach is used in structuring questions. The main objective is to provide benchmark data on the labor force and employment every ten years. The questions are less elaborate than those collected in Sakernas and Susenas, but all important employment questions needed to analyze the labor force and employment

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structure are included in the census.

Before the 2000 census, data collection was conducted in two parts. A “complete census” collected basic information on family structure covering the names of household members, age, sex and family relationship to household heads. The main objective was to produce basic information on the population at the lowest administrative level (villages). But this information was also used as a frame for sample selection of households to be interviewed in the “sample census”, in which detailed questions on each household member were asked in addition to questions on housing characteristics and facilities. Both parts of the Census covered all provinces. Fieldwork of the “complete census” was done in September-October, while that of the “sample census” was conducted in October. The Census date was October 31 of the relevant year. In the 2000 Census the time reference was moved to July in order to improve international comparison, as most countries collect mid-year population in their censuses.

Labor force and employment data are collected in the “sample census”. The sample is large, covering 4-5 percent of households. In 1990, the sample covered approximately 200,000 household. With such a large sample, sample censuses can provide aggregate data down to the regency level. In fact, population censuses are the only source of data which provides employment information for regencies. Detailed tabulations and refined classifications of the data can be provided at higher levels of administrative regions (i.e. provincial and national levels). Such tabulations include the structure of the working age population, characteristics of employment, information on job seekers, and characteristics of each segment of the labor force, as well as general socio-economic characteristics of the population.

The 2000 Census is a special case. It was designed to make the best use of the limited budget provided by the government in the aftermath of the economic crisis. The budget was not enough to finance the two-stage data collection used in previous censuses. To retain the main objective of the census (i.e. provision of data for smaller regions), a complete census was needed, otherwise it could not be considered a census. But funds were not sufficient for conducting an adequate “sample census” for detailed information. So a compromise was devised whereby selected information would be included in the complete census. Therefore, in addition to the basic questions on family structure, the 2000 Census includes one or two questions on fertility, education, migration, labor force and employment.

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## **2. Inter-Censal Population Survey (Supas)**

Supas is conducted regularly halfway between censuses. Its objective is to provide population data which could be linked to those from the censuses. The survey has so far been conducted in 1976, 1985 and 1995. The plan is to retain such data collection in the future, since Indonesia cannot afford to conduct a census every five years. With a population whose structure is considered to be rapidly changing, decennial censuses cannot capture these changes. More frequent data are needed to follow the rapid decline in fertility and mortality, as well as the

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accelerated migration due to intensive government programs.

Although the sample in Supas is large (207,000 households in 1995 and 125,400 in 1985), this is still smaller than the number of households interviewed in a typical “sample census”. However, Supas still allows the provision of information for smaller regions which are comparable to those produced by the census. Accordingly, aggregate population trend data are available every five years. To conform with census data, Supas fieldwork is typically conducted in September-October.

Questions in Supas are similar to those in the “sample census”. Labor force and employment data collected in Supas are also the same as those in the census, thus allowing measurement, every five years, of the structure and characteristics of employment and the labor force.

### **3. National Labor Force Survey (SAKERNAS)**

Sakernas was conducted for the first time in 1976, with the specific purpose of collecting data on labor force and employment. This survey was designed to improve the weaknesses of employment data collected in the 1971 population census. Sakernas employed a rigid labor force approach using two reference periods: “current” and “usual”. Since the labor force approach was used for the first time in that year, a comprehensive pilot test by BPS, in close cooperation with DOM and the ILO, preceded the implementation of the survey. The survey was then conducted once a year in 1977 and 1978, and was designed to obtain serial data to be linked with data from population censuses and Supas. It was stopped for a few years and was then resumed annually until 1985.

Beginning in 1986, the survey was conducted quarterly to capture the seasonal fluctuations in employment. With the Indonesian economy believed to be still predominantly agricultural, employment was believed to be greatly influenced by agricultural seasons. It was believed that sectoral employment and other related characteristics would depict the peak and trough seasons in agriculture. Fieldwork every year in February, May, August and November. The sample was approximately 20,500 households every quarter in 1992. Quarterly estimates could be merged to produce average information for the year with a total sample of 82,000 households.

Quarterly surveys were conducted for 8 years until 1993. Results showed that seasonal fluctuations could not be clearly depicted by the quarterly data. This seemed to be caused by the small size of the sample. With around 20,000 households, only national figures could be produced. With seasons different from region to region, averaging at the national level would produce the same results for every quarter. Without a substantial increase in the sample which would allow the production of regional data, such quarterly surveys would not be useful in depicting seasonality at the national level. Production of average figures for the year from the quarterly survey is also not useful, since data do not represent yearly figures with a certain point

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in time as the reference, but rather an average of four quarterly figures not comparable with other figures. Another drawback of the quarterly version of that survey was the limited number of questions included: only items believed to be affected by seasonality were included. Again this made results difficult to compare with those of other survey.

Following this reality, the quarterly survey was stopped and beginning in 1994 the survey was conducted yearly with more a detailed questionnaire. The sample size was reduced to 65,500 households. In 1998 the sample was again reduced to 49,200 households due to budget constraints. Until 1999, Sakernas was conducted in August of every year. The August employment figures from Sakernas would be compared with the employment figures from Susenas, which was conducted in February of every year. Sakernas would reflect employment conditions in the second semester while Susenas would reflect conditions in the first semester. In 1999, the Sakernas sample was reduced to about 20,000 households, and is expected to produce detailed information only at national levels, with only aggregate data for provinces.

A complete set of labor force and employment data is collected in Sakernas. The working age population (those aged 10 years and above, which was changed to 15 years and above since 1998) is classified into two segments: that in the labor force and that not in the labor force. The labor force consists of those working (“employed”) or looking for work (“unemployed”). For the “employed”, detailed characteristics of their work are collected, including hours worked, industry, occupation, status, additional works, wages and salaries, and whether also looking for work. For the “unemployed” the questions include ways and duration of job search, whether looking for part-time or full-time work, whether previously working and terminated from their work during the crisis and for what causes, and whether recently found a job. In addition, socio-demographic data are collected including age, gender, and education.

#### **4. National Socio-Economic Survey (Susenas)**

Susenas is a multi-purpose household survey. It has a long history in BPS. The first Susenas was designed and launched in 1963 by the Statistical Research and Development Center (StRDC), a UN organization created to assist statistical development in BPS. The main objective of Susenas was to collect data on demographic and socio-economic household characteristics. After 1963, the survey was conducted regularly in 1964/65, 1967, 1969 and 1970 with samples between 16,000-24,000 households. In all these surveys, labor force data were collected together with demographic and socio-economic data as well as consumption expenditure.

The survey temporarily stopped in 1971 with the termination of StRDC, and resumed again in 1976 with the funding from the government. In 1976 the survey was conducted quarterly to collect detailed consumption expenditure data. To capture the seasonal fluctuation of consumption, the survey was implemented in four quarterly rounds. Labor force and employment

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data were only collected in the fourth quarter of 1976, where the sample was enlarged to 78,000 households compared to only 17,000 households in each of the previous quarters. This quarterly survey was repeated in 1978 with a sample of only 6,300 households per quarter. The 1978 Susenas incorporated more topics, including labor force and other demographic, socio-cultural and health data, as well as data on consumption expenditure and income.

In 1979 and 1980 the survey was conducted twice every year with samples between 54,000-102,000 households to accommodate new modules. The new modules included fertility, handicraft/cottage industry, agriculture and livestock. Labor force data were only collected in the second semester of 1980. In 1981 Susenas was conducted quarterly again with a sample of 15,000 households per quarter and with no questions on the labor force. Information was limited to socio-cultural, health and consumption expenditure.

Labor and employment was included again in 1982 with a separate sample of 60,000 households. Other information on crimes, welfare, handicraft/cottage industry and prepared food consumption were collected separately from samples between 4,000 to 15,000 households. From that time on, the labor force module was taken out of Susenas and fully integrated with Sakernas. Consequently, the biannual Susenas in 1984 and the yearly Susenas in 1985-87 and 1989-91 did not contain any labor force module.

Beginning in 1992, Susenas was organized into two questionnaires: a new core and a module. Before 1992 the core questionnaire covered only five basic questions: four demographic and one on education. Welfare indicators are believed to be needed every year, since a large percentage of people are believed to be living below the poverty line. Accordingly, the government considered the reduction of poverty as a high priority. As most data on welfare are obtained from Susenas, important questions from the modules have been transferred to the core in order to enable production of yearly data.

The design of the new Susenas makes it possible to link modules through the core questions. For example, through the labor force and expenditure categories in the core, labor force characteristics in the module could be linked to the structure of expenditure in the module. It was considered important to include selected basic items on expenditure, causes of deaths, health, breast feeding, immunization, education, channels of communication, fertility level, family planning methods, housing materials and facilities, as well as economic activities. The economic activities incorporated basic questions on the labor force and employment, some limited questions enabling the construction of labor force structure, those working and those looking for work. For the employed the questions asked are: hours worked, industry and status.

In 1992 the sample size for the core questions was 65,600 households, which enabled estimation at national and provincial levels. From 1993 until recently it was enlarged to 202,000 households to enable estimation at the regency/municipality levels, while the sample size for the module is 65,600 households all along. With different modules, there must be a frame for sample

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selection for the module data collection. This is provided by households interviewed with the core questions comprising selected questions from the modules. From this frame a sub-sample of the core households is selected for a particular module. Accordingly, modules can be interconnected through the core questions. Therefore, from Susenas of 1992 through 1995 only limited data on employment are available.

Despite the benefits obtained from a multipurpose survey, where a very rich information base can be obtained, the system became very complicated. The preparation of the survey documents, training, fieldwork and data processing became difficult to organize. The labor force and employment module tended to be less accurate compared to the specialized labor force survey. Moreover this system made it impossible to design the same questionnaire as the one used in Sakernas.

After the economic crisis in 1997, Susenas was redesigned to simplify its operation. Only three modules were included. Consumption expenditure is collected every three years, and general information for the welfare indicators is taken as another module conducted every year. Another module collected every year covers labor force and employment and is designed to be comparable to the data from Sakernas.

### **5. One-Hundred Village Survey (SSD)**

Providing information for small areas is very costly. It requires large samples which in turn require large scale and nationwide organization and implementation. Quality of results might be low due to sampling and non-sampling errors. For example, Supas with 208,000 households, could only produce information at the regency/municipality levels with a minimum level of confidence. SSD was created to capture social changes in typical villages. As indicated by the name of the survey, 100 villages are selected from 10 regencies in 8 provinces. They are about medium villages with populations of 500-1000 households purposively selected by considering the following characteristics: poor/non-poor, urban/rural, coastal/hinterland, Java-Bali/outside Java-Bali and West/East region. In every village, 120 households were enumerated to give a picture of the different typical villages, and was not meant to be summed up to portray the conditions of higher administrative levels.

BPS first conducted SSD in May 1994 under the name SIVD (Studi Identifikasi Variabel Desa). The purpose was to identify village variables closely related with poverty and to test Susenas as a tool for monitoring welfare at the village level. In May 1997 the survey was repeated in the same villages but with some modifications to monitor human resources and social infrastructure. This survey became known as SSD. In 1998/1999 SSD was implemented in four rounds (August 1998, November 1998, February 1999 and May 1999) so as to capture quarterly changes in socio-economic living conditions impacted by the economic crisis.

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Variables collected in the survey include demographic characteristics, health, education, labor force and employment, fertility and family planning, housing, consumption expenditure and food security, ownership of durable goods and land, access to public facilities, and village potential. In 1998 variables connected to the crisis impact were added. These include migration, public works, crime, crisis response, as well as variables related to the social safety net. Data on the labor force and employment cover: labor force structure, unemployment, and information on industry, occupation, status, hours worked and additional works for those working, and for those displaced from work the reasons for displacement.

## **B. Establishment Surveys**

BPS conducts several establishment surveys which contain data on employment. As expected, most of these surveys usually collect data on production cost, input and output structure, capital formation, as well as information on business operation. Employment data are usually collected as part of the information on cost structure. In addition, data on participation in government development programs are also obtained from small and household establishments, since the government gives them credits and undertakes various programs to assist them.

The unit of enumeration of the survey is the establishment, which is defined as the smallest economic unit conducting a business activity by financing the production of goods and services and selling them for profit or for earning. The important element of being an establishment is the risk bearing, which it must assumed. These surveys collect *establishment data* provided by the responsible person in the establishment designated as the respondent. Usually only cost accounting and related economic data referring to the establishment are collected and provided by the respondents. Individual worker data cannot be collected from the respondents in these surveys, but data on group of workers, for instance, classified by gender, type of works, and education might be available. Establishment surveys currently conducted and containing employment data include:

1. Economic Census (Sensus Ekonomi, SE)
2. Directory of Incorporated Establishment (Direktori Perusahaan Berbadan Hukum, DPBH)
3. Quarterly Establishment Survey (Survey Triwulanan Kegiatan Usaha, STKU)
4. Small and Household Cottage Industry Survey (Survey Industri Kecil dan Kerajinan Rumah tangga, SKKR)
5. Small and Household-Establishment Integrated Survey (Survei Usaha Terintegrasi, SUSI)
6. Large and Medium Manufacturing Survey (Survei Industri Besar-Sedang, SIBS)
7. Hotel Establishment Survey (Survey Hotel, SH)
8. Employee Wage Survey (Survey Upah Buruh, SUB)

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### **1. Economic Census (SE)**

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BPS has so far conducted 3 censuses: 1976, 1986 and most recently in 1996. This decennial activity aims at collecting data on all economic establishments outside agriculture. Data for agricultural establishments is conducted separately in the agricultural census and surveys. Before the implementation of the 1996 Census, collection of establishment data was undertaken separately through a sector-wide surveys. These different surveys were undertaken in different years by different sectoral divisions in BPS. No or very little coordination took place to ensure comparability of the data.

The 1996 Census was conducted in stages starting in the beginning of 1996 and attempted to integrate all establishment data collections in BPS. A limited set of information was collected from all establishments, including large, medium, small and micro establishments. Like in many other establishment surveys, employment data were collected as part of information customarily collected from establishments including: identification and location, main activity, type of product, establishment status, value of assets, value of production, total earnings, and number of workers differentiated between permanent and temporary workers.

The Census differentiated between “incorporated” and “unincorporated” establishments. “Incorporated” establishments were kept in the directory, which was first established during the census preparation stage using available information in BPS and secondary information collected from other departments and organizations. The directory was then updated during census fieldwork. Newly found “incorporated” establishments were added to the directory, and those closed down were removed. “Unincorporated” establishments were not kept in the directory, because their number was large and their turnover was high. These were listed by visiting all households in the country, and the census questionnaire was applied to establishments found during the household listing. Fieldwork thus produced two results: a list of “unincorporated” establishments and information on establishments. The information collected was the same as that collected from those in the directory. For employment, therefore, data were confined to the number of permanent and temporary workers.

The list of establishments and related information was maintained as a frame for drawing samples for establishment surveys which were to be conducted at subsequent stages. This list is expected to be partially updated during the conduct of surveys of “unincorporated” establishments in subsequent years. After a period of ten years, the list will be totally renewed to form the basis of the next economic census.

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## **2. Directory of Incorporated Establishments (DPBH)**

During the economic census, all “incorporated” establishments (large and medium establishments for manufacturing industries) from all economic sectors outside agriculture are organized in a directory for the first time. Agricultural establishments are not included in the directory because they are listed separately during the agricultural census. The directory contains

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information on identification and location of the establishment, its main activity, total assets, value of production and employment (only the total number of permanent and temporary employees). BPS plans to gradually update the directory every year using secondary data sources and relevant surveys and to fully revise it every ten years.

### **3. Quarterly Establishment Survey (STKU)**

In the years prior to the Economic Census, a quarterly establishment survey (Survei Triwulanan Kegiatan Usaha, STKU) was undertaken to collect relevant quick indicators to observe quarterly sectoral growth/changes in production in the services sectors to help prepare the quarterly GDP. The relevant indicators collected may be different from sector to sector, but most involved output and employment. STKU covered only establishments in services including transportation, banking and finance, hotel, travel bureau and restaurant, trade and services.

STKU was first implemented in 1987 only in Jawa. In 1988 North Sumatera and South Sulawesi were added, and again in 1990 ten more provinces were added. In 1994/95 STKU achieved its full development, covering all 27 provinces in Indonesia. The information covered in that survey was: the number of employees, wages and salaries, production indicators, sales/earnings and earnings from other sources. Fieldwork was conducted at the beginning of each quarter to collect data for the previous quarter. Since the survey is simple, the preliminary results were out in three months, and final results in six months. In 1996 the survey was integrated into SUSI.

### **4. Small and Cottage Industry Survey (SKKR)**

This survey collects detailed data on small scale and cottage industries. It only covers selected provinces, which may differ from year to year. The 1993 survey, for instance, covered only 20 provinces including Jambi, Bengkulu, East Timor, Central Kalimantan, East Kalimantan, Mollucas and Irian Jaya. The total sample was 40,000 establishments. Data collection was conducted yearly between 1991 and 1995. Information collected in this survey was meant to supplement the data from SIBS. In 1998 this survey was integrated into SUSI.

### **5. Small & Household Establishment Integrated Survey (SUSI)**

Following the implementation of the 1996 Economic Census, SUSI was conducted for the first time in December 1998 using the establishment list from the Census. As part of the Census activities, SUSI only collected indicators from “unincorporated” non-agricultural establishments which are mostly small and micro enterprises. However, some medium establishments may be “unincorporated” and thus would have to be included in SUSI. In budget years 1999/2000 and 2000, SUSI was implemented quarterly in the months of July and October in 1999 and in January and April of 2000. To get a serial picture, 50 percent of the sample from

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the previous survey was retained in the following survey. Questions were the same as those used in the 1998 survey. While STKU only collected indicators in the form of simple indexes just to get information on the rate of growth, SUSI collects detailed information on the establishment's activities including cost structure, output, capital and sector of production. Employment data collected are: number of employees broken down by gender, age group, education, paid or unpaid, and remuneration.

#### **6. Large & Medium Manufacturing Survey (SIBS)**

This survey is still routinely conducted every year. It collects more information than what is needed for the directory. Given the importance of this sector in Indonesian economic development, detailed information on the establishment is collected on cost of production, outputs and services performed, power generation, investments, capital and assets. As part of production costs, expenditure for employees are also collected in detail, with a breakdown by production and non-production workers. Components of expenditures include wages/salaries, pension contributions, insurance and other allowances. A separate block on employment includes a breakdown of the number of employees by gender, education (science, technical or others) and type of job (research and development, production engineering and others and working as researcher, technician, administrative staff, factory workers).

The survey covers all large and medium manufacturing establishments. Coverage depends a great deal on the completeness of the directory, which is updated regularly to add new establishment and remove those that closed down. A new system of directory updating was applied for Java in 1991 and outside Java in 1992. It checks the list of establishments with recent sources from other departments, and the unmatched establishments are checked in the field to make sure they exist.

The survey produces information for smaller sub-sectors of the manufacturing sector, up to the five-digit ISIC level. The response rate is about 85-90 percent. Given the large number of establishments and the long questionnaire, publication lag considerably behind. The 1997 data, for example, were only available in March 1999.

#### **7. Hotel Establishment Survey (SH)**

Collection of statistics for the hotel sector is based on recommendations of the World Tourism Organization (WTO) which relies on "accommodation statistics." But only a small part of these recommendations is adopted in the Indonesian hotel survey. The survey covers all 27 provinces in Indonesia, is conducted monthly. Two types of surveys are conducted: one covering stock taking and one room occupancy.

The stock taking survey aims at building a hotel directory covering all classified and non-classified hotels. It has been conducted yearly since 1978, and includes data on the number of

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rooms and beds, room rates, and distance from airport, bus terminals and train stations, as well as hotel facilities. In the past three years employment data have been grouped into more detailed classifications by gender, citizenship, type and level of education, as well as by status (paid/unpaid). The room occupancy rate survey started in 1980 and covers all classified hotels and a sample of non-classified hotels with at least 10 rooms. This survey is conducted monthly to collect data on number of rooms, beds, occupied rooms, foreign and domestic guests. It is useful for calculate occupation rate, average length of stay, number of foreign and domestic guests and average number of guests per room.

Like the large and medium manufacturing survey, these hotel surveys are continuously undertaken, and are also meant to support the updating of the directory of incorporated establishments. All hotels, including the non-classified ones (hotel melati), are included in the directory since the operation of hotels must be legal and licensed by the tourism office of the provincial governments.

#### **8. Employee Wage Survey (SUB)**

This survey was first conducted in 1979 to collect detailed information on wage development and structure, including distribution by occupation. It does not cover all economic sectors, only non-oil and gas mining, manufacturing, hotels and land transportation. It was simplified in 1992 by dropping the question on wage by occupation. Consequently, only average and median wage of workers under the rank of supervisor were collected, and by dropping the land transportation sub-sector. The sample size was also reduced. The survey was conducted quarterly to enable monitoring of changes in wages. Three provinces (Bengkulu, East-Timor and Central-Sulawesi) were left out. For non-oil and gas mining only 35 establishments were included in the sample, while for the manufacturing industry 667 large and 342 medium establishments were included. Small establishments were not represented. Fieldwork was undertaken quarterly in March, June, September and December every year. Wage data collected were the payments to production workers lower than a supervisor. Wages were broken down by establishment size, gender, sub-sector and capital status (foreign, domestic, government owned).

#### **C. Agricultural Census (ST)**

The Agricultural Census was conducted in 1963, 1973, 1983 and most recently in 1993. In terms of employment, agriculture is the largest sector in the economy but the living standard of its workers is the lowest. With most agricultural activities still traditional and informal, several government programs are implemented to help develop this sector. The sector has a large number of sub-sectors as well as commodities produced. More than one hundred million households are involved in agricultural production in one way or another. Censuses covering this sector must, therefore, be able to capture all these activities. That is why the agricultural census was organized

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into several separate data collection phases aiming at capturing activities of sub-sectors and covering areas important to government programs. The Census basically consists of two parts. First is the complete data collection covering agricultural establishments, village cooperative units and the "Village Potential Survey". The second part is the "sample census" of agricultural households, land-holding farmers and the "sub-sector agricultural households". In all the sample size is 20 percent of all enumeration areas, and 20 percent of households in the selected enumeration areas.

One activity in the establishment census covers those engaged in food crops and horticulture (Sensus Perusahaan Palawija dan Hortikultura, SUPH). Horticulture includes vegetable crops, ornamental and medicinal plants. Collection is done by complete enumeration of all 54 establishments engaged in this activity. Employment data are differentiated by gender, education, whether administrative staff/field workers/factory workers, whether managers/assistants/regular employees, and whether permanent or temporary workers (monthly or daily workers). As part of the cost structure, wages and salaries and other income components are collected by type of employee.

Similar employment data are collected in other establishment censuses, which cover:

1. Industrial plants (covering, for example, agathis, acacia and teak woods)
2. Wild Animal Culture and Nature Tourism
3. Possesses Rights for Forest Exploitation (HPH) and Permission for Woods Collection (IPK)
4. Big and Small Cattle
5. Fishery

The "Sample Census of People's Estates" (Sensus Sampel Perkebunan Rakyat, SSKR) collects data from all households engaged in the production of cash crops. Altogether there were 150,000 households engaged in plantations of different commodities including rubber, coconut, coffee, clove, cacao, kelapa-sawit, and lada. Other sample censuses cover different types of agricultural households. One such sample census covers agricultural households engaged in the sub-sectors of animal husbandry, land-holding farmers and forestry.

The "Sample Census of Big and Small Cattle Households" (Sensus Perusahaan Ternak Besar/Kecil, SUTBK) was conducted as part of the 1993 agricultural census. Data include the number of employees by status (permanent/temporary), gender and education. Also collected are data on daily workers according to number of days and man-days, as well as expenditures for employees (in money and in kind) given as wages and salaries, overtime, bonus, gift, and others. These data are collected in addition to information on cost structure, output, earnings, capital formation and land owned and used.

The "Sample Census of Agricultural Household Earnings" (Sensus Sampel Pendapatan Rumahtangga Pertanian, SSPRT) was also conducted as part of the 1993 agricultural census. In

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1983 it was also part of the census and was conducted in 1990 as *Survei Pendapatan Petani (SPP)*. It covers all households engaged in agriculture regardless of the sub-sectors. Altogether there were 900,540 households enumerated in 1993. The only employment related data collected in this survey were expenditures for wages and salaries.

Another sample census conducted during the 1993 agricultural census was the “Sample Census on Cost Structure of Agricultural Households” (*Survey Struktur Ongkos Usaha Rumah tangga Pertanian, SSOURT*). This was the third such survey, the first having been done during the 1983 agricultural census and the second blended in the 1990 SPP. Labor cost (wages and salaries) is collected in this survey.

#### **D. Community Data Surveys**

Community Data Surveys, conducted regularly by BPS, provide data on village collected from village officials. Some data are good and based on village records, but others reflect only the perception of village officials. Data on labor force and employment in the village are also collected.

##### **1. Village Potential Survey (Podes)**

This survey was first introduced in 1976 as the “Village Facilities Survey” (*Fasdes*) undertaken within the 1976 Supas. Since then the survey has been regularly conducted as part of a big data collection effort, such as censuses and Supas. It is convenient to conduct Podes as part of a bigger national data collection since all villages are visited during mapping or listing. Podes covers all villages: in 1990, for example, there were 67,515 villages. A 1993 Podes was conducted as part of the agricultural census and in 1996 as part of the economic census. Fieldwork is currently underway for a 2000 Podes as part of the Population Census. Employment related information includes percentages of households engaged in agriculture, manufacturing, trade, services, and others.

##### **2. Sub-District Survey (SK)**

This survey was conducted in September 1998 in all 4,025 sub-districts of Indonesia. The response rate was high: 99.2 percent or 3,992 sub-districts. The survey was meant to provide a picture of the spread and intensity of the crisis all over the country. Data collected cover household economic resilience, food and merchandise supply security, health and family planning, education, unemployment and crime.

Like other topics, information on unemployment was asked to informants in the sub-districts who were considered knowledgeable about the condition in the sub-districts during the crisis. These informants were medical doctors in public health centers, heads of sub-district education offices and staff of rural society development or agricultural personnel. They were asked about their perception of their sub-districts. To obtain good responses, questions were kept

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simple.

### **E. Ad-Hoc Surveys**

During the economic crisis it was believed that there was urgent need to document how serious and widespread the social impact of the crisis was. Data collection was then required to obtain information in support of the formulation of programs and projects aimed at alleviating that impact. Such programs needed to be backed up by quick and comprehensive data in order to be able to reach the target groups as well as to monitor their results. To support these programs, universities and non-government organizations also conducted similar surveys, but the scope of the NGO surveys was usually small. One large survey was the “Indonesian Family Life Survey” (IFLS) funded by the Rand Corporation and implemented by the Demographic Institute-University of Indonesia, which focused only on health, education and consumption expenditure. No data on labor force and employment were collected.

One survey conducted by BPS in cooperation with the United Nations Development Program (UNDP) in 1998 was the “Economic Crisis Impact Survey” (Survei Dampak Krisis, SDK). This survey aimed at monitoring the impact of the crisis on the living conditions of the population and the continuation of their economic activities and was undertaken through several rounds and intensive observation. Aspects which were studied included: return migration, production cost, termination of employment, urban informal sector, cost of living and retailed business in urban areas, and village potential. It was not designed to provide a rigorous representation of regional/national data for policy formulation. Rather, it was meant to provide an early warning to the government of the spread and seriousness of impact of the crisis. That is why only a few regencies were purposively chosen for selection of a sample of establishments and households. These were the ones believed to be most affected by the crisis. Three particular studies were done in this regard:

**a. Study on Urban Informal Workers (SUIW):** This study aimed at collecting information on informal workers in urban areas, to test the common belief that those terminated from their jobs tended to stay in urban areas and mostly shifted to informal jobs. A survey was conducted in only 7 urban regencies. Information collected included: demographic characteristics of household members, housing condition and facilities, economic resilience of the households, and very detailed questions on labor force and employment of household members including their participation on labor intensive projects, and activities before and after job termination.

**b. Study on Economic Resilience of Migrant Households (SERMH):** This study, which attempts to determine the impact of the crisis on migrants, contains labor force and employment data.

**c. Retail Business Survey:** This survey collects data on supply, sales and prices of merchandise. It also collects employment data, including number of employees,

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working days, daily hours worked, number of shifts in a day, whether employee has undergone any job termination and how many.

#### **F. Administrative Records**

Most data on labor force and employment are collected and provided by BPS . The only other sources of such data are the Department of Manpower (DOM) and the Department of Public Works (DPW). DOM provides data on registered job openings and people seeking work. So coverage of this segment of the labor market is small, since not all establishments offering job openings register with DOM. In fact, most of them usually advertise their job vacancies publicly to reach a wider pool of job seekers. Moreover, companies generally shy away from DOM, because of its complex bureaucracy. Also highly qualified job seekers seldom register with DOM; they prefer to apply directly to the desired companies. Although in theory job vacancies should be registered with DOM, in practice only mass recruitment is usually through that department. Another problem with this source of data is that not all documents are processed, limiting further their usefulness for market-wide analysis. For these data to be of any use, therefore, a reliable system must be developed, particularly to incorporate data from other sources.

Other data produced by DOM include employment created by government programs. Data on participants of padat-karya programs (labor intensive infra-structure projects), training conducted by DOM, foreign workers in Indonesia, Indonesian workers working overseas and their remittances are maintained in DOM. Since the programs are conducted by that department, and since by law they are required to register with it, such data should be good, although some available to users because they are not processed.

Employment data associated with public works programs may also available at the DPW. Data may consist of the number of persons recruited for infrastructure construction, or those involved in labor-intensive projects similar to those conducted by DOM. The degree of availability of the DPW employment data is similar to that of DOM: data are not systematically processed to generate regular statistics

### **III. STRENGTHS AND WEAKNESSES**

Establishment surveys, community data surveys and household surveys have different characteristics and therefore different strengths and weaknesses. Information in establishment surveys is given by the person(s) designated by the company to answer the questionnaire, and the answers are mostly based on establishment records. Consequently, the concepts and definitions used in this type of survey must be suited to those already applied in the establishments. In addition, one cannot ask in such a survey questions directly related to individual workers, unlike in household surveys, where specific questions are addressed to individual household members.

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Accordingly, in establishment surveys one does not face the constraint of using definitions and concepts dictated by the labor force approach.

#### **A. Establishment Surveys**

Establishment surveys contain only limited data on employees, but such data can be related to information on cost, capital and output of the establishment. Employee data can also be broken down by gender, marital status, age group, education, and occupation group. Relating employment data to other costs of production makes possible the analysis of cost structure to see whether labor is fairly paid. Comparison of capital to labor cost can be used to determine whether the establishments are capital or labor intensive. And in relation with output or value added, one can analyze the share of labor in value added, compared to returns on other production factors.

Another strength of data from these surveys is that they can be used to produce more detailed sub-sectoral employment and job classification. Household surveys on the other hand may provide full coverage of all sectors but the sub-sectoral breakdown is limited to the 2-digit ISIC level. The breakdown of occupation in household surveys is provided to the 3-digit ISCO level, and individual employment can be grouped in this classification. But the 2 and 3 digit occupation classification data are not reliable and seldom used. Both the interviewers and the respondents are not able to correctly interpret the detailed occupational classification. Establishments are in a better position to provide such data. Thus by merging employment data from these surveys with those from household surveys one can obtain more detailed sub-sectoral and occupational classifications. Of course, one needs to do this carefully by making adjustments due to conceptual differences. This is the type of exercise done, for example, when constructing an input-output table which requires that employment data be available for more than 140 sub-sectors.

#### **B. Household Surveys**

Detailed individual data (including demographic, socio-economic and employment characteristics) as well as general information on the establishment or the place of work and on the worker's household are available in household surveys. But the quality of the data depends on the size, objective and methodology used. There is a trade-off between the size and complexity of a survey and the quality of the data. More extensive information collected, such as in Susenas, makes it possible to conduct rich analyses. Another strength of a large sample is that it allows the provision of data for smaller administrative regions.

BPS conducts regularly five types of household surveys: the population census, Supas, Sakernas, Susenas and the "One Hundred Village" survey. Since these surveys used the same basic concepts and definitions of employment, one would expect that their results to be comparable. But employment data from these sources are not comparable for other reasons. While censuses and Supas, which are designed with the same objective of collecting general population

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data, produce somewhat comparable results, their data are not comparable with the other three surveys. Employment data for these three surveys, which were designed for different objectives, are also not comparable.

Sakernas and Susenas data are not comparable because they are derived from different types of survey. Susenas is a multi-purpose survey, with information collected in many different fields organized in two questionnaires: one as a core and one as a module. The methodology and implementation of the survey is very complex. The quality of employment data is greatly affected by the collection of other information. Sakernas, on the other hand, as a survey specifically designed for collecting employment data should produce the most reliable data. It has been consistently undertaken in August of every year since 1994, all the survey personnel have been familiar with the concepts, definitions and questions, making it easier to interpret various questions in a uniform way and thus produce results which are consistent from year to year.

But continuity and consistency in the conduct of a survey also has a downside: it discourages survey managers from taking necessary actions to correct mistakes identified in the concepts, definitions or procedures. So one has to make a choice: keeping any existing mistakes for the sake of consistency but running the risk of data mis-interpretation, or revising the questionnaire in order to come up with more accurate figures but producing results which are not comparable to previous surveys.

Because of their large sample of households, the population census and the inter-censal population survey can provide employment statistics for smaller administrative regions down to regencies/municipalities. Employment information can then be statistically linked with other characteristics of the population including family structure, fertility, mortality and migration, as well as housing conditions and facilities. Rich cross-sectional employment analyses can therefore be performed with these data, in addition to serial comparisons. The only drawback is that when the structure of questions in the questionnaire changes, it makes serial analysis more difficult.

Susenas provides a rich source of data, richer than even the census or inter-censal population survey, because it contains far more information. However, it suffers from high variability in the information collected. Another shortcoming relates to employment data contained in the core questionnaire: questions are limited and are placed following other more dominant questions. Thus despite the benefits derived from the large size of the sample, Susenas employment data suffer more from a higher level of instability of the data compared to Sakernas.

One serious weakness of both surveys is that they cannot be used for short-term comparisons. Maintaining consistency of the questionnaire, the methodology and fieldwork would undoubtedly enhance our confidence in conducting serial analysis.

### **C. Community Data Surveys**

Data derived from Community surveys are useful for providing an indicative picture for

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smaller regions, only if the differences between them and the standard surveys are not large. Accordingly, concepts, definitions and categorization of answers should be kept as close as possible to those of the standard ones.

#### IV. CONSISTENCY OF DATA FROM DIFFERENT SOURCES

To make the best use of all available data in BPS, data must be made *comparable* to the extent possible. In other words, one must be able to be put them in one *map*. But one, of course, cannot expect employment data from different sources collected for different purposes employing different data collection procedures to be fully comparable. Data are most useful when used for the purpose they were designed. But in practice users often attempt close comparisons of employment figures from different sources. This section attempts to briefly highlight some issues related to consistency of employment data derived from the various sources stated above.

##### A. Instability of Employment Statistics

After the 1996 Economic Census, the definition of “employees”, “paid” and “unpaid”, as well as “permanent” or “temporary”, has been made clear and uniform in all establishment surveys. The breakdown of employment statistics by sub-sector, type of work, education, age and gender has also been standardized. Moreover, establishments are now consistently divided into two statistical groups: the “incorporated”, defined as those in the directory, and the “unincorporated”, defined as those non-agricultural establishments not in the directory. Similarly, the use of the establishment as the enumeration unit has also been standardized since the 1996 Economic Census.

However, the same cannot be said of household surveys. Although the basic concepts and definitions have been retained since 1976, certain aspects of data collection have greatly influenced response, causing employment statistics not to be strictly comparable over time or across surveys. Questions on sex, age, marital status, and education, for instance, are straight forward and cannot be misinterpreted. But answers to questions on whether a person is “working” or “looking for work” may depend on how the questions are phrased and perceptions of the interviewer as well as the respondent. This is particularly complicated for a developing country like Indonesia. The boundaries between “working” and “not working” in the informal sector, which dominates the labor force, can be arbitrary. Similarly for “looking for work”, especially among those looking for informal work. Such inconsistencies are compounded when the number of respondents is very large, especially the widely different backgrounds and experiences of enumerators. In interviewing households, not only are concepts and definitions important, but also how the questions are asked as well as the order in which they are asked.

That is why I believe that no employment statistics give us the *absolute* truth. The real truth may never be known. Survey results can only be considered *relative*, depending on various

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aspects of the design and the organization of field enumeration. Thus I believe that efforts to find *true figures* by *improving* questions and questionnaires have not succeeded. In fact, they only resulted in unexplainable fluctuations in employment statistics. On balance, therefore, I believe that policy makers and users will benefit far more from obtaining *consistent* and *serially comparable* statistics (by retaining the same questionnaire) from the same source than by continuing the futile effort of “improving” questionnaires in order to reach the *absolute truth* about employment.

Comparisons of employment statistics from different sources are more problematic. Sakernas and Susenas were supposed to produce comparable results: using Susenas for the first semester of a particular year and Sakernas for the second semester. However, these two surveys have never produced comparable results. Susenas figures for the unemployment rate have always been higher (see Table 2).

**Table 2**  
**Comparison of Unemployment Rates in Susenas and Sakernas**

	1997	1998	1999
Susenas (February)	5.14%	7.00%	6.43%
Sakernas (August)	4.68%	5.46%	6.36%

Of course, one main reason for the difference is the fact that Susenas is a multi-purpose survey while Sakernas is specially designed for employment. But another reason may be that Susenas adopts the latest version of Sakernas. Since by design Sakernas August figures of a particular year are comparable with Susenas February figures for the following year, the two figures for the same year may not be comparable.

### **B. Comparison of Establishment & Household Survey Data**

Employment data from household surveys can not be matched directly with data from establishment surveys for at least three reasons. First, multiple jobs cannot be captured in establishment surveys. One person in an establishment survey may be recorded more than once if he/she works in more than one establishment, while in a household survey he/she is considered employed in his/her main job. Consequently, employment levels obtained from establishment surveys are conceptually higher than those based on household surveys. Secondly, persons working in *non-establishments* are not captured in establishment surveys, but are captured in household surveys. Thus sectoral employment levels in household surveys are generally higher than their corresponding sectors in establishment surveys. Thirdly, the definition of work is different in the two surveys. In household surveys a person is considered “working” if he works for at least one hour in a week, while in establishment surveys the definition of “employees” is

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mostly based on whether that person was on the company's payroll for that year or not. Again, this will cause larger employment in household surveys. Sectoral data are also different, since in establishment surveys the sectors are predetermined based on the *type of product/output* produced, while in household surveys it depends on the interpretation of the respondents

Despite the above conceptual differences, it is not impossible to reconcile data from these sources and put them on one *map*. Such data can be analytically linked, as is done for example when an Input-Output table is constructed, requiring detailed sectoral employment data in head counts as well as in man-hours. But undoubtedly the best way is to reconcile the two sources at the planning stage. Improvement and simplification of the methodology used in both household and establishment surveys is needed to produce directly linkable data. It is worthwhile to look at this aspect of data consistency to make the data more useful and applicable. Serious efforts should be attempted in reconciling these employment data.

### **C. Comparison of Household & Community Survey Data**

Employment data reported by informants in the community survey are very simple. In most cases, only their general impression on the number of people employed and unemployed is required. Other information collected may include whether the person is working in agriculture, industry or in other sectors. But even with such simple information, reported data are not comparable with those from household surveys, since it is not possible for the informants to apply the definitions used in such surveys. The "employed" and "unemployed" as defined by the standard labor force approach used in household surveys are not clearly identifiable in conditions observable daily in the areas. For instance, an "unemployed" persons according to the definition, is one "looking for work and not working at all". When applied to field reality, the "unemployed" (*menganggur*) are those not working and doing nothing. The latter version is the one which most likely influences the perception of the informant. Informants may witness that many people during the day are not working but are just getting together chatting, talking and drinking. So they report high a unemployment rate. But these people may be working in the formal sector or working marginally in the informal sector, or they may not be working but also may not be looking for work. By definition they should not be considered as unemployed. Similarly, the number of people "working" is not comparable with that obtained from household surveys, since it is doubtful that informants can capture the standard definition of people working at least for one hour in a week . Those working marginally in the informal sector are not likely to give the impression that they are working.

These differences are not possible to fully reconcile, but they can be minimized. And they should be minimized because household survey figures are likely to be used as the reference for comparison. Unemployment in their villages or sub-districts will be considered high or low based

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on the more commonly used national or provincial figures from household surveys. To minimize these differences, guidelines should be provided to informants. While still kept simple, the classification should be made similar to the one used in household surveys. For instance, instead of two employment categories (“employed” and “unemployed”), we can introduce another category: “not in the labor force”. This way the unemployment figure will be close to that in household surveys. The three categories are still simple and should be well understood by informants, who are usually educated intelligent people in the village.

## **V. CURRENTLY NEEDED EMPLOYMENT STATISTICS**

It is ironic that a less developed economy with less resources may need more statistics than a developed economy to cope with its more serious employment problems. It is absolutely critical that a balance be found between data needs and available resources. Data must be carefully selected to serve the most urgent and immediate needs. Production of data must be efficiently conducted to come up with the best and most relevant statistics to meet the optimal requirements of the economy.

### **A. Measurement of Structural Changes**

Employment has long been an important factor in Indonesian economic growth. There was a debate over whether the success of economic development before the economic crisis was accompanied by large employment creation and resulted in a better labor force and employment structure. It was disputed whether there was a significant structural change from a reliance on agriculture and mining to one on industry and services. Was the modern sector growing fast enough and absorbing enough informal workers to reduce the degree of underemployment? Some even went further and questioned whether the Indonesian economy had moved from labor surplus to labor shortage economy characterized by increasing real wages. After the crisis it was strongly suggested that further economic development should make more use of existing resources, and that human resources must be used effectively to speed up recovery and improve living conditions. According to this line of thinking, sectoral growth policies should take employment into consideration, and small-scale and agro-industries were recommended as the engine for future Indonesian economic growth. Accordingly, employment data are required to support the needs to monitor employment structural changes.

Therefore, the need for structural employment statistics will become stronger in the future. Consequently, BPS should continue and improve the current labor force data collection based on the labor force approach, classifying working age population into employed, unemployed and not in the labor force. Structurally, unemployment will undoubtedly increase with the modernization

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of the economy. And in line with modernization, employment will shift from rural to urban, and from informal/traditional to formal/modern. The success of employment creation in the future is expected to drastically change the composition of employment status: the own-account and unpaid family workers will greatly decline, while the proportion of employers and employees will increase. Working will be more stable, less seasonal and more productive, and consequently multiple jobs will be reduced. Shifting of sectoral employment will also continue, and the pattern of the change will depend on growth policy. Employment statistics need to depict at least these structural changes.

### **B. Measurement of Short-Term Trends**

In addition to answering structural change questions, employment statistics also need to reflect seasonal movements, since the Indonesian economy is still dominated by traditional agriculture. Critical policy questions need to be answered, among others: what aspects of employment are influenced by seasonal movements; is work intensity in agriculture different during peak and low seasons; does agricultural employment decline during low seasons; what sectors can absorb agricultural workers; what is the composition of formal/informal employment; are seasonal patterns different by gender, education and other characteristics of individual workers.

Employment data are also needed to monitor closely the impacts of economic crises. It has become urgent to monitor the employment situation to provide answers to questions such as: how many people have lost their jobs; has overall unemployment increased; has underemployment increased; has work intensity and productivity declined; have real wages declined; have people moved from the more affected urban areas to rural areas to settle for employment within the family; what sectors were hardest hit; how do households and communities respond to employment deterioration. During economic recoveries, such indicators are needed to address questions in the opposite direction, e.g. how many people gained new employment etc..

Even in non-crisis situations, more frequent employment indicators are needed for monitoring developments in the labor market. Tracking demand and supply of labor in the modern sector is useful in understanding the mechanism of wage determination in the modern sector, which in turn influences earning levels in the informal sector. The labor market for the whole economy cannot be understood without knowing the modern labor demand and supply.

The need for monitoring short run employment developments cannot be overstated. Of course, one does expect BPS to provide all the data mentioned above. However, BPS can evaluate what data can and cannot be provided. Data can then be prioritized based on a cost/benefit evaluation and budgetary constraints, and a decision can then be made on the most effective course of action.

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### **C. Informal Sector**

The economic crisis in Indonesia has provided indisputable evidence that the informal sector plays a prominent role in mitigating the impact of the crisis. Many people have reiterated the important role of the informal sector in providing employment for the excess supply of labor. The sector is believed to provide a “safety valve” for employment in Indonesia, absorbing agricultural workers who migrated to urban areas. It has been a major part of the economy for a long time and will undoubtedly exist in the Indonesian economy for a long time to come. Data on this sector must therefore be further developed and improved.

Currently two sources of data are available to assess informal sector employment. The first is from household employment surveys (such as Sakernas and Supas) and the second from establishment surveys. Estimates of informal employment in household surveys are obtained from data on status and occupation. The self-employed (except professionals), own-account and unpaid family workers are considered as workers in the informal sector. Employers and employees (except agricultural labor) are classified as formal workers. Employment can then be divided into two categories (informal and formal) with different characteristics (based on the data items collected in the survey). Other estimates of income are derived from establishment surveys. And for the manufacturing sub-sectors are derived from survey of small and cottage industries. Micro establishments are generally considered as informal, and data include: production costs, expenditure for labor, number and characteristics of employment groups, output structure, capital, business operation, marketing and participation in government programs. Based on this information average earnings of different groups of workers are calculated. Although such estimates exist, they have so far been underutilized. More and better indicators should still be constructed from these data to show informal sector changes.

### **D. Implications of Regional Autonomy**

The types of employment data required from BPS will certainly be greatly influenced by the government’s decision on regional autonomy. As we understand it, it has not yet been decided whether to exempt BPS activities from decentralization or to grant autonomy to regional statistical offices. Currently the production of statistics is highly centralized, which was a natural response to the central development planning of the past. With regards to the production of employment statistics, one can see two extreme cases and an unlimited number of scenarios in between. One extreme would be that full autonomy in statistics is granted to regional statistical offices and the other would be that the current centralized system remains intact.

If full autonomy is granted to regional offices, then these offices will presumably be catering primarily to the needs of their regional governments, which may result in a need for independent regional survey design, implementation and processing. The role of the central BPS office would be limited to one of coordination, standardization of measurements and the

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production of statistics of national importance. That, of course, would have dramatic functional and organizational implications which are difficult to predict at the present time. On the other hand, if the decision is to exempt statistical activities from regional autonomy, then BPS can continue to produce national as well as regional statistics, and hopefully streamline data collection procedures in order to enhance their efficiency in the face of tight budget constraints.

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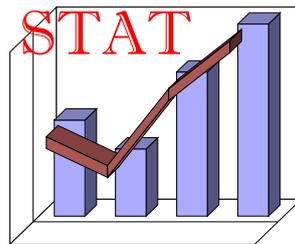
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# **EARNINGS DATA IN INDONESIA : A REVIEW OF EXISTING SOURCES**

Report # 10

by  
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August, 2000



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

August 14, 2000

Earnings Data Review

## EXECUTIVE SUMMARY

**Objectives.** Concerns on employment and low income have been at the forefront of Indonesian policy making for decades. Consequently, extensive data collection efforts have been undertaken since 1961 in response to emerging needs in tackling these policy concerns. The need for relevant and timely data became particularly critical in the wake of the 1997-1998 economic crisis. In Indonesia, collecting data on earnings is not easy, since household members, individually or in groups, are engaged in many different activities to obtain income barely sufficient to support their livelihood. Different techniques have been tried to get earnings data with reasonable accuracy. A previous report reviewed major existing employment data sources. This report reviews existing sources of earnings data in Indonesia and attempts a brief discussion of their major strengths and weaknesses. Finally, it identifies what earnings data are needed and recommends broad methodological improvements.

**The Concept of Earnings.** To understand what constitutes earnings data, one must understand the activities and transactions conducted by households and household members. Theoretically, households consume and save, while establishments produce and invest. In addition to wages/salaries, households also receive non-wage incomes and transfers, as well as use borrowing or saving withdrawals to finance consumption. Earnings and all related items can be organized into four inter-related accounts: *income and expenditure*, *transfers*, *cash* and *fixed capital*.

Incomes are obtained as payments for services performed, or as compensation for the use of cash or fixed capital. These different types of income accrue to individuals, groups of individuals, households or establishments. One important type of income is *wages/salaries* as payment to employees. Those who work as *own-account or self-employed* workers receive compensation in the form of "*wages*" or *net earning*. Individuals who own a business (*employer*) outside the household, receive *dividend/profit*. In addition, individuals who own cash capital earn income in the form of *interest* or *dividend*. Individuals may also invest in fixed assets and rent them out to earn some *rents*. Dividends, profit, interest and rent may also accrued to households, if the cash investment and assets are owned by the household.

To obtain income, a large number of households undertake economic activities, performed together by several household members. The contribution of individual household members cannot be separated and thus cannot be measured. Some may be paid individually for their work, but most are not. The income generating activities are theoretically separated from the regular household activities, and are considered to be performed by an economic establishment called a *household micro-enterprise*. Income in this case is usually measured as outputs minus inputs accrued to the household, not to any individual.

Transfers are payments received, not in return for goods sold or services performed, but for other reasons. With the existence of a large number of poor households, transfers play an important role in narrowing down the income gap. Transfers among households, and between households and government or establishments are very common. Contributions, gifts, cash received from begging, stealing or gambling, scholarships, taxes, subsidies, inheritances, and premium payments for insurance against damage and loss are common transfer items. For the net transfer recipients, transfers add to income which can be used for consumption and saving.

Savings may take the form of *cash or fixed capital*. Cash capital transactions include saving deposit/withdrawal, lending and borrowing, or buying/selling stocks and bonds. Fixed capital transactions include purchase and sale of cars, houses, land and jewelry. Purchase of durable consumption goods is considered as consumption, while purchase of fixed assets is considered as fixed capital investment. Changes in the value and composition of these accounts will affect the non-wage income of the household or the individual household member. Collection of data on these transactions in a household survey is important to avoid mis-classification of earnings components.

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**Earnings Data Sources.** BPS collects earnings data through different types of surveys. Not all employment data sources collect earnings. Surveys collecting earnings data can be grouped into three categories: household surveys, establishment surveys and agricultural censuses. Household surveys collect individual and household earnings data from *households* and *individual household members* as the units of enumeration. Household surveys collecting earnings data are the *National Labor Force Survey (Sakernas)*, the *National Socio-Economic Survey (Susenas)*, and the *Producer Price Survey of Farmers*. Establishment surveys use *economic establishments* as units of enumeration, and earnings data are collected in the form of labor cost as part of production cost structure. Establishment surveys collecting earnings data include the *Large and Medium Manufacturing Survey (SIBS)*, the *Small and Household Establishment Integrated Survey (SUSI)* and the *Employee Wage Survey (SUB)*. Agricultural Censuses use both households and establishments as units of enumeration. Accordingly, in household agricultural censuses household earnings are collected, while in the establishment agricultural censuses only labor cost is collected.

Only the 1976 and 1977 Sakernas collected individual and household earnings. Individual incomes were collected from all household members working as employees, own-account workers and employers in the form of wages/salaries, production minus cost, rents, and interest. Household income from agriculture was collected for detailed agricultural sub-sectors. Starting in 1988, only wages/salaries were collected until the recent 1999 Sakernas. BPS collected earnings data in household surveys for the first time in the 1963/64 Susenas. The same survey was replicated in 1964/65, and variations of it were conducted in 1969, 1978/79 and 1981. The methodology and schedules changed several times to improve earnings data. But some apparent misunderstandings remained in the concepts of income, transfer, cash and fixed capital items until the recent Susenas. For the years 1984, 1987, 1990, 1993 and 1999 income data were collected consistently using the same schedules.

BPS conducts several establishment surveys to collect data on labor costs. In SIBS, labor costs are differentiated by whether they are paid to production or non-production workers, while the components include wages/salaries, pension contributions, insurance and other allowances. The 1998 SUSI differentiated labor payments by wages and salaries, and other payments for overtime, bonus, gifts and others. The specially designed quarterly wage survey (SUB) was simplified in 1992 to collect only average and median wage of workers under the rank of supervisor in non-oil and gas mining, manufacturing and hotels. In 1993 three more sectors were added: construction, trade and restaurants.

Agricultural censuses include establishment and household surveys. In establishment surveys, labor costs are collected by type of employee, in money and in kind given as wages and salaries, overtime, bonus, gift, and others. In the household agricultural census, labor cost data can be averaged also by number of man-days, and wages/salaries are collected for different types of work including land preparation, seedling, planting, fertilizing, pest and weed control, taking care of plants, harvesting, post harvest activities, and others. Other incomes accrued to household members are collected then added to household agricultural income to estimate total household income of agricultural households.

**Strengths and Weaknesses.** Since 1988, Sakernas has collected only wages and salaries from employees. Its most significant strength is the fact that it collects wages and salaries fully incorporated in detailed employment data, thus allowing users to conduct elaborate analyses on different aspects of employment. One big weakness, however, lies in its coverage of employment status. Employees are often mixed up with the self-employed. The current survey deliberately included farm labor as employees, which should be more appropriately classified as self-employed. Moreover, since practically everybody working independently for pay in the informal sector considers himself as *buruh* (i.e. “employee”), the true number of “employees” is overestimated.

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Susenas' main strength is its explicit collection of detailed individual and household incomes, even if undertaken only once every three years. No other single survey provides such detailed information on value and cost of production. One big drawback, however, is the constant changes of the methodology and the questionnaire making it difficult to undertake inter-temporal analyses of particular component variables. Only since 1984 did Susenas use a better survey instrument. The differences in survey instruments reflect some misunderstanding in the concepts of household incomes, transfers and capital accounts, and has resulted in underestimation of household income.

The annual Large and Medium Manufacturing Survey (SIBS) provides labor cost information broken down by up to the five-digit ISIC level. Payments to employees and its components, are separated for production and non-production workers, and whether they are paid in cash or in kind, while its components include wages and salaries, overtime, gifts, bonuses, pension payments, social contributions, insurance and other similar benefits, and accident allowances. Its major weakness, however, is the long lag (more than 2 years) in data availability.

In SUSI the number of employees is broken down by detailed classification, while labor cost data are only broken down by gender. Consequently, only wage per employee by gender can be computed. The detailed classification of sectors (until 4 digit ISIC) is the major strength of wage data in SUSI. Since SUSI is an establishment survey with the establishment as the unit of enumeration, no household incomes are collected.

Data collected in the *agricultural establishment census* are limited to labor costs as part of the cost structure. Labor cost and employment are broken down by commodity group and for different types of jobs: land preparation, seedling, planting, fertilizing, pest and weed control, taking care of plants, harvesting, post harvest activities and others. Therefore, average wage per worker or per man-month can be calculated for different commodity groups and different jobs. From the *household agricultural survey*, both individual and establishment income data are collected, with the objective of estimating household income. However, in a particular sub-sectoral survey, only household income in the corresponding agricultural sub-sector is collected in great detail. Household incomes from other agricultural sub-sectors and non-agricultural sectors may be available separately but will not be as reliable. Therefore, income data from different surveys on agricultural sub-sectors tend to be inconsistent.

**Recommendations.** Three general recommendations are provided to improve overall earnings data collection in BPS:

- To avoid any unnecessary inconsistency the questions and their arrangement in the questionnaire must be kept as uniform as possible. In this case the 1999 Susenas questionnaire can be used with some improvements. All items related to income included in the questionnaire must be conceptually valid and exhaustive to arrive at a correct estimate of household income.
- To come up with conceptually correct wages/salaries, agricultural labor in Sakernas need to be taken out of the "employee" category and treated separately. In addition, profit and net earnings need to be introduced along with wages/salaries in order to ensure that wages/salaries are not included in compensation to self-employed workers.
- Labor cost in establishment surveys need to be separated into a wage and a non-wage component. In addition, grouping of employees and labor cost spending needs to follow a meaningful classification of workers. In addition to economic grouping, such as by sector, occupation, and types of workers, socio-demographic breakdown must also be considered.

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**GLOSSARY**

Arisan	rotating saving among family members or close groups.
Bagi Hasil	Production Sharing
BPS	Badan Pusat Statistik
Buruh	Indonesian word for persons doing any odd jobs receiving compensation in the form of upah (wage).
DKI	Daerah Khusus Ibukota, Special Regency of Jakarta
HPH	Hak Pengelolaan Hutan, Right for Forest Exploitation
IPK	Ijin Pengambilan Kayu, Right for Log Collection
ISCO	International Standard Classification of Occupation
ISIC	International Standard Industrial Classification
Sakernas	Survei Angkatan Kerja Nasional, National Labor Force Survey
SHPP	Survei Harga Produsen di Pedesaan, Producers Price Survey in Rural Areas
SIBS	Survei Industri Besar dan Sedang
SPP	Survei Pendapatan Petani, Survey of Farmers Income
SSOURT	Survei Struktur Ongkos Usaha Tani, Survey on Cost Structure of Agricultural Households
SSPRT	Sensus Sampel Pendapatan Rumah Tangga Tani, Sample Census of Farmers Incomes
StRDC	Statistical Research and Development Center: a center established by the UN and BPS to assist statistical development in BPS
SUB	Survei Upah Buruh, Employee Wage Survey
Susenas	Survei Sosial Ekonomi Nasional, National Socio-Economic Survey
SUSI	Survei Usaha Rumahtangga Terintegrasi, Integrated Survey of Household Enterprises
SUKP	Survei Upah Karyawan Perkebunan, Estate Employee Wage Survey
SUPAS	Survei Penduduk Antar Sensus, Inter-Censal Population Survey
UN	United Nations
Upah	Wage paid as compensation to employees and to other blue collar workers doing any odd job

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## **I. INTRODUCTION**

Concerns for employment and low incomes have been at the forefront of Indonesian policy making for decades. In addition to unemployment, one of the most important issues is the existence of a large informal sector in the economy causing under-employment and creating low productivity jobs resulting in low worker returns. As a result, the standard of living of most people is low, and a large segment of the population still lives below the poverty line. Extensive data collection efforts have been undertaken since 1961 in response to emerging needs in tackling employment policy concerns. Employment and earnings data were collected in household and establishment surveys. The need for relevant and timely data became particularly critical in the wake of the 1997-1998 economic crisis. Since then Indonesia has seen a proliferation of employment and earnings data collection efforts aimed at shedding some light on the impact of the crisis on different segments of society in general and on the poor in particular.

In Indonesia collecting data on earnings is not easy, since household members, individually or in groups, are engaged in many different activities to obtain income barely sufficient to support their livelihood. Different techniques have been tried to get earnings data with reasonable accuracy. In household surveys, earnings have been collected as part of employment information with the emphasis on individual income, or as part of expenditure focusing on household income, while in establishment surveys labor costs are included as part of the cost structure of production.

A previous report (Sigit, 2000) reviewed major existing employment data sources. This report reviews existing sources of earnings data in Indonesia and attempts a brief discussion of their major strengths and weaknesses. Finally, it identifies what earnings data are needed and recommends broad methodological improvements.

## **II. MEASUREMENT OF EARNINGS**

Many people tend to loosely identify earnings with wages. That is clearly wrong, particularly in a country like Indonesia, where non-wage employment is about three times wage employment. At the household level, total income exceeds wages when household members engage in different activities in search of sufficient income to support themselves. Earnings can be obtained not only from performing a particular job, but also from renting out household assets and from returns on savings. Earnings are often confused with other household transactions, such as selling used household goods, saving withdrawals, and gifts from relatives.

To understand what constitute earnings data, one must be familiar with activities and transactions conducted by households and household members. Households and establishments

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have different functions. Households consume and save, while establishments produce and invest. In practice, activities of households and establishments are more complicated because households also receive non-wage incomes and transfers, as well as use borrowing or saving withdrawals to finance consumption, and establishments commonly use external resources. Household earnings and related data can generally be organized into four accounts: *income and expenditure*, *transfers*, *cash* and *fixed capital*. Income and expenditure constitutes the main household account, incorporating major household transactions. Transfers are important because they are very common among households, and between households, government and/or establishments. Cash transactions, not as transfers but as capital, are regularly undertaken by households to cover investment/dis-investment. And since such transactions also affect income and expenditure, they are usually collected in household surveys. Since fixed capital transactions, covering the purchase and sale of fixed assets, also influence earnings and indirectly affect consumption, they are also covered in household surveys.

#### A. Income Account

Income is a payment for services performed by an individual, a household or an establishment, or a payment to an entrepreneur for running a business. But income is also a compensation for the use of fixed or cash capitals. For best result, incomes accrued to individuals must be collected for each individual. However, some incomes may not be easily separated for each individual if they are the result of collective work of several members of the household. The best way to collect such income data is through the household. Similarly, establishment income must be collected through the establishment. Table 1 summarizes various types of income received by individuals and households.

**Table 1**  
**Types of Individual and Household Income**

	Type of Income Received	
	Wage Related	Non-Wage Related
<b>Individuals Working as</b>		
Own-account worker	wages, costs excluding other inputs	interest, rent, dividend, transfer
Unpaid family worker	none	interest, rent, dividend, transfer
Employee	wages/salaries	interest, rent, dividend, transfer
Employer	none	interest, rent, dividend, transfer
<b>Household</b>	“net profit”	interest, rent, dividend, transfer

#### 1. Individuals

One type of income is *wages/salaries* paid to individuals working as employees.

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Sometimes this payment is called honorarium, especially if it is paid to temporary employees of a higher rank. Wages/salaries may be paid in cash or in kind, and wage structures may differ from one company to another based on the type of incentive for inducing employees to work hard. The Indonesian word for wages is “*upah*”, which is commonly understood to refer to compensation for any work performed by individuals, including work involving “odd jobs”. Therefore, even if an individual is self-employed or an own-account worker, he would consider himself as “*buruh*” (literally meaning labor) and payment for that work as *upah*. In household surveys conducted in Indonesia, such individuals are often mistakenly classified as “employees” receiving “wages/salaries”. This is one reason why wages/salaries in household surveys are lower than those paid by establishments to their employees.

Own-account or self-employed workers often receive compensation in the form of profit, if the work done is based on a contract involving the use and purchase of inputs. In this case, their earnings (or income) is gross revenue minus the cost of inputs. The input cost may also include payment for labor, if labor is hired for such work. In this case, such contract workers should be more suitably classified as “own-account” or “self-employed” workers rather than employers, since their use of workers is on an *ad hoc* basis. Individuals owning a business and working as *employers* outside the household receive income in the form of dividends/profits. If the company they own is formal, some of the profit is retained in the company, and an agreed amount of dividend is given to owners/stockholders. But if the company is small and informal, the owners may claim all the profit.

In addition, individuals may own cash capital (such as saving deposits, stocks, bonds), and those lending money may earn income in the form of interest. Individuals may also invest in fixed assets, such as cars, houses, and land.

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## **2. Households**

A large number of households in Indonesia conduct economic activities which are performed together by several household members. The contribution of individual household members cannot be separated and thus cannot be measured. Some may be paid individually for their work, but most are not. Rather, they have a right to the income as a family. Distribution of their income follows their individual function in the family: e.g. household head, spouse, children, etc. For example, children are entitled to basic necessities, schooling and health costs.

This type of economic activity is performed by economic establishments called “household micro-enterprises”. Income in this case is usually measured as outputs minus inputs accrued to the household, not to any individuals. Although theoretically such household incomes should be possible to measure, in certain sectors, e.g. trade, the measurement is difficult. The main reason is that buying and selling as well as consumption occur simultaneously and continuously. No records are kept to track down the trade margin, or the quantity bought, sold or

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consumed for each commodity. Moreover, incomes from households engaged in agricultural activities are also difficult to collect due to the complexity of these activities.

As was mentioned in the case of individuals, households may also own cash capital and property, and incomes may be derived from these sources. In this case, interest, rents, dividends will accrue to the household, since the cash and fixed capital/equipment are owned by household members as a group rather than by any individual member. In practice, however, even if the property belongs to the household, it must be under the name of one of the household members. Therefore, data can be collected as either household income or individual income. Collecting data under the name of a household member is preferable because it can be consistently undertaken with the same individuals.

### **B. Transfer Account**

Transfers are payments received, not in return for goods sold or services performed, but for non-economic reasons. They are one-sided transactions. Common forms of transfers are: contributions, gifts, cash received from begging, stealing and gambling, scholarships, subsidies, inheritances, and premium payments for insurance against damage and loss.

Households from higher income levels are involved in different kinds of transfers compared to low income households. For example, low income households may receive government subsidies for food and education, and from richer households gifts and other contributions. Therefore, low income households as a group have positive transfers in, which are used to increase their consumption level. High income households, on the other hand, may not receive subsidies from the government. On the contrary, they must pay higher taxes, give contributions, and their money may even be stolen. So overall, this group has a negative net transfer balance (more transfers out than transfers in).

Transfers add to income available for consumption. Therefore, with positive net transfers to low income groups and negative net transfers from high income households, income differences will be reduced.

### **C. Cash Capital Account**

Cash capital transactions include savings, withdrawals of saving deposits, lending, borrowing, receipts of payments from borrowers, payments of debt, buying stocks and obligations. But interest, receipt of dividend, receipt of capital gain on sale of a stock etc. are incomes. Cash capital transactions are important to collect in household surveys since they help in distinguishing between various sources of earnings, and in determining the correct estimate of income of the household.

Since cash capital also produces income, the cash capital account can be used for checking reported income items. If a household/individual owns a saving deposit, there must be a

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corresponding interest income accruing to the household/individual. And if the household/individual engages in the stock market, then income is obtained from capital gains and dividends.

#### **D. Fixed Capital Account**

Another account for which data are commonly collected in household surveys is the fixed capital account. Purchases and sales of houses, cars, jewelry and other precious goods are examples of transactions included in this account. Opinions may differ on what should be considered as “fixed capital”, or an investment good and what should be considered as a consumption good. Some may consider a car or jewelry as consumption goods while others may consider them as investment goods. By and large, household durables such as furniture, electronic consumption goods and kitchen appliances are consumption goods, while houses, land, jewelry, cars and other similar goods, are investment goods. The purchase and sale of these assets may produce profits for the household or the household member. Alternatively, these assets may be rented out in return for “rent” income. So household survey data on “fixed capital” accounts can lead to a better understanding of household income, and can in turn be used to check the completeness of income data reported by households.

#### **E. Relationship Between These Accounts**

It may be useful at this point to show how all the above sources of earnings fit together. The sum of incomes of individual household members plus any additional household net revenue equals total household income. This income plus net transfers to households equals household earnings, which are used by the household for consumption and/or saving. What form do savings take? They may take the form of deposits, debt obligations, cash or fixed capital. In turn, they may be used to buy land, houses, cars, machinery, or other equipment. The type of saving will directly affect household income receipts. Changes in the value and composition of these accounts will affect non-wage income of households or individual household members. Based on book-keeping theory, the four accounts are related. Table 2 shows how.

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**Table 2**  
**Relationship Between the Four Household Accounts**

<b>Account</b>	<b>Receipt</b>	<b>Spending</b>
<b>Income &amp; Expenditure</b>	wages & salaries, other income, net transfers (TI - TO)	consumption goods, consumption of durables, net cash capital investment (IN - DI), net fixed capital investment (P - S)
<b>Transfer</b>	transfers in (TI)	transfers out (TO)
<b>Cash Capital</b>	dis-investment (DI)	investment (IN)
<b>Fixed Capital</b>	sales (S)	purchases (P)

Net transfers in the income-expenditure account are obtained from the transfer account (TI - TO). Similarly, net cash and fixed capital investments are obtained from the cash capital (IN - DI) and fixed capital (P - S) accounts respectively. The sum of net cash and fixed capital investments equals household savings, which also equals household income plus net transfers minus consumption expenditure (including purchases of durable goods).

### III. EARNINGS DATA SOURCES

Data on earnings are difficult to collect. Respondents are reluctant to report them for various reasons. Some are afraid that such data might be used for tax collection. Others may simply think that how much they earn every month is something personal, not to be shared with others. Many wealthy individuals may not even know how much they earn. Similarly, the poor do not know exactly how much they earn from different ad-hoc sources. Most people tend to report lower levels than what they really earn. Past experience suggests that earnings data collected by BPS are underestimated. They are consistently lower than household expenditure.

BPS collects earnings data through different types of surveys. Not all employment data sources collect earnings data. Surveys collecting earnings data can be grouped into three categories: *household surveys*, *establishment surveys* and *agricultural censuses*. Community data surveys and administrative records do not provide earnings data.

Household surveys are conducted with *households and individual household members* as units of enumeration. Respondents are individual household members. Accordingly, both detailed household and individual information, including earnings, are collected and become available through direct response. There are three regular surveys in this category collecting earnings data: the *National Labor Force Survey*, the *National Socio-Economic Survey* and the *Producers Price Survey of Farmers*

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Establishment surveys use *economic establishments* as units of enumeration. They are usually represented by relevant officers in charge as the informants to fill up/answer the questionnaire. Only information on establishments is thus collected. Individual questions on employees cannot be collected. However, group characteristics of employees may be included in the survey. Earnings data are collected in the form of labor cost (some are broken down into groups of workers), as part of the cost structure. Several sources of establishment surveys collecting earnings data include the *Large and Medium Manufacturing Survey*, the *Small and Household Establishment Integrated Survey* and the *Employee Wage Survey*.

Agricultural Censuses use both households and establishments as units of enumeration. Since the majority of households in Indonesia are engaged in agriculture, agricultural census data collection is conducted through households, in addition to the agricultural establishment data collection. With so many different sub-sectors producing different kinds of commodities, agricultural census data collection is complex. Moreover, *regular* household activities must be separated from the *economic activities* of households. Only agricultural economic activities need to be included in the agricultural census. With a large number of sub-sectors and commodities, the separation of these two activities becomes more complex.

## **A. Household Surveys**

BPS conducts several household surveys, some especially designed to collect employment and earnings data and others including employment and earnings as part of other information collected in the survey. The size and area coverage of these surveys vary depending on their objectives: some only produce detailed information at the national level, and some provide information for provinces. Three household surveys collect data on earnings: the *National Labor Force Survey* (Survei Angkatan Kerja Nasional, Sakernas), the *National Socio-Economic Survey* (Survei Sosial Ekonomi Nasional, Susenas) and the *Producers Price Survey of Farmers* (Survei Harga Produsen di Pedesaan, SHPP)

### **1. National Labor Force Survey (Sakernas)**

#### **a. Data Collection**

Sakernas was conducted for the first time in 1976, with the specific purpose of collecting data on the labor force and employment. This survey was designed to overcome the weaknesses of employment data collected in the 1971 population census. Sakernas employed a rigid labor force approach using two reference periods: one “current” and one “usual”. Since the labor force approach was used for the first time in that year, a comprehensive pilot test by BPS, in close cooperation with the Department of Manpower (DOM) and the ILO preceded implementation of the survey. The survey was then conducted in 1977 and 1978, and was designed to obtain serial data to be linked with data from Susenas, population censuses and

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Supas. It was stopped for a few years and was then resumed annually until 1985.

Beginning in 1986, the survey was conducted quarterly (in February, May, August and November) to capture the seasonal fluctuations in employment. With an economy still predominantly agricultural, employment was believed to be greatly influenced by agricultural seasons. It was believed that sectoral employment and other related characteristics would depict the peak and trough seasons in agriculture. The sample was approximately 20,500 households every quarter in 1992. Quarterly estimates were merged to produce average information for the year with a total sample of 82,000 households.

Quarterly surveys were conducted for 8 years until 1993. The results showed that seasonal fluctuations could not be clearly depicted by the quarterly national data, since agricultural seasons were different from region to region. Averaging at the national level tended to produce the same results for every quarter. Without a substantial increase in the sample which would allow the production of regional data, such quarterly surveys would not be useful. Average figures for the year from the quarterly survey were also not useful, since the average data had no time reference in the year. Another drawback of the quarterly version was the limited number of questions included: they were confined to seasonally affected items.

Accordingly, the quarterly survey was stopped and beginning in 1994 the survey was conducted yearly with a more detailed questionnaire. The total sample size was reduced to 65,500 households. In 1998 the sample was again reduced to 49,200 households due to budget constraints. Until 1999, Sakernas was conducted in August of every year.

### **b. Earnings Data**

Only the 1976 and 1977 Sakernas collected *individual and household incomes*. Data on individual incomes were collected for household members working as *employees, own-account workers* and *employers*. For employees, incomes were in the form of wages and salaries, and for other workers incomes were estimated as production minus cost. Other incomes from renting out houses or land, and interest incomes were also collected in aggregate form from these individuals.

Household incomes from agriculture were collected for detailed agricultural sub-sectors in a separate block. But the incomes were simply estimated as the value of production minus costs. Income from non-agricultural households was not explicitly collected, but was already included in the individual household member's income.

*Transfers of cash* were collected from each household member. Such a method may have some strengths, but it may not be necessary since only a few household members are involved in such transfers. Items included under transfers are: pensions, cash receipts and payments, savings and withdrawals, and others (including lending and borrowing). Such transfer transactions are mixed up with *cash capital transactions*, since savings deposit and withdrawal, as well as lending

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and borrowing are not transfers but cash capital transactions. Moreover, pension, if paid by the company, must be included in income. In this survey fixed capital transactions were not collected.

Collection of earnings data was stopped in subsequent surveys, since such data were considered difficult to collect, and the data collected in 1976 and 1977 were believed to be unreliable. Starting in 1988, only wages and salaries were collected from those working as employees. These data were collected until 1999. No earnings data are collected from other workers, and no attempt is made to collect household earnings.

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## **2. National Socio-Economic Survey (Susenas)**

### **a. Data Collection**

Susenas, a multi-purpose household survey, has a long history in BPS. The objective of the survey is to collect consumption and welfare statistics. Earnings data in Susenas are collected in support of that objective. Thus earnings data are available every three years along with consumption expenditure data.

The first Susenas was designed and launched in 1963 by the Statistical Research and Development Center (StRDC), a UN organization established to assist statistical development in BPS. After 1963, the survey was conducted regularly in 1964/65, 1967, 1969 and 1970 with samples between 16,000-24,000 households. The survey temporarily stopped in 1971 with the termination of StRDC, and resumed again in 1976 funded by the government.

In 1976, Susenas was conducted quarterly to collect detailed consumption expenditure data, and was repeated in 1978 to include more topics covering labor force and other demographic characteristics, socio-cultural and health, as well as consumption expenditure and income. The data on earnings in this survey were very much influenced by the 1976/77 Sakernas. In 1978/79 survey earnings were embodied in the block on employment. Since then, collection of earnings data was conducted consistently every three years together with consumption expenditure data.

In 1979 and 1980 the survey was conducted twice every year with samples between 54,000-102,000 households to accommodate new modules. In 1981 it was conducted quarterly again with questions on consumption expenditure and income. Labor and employment were included again in 1982 with a separate sample of 60,000 households. However, in the following year, the labor force module was taken out of Susenas and fully integrated with Sakemas. Consequently, the biannual Susenas in 1984 and the yearly Susenas in 1985-87 and 1989-91 did not contain any labor force module. Questions on earnings were included in the 1981, 1984, 1987 and 1990 surveys.

Beginning in 1992, Susenas was organized into a new core and a module. Before 1992 the core questionnaire covered only five basic questions: four demographic and one on education. Welfare indicators are believed to be needed every year, since a large percentage of the population is still living below the poverty line. In 1992 the sample size for the core questions was 65,600

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households, which enabled estimation at national and provincial levels. From 1993 until recently it was enlarged to 202,000 households to enable estimation at the regency/municipality levels, while the sample size for the module was 65,600 households all along. After the economic crisis in 1997, Susenas was redesigned to simplify its operation. Only three modules were included. Consumption expenditure is collected every three years together with earnings data. Thus earnings data exist in 1990, 1993, 1996 and most recently 1999.

### **b. Earnings Data**

BPS collected earnings data in household surveys for the first time in the 1963/64 Susenas and the same data collection was repeated in 1964/65. Four different types of household income data were collected. These were wages and salaries from employee, income earned by employer or own-account worker (estimated as gross earnings minus labor cost, rent paid and maintenance/operational costs), household incomes earned from household production activities in agriculture, and farming of cattle and poultry, and from other sectors. Household incomes were collected in detail as sales value (collected from inventories) minus production costs (broken down into detailed direct and indirect costs) and other costs. To complete the picture on household earnings, data on transfers, cash receipts and payments were also collected. This included cash receipts, borrowing, lending, repayment of debts, contributions, gifts and others. Such data were informative, although their purpose was not clear and the questions were not exhaustive or systematic.

In the 1969 survey, household incomes were collected for different sub-sectors (including agriculture, fishery, manufacturing, trade, transportation, construction, services and others), but the income components were not systematically arranged in one block. Information on product inventory, cost of materials, other production costs, and labor costs were located in different blocks. For individual incomes, total wages and salaries paid in kind or in cash were collected in a separate block from employees working in different sectors, classified by one digit ISIC.

Another block on *cash transfers* was conceptually correct, but the items were mixed with capital account. Lending and borrowing, receipt of payment from debtors and repayment of debt are not transfers but cash capital transactions. *Cash capital flows* were collected in the finance block, consisting of withdrawals/savings in banks and post offices, use and savings at home, life insurance premiums, purchases and sales of stocks and bonds, and others. Another block was designed to collect data on *fixed capital transactions*, including land and building, and equipment, machinery, transportation, and other capital which were differentiated by whether they were used by the household or the establishment.

In the 1978/79 survey, non-agricultural incomes were collected as part of the *standard labor force* data collection. For each household member working, regardless of their status, their *net cash and in kind incomes* were collected for *main and additional jobs*. In addition *property*

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*incomes* from renting out houses and lands, and interest incomes were also collected in total on an individual basis. In a separate block household incomes from agriculture were collected for detailed agricultural sub-sectors, covering seasonal crops, cash crops, animal husbandry and poultry (including production of eggs and milk), cattle, fishery, hunting and forestry. But the income was simply estimated as value minus cost of production. Cash transfers were collected from each individual household member covering pension, cash receipts and payments, savings and withdrawals, and others (including lending and borrowing).

In the 1981 survey, income data were collected using the household schedule. In one separate block different components of wages and salaries were collected from each household member working as an employees. Profit and income from self-employment were not collected. A separate block was for data on net income from household establishments in agriculture, animal husbandry, fishery, forestry/hunting, trade, manufacturing, transportation, services, and others which were operationally active during the last month and the last three months. Other incomes were collected in one block with cash capital and transfer transactions. One further block was dedicated to collecting detailed agricultural income data, broken down by sub-sector (covering seasonal crops, cash crops, animal husbandry, poultry, fishery, forestry and hunting).

While in previous periods survey instruments for collecting earnings data changed, for the years 1984, 1987, 1990, 1993 and 1999, data were collected using exactly the same schedules. A separate block was used for collecting wages and salaries (broken down into basic wages and salaries, overtime, honoraria and others) as well as income in goods and services. Here again, profit and income from self-employment were not collected, but were included as dividends and other incomes. A new innovation was the disaggregation of other incomes into interest payments, land-rentals, building and equipment rentals, dividends, pension payments, scholarships, claims on life insurance policies, imputed house rentals and non-establishment income from agriculture and non-agriculture. However, pension and scholarships were incorrectly classified as other income.

Income from agricultural and non-agricultural households was collected with detailed sub-sectoral breakdowns. Sub-sectors of agricultural households included food crops (paddy, roots, nuts, vegetables, fruits), non-food crops (estate and non-estate), animal husbandry (cattle and other products, poultry and other products, other animal husbandry), fishery and forestry/hunting, while the sub-sectors for non-agricultural households were manufacturing/cottage industry, trade, transportation, services, and others. Income was estimated as value minus cost of production. Production was collected in detail based on the inventory method, but costs were not disaggregated.

Transfer transactions were correctly put into one account in a separate block including cash received and sent, inheritance, and a total for contributions, gifts and other assistance. Another separate block covered fixed capital (purchase and sale of stocks, gold and jewelry, land

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and buildings, and durable goods) and cash capital transactions (saving and saving withdrawals, non-life insurance claims and payments of premium, lending/borrowing and repayment of credits and debts, pawning and withdrawal of household durables, payment and receipt of *arisan* and others).

Among the more recent Susenas surveys, only in 1996 was income collected differently. Wages and salaries were collected from employees, by one digit ISIC and one digit ISCO. The components of income were different: housing accommodation was separated from wages and salaries given in kind. Household establishment income (value minus cost of production and depreciation) in agriculture and non-agriculture was collected in one block for *each household member* broken down by three digit ISIC and one digit ISCO. On the other hand, other incomes (net interest, dividends, royalty, housing rents, imputed own housing rents, land rents, production sharing) were collected on a *household basis*, and the components were not complete.

### **3. Producer Price Survey of Farmers**

Following a study in 1993 for improving the weighting for farmers' terms of trade, a monthly survey was conducted to collect information on prices of commodities bought and sold by farmers. Prices of commodities and services bought by farmers are *prices paid*, while prices of commodities and services sold by farmers are *received prices*. The ratio of received prices over paid prices constitutes the farmers' terms of trade, indicating whether farmers are better-off or worse-off because of price changes.

Wages paid for the use of farm labor constitute one item in the prices paid by farmers. These wage data are collected in the context of the producer price survey of farmers, which is limited only to food crop farmers. Although wage data are collected for the computation of farmers' terms of trade, they are published separately as farm labor wages in rural areas. The objective was to continuously monitor the wage condition of farm labor for different types of agricultural jobs in the food crop sub-sectors. These jobs include hoeing, ploughing, planting, weeding and harvesting. Other jobs, such as taking care of plants or drying are not covered.

The survey is conducted in all provinces except DKI, but only data from 14 provinces are of acceptable quality and publishable. For wage indicators, only three types of jobs (hoeing, planting, and weeding) commonly performed by agricultural labor in the food crop sub-sector are used and published.

#### **B. Establishment Surveys**

BPS conducts several establishment surveys containing data on employment and income. Understandably, most establishment surveys collect data on production costs, input and output structure, capital formation, as well as information on business operations. Employment cost is usually obtained as part of the information on cost structure. As these surveys collect

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*establishment* data, only cost accounting and related economic data related to the establishment itself are provided. Data on individual workers and their earnings cannot be obtained; only data on groups of workers (e.g. classified by gender, type of work, and education) may be available. BPS establishment surveys containing earnings data include: the *Large and Medium Manufacturing Survey* (Survei Industri Besar-Sedang, SIBS), the *Small and Household Establishment Integrated Survey* (Survei Usaha Terintegrasi, SUSI), the *Employee Wage Survey* (Survey Upah Buruh, SUB), and the *Estate Employee Wage Survey* (Survei Upah Karyawan Perkebunan, SUKP)

### **1. Large and Medium Manufacturing Survey (SIBS)**

This survey is routinely conducted every year. Given the importance of this sector in the Indonesian economy, detailed information is collected on cost of production, outputs and services performed, power generation, investment, capital and assets. As part of production costs, expenditure for employees are also collected with a breakdown by production and non-production workers. Components of expenditures include wages/salaries, pension contributions, insurance and other allowances. A separate block on employment includes a breakdown of the number of employees by gender, education (science, technical or others) and type of job (research and development, production engineering and others and working as researcher, technician, administrative staff, factory workers).

The survey covers all large and medium manufacturing establishments. The coverage depends a great deal on the completeness of the directory, which is updated regularly to add new establishments and remove those that closed down. A new system of directory updating was applied for Java in 1991 and outside Java in 1992. It checks the list of establishments with recent sources from other departments, and the unmatched establishments are checked in the field to make sure they exist.

The survey produces information for smaller sub-sectors up to the five-digit ISIC level. The response rate is about 85-90 percent. Given the large number of establishments and the long questionnaire, publication lags considerably behind. The 1997 data, for example, were only available in March 1999.

Since 1994, data on the number of employees are classified by education, production workers/non-production workers, and gender, but labor costs paid by the establishment are only divided into payments for production or non-production workers. The labor cost components are: wages and salaries, overtime, gifts, bonuses, pension contributions, social contributions, insurance and other similar benefits, and accident allowances, broken down whether paid in cash or in kind.

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## **2. Small and Cottage Household Integrated Survey (SUSI)**

Following the implementation of the 1996 Economic Census, SUSI was conducted for the first time in December 1998 using the establishment list from the Census. As part of the Census activities, SUSI only collected indicators from “unincorporated” non-agricultural establishments which are mostly small and micro enterprises. However, some medium establishments may be “unincorporated” and thus would have to be included in SUSI. In budget years 1999/2000 and 2000, SUSI was implemented quarterly in the months of July and October in 1999 and in January and April of 2000. To get a serial picture, 50 percent of the sample from the previous survey was retained in the following survey.

This survey is different from other household establishment surveys. In other surveys both household income and income of the establishment are collected. In SUSI only income of the establishment is collected, since this survey considers the establishment as the unit of enumeration. Accordingly SUSI collects detailed information on the establishment’s activities including cost structure, output, capital and sector of production. Data on employment are broken down by gender, age, education and technical skill, and data on earnings are computed as output minus inputs. Employees are broken down into three age groups (less than 10, 10-14 and 15 or above) and are divided by paid/unpaid, gender and education. Labor payments are collected as part of production costs and are broken down by wages and salaries, and other payments for overtime, bonus, gifts and others. In Susi, the sectoral classification is by 4-digit ISIC.

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## **3. Employee Wage Survey (SUB)**

This survey was first conducted in 1979 to collect detailed information on wage development and structure, including distribution by occupation. It does not cover all economic sectors, only non-oil and gas mining, manufacturing, hotels and land transportation. It was simplified in 1992 by dropping the question on wage by occupation. Consequently, only average and median wage of workers under the rank of supervisor were collected; and by dropping the land transportation sub-sector. The sample size was also reduced. The survey was conducted quarterly to enable monitoring of changes in wages. Three provinces (Bengkulu, East-Timor and Central-Sulawesi) were left out. For non-oil and gas mining only 35 establishments were included in the sample, while for the manufacturing industry 667 large and 342 medium establishments were included. Small establishments were not represented. Fieldwork was undertaken quarterly in March, June, September and December every year. Wage data collected were the payments to production workers lower than a supervisor. Wages were broken down by establishment size, gender, sub-sector and capital status (foreign, domestic, government owned). Chris Manning (May 1994) extensively outlined the importance of this survey to provide wage data, highlighted its weaknesses and suggested improvements in the survey.

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#### **4. Estate Employee Wage Survey (SUKB)**

This survey has been conducted since 1951 by mail covering only all state-owned estates. Information collected includes: number of workers, number of person-days worked, and total income of workers. Average wage per worker as well as per person-day worked is available. Data are collected twice a year, but published only once a year. This has caused a long delay in the availability of the first semester data.

#### **C. Agricultural Census**

The Agricultural Census was conducted in 1963, 1973, 1983 and most recently in 1993. In terms of employment, agriculture is the largest sector in the economy but the living standard of its workers is the lowest. With most agricultural activities still traditional and informal, several government programs were implemented to help develop this sector. The sector has a large number of sub-sectors as well as commodities produced. More than one hundred million households are involved in agricultural production in one way or another. Censuses covering this sector must, therefore, be able to capture all these activities. That is why the agricultural census was organized into several separate data collection phases aiming at capturing activities of the sub-sectors and covering areas important to government programs. The Census basically consists of two parts. First is the complete data collection covering agricultural establishments. The second part is the "sample census" of agricultural households, land-holding farmers and the "sub-sector of agricultural households".

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##### **1. Census of Agricultural Establishments**

One activity in the agricultural census is the census of establishments engaged in *food crops and horticulture*. As part of their cost structure, wages and salaries and other income components are collected by type of employee. Similar earnings data are collected in other establishment censuses. The census of *big and small cattle establishments* collects data on number of employees (whether permanent or temporary workers) by gender and education. It also collects information about daily workers by number of days and man-days, as well as expenditure on employees (in money and in kind) given as wages and salaries, overtime, bonus, gift and others. Such employment data are collected in addition to information on cost structure, output, earnings, capital formation and land owned and used. Other establishment censuses cover establishments engaged in *industrial plantations, wild animal culture and nature tourism, forest exploitation* (Hak Pengelolaan Hutan, HPH), *wood collection* (Ijin Pengambilan Kayu, IPK) and *fishery*.

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##### **2. Census of Agricultural Households**

Labor cost data in the census of agricultural households are broken down by number of man-days, and total wages and salaries are collected for each type of work: land

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preparation, seedling, planting, fertilizing, pest and weed control, taking care of plants, harvesting, post harvest activities, and others.

As part of the agricultural household sample census, the census of “people's estates” was conducted to collect data from all households engaged in the production of cash crops. Other sample censuses were also conducted, one of which covered agricultural households engaged in animal husbandry and forestry as well as land-holding farmers. Another was the sample census of agricultural household earnings (SSPRT) conducted as part of the 1993 agricultural census. This was the third such survey, the first one was conducted as part of the 1983 census and the second in 1990 as Survey Pendapatan Petani (SPP). This survey covers all households engaged in agriculture in all sub-sectors. Altogether there were 90,054 households enumerated in 1993, and employment related data covered only expenditures on wages and salaries.

During the 1993 agricultural census, a sample census on cost structure of agricultural households (Survey Struktur Ongkos Usaha Rumahtangga Pertanian, SSOURT) was also conducted. This was the third such survey, the first was conducted in during the 1983 census and the second was blended in the 1990 SPP. Labor costs (wages and salaries) were included as part of other costs collected in this survey.

With regards to income, two types of income were collected in the *sectoral agricultural household survey*, to enable estimation of the total income of agricultural households. The first consisted of incomes collected as part of the cost structure of the agricultural economic activities of the household. The second consisted of other incomes collected as part of household income.

In the survey of “people’s estates”, for example, the first type of income consists of labor cost paid by the household to workers doing different kinds of jobs in the household plantation. Such jobs are classified into: land preparation, seedling, planting, fertilizing, pest and weed control, plant maintenance, harvesting, post harvest activities, and others. Workers undertaking these jobs come from outside the household, or they may be family members working paid as workers in the household establishment. For each type of job, data are collected on man-days of unpaid workers, man-days of paid workers, and wages paid. This way average wage paid by household can be computed for each type of agricultural work. The second type of income is collected as household income, not as individual income, although some may consist of individual incomes accrued to individual household members. The incomes are earned from other *usaha* (i.e. “efforts”). These *usaha* are differentiated into different sub-sectors of agriculture (food crops, vegetables, fruits, ornamental plants, estate crops, poultry, fish culturing, fishery, forestry/hunting, and agricultural services) and non-agriculture (services, manufacturing industry, trade, transportation and others). Two types of income are collected: that earned as an employee and that earned as an employer.

Another survey conducted within the agricultural census is the *agricultural household earning survey*. The objective of this survey is to get “total earning” of agricultural households.

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Individual and household income from all sources is thus collected. The structure of questionnaire is basically similar to those used in Susenas, with more elaboration on agricultural income. Total wages and salaries are collected in the survey for each household member, and they are differentiated by whether they earned as employees of agricultural or non-agricultural sectors. Other earnings (including income from pensions, rents, interest, dividends and others) are also collected for all household members as a group. The questionnaire contains blocks to collect data on transfers and cash capital transactions.

#### **IV. STRENGTHS AND WEAKNESSES OF EARNINGS DATA**

##### **A. Household Surveys**

Since 1986, Sakernas has collected only wages and salaries from employees. Its objective was not to collect household income with all its different components, but only to collect wages and salaries to be used as employment indicators. Its most significant strength is the fact that it collects data on wages and salaries which are fully incorporated with detailed employment data, thus allowing users to conduct elaborate analyses of different aspects of employment. One big weakness, however, lies in its coverage of employment status. Employees are often mixed up with the self-employed. The current survey deliberately included farm labor as employees, which should be more appropriately classified as self-employed. Moreover, since practically everybody working independently for pay in the informal sector considers himself as *buruh* (i.e. “employee”), the true number of “employees” is overestimated. Data collected on total wages and salaries also cover not only formal wages and salaries paid by employers, but also various earnings from different types of temporary and ad-hoc jobs. Accordingly, wage data here may underestimate the true wage levels.

As for Susenas, its overwhelming strength is its explicit collection of detailed household income data, even if undertaken only once every three years. No other single survey provides such detail on value and cost of production. In some cases, detailed classifications of incomes were possible (e.g. by sector and/or occupation, such as in the 1969 and 1978/79 surveys, or by sector, as in the 1981 survey) while in others, e.g. the 1996 survey, a detailed sectoral and occupation breakdown of wages/salaries was available. Another strength of Susenas earnings data is that it allows the possibility of conducting rich analyses connecting income with expenditure and employment data, as well as demographic and socio-cultural data contained in the modules.

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One big drawback, however, is the constant changes to the questionnaire making it difficult to undertake inter-temporal analyses of particular types of incomes.<sup>1</sup> It may still be possible to compare one particular type of income over time. However, broader categories, such as incomes from working (services incomes), property income, total individual income, and total household income, are not comparable for long periods. For instance, services incomes are completely collected from workers of different working status in the 1963/64, 1964/65 and 1969 surveys, but in other surveys only employee income is collected; incomes from self-employment and employers are left out, or collected in the wrong category.

Another weakness is the separation of different components of income into different blocks, resulting in *ad hoc* coverage of these components rather than an exhaustive systematic one. In the 1969 survey, for instance, the separation of different values and costs of production into different blocks may invite interpretations influenced by the corresponding blocks, resulting in inaccurate estimates of income. Moreover, this may also lead to a lack of exhaustive coverage of a particular income category: some components may be left out, some important components may be included in "others".

Another serious weakness is the mix up of individual and household income categories, as well as between different types of individual incomes. For best results, individual incomes should be provided on an individual basis and household incomes on a household basis. But, in the 1978/79 survey, for instance, net incomes of households engaged in non-agricultural activities were considered as individual incomes. Also in the 1996 survey, incomes from household establishments in agriculture and non-agriculture were collected in one block accrued to individuals and were estimated from value minus cost production and depreciation. Service incomes in the 1984, 1987, 1990, 1993 and 1999 surveys were collected in the block for property incomes.

Another general drawback is the mis-classification of different transactions in the different accounts. For example, in the 1981 survey, other incomes were collected in one block with cash capital and transfer transactions. This mixup of all three types of transactions is confusing and makes it more difficult to provide an exhaustive list of items for each type of transaction..

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<sup>1</sup> Some changes in the questionnaire indicate a basic conceptual misunderstanding of how certain items should be interpreted. For example, cash received from scholarships is correctly classified as "cash transfer" in the 1984 schedule, but in the 1999 schedule it is considered as "other income". The 1999 schedule also classifies claims of loss, accident and health insurance as "other income", which is not correct. Such a classification would be correct if the premium is paid by the company; otherwise, it must be included in the cash capital account together with claims on own life insurance, while claims on other person life insurance should be classified as cash transfers. These transactions on insurance were not included in the previous schedules

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## **B. Establishment Surveys**

The strength of earnings data from SIBS is the breakdown of information into smaller sub-sectors of the manufacturing sector, up to the five-digit ISIC level, making it possible to evaluate workers incomes for these sub-sectors. Its major weakness, however, is the long lag in data availability. Given the large number of establishments and the long questionnaire, publication lags considerably behind. The 1997 data, for example, were only available in March 1999. Since 1994, data on the number of employees has been classified by education, production/non-production workers and gender. But since labor costs paid by the establishment are only divided into payments for production and non-production workers, average wage per worker can only be estimated for these two categories of workers. However, all labor cost components (wages and salaries, overtime, and gift, bonus, pension fund, social contribution, insurance and other similar benefits, and accident allowances) are differentiated by production/non-production workers and whether paid in cash or in kind. Therefore, a more detailed breakdown of wages per worker can be made.

In SUSI only income of the establishment is collected. Since this survey considers the establishment as the enumeration unit, no attempt is made to collect household income. As part of production cost, the number of employees (broken down by detailed classification) and labor costs (broken down by gender only) are also collected. Consequently, only wage per employee by gender can be computed. The biggest strength of this survey is in providing wage data up to the 4-digit ISIC level.

The Employee Wage Survey (SUB) is theoretically a potential source of wage data. Its extension to cover more sectors is a good development. For serial analysis these statistics are sufficient, but for sectoral comparison they suffer from incomparability of the groups represented in various sectors. Employees below the rank of supervisor are very likely not comparable between sectors. For further discussion on these wage data see Manning (1994) and Korns (1988). Similarly, a discussion of the Estate Employee Wage Survey is provided in Korns (1988). Here one can only mention that coverage of only government estates cannot be representative of development of the estate economy, although most estates are government owned.

## **C. 1993 Agricultural Census**

Earnings data collected in the *agricultural establishment census* are limited to labor costs as part of the cost structure. The strength of earnings data here, is the break down of labor cost and employment into commodity group and different types of jobs: land preparation, seedling, planting, fertilizing, pest and weed control, taking care of plants, harvesting, post harvest activities and others. Accordingly average wage per worker or per man-month can be calculated in details.

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From the *household agricultural survey*, both individual and establishment income data are collected, with the objective of estimating household income. However, in a particular sub-sectoral survey, only agricultural household income of that sub-sector is collected in great detail. Household incomes from other agricultural sub-sectors and non-agricultural households are available separately but are not as reliable. Therefore, for sub-sectoral studies, the data are sufficiently accurate, but for sub-sectoral comparisons they tend to be inconsistent.

Other incomes such as contract and pension payments and transfer are also collected, but many other household/individual income items (such as, dividend, profit, interest and rents) are left out.

## V. CONCLUSIONS & RECOMMENDATIONS

### A. Conclusions

Based on the above discussion of coverage and collection of earnings data, the following points can be concluded.

*Objectives of Earnings Data Collection.* Earnings data collection has so far had two objectives: the first is to estimate total household income and the second to collect income data as employment indicators. Total household income is important for welfare analysis, and for explaining the source of funding for household consumption expenditure. Collecting total household income is a complicated task, since several components of income can accrue to each member of the household or to the household as a whole. Moreover, there are transfer, cash and fixed capital transactions related to incomes, which must be identified and correctly classified. Accordingly, questions and questionnaire used in the survey must be systematically organized.

*Wages and Salaries.* This is one of the most important types of income collected in household surveys. Wages and salaries accrued to individual household members working as employees seems to be less difficult to collect. All household surveys on employment collect these data using the same question. However, the type of questions, their order, the block containing them and the systematic arrangement of the whole questionnaire are different. In some Susenas and Sakernas surveys, they are collected as part of employment, using the flow of individual questions on employment data collection. In most other Susenas, wages and salaries are collected using household schedules containing a list of household members working as employees. Differences also exist in the components of wages and salaries. Some may include detailed questions on wages and salaries (e.g. whether in cash or in kind, bonuses, company paid pensions and other allowances) while others include only totals.

*Labor cost.* Labor cost per worker is not equivalent to wages/salaries per employee, but is more like the average spending per worker paid by the establishment. The reason is that several components, such as expenditure on uniforms, training and recreation, are considered as labor costs by the

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establishment, but are actually not received by workers as wages and salaries. Labor cost may be simply collected as a total, or by employment group with varying degrees of details.

*Profit and Self-employment Income.* These are the incomes of household members working as own-account workers and employers outside the household, which must be collected individually. They were excluded from Sakernas and most Susenas surveys. They were only included in the 1963/64, 1964/65 and 1969 Susenas. Therefore, conceptually household incomes based on Sakernas and recent Susenas surveys have been underestimated, especially since the number of self-employed and employers working outside the household is around one-third of total employment.

*Agricultural Household Establishment Income.* Data on this item were collected in detail in Susenas, as production minus cost. Production is accurately estimated using the inventory accounting method, while the cost of production is estimated from individual components. But in some cases only total production and total cost were collected (such as in the 1978/79 and 1981 Susenas), making the estimate of establishment net income very weak.

*Non-agricultural Household Establishment Income.* Only simple data are usually collected for the estimation of this income, much simpler than those collected for agricultural establishments. But in some cases (such as in the 1969 Susenas), estimation of this income was undertaken in detail. In the 1987 Susenas, similar to agricultural households, the production data were collected in detail but on the cost of production only total cost was collected.

*Other Individual Incomes.* These incomes were only casually collected in most household surveys. House rents may be well covered, but land rents and rents from other equipment rented out tend to be under-reported. Interest from saving deposits are probably mis-reported, since interest is not separately provided. Moreover, interest from lending activities is very likely not reported by respondents.

*Household and Individual Income.* In some surveys these were not correctly classified. In the 1996 Susenas, household establishment income was erroneously classified as individual income by asking each working household member about value and cost of production. In fact, the sector and occupation of these household members were classified according to the relevant 3-digit ISIC and one-digit ISCO.

*Reference Period for Income.* Different reference periods were usually used for different types of income. Wages and salaries are commonly collected for one month. Income of households engaged in agriculture can be collected for one year, one season, or three months depending on the type of agricultural activity. For non-agricultural establishments, data collection is usually based on a three-month reference period or even a one-month period for frequently produced outputs.

*Sectoral Breakdown of Income.* The sectoral breakdown of income data can be very simple (e.g. agriculture and non-agriculture), as in Susenas. But in most cases it is by one-digit ISIC. For the agricultural sector, detailed sub-sectoral breakdowns are often provided. In Large and Medium Manufacturing, sub-sectors are broken down to the 5-digit ISIC.

*Occupational Breakdown.* In the 1996 Susenas, income is broken down by one-digit ISCO, but many other sources have no occupational breakdown at all. In

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agricultural survey, data on wage/salaries are broken down for different types of agricultural jobs.

*Other Classification of workers.* In establishment surveys, labor cost is often broken down for groups of employment, according to temporary or permanent workers, gender, age groups, education and type of work. Somewhat detailed classifications are found in SIBS and the Agricultural Census.

*Transfer and Capital Accounts.* These transactions are mixed up almost in all Susenas. In some cases, they are also mixed with property income, such as rent and interest. In most surveys, transfers and cash capital transactions are not systematically put in one account, making separation of the two accounts difficult. The accounts become even more complicated when property income is also included in the same account as in the 1981 Susenas. Moreover, items included in each account are not complete. Many of the important items are put in the category called "others". The treatment of payments for pension, life insurance, accidental insurance and insurance against damage or loss is not consistent.

*Component Income Block Arrangement.* Even with the apparent confusing treatment of components of the transfer and capital accounts, the arrangement of blocks to collect individual and household income data in some Susenas surveys remains good. But in some cases, that arrangement is not well ordered, and components of income are separated into different blocks and mixed with other items. This leaves room for misinterpretation of income items and may result in inaccurate data.

*Earnings Concept.* The concept of earnings must be carefully examined. It is usually calculated as the difference between total value of production and total cost of production, which is based purely on cash transactions. It is more appropriate to divide earnings into two components: earnings in cash and potential earnings. The former component can be computed as the value of production sold and used for own consumption minus the cost of production of sold goods only. Production still in inventory should not be included in the cash calculation. In some cases production given to other parties must be considered as a cost, if it is required for the operation of the establishment.

## **B. Recommendations**

It is not the purpose of this report to provide detailed recommendations on the collection of all earnings data in BPS. Detailed recommendations can be provided in the future following a review of earnings data in a particular type of survey. Rather, the report will provide three broad suggestions, which should help BPS improve the quality of earnings data:

**Make Susenas questions, their order and the block in which they are placed as uniform as possible** in order to avoid any unnecessary inconsistency. Conceptually all items related to income must be valid and complete to arrive at a correct estimate of household income. For this purpose, the 1999 Susenas questionnaire can be used as the base, and with some improvements can be adopted as the standard questionnaire for subsequent Susenas surveys.

**Strictly stick to the basic concept of "employee".** Wages/salaries are important employment and welfare indicators. Papanek (November 1999) explains in great

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detail the strengths of wages as indicators measuring the impact of the crisis. For such indicators to be useful, they must be accurate and conceptually comparable among different surveys. Wages/salaries are relatively not difficult to collect. However, the accuracy of wages/salaries data depends a great deal on the category of workers considered as “employees”. Any low skill blue collar worker doing any odd job may consider himself a “buruh” (employee) and consequently any payment received for such jobs is classified as “upah” (wages). In Sakernas farm labor (mostly self-employed) is deliberately included in the “employee” category. Therefore, two suggestions can be made to “clean up” this category:

- First, separate farm labor from the “employee” category and put it in a separate category,
- Secondly, take out other self-employment from the “employee” category by introducing self-employment income along with wages and salaries.

**Divide labor cost collected in establishment surveys into a wage and a non-wage component.** In establishment surveys, labor cost is collected as part of production cost. Since establishment surveys provide an alternative means for collecting wage data to be compared with direct wage data collection (e.g. in the Employee Wage Survey and other household surveys), labor cost must also be directed toward wage/salaries data collection. This can be done simply by separating wage components in the labor cost from non-wage components. Expenditures on training, uniforms, and group recreation are considered labor costs by the establishment, but are not components of wages/salaries received by employees. In addition, to get richer data the employees and company spending must be broken down by some meaningful classification of workers, such as by sector, occupation, type of worker, and some socio-demographic breakdown.

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Earnings Data Review

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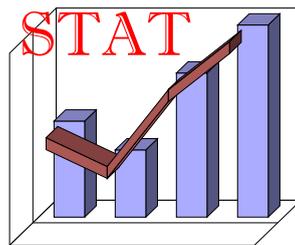
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# NOTES ON SHORT-TERM LABOR MARKET INDICATORS

Report # 12

by  
**John Kuiper**

August, 2000



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

September 1, 2000

Comparison of Implicit Price Indexes for Manufacturing

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## I. INTRODUCTION<sup>1</sup>

At present information on employment and household income in Indonesia is collected only on an annual basis. The National Labor Force Survey (Sakernas) is conducted annually, with the survey having a sample size of about 60,000 households. Additional information is available from the annual socio-economic survey (Susenas). The questionnaires used for these surveys are quite detailed.

Policy makers would like labor force information to be available on a timely basis to indicate trends and cyclical movements in employment and earnings, so that the information will be most useful for purposes of economic policy analysis.

## II. EXTENDING THE SAKERNAS SURVEY

In many countries National Labor Force Survey data are collected monthly, but the cost of taking monthly surveys is high. In addition to this important cost consideration, two other issues need to be properly considered in planning future short-term labor indicators for Indonesia. The first is that before a new survey is undertaken, the processing of the previous survey should have been fully completed. The second is that monthly fluctuations may be quite small in Indonesia, due to the high percentage of the population that is self-employed. If that is the case, then the marginal benefit from going from a quarterly to a monthly survey may be quite low.

It is therefore suggested that **the current Sakernas survey be extended from an annual survey to a quarterly survey, with a more limited questionnaire being used during the three quarters added to the current survey.** The purpose of collecting quarterly data would not be to measure the “absolute levels” in employment and earnings, but rather to obtain prompt indicators of “trends”, i.e. the effects on the labor force of changes in the economic conditions of the country.

Information which becomes available only on an annual basis is not very useful as an input in economic policy decisions. This quarterly data also would be an important input in the preparation of the Quarterly National Accounts.

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<sup>1</sup> The purpose of this report is to provide input to a continuing project on labor market indicators by members of the STAT team.

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### III. ESTIMATING QUARTERLY HOUSEHOLD INCOME

For purposes of determining household income, questions in the quarterly survey will need to include the employment status for members of the household and socio-economic information regarding the household.

To obtain an estimate of household income, the occupation of members of the household who are employed needs to be determined. The occupation data can be used, together with data from other sources, such as the annual socio-economic survey (Susenas), to obtain household income.

Total household income (HI) on a quarterly basis may be estimated as follows:

$$HI = \text{employment earnings} + \text{self employed net income} + \text{net investment income} + \text{transfers}$$

where

Employment earnings is a function of employment by occupation status (quarterly data) and income by occupation (available on an annual basis).

Self-employed net income is a function of self-employment by occupation status (quarterly data) and income by occupation for the self-employed (available on an annual basis).

Net investment income is estimated based on data from the annual Sakernas and Susenas surveys, taking account of, among others, the level of interest rates for the quarter.

Transfer income is estimated based on the annual data from the Susenas survey.

The quarterly estimates of total household income will probably be relatively more reliable for low-income groups, due to the smaller share of net investment income in their total income. It is to be stressed that the quarterly data need to be available on a timely basis, with the period for processing not to exceed six weeks.

It should also be noted that quarterly Sakernas surveys were conducted during the period 1986 to 1993, with a quarterly sample size of only about 20,500, but were then stopped because they failed to show any significant quarterly variation in employment.<sup>2</sup> One might legitimately be skeptical and ask why the result of the new proposed quarterly Sakernas would be any better than that of the 1986-1993 one.

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<sup>2</sup> Sigit, Hananto, "Employment Sources in Indonesia: A review of Existing Sources," STAT Project Report #5, June, 2000.

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The answer to this concern is two-fold. First, the old quarterly Sakernas survey had as a primary purpose the estimation of seasonal fluctuations in wages within the same year, with special emphasis on the agricultural sector. The purpose of the current proposed extension of Sakernas would be to obtain prompt indicators of employment and household income, rather than estimating seasonal fluctuations within one year. As such, it aims at capturing cyclical changes in the economy rather than simply seasonal changes. Secondly, the proposed survey would estimate all household earnings components based on information obtained from other sources, whereas the old survey was limited to measurement of wages. These data will also be especially useful as indicators for economic conditions in the informal sector, because data from establishment surveys cover only the formal sector of the economy.

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**APPENDIX A**  
**CURRENT SAKERNAS QUESTIONNAIRE**

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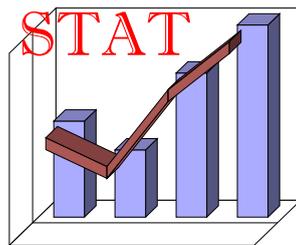
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**SURVEI TRIWULANAN  
PEMULIHAN KESEMPATAN KERJA :  
A PROPOSED SURVEY TO MONITOR SHORT TERM  
EMPLOYMENT & EARNINGS CHANGES**

Report # 17

by  
**Hananto Sigit**

December, 2000



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

## EXECUTIVE SUMMARY

**Objective.** Employment problems have been exacerbated by the economic crisis. Employment and income were the first affected by the crisis, which led to a deterioration in education, health and general living conditions. After experiencing a declining economy for two years in 1998 and 1999, the Indonesian economy is expected to recover in the year 2000 with a positive growth of 4-5 percent. Even if the priority of the government is in politically maneuvering to lead the country into a democratic state, employment problems and lower incomes will remain greatly affected since economic programs during the recovery give a high priority to developing small-scale economic activities and industries based on owned natural resources.

In response to this new development, different data are needed to design policies to overcome the problems and to monitor the employment recovery process. More frequent changes will occur in employment as a result of implementation of recovery programs. These changes must be followed very closely to provide inputs to take necessary actions to cure any deviation. Hence the existing yearly employment survey conducted by BPS needs to be complemented with a more frequent survey, preferably a quarterly survey. Unlike the yearly survey stressing collection of structural employment data, the quarterly survey proposed in this report would collect short-term indicators to show quarterly employment fluctuations.

To support the government in designing employment oriented policies and to help it monitor their results, this report proposes to conduct a quarterly survey for employment recovery (Survei Triwulanan Pemulihan Kesempatan Kerja, STPKK).

**Employment Statistics Needed.** In the new economy, the need for structural employment statistics has become stronger. BPS should continue and improve the current labor force data collection based on the labor force approach, classifying working age population into employed, unemployed and not in the labor force. Structurally, unemployment will undoubtedly increase with the modernization of the economy. And in line with modernization, employment will shift from rural to urban, and from informal/traditional to formal/modern. The success of employment creation in the future is expected to drastically change the composition of employment status: the own-account and unpaid family workers will greatly decline, while the proportion of employers and employees will increase. Shifting of sectoral employment will also continue, and the pattern of the change will depend on growth policy. These employment structural statistics are well accommodated in the current Susenas and Sakernas.

In addition to structural data, statistics are needed to observe the recovery process and seasonal/business cycle fluctuation of employment. In least developed countries, employment is believed to be influenced by seasons. Rainy and dry seasons affect working activities in agriculture, and indirectly influence the non-agricultural sectors, while the modern sector is more influenced by business cycles. In Indonesia, with the dominant role of the government, government budgets greatly affect economic activity. And in the coming several years, short-term employment indicators are particularly needed to observe the development of employment during recovery.

One important aspect to be taken care of in the proposed quarterly survey is employment in household and small enterprises, responding to a shift of policy toward development of small companies. In response to the fact that small businesses are less able to withstand the crisis, more credits and facilities are given to them. Moreover, the economic crisis in Indonesia has provided indisputable evidence that the informal sector plays a prominent role in mitigating the impact. The important role of the informal sector in providing employment for the excess supply of labor is well recognized. The sector is believed to provide a "safety valve" for employment in Indonesia.

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**Items to be Collected.** First the survey should collect important socio-demographic information connected with employment. Some are standard in a household survey, such as composition of members in relation to the household head. Then questions on age, gender, and education are added. Information on migration is also important to see whether they moved to their current place to accept employment, or they returned to their place of origin after losing their job.

The question of whether one is working or has a job must be asked directly to respondents, not through the usual framework of main activities. Here we do not ask structural questions on occupation and employment status separately. Rather, we blend them together to identify important groups of employment. These groups are employers, own-account workers, employees, individual workers, and unpaid family workers. Employers are classified by number of employees. Individual workers are divided by whether they are professionals or not. Employees are differentiated into managers and professionals, administrative workers, factory workers, field/site workers, and other employees. Individual incomes are asked to own-account workers, individual workers and employees.

The number of hours worked in different quarters indicates the upswing or downswing of intensity of employment, particularly for own-account and individual workers. The question on activities before current employment is meant to identify changing in status. Employed persons are also asked whether they are seeking work and the reasons for seeking work. That is meant to determine whether they are still underpaid or underemployed. Those not looking for work are asked the reason for their status (still in school, have to do housework or content with the current work). A question on time started working is provided as an indicator of whether work was newly found.

People “not working and do not have a job” are asked whether they worked or had a job before, and those who have ever worked are asked when and reasons to stop working. These are also asked whether they are looking for work, when they started seeking work and for what reasons. This question aim at identifying new entrants, as well as backlogs in unemployment and its causes.

Those “not looking for work” are asked for the reasons why they are not looking (still in school, doing housework, other), to enable calculation of the labor force participation rate.

Twenty-four tables are proposed, broken down into 3 tables for all individuals, 18 tables for working individuals, 1 table for working individuals but not looking for work and 2 tables for non-working individuals but looking for work. In addition, 27 indicators are also proposed to be constructed from the tables. These include 1 indicator for the labor force, 8 for unemployment and underemployment, 6 for working status, 4 for informal-formal employment, 4 for income and hours worked, and another 4 for welfare.

**Methodology.** Essentially, recovery and seasonal/business cycle fluctuations affect the economies of the region, not its geographic areas. Business cycles are economic, not geographic, phenomena. Different regions with the same type of economy will have the same pattern of business cycles and of economic recovery. The need is for the central government to see the various effects of recovery and business cycles on employment in different sub-economies, so that proper policies can be designed to mitigate negative impacts and enhance employment creation. Since the proposed survey is an employment survey, the sub-economy chosen must have a strong correlation with employment fluctuations caused by the economic crisis and by seasonality. For this purpose evidence from the employment impacts of the crisis can be used as a basis for selection, since during the recovery these aspects will be the most likely to be affected. Several aspects of the sub-economy need to be considered as criteria for selection: economic sector, formal-informal, urban-rural, and size of firm.

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In practice we select regions/areas purposively to represent a certain sub-economy. The areas chosen must be homogeneous. Usually the smallest areas will be most homogeneous. BPS used to select villages to account for certain economic activities. This can be used as a start, since information on villages are available periodically. If a village is not homogeneous, a segment of the village can be chosen.

From the selected areas, a number of households are then selected. The number of households depends on the size of tables to be prepared. Assuming the largest table consists of no more than 20 cells, and the average contents per cell should be no less than 20 individuals, then the total sample per sub-economy should be at least 400 households. But if we assume that the average number of people working per households is 1.5, then the sample should be only 300 households per sub-economy. If the country is divided into 15-20 sub-economies, the total number of households should be around 4500-6000. This number is manageable and can be processed within three months, to be able to generate timely figures.

The next important question is whether some households should be surveyed repeatedly. A repetitive sample of households is needed when we want to follow the condition of households or individuals as they are affected by economic fluctuations. Repetitive samples are not required when the purpose is to produce indicators for the sub-economy. The sample households can be completely different from sample to sample in every quarter, as long as the sample households sufficiently represent the sub-economy.

**Methods of Estimation.** The survey will not produce national estimates using rigid sampling estimation procedures, but will produce national analytical estimates. The key procedure is to obtain a representative sample of households for a particular sub-economy, such that reasonable tabulations could be prepared from the samples. Only the sample values will be tabulated. No blowup will be done by region. From the tables, rates and percentages are computed to come up with the indicators. These estimates, tabulations and indicators will be prepared for every sub-economy selected in the sample.

Another question is whether we will be able to have employment fluctuations for the national economy of Indonesia. This will depend on the sub-economies selected in the sample. We will very likely not be able to include all types of sub-economies in the sample. But if we are able to include 80 percent of the national economy in the sample, this will be sufficient. National fluctuation levels can then be derived to represent those 80 percent of the economy. This can be done by a weighted summary of the indicators using the employment distribution from the structural data collected in Sakemas.

Sampling selection and analytical estimates are flexible. They can be suited to the availability of funds and organization of fieldwork and data processing. If few constraints exist, more areas, more sub-economies and larger samples can be included to represent more of the national economy. Therefore the availability of funds will be not much of a constraint.

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## **I. INTRODUCTION**

### **A. Objective**

The large and rapidly growing population of Indonesia has resulted in an abundant and rapidly increasing labor supply. In total, around 3 million people every year enter the labor force. A large portion of this labor supply cannot be absorbed in the economy, resulting in serious and widespread employment problems. Those not absorbed by the modern economy constitute a large segment of the informal sector, with chronic problems of under-employment, low intensity and low productivity jobs which provide them with minimal earnings.

In response to this problem, BPS has been collecting data on employment and earnings for a long time. In household surveys employment and earnings data are collected as part of the efforts to collect statistics on welfare. In establishment surveys labor cost is usually collected as part of information on cost structure in the production of goods and services. For more detail on these surveys see Sigit (2000a and 2000b).

Planners, policy makers as well as observers have paid great attention to the problem of insufficient employment opportunity. But the problem is so big and has remained so for a long time. Serious unemployment and under-employment, and low living conditions never became easier during the 40 years of economic development history of Indonesia. Even during the miracle economy, a period of rapid economic growth in the nineties, the unfavorable employment structure did not change very much.

Employment problems have been exacerbated by the economic crisis. Employment and incomes were the first affected by the crisis, which led to a deterioration in education, health and general living conditions. After experiencing a declining economy for two years in 1998 and 1999, the Indonesian economy is expected to recover in the year 2000 with a positive growth of 4-5 percent. Even if the priority of the government is in politically maneuvering to lead the country into a democratic state, employment problems and lower incomes will remain greatly affected since economic programs during the recovery give a high priority to developing small-scale economic activities and industries based on owned natural resources.

In response to this new development, different data are needed to design policies to overcome the problems and to monitor the employment recovery process. More frequent changes will occur in employment as a result of implementation of recovery programs. These changes must be followed very closely to provide inputs to take necessary actions to cure any deviation. Hence the existing yearly employment survey conducted by BPS needs to be complemented with a more frequent survey, preferably a quarterly survey. Unlike the yearly survey stressing collection of structural employment data, the quarterly survey proposed in this report would collect short-term indicators to show quarterly employment fluctuations.

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To support the government in designing employment oriented policies and to help it monitor their results, this report proposes to conduct a quarterly survey for employment recovery (Survei Triwulanan Pemulihan Kesempatan Kerja, STPKK). This survey must meet the objective, but at the same time must be simple, small, timely and not costly, in order to be effectively implemented during these difficult times.

### **B. Report Presentation**

Collecting data on employment and earnings in a household survey in Indonesia is not simple, since household members individually as well as in groups engage in many different activities to get income sufficient to support their livelihood. Different techniques have been tried in the past to get the data with reasonable accuracy. In fact, quarterly employment surveys have been tried before with no success. Therefore this proposed survey must be carefully prepared to meet the objective. Its failure may be very costly and may jeopardize government recovery programs.

One important aspect of a survey is what items are necessary to collect. The first step to justify the importance of the items is to understand clearly the labor market mechanism in Indonesia and its past development especially during the miracle economy. This is meant to understand the employment condition right before economic crisis. The next step, as presented in Chapter II, is to review the employment impacts of the crisis, which depend a great deal on the labor market mechanism. This is important because it will help identify variables which were most affected by the crisis, and which will most likely be affected in a reverse direction during economic recovery.

Chapter III identifies key areas and important subjects to be included, which are then elaborated further in Chapter IV into items to be collected in the proposed survey. The proposed tabulations and employment indicators to be constructed are also discussed in this chapter. The last chapter discusses the proposed methodology for employing analytical estimates, which are more flexible. The methodology is discussed with great care, since it deviates from the traditional one which relies on areas of estimation using strict sampling procedures.

## **II. IMPACTS OF CRISIS AND RECOVERY ON EMPLOYMENT AND EARNINGS**

### **A. Labor Market and Past Developments**

The Indonesian economy was traditionally dominated by agriculture. Most employment in agriculture is traditional, family oriented and informal. In 1960, agriculture employed more than 60 percent of the labor force and the remaining 40 percent engaged in non-agricultural

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employment as formal or informal workers. Hence, three sectors, traditional agriculture, informal non-agriculture and the modern sector characterize the Indonesian economy.

Demand for labor is created in the formal sector, generated by accumulated investment induced by economic growth. Entrance into the formal sector is difficult. It needs capital, expertise and knowledge. Most labor force entrants to the formal sectors are absorbed as labor. Only a small number is able to become employers. On the other hand, no labor demand exists in the informal sector. Entry to the informal sector is easy and free. No capital and/or skill is required and work is self-generated.

In general, the abundant labor supply will first look for formal employment. Those that cannot find employment in the formal sector can be accommodated in the informal sector. Of course, the larger the pool of persons engaged in the informal sector the smaller the per capita income. The informal sector is largely dependent on the modern sector as the demand for their goods and services are from the formal sector. Only a small portion of demand is self-created within the informal sector.

Self-generated work in the informal sector is not formally organized or institutionalized, but is purely market determined. The market is very competitive. Some workers have to work very hard to earn a small income. Some do not have the opportunity to work hard, but end up working less time and doing unproductive work. Therefore the informal sector is generally characterized by irregular working hours, a large degree of under-employment and low productivity.

Despite the high economic growth before the crisis, Indonesia is still characterized by abundant labor surplus. The economy could not absorb the large increase in the labor force estimated at more than 3 million persons every year. This has resulted in the expansion of large informal economic activities along with the growing modern sector economy. Data suggest that only around 20-30 percent of employment is in the formal sector. The remaining 70 percent are in agriculture or performing informal non-agricultural activities.

## **B. Crisis Impact**

The crisis hit Indonesia at the time that the economy was still characterized by a large labor surplus. Under-employment is still large and widespread. Wages for unskilled workers are low and fall short of the cost of living. Agricultural and informal employment is still large. The crisis has caused even more workers to be absorbed in agriculture and the informal sector.

### **1. Unemployment and Under-Employment**

The number of openly unemployed persons is small. For many years in the 1970s and 1980s open unemployment rates in Indonesia were very low: around 2-3 percent. The success of development accompanied by the *formalization* of the economy has pushed the rate upward

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to above 4 percent in the first half of the 1990s. The unemployment rate during the two crisis years (August 1997-98) only moderately increased from 4.7 percent to 6.4 percent. Unemployment is much lower in rural (3-4 percent) than in urban (8-10 percent) areas. The crisis has caused a larger increase in unemployment in urban (by 2.4 percent) than in rural areas (by 1.0 percent).

The moderate increase in unemployment indicates flexibility in the labor market. The number of displaced workers is large, but a large portion of the layoffs was reabsorbed, mostly in the flexible informal sector. The 1998 Sakernas recorded 4.2 million persons displaced from work during August 1997-98 for various reasons directly or indirectly. Around 2.2 million were re-employed, 1 million out of the labor force and only 1 million continued looking for work.

More serious is the crisis impact on under-employment. In 1997 about 39 percent of all employed persons worked less than 35 hours per week. It increased to 43 percent in 1998. With more stable formal employment, under-employment is less prevalent in urban (only 22 percent in 1997) than in rural areas (around 48 percent). But urban areas suffered more from the economic crisis, causing under-employment to increase much higher by 16.9 percent compared to only 8.2 percent increase in rural areas.

## **2. Sectoral and Formal-Informal Transformation**

During one year of the crisis, the data show a large reversed flow of employment back to agriculture. The proportion of urban and rural agricultural employment increased from 8 to 11 percent and from 58 to 63 percent, respectively. In urban areas, the non-agricultural sectors experiencing large decreases in employment were manufacturing, electricity, gas & water, banking & finance and construction. In total, employment in these sectors declined from 26 to 23 percent. Quarrying, trade, transport and services were able to employ more workers because of the existence of large informal activities. In rural areas, all non-agricultural sectors uniformly experienced a decrease in employment.

After a favorable shift from informal to more formal employment in the first half of the 1990s, the economic crisis caused a reversal: a sharp decline of formal employment from 57 to 43 percent in urban areas, and a decline from 26 to 24 percent in rural areas. Most formal sectors experienced a decrease in employment, but informal manufacturing, quarrying and restaurants also lost some workers. On the other hand, agriculture, which is mostly informal absorbed almost all the displaced workers. Only a small number were able to work in informal construction and transportation.

The data show a significant shift from employees to self-employment. In urban areas not only did the proportion decline from 55 to 52 percent, but also the number of employees from 16.1 to 15.7 million. The number of own-account and unpaid family workers increased from 35 to 37 percent and from 11.6 to 12.1 percent respectively. To a lesser degree, the shift from formal

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to informal occurred also in rural areas. Informal employment increased from 74 to 76 percent, more persons working together with the help of unpaid family workers (the percentage increased from 25 to 27 percent). The decline in rural formal employment was also caused by displacement of employees, which is reflected in the sharp percentage decline from 25 to 22 percent.

The formal-informal shift indicates a decrease in the quality of employment. The shift to lower quality employment can be more clearly indicated by the movement of selected workers. Factory and construction workers have declined the most. Others displaced workers were those in services and banking. On the other hand, self-employment, unpaid family workers and agricultural labor have increased substantially.

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### **3. Wages and Salaries**

One year before the crisis nominal salary of employees increased by 16 percent. And one year during the crisis it increased by 17 percent (21 percent in rural and 15 percent in urban areas). However, with an inflation rate of 62 percent during the period August 1997-98, the real salary substantially declined. The decline was more in urban (30 percent) than in rural areas (25 percent). As suspected, male workers have higher salaries than female workers (around one and a half times). However, the crisis in urban areas affected wage incomes of males far more (declined by 30 percent) than females (declined by 28 percent). In rural areas the opposite occurred: incomes of female workers declined by more than that of male workers.

Evidence of declining sectoral real wages was also found in the quarterly wage indices. The data show decreases in real wages in hotel, mining and manufacturing. The most serious was the decline in manufacturing (22 percent). In fact, the high inflation rate in 1998 caused indices of real wages in nearly all sub-sectors (with the exception of wood products) to go significantly below 100 since the first quarter of 1998. This means that the levels of real wages are currently far below those of 1994.

Data on wages by education of employees show consistent crisis impacts. Employees with higher education suffered more income decline than those with lower education. Those with university degrees experienced more than a 30 percent income decline, compared to a decline of less than 26 percent for those with the lowest education.

#### **C. Employment Implications of Economic Recovery**

The government is often criticized for not having a concrete program for economic recovery and for being only focused on solving ad-hoc problems. Some problems are pure political, but others are economic. Even though problems still exist, the recapitalization of private banks has been completed. In the meantime, the recapitalization of non-bank enterprises has a lot of problems. But some enterprises are able to restructure their debts with their creditors, without the help of the government. Other serious problems are the pressing needs to increase the prices

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and tariffs of non-traded goods and the continued weakening of rupiah. The price of electricity, transportation, water, telecommunication and gasoline have been kept constant for a long time by the former government.

Despite all those problems, some economic sectors were able to increase production; and small industries have enjoyed abundant credits extended by the government and private banks. This positive condition was able to drive the economy, and this year's GDP is predicted to grow by 4-5 percent. What will be the impacts on employment during the short run is difficult to predict. But the development of small-scale business is expected to provide employment opportunities. The functioning of the re-capitalized banks and non-bank enterprises not caught in the debt settlement problems, give hope for more employment. Sooner or later the economy will get used to the ups and downs of the political situation and will be able to operate normally without foreign capital flowing in. With this situation, the recovery, however slow, will continue and will step up gradually.

### **III. CURRENTLY NEEDED EMPLOYMENT STATISTICS**

#### **A. Measurement of Employment Structural Changes**

Experience from the crisis strongly suggests that further economic development should make more use of existing natural and human resources to speed up recovery and improve living conditions. Small-scale and agro-industries were supposed to be the engine for future Indonesian economic growth. According to this line of thinking, employment creation should be the most important consideration in sectoral growth policies, and industrialization policies. Accordingly, structural employment data are required to support the needs to monitor employment structural changes.

Therefore, the need for structural employment statistics will become stronger. Consequently, BPS should continue and improve the current labor force data collection based on the labor force approach, classifying working age population into employed, unemployed and not in the labor force. Structurally, unemployment will undoubtedly increase with the modernization of the economy. And in line with modernization, employment will shift from rural to urban, and from informal/traditional to formal/modern. The success of employment creation in the future is expected to drastically change the composition of employment status: the own-account and unpaid family workers will greatly decline, while the proportion of employers and employees will increase. Working will be more stable, less seasonal and more productive, and consequently multiple jobs will be reduced. Shifting of sectoral employment will also continue, and the pattern of change will depend on growth policy. Employment statistics need to depict at least these structural changes.

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Substantial structural changes will occur only in the intermediate term of at least 3-4 years. But it must be observed from development/fluctuation of the annual data, since comparison of two annual figures is often inconclusive. Structural changes can only be reliably interpreted by analyzing trend data of at least 3-4 years. The changes may occur quicker with rapid employment intensive economic growth. However still in 1 or 2 years there will be few changes in the structural composition of employment.

Employment structural statistics are well accommodated in the current Susenas and Sakernas, employing the labor force approach. Susenas and Sakernas are conducted every year, respectively in February and August. They provide estimates for provinces. The two surveys are not exactly comparable, since Susenas is a multi-purpose survey accommodating other information besides employment, while Sakernas is specifically designed for employment data collection. The incomparability is minimized by employing the same questions and concepts and definitions. However, the survey methodology, organization and field work could not be kept the same.

The ideal use of the biannual data (from Susenas in February and Sakernas in August) is to establish a biannual trend and to measure seasonal fluctuations. This is not possible due to the incomparability of the survey figures. However, the comparability of the data must be pursued, by simplifying the methodology, survey organization and field work.

Investigation of structural changes can be done separately from Susenas and Sakernas figures. Separate trends can be established from Susenas and Sakernas, and the results can be compared. Most of the times the results are consistent, but sometimes they are inconsistent, especially when comparisons are made for only two years. In this case, we are forced to choose between one of the two trends.

## **B. Seasonal/Business Cycle Employment Data**

In addition to structural data, statistics are needed to observe the seasonal and business cycle employment fluctuations. In least developed countries, employment is believed to be influenced by seasons. Rainy and dry seasons affect working activities in agriculture, and indirectly influence non-agricultural sectors. And since agriculture is still dominant, the influence of seasons is believed to be substantial. Meanwhile, the modern sector is more influenced by the business cycle. In Indonesia, with the government's dominant role, its budgets greatly affect economic activity. And in the coming several years, short-term employment indicators are particularly needed to observe the development of employment during the recovery period. Critical policy questions need to be answered, among others: what aspects of employment are influenced by seasonal movements; is work intensity in agriculture different during peak and low seasons; does agricultural employment decline during low seasons; what sectors can absorb agricultural workers; what is the composition of formal/informal employment; are seasonal

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patterns different by gender, education and other characteristics of individual workers.

Employment data are also needed to monitor closely the continuing impacts of economic crises. It has become urgent to monitor the employment situation to provide answers to questions such as: how many people lost their jobs; has overall unemployment increased; has underemployment increased; has work intensity and productivity declined; have real wages declined; have people moved from the more affected urban areas to rural areas to settle for employment within the family; what sectors were hardest hit; how do households and communities respond to employment deterioration. During economic recoveries, such indicators are needed to address questions in the opposite direction, e.g. how many people gained new employment etc.

Even in non-crisis situations, more frequent employment indicators are needed for monitoring developments in the labor market. Tracking demand and supply of labor in the modern sector is useful in understanding the mechanism of wage determination in the modern sector, which in turn influences earning levels in the informal sector. The labor market for the whole economy cannot be understood without knowing the modern labor demand and supply.

The need for monitoring short-run employment developments cannot be overstated. Of course, one does not expect BPS to provide all the data mentioned above. However, BPS can evaluate what data can and cannot be provided. Data can then be prioritized based on a cost/benefit evaluation and budgetary constraints, and a decision can then be made on the most effective course of action.

### **C. Employment in Small & Household Enterprises**

One important aspect to be taken care of in the proposed quarterly survey is employment in small and household enterprises. This is to respond to the shift of policy from stressing development of big companies to that of small companies. More credits and facilities are given to small businesses to respond to the fact that small businesses are less able to cope with the crisis than big companies. Development of large companies tends to increase output, but its overall impact on employment creation is low. On the other hand, developing small businesses will provide more employment opportunities. Successful development of small businesses will have substantial impacts on employment. Therefore it is necessary to monitor employment resulting from development of small businesses.

### **D. Formal-Informal Employment**

The economic crisis in Indonesia has provided indisputable evidence that the informal sector plays a prominent role in mitigating the impact of the crisis. Many people have reiterated the important role of the informal sector in providing employment for the excess supply of labor. The sector is believed to provide a “safety valve” for employment in Indonesia, absorbing

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agricultural workers who migrated to urban areas. It has been a major part of the economy for a long time and will undoubtedly exist in the Indonesian economy for a long time to come. Data on this sector must therefore be further developed and improved.

Currently two sources of data are available to assess informal sector employment. The first is from household employment surveys (such as Sakernas and Supas) and the second from establishment surveys. Estimates of informal employment in household surveys are obtained from data on status and occupation. The self-employed (except professionals), own-account and unpaid family workers are considered as workers in the informal sector. Employers and employees (except agricultural labor) are classified as formal workers. Employment can then be divided into two categories (informal and formal) with different characteristics (based on the data items collected in the survey). Other estimates of income are derived from establishment surveys, and for the manufacturing sub-sectors they are derived from surveys of small and cottage industries. Micro establishments are generally considered as informal, and data include: production costs, expenditure for labor, number and characteristics of employment groups, output structure, capital, business operation, marketing and participation in government programs. Based on this information, average earnings of different groups of workers are calculated. Although such estimates exist, they have so far been underutilized. More and better indicators should still be constructed from these data to show informal sector changes.

#### **IV. PROPOSED QUARTERLY SURVEY**

##### **A. Past Experience With Quarterly Sakernas**

During the new order government economic development was heavily institutionalized, and policies were undertaken to control certain important economic variables, e.g. foreign exchange rate, interest rates and price levels, by using all resources available. Exports were pushed at all cost using incentive policies, and sometimes at the expense of other variables. Such government interventions minimized fluctuations caused by business cycles.

The previous quarterly survey of Sakernas did not show strong seasonal fluctuations. One reason was the inability of the data to produce regional estimates due to the small sample. In a large country such as Indonesia stretching widely along the equator, seasons vary from island to island. National estimates average the differences created by seasons in various regions, and accordingly tend to produce the same quarterly data. Moreover, concentration on agricultural development in the past by constructing a vast irrigation channel in the country, has made the country less dependent on seasons. Consequently the agricultural sector in Indonesia is less affected by seasons.

Another reason for the lack of seasonality in the previous quarterly Sakernas was its adoption of structural questions, simplified from the previous annual Sakernas. Exactly the same

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structural data on labor force and employment were produced by the quarterly and yearly survey. In fact the quarterly data was averaged to produce data for the year. The survey was not designed to produce indicators to show the impact of seasons or business cycles.

The concepts and definitions adopted from the yearly Sakernas based on the labor force approach were sometimes also not appropriate for a quarterly survey. For instance, the data on employment in agriculture and non-agriculture were supposed to be directly affected by seasons. During peak seasons (planting and harvesting) the percentage of agricultural employment would be high, and during low seasons it would decline. But the definition considered those waiting for the harvest as having a job. Only agricultural labor possessing no land were considered unemployed. And since most households owned a small piece of land, they were still considered working in agriculture during slack seasons. Consequently, employment in agriculture did not substantially change during peak and low seasons.

### **B. Employment Recovery Quarterly Survey**

In the new reform era the economy is expected to fluctuate. In the new system of government, the role of institutions is minimized and the market mechanism is more relied on. The government is controlled by many different institutions, and no single power controls the economy. Legislative, judicial and executive bodies are separated. Bank Indonesia is separated from the government. Anti-monopoly laws have been passed. And the government will rely more on the development of small industries. These developments will make the Indonesian economy prone to business fluctuations.

Moreover, it is still believed that seasonal fluctuations characterize the Indonesian economy. The challenge is to devise appropriate instruments to capture them. Areas selected in the sample should be able to represent an economy affected by seasons. We also need to ask the right questions and use appropriate definitions. Estimates at national, island or provincial levels will not produce correct results.

One question has been asked frequently: why not take out the employment part of Susenas and conduct a separate employment survey similar to Sakernas, instead of doing it in a multipurpose Susenas, then add two more surveys in between to have a quarterly survey? The answer is that this is not feasible since employment data are always required in Susenas to be connected with other information (such as income, expenditure and other welfare variables). Elements of incomparability with Sakernas cannot be removed. As mentioned above, the maximum that can be done with Susenas is to make them as comparable as possible with Sakernas to establish trends to reinforce the findings from Sakernas. Comparison of February and August figures must be conducted with particular care, due to the different nature of the surveys.

Susenas and Sakernas cannot be converted to quarterly surveys, since they are designed to estimate labor force and employment structures for certain regions. The cost of merging the

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two objectives in one survey would be too high, unless some information on structural or short-term fluctuations is sacrificed. In Indonesia, data for a comprehensive employment structure are necessary. It would be difficult to add more detailed questions on short-term employment fluctuations.

Business cycle employment fluctuations must be seen independently from structural employment. Of course concepts and definitions must be made as comparable as possible. But the purpose is not to provide figures to be compared with those of February and August of Susenas and Sakernas. The questions, questionnaire and concepts/definitions must be simple. They should follow the labor force approach, but if necessary they may deviate from it, since employment structure is not the primary objective. Rather, the objective would be to produce employment indicators which show fluctuations in important aspects of employment.

### **C. Main Items to be Collected**

The items to be included in the proposed STPKK survey questionnaire are presented in Figure 1.

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**Figure 1**  
**Items to Include in the Survey Questionnaire**

I. WORKING OR HAVE A JOB	II. NOT WORKING AND DO NOT HAVE A JOB
1. How many jobs 2. Total hours worked 3. Hours worked on main job 4. Economic sector 5. Employment Status of main job a. Employers 1. With employees less than 5 2. Employees between 5-20 3. Employees 20 or more b. Own Account 1. Assisted by Unpaid Workers 2. Without Assistance 3. Employees: 1. Managers and Professionals 2. Administrative Workers 3. Field/Site Workers 4. Factory Workers 5. Other workers d. Individual Workers 1. Professionals 2. Non-Professional e. Unpaid Family Workers 7. Started Working a. Between 0-3 months b. Between 3-6 months c. Between 6-9 months d. Between 9-12 months e. More than 12 months 8. Activities before working a. looking for work b. in school c. housewife d. worked in better jobs e. work ed in worse jobs f. no activity 9. Looking for work a. Paid employment	1. Ever worked or had work before 2. When stopped working 1. During the past 3 months 2. Between 3-6 months 3. Between 6-9 months 4. Between 9-12 months 5. More than 12 months 3. Reasons for Losing work: a. Displaced from work b. Own company/household business closed down c. No work for Individual workers 4. Looking for work a. Paid employment b. Self employment c. Not looking for work d. Reasons for not seeking work 1. Still in school 2. Housework 3. Sick/disabled 4. Sufficient money 5. Others 5. When started seeking work a. During the past 3 months b. Between 3-6 months c. Between 6-9 months d. Between 9-12 months e. More than 12 month ago 6. Main/direct reasons for seeking work: a. Not looking for work b. Main Reasons:

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- |  |                                |
|--|--------------------------------|
| b. Self employment                       | 1. Satisfied with current work |
|  | 2. Still in school             |
|  | 3. Doing housework             |
| 10. When started seeking work            |                                |
| a. During the past 3 months              |                                |
| b. Between 3-6 months                    |                                |
| c. Between 6-9 months                    |                                |
| d. Between 9-12 months                   |                                |
| e. More than 12 month ago                |                                |
| 11. Main/direct Reasons for seeking work |                                |
| a. Insufficient income                   |                                |
| b. Still have time                       |                                |
| c. Current work is not suitable          |                                |
| d. Declining household business          |                                |
| e. Unpaid family worker                  |                                |

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### **1. Socio-Demographic Items**

First of all the survey should collect some important socio-demographic information to be connected with the employment information. Some of this information is standard in a household survey, such as composition of household members, by identifying the relationship of each member to the household head. Then questions to individual members with regard to age, gender, and education would follow. Other important information relate to migration to see whether they had to move to the current place in order to accept employment, or they had to resort to their place of origin after losing their jobs. Questions asked include how long they have been staying in the current place of residence by quarter, and direct reasons for moving to the current place of residence.

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### **2. Labor Force & Employment Items**

The question on whether working or have a job must be asked directly to the respondent, and not through the usual framework of main activities as in Sakernas or Susenas. The question on how many jobs, which is a structural variable, is necessary to identify the main job, since most other questions are asked with regard to the main job. Here we do not ask structural questions on occupation and employment status separately. Rather we blend them together to identify important groups of employment. These groups are employers, own-account workers, employees, individual workers, and unpaid family workers. Employers are classified by number of employees. Individual workers are divided whether they are professionals or not. Employees are differentiated into managers and professionals, administrative workers, factory workers, field/site workers, and other employees. Individual income is asked for those working as own-account workers, individual workers and employees.

The question on hours worked per week is asked for total and for main job only to see the intensity of work. The number of hours worked in different quarters indicates whether there is an upswing or a downswing in their employment, particularly for own-account and individual workers. The questions on activities before working in the current job identify changes in activities. They may be looking for work or not in the labor force previously and already found a job at the time of the survey. They may also work with better or lower paid jobs previously compared to their current job. This can indicate upswings or downswings in employment.

Employed persons are also asked whether they are also seeking work and the reasons for seeking work. This information is for identifying whether they are still underpaid, under-employed, and those not looking for work whether they are satisfied with their work, or for other reasons such as still in school or have to do some housework.

A question on when they started working is to identify employment creation in each quarter of the year. During the recovery period the number should be larger in the more recent quarters. But it also depends on the season or the business cycle: peak quarters should show more employment creation.

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For the group “not working and do not have a job”, they are asked whether they have worked or had a job before. This is to identify whether they are experienced or inexperienced workers. And those who have ever worked are asked when they stopped working and the reasons for losing their jobs. This is to identify employment fluctuation from the angle of those not working. They may have stopped working in the reference quarter or before, because they were displaced from work or for other reasons (such as they went back to school or they currently have sufficient income).

This group is also asked whether they are looking for work, when they started seeking work and for what reasons. This will identify whether they are new entrants (if they have never worked before). The quarters in which they started seeking work indicate the backlog of unemployment every quarter. “Reasons for seeking work” provide explanations as to why they are seeking work.

Those not looking for work are asked whether the reason for not looking is that they are still in school, doing housework or other. This question is meant to capture the non-labor force group, to enable calculation of the labor force participation rate. During quarters in the upswing, the labor force participation rate should be increasing because many people should be able to find jobs.

#### **D. Concepts & Definitions**

*Working or Have a Job.* “Working” is defined as doing any economic activity to earn income at least one hour during the previous week. “Have a job” but temporarily not working applies to employers, own-account workers and professional individual workers temporarily not working during the previous week. They are classified as employed.

*Employers.* “Employers” are persons who own, manage and operate a company/business by employing paid workers. They may be assisted by unpaid workers, either family or non-family members. The company may be located outside or inside the household. Paid workers are hired and paid on a regular basis, not only for the short term to finish a certain job. Employers own and operate a small or a big business, and in the case of a big enterprise, they may own only part of the company in the form of shares. However, not all share owners are considered as employers. Those who buy shares as portfolio investment are not employers, but only investors. Employers are divided into three groups: those with total employees (including the employer) of less than 5, between 5 and 19, and 20 and above. An enterprise with total employees less than 5 is called a micro-enterprise or a household enterprise; one with 5-19 employees is called a small enterprise, and one with 20 or more employees is called a medium or large enterprise. This simple definition is adopted based on the official classification of manufacturing industry used by BPS. And this is practically applied in this household survey to capture the size distribution of enterprises.

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*Own-Account Workers (OAW)* are persons owning, managing and operating a household or individual business whether assisted or unassisted regularly by unpaid workers. They do not employ paid workers on a regular basis as employees. But they may hire temporarily paid workers on an ad-hoc basis for particular jobs. Examples of these businesses are barber shops, small shops selling daily needs, household cottage industries, VCD rental shops, shops renting bikes/cars/tricycles for transportation, renting equipment for parties, selling clothes on the sidewalk, operating small restaurants, food vendors, watch repair shops, bike repair shops, tire repair shops, fishermen, painters, handicrafters, tailors, etc. OAW are divided into *Assisted OAW (AOAW)* if they are assisted by Unpaid Family Workers (UFW), and *Unassisted OAW (UOAW)* if they work as individuals without any assistance from UFW. The two groups need to be differentiated, since in the case of AOAW the household micro-enterprise is owned and operated together by household members, and the proceeds belong to the household, not to each individual members. On the other hand, UOAW own and operate an individual micro-enterprise without any assistance from unpaid family and non-family members. Accordingly, the proceeds from the business belong to this particular household member.

*Individual Workers (IW)*. OAW should be clearly differentiated from IW. OAW own a business and wait for customers to purchase or use their services. IW do not own businesses, but work for other people (clients). They offer their services freely to whoever needs them. The type of work depends on the clients' needs. The agreement is based on certain specified work asked by the clients to be performed. There is no long-term agreement between IW and their clients. The payment depends on the amount of services needed to complete the job. It can be paid daily, weekly, or according to certain disbursement on the agreement. IW may use some equipment necessary to perform their services. In performing their work, IW may be assisted by other persons usually at the client's account, but sometimes also at IW's own account. The clients do not employ the IW, since the IW are free to accept any other jobs from other clients whenever available.

IW are divided into two groups: Professional and Non-Professional. The statistical treatment for the two groups is different. Examples of Professional Individual Workers (PIW) are skilled construction workers/engineers, plumbers, gardeners, puppet masters, dancers, actors, medical doctors, nurses, baby sitters, etc. PIW may group themselves together into an organization to enhance their services. Examples of the Non-Professional Individual Workers (NPIW) are unskilled construction workers, workers in market places, harbors, terminals, train stations (loading, unloading and carrying goods), agricultural workers, household domestic helpers (pembantu rumah tangga), etc. PIW are considered to have a job during the time they are not working and waiting for orders, while NPIW are classified as not having a job when they are not working. Therefore the PIW are treated as having a business similar to own-account workers, because they work based on their profession.

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*Employees.* IW must also be differentiated from employees. Employees work permanently for a certain period doing repetitive work for one employer. In some cases employees may also work for two or more employers at different times. Employees are paid periodically or on a piece-meal basis.

*Formal-Informal Employment.* One important aspect considered in designing the classification on work status is to enable estimation of formal-informal employment. The informal category of employment includes: employers with less than 5 employees (for certain purposes those with employees between 5-19 can also be considered as informal), assisted or unassisted own-account workers, non-professional individual workers, and unpaid family workers. And the formal employment consists of employers with 20 or more employees, employees and professional individual workers.

### **E. Cross-Tabulations to be Prepared**

The items selected will produce indicators to show employment fluctuations affected by seasons or business cycles. Before producing these indicators several tables should be designed and analyzed to pick up the most relevant, sensitive and meaningful ones. The following tabulations are suggested.

#### **1. All Sample Individuals**

Table 1: Age by Labor Force Activity

Table 2: Education by Labor Force Activity

Table 3: Length of Stay in Current Place of Residence by Labor Force Activity

Labor Force Activity is defined as: working, looking for work and not in the labor force

#### **2. Working Individuals**

Table 1: Age Group by Total Hours Worked per Week

Table 2: Education by Total Hours Worked per Week

Table 3: Number of Works by Total Hours Worked per Week

Table 4: Education by Economic Sector

Table 5: Length of Stay by Economic Sector

Table 6: Age Groups by Economic Sector

Table 7: Economic Sector by Hours Worked per Week of Main Work

Table 8: Economic Sector by Period Start Working

Table 9: Length of Stay by Period Start Working

Table 10: Period Start Working by Hours Worked per Week of Main Work

Table 11: Economic Sector by Employment Status

Table 12: Age Group by Employment Status

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Table 13: Education by Employment Status

Table 14: Length of Stay by Employment Status

Table 15: Employment Status by Hours Worked per Week of Main Work

Table 16: Period Start Working by Employment Status

Table 17: Economic Sector by Activities Before Working

Table 18: Employment Status by Activities before Working

### **3. Individuals Working & Looking for Work**

Table 1: Economic Sector by Looking for Work and Period Start Looking for Work

Table 2: Total Hours Worked per Week by Looking for Work and Period Start Seeking Work

### **4. Individuals Working & Not Looking for Work**

Table 1: Economic Sector by Reasons for Not Looking for Work

### **5. Individuals Not Working But Looking for Work**

Table 1: Ever Worked by Period Start Looking for Work

Table 2: Period Start Looking for Work by Reasons and Types of Work Looked For.

## **F. Employment Indicators to be Produced**

The output of the survey should only be in the form of cross tabulations, but several indicators should also be constructed from the cross tabulations. The types of indicators to be produced are as follows. Each indicator, whenever appropriate should be classified by gender.

### **1. Labor Force**

1. Labor force participation rate

### **2. Unemployment & Under-Employment**

1. Percentage of open unemployment

2. Percentage start looking for work in 0-3, 3-6, 6-9, 9-12, and more than 12 months.

3. Percentage of backlog unemployment

4. Percentage of new entrant unemployment

5. Percentage of lost work unemployment

6. Percentage lost work, caused by termination, losing business, no work

7. Percentage of working less than 35 hours per week

8. Percentage of working less than 35 hours per week and looking for work

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### **3. Work Satisfaction**

1. Percentage start working within 0-3, 3-6, 6-9, 9-12 and more than 12 months
2. Percentage working and not looking for work for the reasons: satisfactory with current work, Still in school, doing housework.
3. Percentage working but looking for work to compensate for low income
4. Percentage working but looking for work to compensate for low hours worked
5. Percentage working but looking for work not satisfy with the current work
6. Percentage working but start looking for work in 0-3, 3-6, 6-9, 9-12, more than 12 months

### **4. Composition of Formal & Informal Employment**

1. Percentages of formal employment: employers and employees
2. Categories of employees: managers/professionals, administrative workers, factory workers, construction workers, other field/site workers, and other employees.
3. Percentages of informal employment: own account workers, individual workers, and unpaid family workers.
4. Categories of individual workers: agriculture, construction, services, and other individual workers.

### **5. Income & Hours Worked**

1. Average income by category of employment: self-employment, managers/professionals, administrative employees, factory workers, construction workers, field/site workers, and other employees.
2. Percentage experienced income decline by category of employment: self-employment, managers/professionals, administrative employees, factory workers, construction workers, field/site workers, and other employees.
3. Average hours worked in main job by category of employment: self-employment, managers/professionals, administrative employees, factory workers, construction workers, field/site workers, and other employees.
4. Percentage of those experienced hours worked decline by categories of employment: self-employment, managers/professionals, administrative employees, factory workers, construction workers, field/site workers, and other employees.

### **6. Welfare Indicators**

1. Percentage of children (10-14 years old) working
2. Percentage of household members working
3. Percentage of unemployment/underemployment by education
4. Percentage of unemployment/underemployment by age group

## V. SURVEY METHODOLOGY

### A. Economy vs Region as Domain of Estimation

BPS household surveys so far adopt regions as a domain of estimation. The domains of estimation could be villages, sub-districts, regencies, provinces, or national. It is required for BPS as a central government office to produce estimates for all existing regions in Indonesia. If it is decided to produce estimates at provincial levels, then all provinces must be covered as much as possible, with no discrimination. Similarly if a census is designed to produce estimates at the village level, all villages must be statistically represented in the survey/census. Only when there is a budget constraint, or certain areas are not reachable, would some regions be left out from the survey. BPS surveys must be large to cover all domains of estimation and rigidly drawn following particular probability sampling techniques. The sample size must be large to cover smaller units of estimation. But even if the survey is only to produce national estimates, the sample size must be around 50-60,000 households.

The proposed survey here is not meant to produce area estimates, nor even to generate national estimates through a sample of areas. Such surveys are costly and take a long time to process. At this time of economic crisis funds are not available to finance such as big surveys. Consequently, surveys required to produce area estimates are not appropriate to be conducted quarterly.

Subject wise, it is also not efficient to design a quarterly survey for estimating cyclical employment fluctuations at the regional level. A region may have many distinct sub-economies. The cause of differences in employment fluctuations from region to region is essentially not the different types of region/area, but differences in the sub-economies of the regions. Estimating at the regional level means *averaging* the fluctuations of the sub-economies, which tends to produce stable results. Therefore estimating employment fluctuations from region to region and then summing them up to produce national estimates cannot produce quarterly fluctuations. This estimation is performed column-wise as shown in Figure 2.

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**Figure 2**  
**Domains of Estimation**

	Regions							National
	A	1	2	3	.	.	R	
Sub-Economy	A	1A	2A	3A	.	.	RA	NA
	B	1B	2B	3B	.	.	RB	NB
	C	1C	2C	2C	.	.	RC	NC
	.	.	.	.	.	.	.	.
	Z	1Z	2Z	3Z	.	.	RC	NZ
Total Economy	TE	1TE	2TE	3TE	.	.	RTE	NTE

Notes: RTE=Region R Estimate=Average of all sub-economies in Region R  
 NTE=National Estimate=Average of Regional Estimates  
 NC= National Estimate of Sub-Economy C  
 NTE=National Total Economy Estimate= Average of National Sub-Economies

Essentially, recovery and seasonal/business cycle fluctuations affect the economies of the region, not the geographic areas. Business cycles are economic, not geographic, phenomena. Different regions with the same type of sub-economies will have the same pattern of business cycles and of economic recovery. Therefore averaging employment fluctuation among the regions for a particular sub-economy will show the true fluctuation of employment in the sub-economy. Hence employment fluctuations are much better estimated for the different sub-economies separately (row-wise estimates as shown in Figure 2).

Moreover, the need is for the central government to see the various effects of recovery and business cycles on employment in the different sub-economies, so that proper policies can be designed to mitigate negative impacts and enhance employment creation. This is particularly relevant since the focus of the central government is on national development and not on particular geographic regions. Development of a region is the responsibility of the regional government. The employment indicators to be produced should therefore reflect employment conditions in the national economy and in the different sub-economies.

### **B. Criteria for Selection of Sub-Economy**

What sub-economy should be selected in the sample is a big question, since the definition of sub-economy is not straight forward. Does an economic sector sufficiently represent a sub-economy, so that we may have an agriculture sub-economy, a manufacturing sub-economy or service sub-economy? Do different stages of development of the sector matter, so that we have modern, traditional, urban, rural or formal and informal sectors? The more aspects of the economy are taken into consideration, the more accurate the sub-economy can be described. But it will be difficult to select which ones should reflect the Indonesian national economy in general, especially when a wide range of economic conditions exist, from the most traditional to the most modern. To best manage the survey, the selection must be confined to those aspects which are most dominant in the Indonesian economy.

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Since the proposed survey is an employment survey, the sub-economy chosen must have strong a correlation with employment fluctuations caused by the economic crisis and by seasonality. For this purpose evidence from the employment impacts of the crisis can be used as a basis for selection, since during the recovery these aspects will be the most likely to be affected. The following are several aspects which need to be considered as criteria for selection.

---

### **1. Economic Sector**

The economic sector matters a great deal in describing employment fluctuations. Economic upswings and downswings affect various sectors differently. The financial sector, construction and manufacturing are negatively affected during an economic recession. On the other hand, agricultural employment increases, since most of those displaced from jobs resort to family work in agriculture. Even within the agricultural sector, different sub-sectors are affected differently by the crisis.

---

### **2. Formal-Informal**

The second consideration for selection is the formal-informal nature of economic activity. Formal employment declines while informal employment increases during a crisis. During recovery the opposite is expected to occur.

---

### **3. Urban-Rural**

This is a different dimension than the agriculture/non-agriculture or the formal/informal. The urban economy reflects an economy with much better facilities and infrastructure than the rural economy. The economic crisis affected urban areas more than rural areas. During the recovery the opposite flow is likely to happen. This urban-rural aspect is beneficial particularly when crossed with formal-informal sectors: monitoring the behavior of the urban informal sector, which is mostly non-agricultural, versus that of the rural informal, which is dominated by agriculture.

---

### **4. Size of Firm**

Small enterprises are less able to withstand a crisis than big ones. Moreover small businesses are more labor intensive. If economic recovery promotes small businesses more intensively, employment recovery can be speeded up.

## **C. Selection of Areas**

Before selecting individual households in the economy, in practice we have to select geographic areas. But again the selection of areas should not be done randomly to produce area estimates. Rather, it should be purposive to represent a certain sub-economy reflecting the

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four aspects discussed above: economic sectors, formal-informal, urban-rural and size of business.

There may be a strong correlation between the type of the economy and the region. More advanced regions will have more modern economies and the economies in less developed regions tend to be underdeveloped. The type of economies can also be seen more clearly from the dominant economic sector in the region. Less developed regions are very likely characterized by more traditional agriculture or quarrying, and underdeveloped manufacturing and services. On the other hand, financial and services sectors are more developed in more advanced regions. Manufacturing is more region specific: upstream industries are located in regions with rich natural resources, while downstream industries are mostly demand oriented. Moreover, handicraft and cottage industries are traditionally developed in regions with suitable cultures. More broadly, coastal regions, mountainous regions and land fertility greatly influence the local economy and people's way of life.

To best represent an economy the areas chosen must be homogeneous. This way we would recognize what economy is represented by a certain region. Usually the smallest areas will be most homogeneous. BPS used to select villages to account for a certain economic activity. This can be used as a start, since information on villages are available periodically. Later on when a village is not homogeneous, a segment of the village can be chosen for the areas.

For the moment, what villages to be chosen cannot be determined exhaustively. As examples, the sample should include villages where the people work in different walks of life, including:

- a. Fishery, animal husbandry, food crops agriculture, plantation, and other agricultural sub-sectors.
- b. Different manufacturing industries including handicrafts and cottage industries.
- c. Modern economic activities with dominant financial and services sectors
- d. Construction activities
- e. Mining and Quarrying activities
- f. Informal trade and hawkers
- g. etc.

#### **D. Sample of Households**

From the selected areas, a number of households can be selected to represent the condition of the economy in these areas. How many households should be selected cannot be precisely computed at this time, because it will depend on the number of cells to be included in the tables to be produced. But an illustration can be given here. It is envisaged that the largest table will consist of no more than 20 cells. To be meaningful and representative of an economy, the average contents per cell should be no less than 20 individuals. If that is the case, then the total sample per economy should be at least 400 households. But if we assume that from each household, there should be around 2 individuals qualified to be included in the sample, then at

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the minimum the sample size should be at least 200 households per sub-economy. Or if the average number of people working per households is 1.5, then the sample households per sub-economy should be 300 households.

We expect to divide the country into 15-20 sub-economies. Hence the total number of households selected should be around 3000-4000 households, based on an average of 2 eligible individuals per household. And if the number of eligible individuals is 1.5 per household, the total sample should be around 4500-6000 households. This total number of households with the proposed questionnaire size is manageable and can be processed within three months, to be able to generate timely figures for the quarter.

This sample size is only one-half of the "100-Village Survey", which surveyed 120 households from a sample of 100 villages. That survey was multipurpose including also employment and labor force. With only a single purpose for the proposed survey, namely to produce employment data, a sample size of 6000 households seems reasonable.

The next important question is whether some households should be surveyed repeatedly. A repetitive sample of households is needed when we want to follow the condition of households or individuals as they are affected by economic fluctuations. This methodology was applied in the previous quarterly employment survey. But with more structural questions, it was found that not much change had occurred to these households. The purpose of the proposed survey would be to observe the welfare of the households, such that policies could be designed to mitigate the effect of low seasons. By following the same households in 4 quarters, we are able to observe the changes experienced by the households.

Repetitive samples are not required when the purpose is to produce indicators for the economy. The sample households can be completely different from sample to sample in every quarter. But for a certain period, for instance 2 years, the areas selected must be kept constant. After two years we can move to other similar areas, or still remain in the former areas, whenever there are still sufficient households who qualified for the selection. Another choice is to come back to the same households after a period of 2 years. We expect that in two years there would be substantial changes with households, such that meaningful findings can be obtained. The precise sample selection can be discussed later when more information is available. This aspect of sample selection if possible should also be tried out in the field.

This procedure will avoid the need to incorporate the same households to be enumerated every quarter. This is to avoid the negative impacts of interviewing households over and over again, which may be disturbing to the households and to the interviewer. Past experience suggests that the results will be mostly the same for the same households in every quarter. It is not clear whether these results are true or they simply point to the fact that the interviewer may have copied the information from the previous quarter.

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### **E. Methods of Estimation**

The Survey will not produce national estimates using rigid sampling estimation procedures. But analytical estimates may be computed to portray the impacts of economic recovery and seasonal/business cycles on employment. The key method of selection is to obtain a representative sample of households for a particular sub-economy. A statistically sufficient sample of households should be selected to represent the sub-economy, such that reasonable tabulations could be prepared from the samples. Only the sample values will be tabulated. No blow-up will be needed. From the tables, rates and percentages are then computed to come up with the indicators.

The indicators will be produced for a certain sub-economy as described by several aspects discussed previously. For instance, if the sub-economy is *rural food crop agriculture*, then the proposed tabulations should be prepared for this sub-economy employing the sample of around 300-400 households. Rates and percentage will be computed from this sample to produce the proposed indicators. Employment fluctuations shown by the data for a particular sub-economy will be very useful for policy makers to design policies. And the impacts of these policies will be nationwide, not confined to only a particular region. Therefore, the policy implications of the information will be very relevant to the central government.

These estimates, tabulations and indicators will be prepared for every sub-economy selected in the sample. Suppose 20 such sub-economies are selected, then we will have different information for employment fluctuations for 20 different sub-economies in the country. This will give a very rich information base for conducting comparative studies of employment fluctuations.

Another question is whether we will be able to have employment fluctuations for the total economy of Indonesia. This will depend on the sub-economies selected in the sample. We will very likely not be able to include all types of sub-economies in the sample. But if we are able to include 80 percent of the total economy in the sample, this will be sufficient. National fluctuation levels can then be derived to represent 80 percent of the total economy. This can be done by a weighted average of the indicators using the employment distribution from the structural data collected in Sakernas. This distribution can be obtained from Sakernas by using variables, economic sector/sub-sector, urban-rural, and formal-informal. Whenever necessary, other relevant variables can also be used. This will depend on what criteria are used for the selection of the sub-economies.

This sampling selection and analytical estimates are flexible. They can be suited to the availability of funds and organization of fieldwork and data processing. If few constraints exist, more areas, more sub-economies and more samples can be included to represent more of the national economy. Therefore the availability of funds will be not much of a constraint. If only a small budget is available in the beginning, we can start with the most important sub-economies. This would be a sub-economy which employs a large number of persons. Later on the sample can be gradually enlarged to include other sub-economies.

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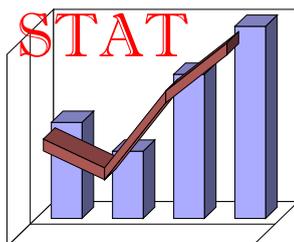
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# SELECTED ISSUES IN LABOR FORCE STATISTICS

Report # 25  
Statistical Paper # 4

By  
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March 2001



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

March 1, 2001

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## **I. QUARTERLY LABOR FORCE DATA: BASIC RECOMMENDATIONS**

At present, labor force data are obtained twice a year: once from the labor force survey (Sakernas), and once from the socio-economic survey (Susenas). The Sakernas sample has been reduced recently, and now stands at around 42,000 households. The Susenas sample is much bigger.

There is a need to produce quarterly estimates of employment and unemployment at the national level. It is not possible to expand the sample size to meet the need for quarterly data.

This report makes the following recommendations:

1. The Sakernas enumeration should be divided into four quarterly rounds. Each round will cover a nationally representative sample of households and persons. Within the quarter, the fieldwork may be concentrated to be within a few weeks (as in the present Sakernas), or may be more or less uniformly distributed throughout the quarter.
2. The total sample size for the four quarters combined will be similar to the total sample size of the present annual survey. However, it would be desirable to increase the sample size somewhat (say by 30-50%), if possible.
3. Such an increase can be paid for by removing the enumeration of labor force questions in Susenas.
4. As to the structure of the Sakernas sample over time, a rotational design is recommended. This means that a certain proportion of the addresses enumerated in one quarter are retained for re-enumeration in the next quarter, while the remainder of the sample is changed.
5. A high degree of overlap in the sample is desirable from the point of view of estimating quarter-to-quarter change; while a low degree of sample overlap is preferred for efficient aggregation of the quarterly data to produce annual estimates. As a compromise, a moderate level of overlap – such as 50% from one quarter to the next - is proposed.

### **A. Pattern of Sample Rotation**

The recommended pattern is illustrated in Figure 1. The sample has been divided into a number of independent subsamples. Each subsample is representative of the whole country; different subsamples are same or very similar in size and structure. Each quarter, one new subsample is introduced into the survey. This subsample is retained for two consecutive quarters, and is then dropped from the survey.

Thus in any one quarter, two subsamples are enumerated: one newly introduced, and the

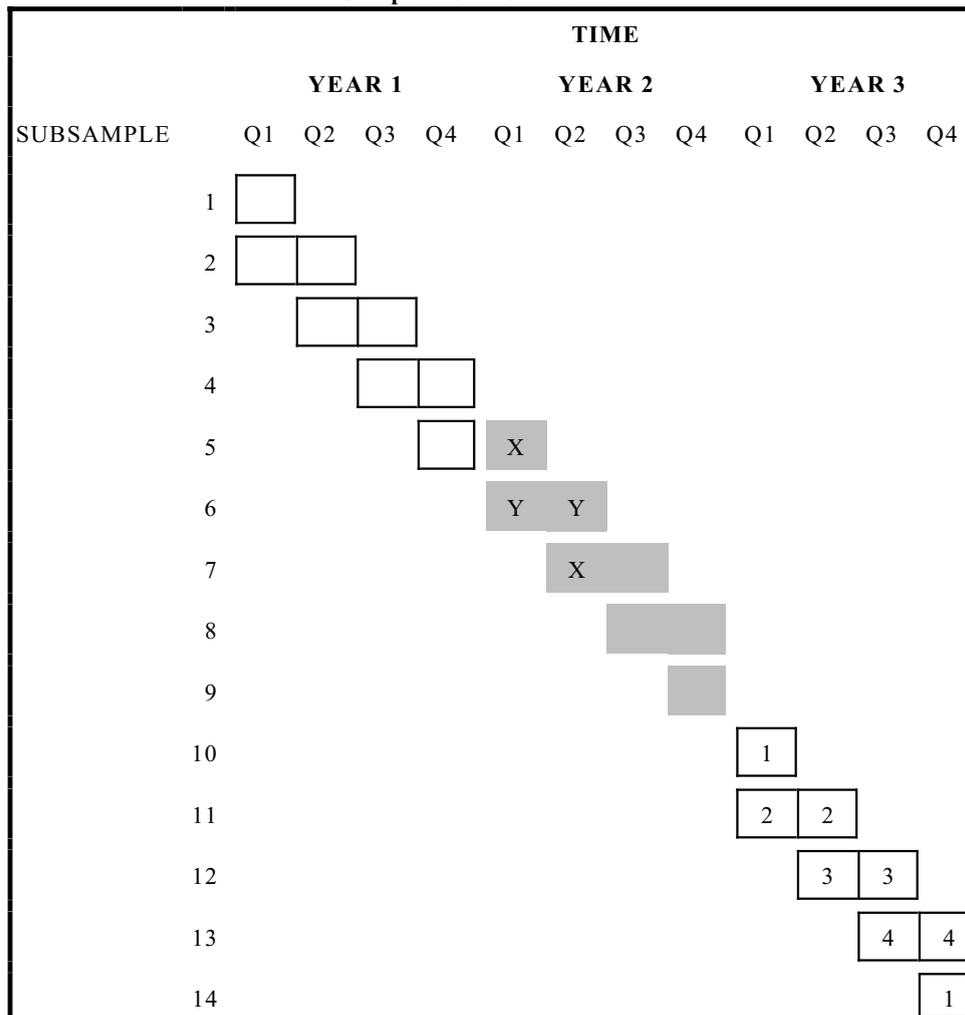
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other retained from the previous quarter. The new subsample is carried forward to the next quarter, and the other one is dropped and replaced by a new subsample in the next quarter.

This system gives a 50% overlap in the sample between two consecutive quarters. (Special arrangement is required to start the system in the first quarter of year 1. Here two subsamples are introduced at the same time, and one of those is dropped after only one enumeration.)

**Figure 1**  
**Sample Rotational Pattern**



**B. Variance of the Estimators**

Consider single enumeration of one subsample. (This is represented by a square in the above diagram.) There are two such enumerations each quarter, and eight per year. The sample size of one such enumeration is of the order of 1/8<sup>th</sup> of the current sample size of the annual Sakernas – or a little bigger than that if possible.

Let V be the variance of some estimate such as the unemployment rate from one such enumeration. (For simplicity, we assume this to be the same for all such enumerations, which is

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reasonable if the subsamples are of the same size and design.) With the sample size as 1/8<sup>th</sup> the annual sample size, V is around eight times as large as the variance of the same statistic from the present annual survey.

### 1. Quarterly Level

The variance of an estimate (a mean, proportion, ratio etc) for a quarter is V/2, since the sample size is doubled by having two subsamples. This sort of statement can be expressed more generally as follows. Suppose the sample is made up of different (and independent) subsamples h, of relative size (or weight)  $W_h$ . A statistic such as the mean is estimated as the weighted sum of subsample means:

$$[1] \quad \bar{y} = \sum_h W_h \bar{y}_h$$

$$[2] \quad \text{with } \sum_h W_h = 1.0.$$

Because the subsamples are independent, we have

$$[3] \quad \text{var}(\bar{y}) = \sum_h \text{var}(W_h \cdot \bar{y}_h) = \sum_h W_h^2 \cdot \text{var}(\bar{y}_h)$$

In the above example for the quarter,  $W_h=0.5$ , and  $\text{var}(y_h)=V$ , so that the left hand side becomes  $= (0.25 \cdot V + 0.25 \cdot V)$

$$[4] \quad \text{variance, quarterly level} = V/2.$$

### 2. Change From One Quarter to the Next

As can be seen from the above diagram, change between quarters is measured by the comparison based on two pairs of basic enumerations: one pair consisting of two independent samples (X-X); and the other consisting of two enumerations over the same sample (Y-Y).

For the first pair, variance of the difference between the two quarters is

$$[5] \quad \text{var1} = (V+V) = 2 \cdot V.$$

For the second case, this variance is reduced due to correlation (R) between the two enumerations:

$$[6] \quad \text{var2} = (V+V-2 \cdot R \cdot V) = 2 \cdot V \cdot (1-R).$$

Putting these together with weights  $W_h=0.5$  as above, variance in estimating difference between

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consecutive quarters is

[7]  $\text{variance, quarterly change} = V * (1 - R/2).$

With zero correlation (or in the absence of an overlap) variance in estimating difference between consecutive quarters is

[8]  $=V,$

which is twice as large as that in estimating quarterly levels.

The column marked (A) in Table 1 shows how the variance is reduced due to overlap, compared to a sample with no overlap (or zero correlation R). The extent of the gain in precision depends on the value of the average correlation R between observations with overlapping samples in the two quarters. With R=0.6 for instance, the 50% overlap reduces the variance from V (without overlap) to 0.7\*V, i.e. by 30%.

**Table 1**  
**Variance of the difference between two quarters (relative values)**

correlation (R)	relative weight given to non-overlapping part (overlapping part=1.0)											(A) Minimum/ Optimal	
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	col(A)	weight
0.0	2.000	1.669	1.444	1.290	1.184	1.111	1.063	1.031	1.012	1.003	<b>1.000</b>	1.00	1.0
0.1	1.800	1.504	1.306	1.172	1.082	1.022	0.984	0.962	0.951	<b>0.947</b>	0.950	1.00	0.9
0.2	1.600	1.339	1.167	1.053	0.980	0.933	0.906	0.893	<b>0.889</b>	0.892	0.900	0.99	0.8
0.3	1.400	1.174	1.028	0.935	0.878	0.844	0.828	<b>0.824</b>	0.827	0.837	0.850	0.97	0.7
0.4	1.200	1.008	0.889	0.817	0.776	0.756	<b>0.750</b>	0.754	0.765	0.781	0.800	0.94	0.6
0.5	1.000	0.843	0.750	0.698	0.673	<b>0.667</b>	0.672	0.685	0.704	0.726	0.750	0.89	0.5
0.6	0.800	0.678	0.611	0.580	<b>0.571</b>	0.578	0.594	0.616	0.642	0.670	0.700	0.82	0.4
0.7	0.600	0.512	0.472	<b>0.462</b>	0.469	0.489	0.516	0.547	0.580	0.615	0.650	0.71	0.3
0.8	0.400	0.347	<b>0.333</b>	0.343	0.367	0.400	0.438	0.478	0.519	0.560	0.600	0.56	0.2
0.9	0.200	<b>0.182</b>	0.194	0.225	0.265	0.311	0.359	0.408	0.457	0.504	0.550	0.33	0.1
1.0	<b>0.000</b>	0.017	0.056	0.107	0.163	0.222	0.281	0.339	0.395	0.449	0.500	0.00	0.0

The gain can be improved by giving an increased weight to the overlapping part, and reduced weight to the non-overlapping part of the sample. We can do this because each part in itself is a representative sample, and hence is any combination of the parts.

Table 1 shows how the variance varies with R and with different choices of the relative weights given to the two parts. The last column is the weight for minimum variance, and equals (1-R). To add up to 1.0, the actual weights are

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[9] Overlapping part:  $1/(2-R)$

[10] Non-overlapping part:  $(1-R)/(2-R)$

(Note that these are the additional weights applied at the time of putting together the two parts. The normal sample weights are of course used as usual in producing the estimates for each part.)

Substituting [5] and [6] with the above weights into [3] gives the estimated variance. The next-to-last column is the ratio of this minimum variance to what would be obtained with equal weights (col. A). The gain from reweighting depends on the value of R (which has to be empirically estimated from the survey data). With  $R \leq 0.4$ , the maximum possible gain from reweighting is no more than 5%. It increases to 10% for  $R=0.5$ , to 30% for  $R=0.7$  and rapidly to the theoretical limit of 100% for  $R=1.0$ .

### 3. Annual Aggregation

The eight enumerations providing data for annual estimation can be divided into four pairs (marked 1, 2, 3 and 4 in the diagram above). The first pair consists of two independent subsamples, and its variance is exactly the same as that for a quarterly estimate (which is also based on two independent subsamples, as noted above):

[11]  $\text{var1} = V/2.$

Each of the remaining pairs consists of two overlapping subsamples, and the variance of their aggregation is increased due to the positive correlation between them:

[12]  $\text{var2} = \text{var3} = \text{var4} = (1+R)*V/2.$

Putting together these samples with weights  $W_h = 0.25$  into [3] gives

[13]  $\text{variance, annual level} = (1 + 0.75*R)*V/8.$

With zero correlation (or in the absence of an overlap) between the eight subsamples enumerated during the year, variance in estimating annual levels is obviously

[14]  $= V/8.$

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Column marked (A) in Table 2 shows how the variance is increased due to overlap, compared to a sample with no overlap (or zero correlation R). The extent of the loss in precision depends on the value of the average correlation R between observations with overlapping samples. With R=0.6 for instance, the 50% quarterly overlap increases the variance by 45%.

**Table 2**  
**Variance of the annual aggregate over 4 quarters (relative values)**

correlation (R)	relative weight given to overlapping part (non-overlapping part=1.0)											(A) Minimum/ col(A)	Optimal weight
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0		
0.0	4.000	2.438	1.750	1.407	1.223	1.120	1.061	1.028	1.010	1.002	<b>1.000</b>	1.00	1.00
0.1	4.000	2.445	1.769	1.437	1.263	1.168	1.116	1.089	1.077	<b>1.073</b>	1.075	1.00	0.91
0.2	4.000	2.452	1.788	1.467	1.302	1.216	1.171	1.150	<b>1.143</b>	1.144	1.150	0.99	0.83
0.3	4.000	2.459	1.806	1.497	1.342	1.264	1.227	1.212	<b>1.210</b>	1.215	1.225	0.99	0.77
0.4	4.000	2.466	1.825	1.527	1.382	1.312	1.282	<b>1.273</b>	1.276	1.286	1.300	0.98	0.71
0.5	4.000	2.473	1.844	1.557	1.421	1.360	1.337	<b>1.334</b>	1.343	1.357	1.375	0.97	0.67
0.6	4.000	2.480	1.863	1.587	1.461	1.408	<b>1.392</b>	1.395	1.409	1.428	1.450	0.96	0.63
0.7	4.000	2.488	1.881	1.617	1.501	1.456	<b>1.447</b>	1.456	1.475	1.499	1.525	0.95	0.59
0.8	4.000	2.495	1.900	1.647	1.540	1.504	<b>1.502</b>	1.518	1.542	1.570	1.600	0.94	0.56
0.9	4.000	2.502	1.919	1.676	1.580	1.552	1.557	1.579	1.608	1.641	1.675	0.93	0.53
1.0	4.000	2.509	1.938	1.706	1.620	<b>1.600</b>	1.612	1.640	1.675	1.712	1.750	0.91	0.50

The loss can be reduced by giving an increased weight to the non-overlapping part, and reduced weight to the overlapping part of the sample. Table 2 shows how the variance varies with R and with different choices of the relative weights given to the two parts. The last column is the weight for minimum variance, and equals 1/(1+R) for the overlapping part. To add up to 1.0, the actual weights are

[15] Non-overlapping part:  $(1+R)/(4+R)$

[16] each of the 3 overlapping parts:  $1/(4+R)$

Substituting [15] and [16] with the above weights into [3] gives the estimated variance. The next-to-last column is the ratio of this minimum variance to what would be obtained with equal weights (col. A). The gain from reweighting is mostly very modest, unlike the previous case of quarterly change. It does not exceed 5% even with R as high as 0.7.

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### **C. Main Conclusion**

In summary, with 50% overlap from one quarter to the next, and  $R=0.6$ , say, and optimal weighting, the overlapping increases the precision in measuring quarterly change. The variance may be reduced by nearly a factor of 2, making the variance for change similar to that in measuring quarterly levels.

However, the variance of annual estimates is increased by around 40% (see Table 2) compared to the design with no sample overlaps, as at present. This means that the annual sample size would need to be increased by around 40% if the current level of precision is to be retained – i.e. from the present 42,000 households to around 60,000 per year or 15,000 per quarter.

## **II. MEASUREMENT OF UNEMPLOYMENT IN SAKERNAS**

Sakernas is designed to measure the basic LFS concepts of employment, unemployment, under-employment, main activity status if economically inactive, and status in employment. The issue is how far the concepts in the survey are operationalized to conform to the international (ILO) standards<sup>1</sup>.

### **A. Employment**

The measurement of employment appears to be according to the international standards. In fact, Sakernas collects some additional information. Firstly, information is obtained on all the main activities performed by the respondent during the preceding week (question 2a). This permits an estimation of the incident of each type of activity, with each person counted more than once if applicable. Then the main activity during the week is identified (question 2b). This permit classification of the population according to main activity, including employment if applicable. Those with employment as the main activity during the past week are of course 'employed' according to the ILO concept. The remaining are also classified as 'ILO employed' if they have done at least one hour of work during the week (question 3), or are temporarily away from work (question 4). This completes the conformity with the international standards.

### **B. Unemployment**

However, the measurement of unemployment in Sakernas needs to be re-examined. At

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<sup>1</sup> In an internal report, some doubt was cast on three aspects of Sakernas: it is stated that (i) some computations are in error; (ii) the definition of employment or work does not conform to ILO standards; and (iii) the same applies in particular to the concept of unemployment. I have examined these issues, and find that criticisms (i) and (ii) are not valid. However, the application of the concept of 'unemployment' does require re-examining in Sakernas, as discussed in this section.

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present, those not 'ILO employed' (see above) are classified as unemployed on the basis of a positive answer to a single question:

Q5 'Are you looking for a job?'

There are some other questions in the questionnaire relevant to the status of being unemployed, but those are at present not used for the purpose. These include:

Q16 steps taken in looking for job

Q17 duration since started looking for a job

Q18 type of job looking for

Q19 main reason for not looking

Q20 'If you were offered a job, would you accept it?'

Q21 whether ever worked before.

At least formally, it appears that the measurement of unemployment in the above manner does not conform to the ILO definition, though the actual numerical difference is an empirical question. It is recommended that the standard reference

R. Hussmanns, F. Mehran, and V Verma: *Surveys of Economically Active Population, Employment, Unemployment and Underemployment: An ILO Manual on Concepts and Methods*. Geneva: International Labour Office, 1990.

be consulted in detail to identify the modified sequence of questions which may be introduced to make the survey more consistent with international standards.

Some main points may be noted here.

- Q5, which is the basic question, should be worded so that it clearly covers not only persons looking for paid employment, but also those looking for or making arrangements for starting self-employment.
- The impact of questions already in Sakernas in defining unemployment more in line with the international standards should be investigated empirically from the time series of data already available from the survey. For example, persons not looking for work because they already have a job ('future starts') in Q19 are included as unemployed according to the standard definition. If a 'relaxed' framework is adopted, as is often more appropriate in developing countries, then those not looking because they feel there is no work available ('discouraged workers') in Q19 should also be counted as unemployed.
- By contrast, those taking no active steps (Q16=blank) should be counted as economically inactive rather than unemployed. However, in relation to search for work, usually a longer reference period than simply the preceding week is considered more appropriate.

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- To be classified as unemployed, the person should be 'available for work'. This refers to the person's physical availability to start work during the reference week or some following period such as within the next four weeks. It is not an issue of 'accepting' a particular job. Q20 may therefore need to be reformulated. The availability question is all the more important if a 'relaxed' definition of 'looking for work' is adopted.

### C. Status in Employment

Dr. Hananto Sigit in his report on the proposed STPKK survey<sup>2</sup> has proposed a categorisation of status in employment which is more refined and more appropriate to the Indonesian situation. It should be investigated whether this can be incorporated into Sakernas.

## III. PILOT SURVEY TO MONITOR SHORT-TERM EMPLOYMENT AND EARNINGS CHANGES

This section presents some brief and practical remarks on the proposed STPKK survey. The STPKK is planned to be an intensive (focused) but a small-scale survey – initially a very limited pilot. The rationale and overall structure of the survey has been elaborated in a separate report by Dr. Hananto Sigit.<sup>3</sup>

### A. Content

Five points are worth noting:

1. The sample base for the survey has to be limited and focused – both in terms of coverage and sample size. This means that the survey does not aim, nor should it report, on quantitative measures such as activity or unemployment rates. For such 'broad' statistics, we must continue to depend exclusively on regular and large-scale surveys such as Sakernas. Rather, the focus of the survey should be on *monitoring a carefully selected and limited set of indicators of relative change*.
2. The survey should aim at measuring phenomena not captured in the regular surveys. These concern in particular the circumstances in which individual workers are losing or gaining employment in the current economic situation, changes in their wages and/or earnings, changes in their circumstances, special difficulties

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<sup>2</sup> “Survei Triwulanan Pemulihan Kesempatan Kerja: A Proposed Survey to Monitor Short-Term Employment & Earnings Changes”, STAT Project Report # 17, December, 2000.

<sup>3</sup> *Ibid.*

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experienced, possibly including some subjective question, etc.

3. One of the new important areas to be included is earnings – in particular *changes* in earnings - from employment as well as self-employment. This would require the development of fairly complex series of questions.
4. The development and testing of the questionnaires is therefore a very important part of the planned pilot.

## **B. Sampling**

With regard to sampling, the following points need to be considered:

1. The above mentioned focus on change does *not* mean longitudinal monitoring of a panel of respondents. In fact, such a design will be too difficult, expensive and time-consuming. Primarily, quick monitoring of changes requires retrospective collection of the information at the individual level, with the survey itself designed as a series of purely cross-sectional enumerations, each of which separately and directly obtains information on recent change at the micro-level.
2. As noted by Dr. Sigit, the domains of study will be 'sub-economies', rather than geographical areas. For cost and practical reasons, the sample will have to be geographically very restricted in any case – based on a carefully selected *small number* of areas as far as possible. Within the sample areas, a targeted sample of households and persons is required – targeted in terms of employment and related characteristics. Nevertheless, the sample must be such that statistically valid conclusions can be reached on its basis.
3. Perhaps the most appropriate approach would be to select the sample on the basis of information on economic characteristics of areas (e.g. wilcah) available from the 1996 Economic Census and/or SUSI. From these sources, areas of concentration of particular 'sub-economies' of interest can be identified. Those with the highest 'concentration' of the 'sub-economies' of interest can be taken into the sample, or more generally, the sample can be selected with probabilities in proportion to the degree of such concentration.
4. As far as possible, complicated subsampling of households or persons within selected areas should be avoided, as should any elaborate screening or listing operations. Such operations are often too difficult, time-consuming and expensive; they also tend to be prone to error. Hence the sample should (and can) be designed so as to minimize the need for screening within sample areas. This can be achieved by making a full use of the census/SUSI information in the *selection of areas* themselves.
5. In any case, the restricted sample base of the survey would mean that external information (such as from the 1996 Economic Census

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and/or SUSI frame) will be required to produce reasonably valid estimates from the survey.

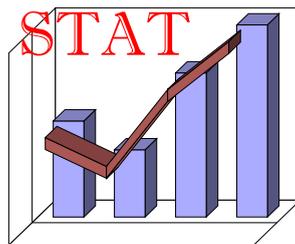
6. Certain 'sub-economies', such as individuals who are working (or have recently worked) in medium and large scale establishments, cannot be adequately captured from an area-based frame of the type mentioned above. It will be desirable to supplement the sample by selecting workers from such enterprises, or possibly from areas where these enterprises are located. The extent of such supplementation depends on the available resource.

# MEASURING OPEN UNEMPLOYMENT IN SAKERNAS

Report # 35  
Statistical Paper # 7

by  
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**Yahya Jammal**

June, 2001



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

We would like to thank Mr. Tolkhah Mansyur and Mr. Achmad Sukroni for undertaking several rounds of calculations for various tabulations used in this report, and Mr. Vijay Verma for valuable comments on an earlier draft.

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## I. INTRODUCTION

In an earlier report,<sup>1</sup> Vijay Verma evaluated the definitions used by BPS for the terms “employed” and “unemployed” in the context of the standard international (i.e. International Labor Organization, ILO) concepts. He concluded that while the definition of “employed” conformed to that of the ILO, the definition of “unemployed” did not. He further suggested that some empirical investigation be conducted to measure the implication of a adopting a relaxed ILO definition of “unemployed”. This brief paper documents an empirical evaluation of adopting this concept. The 1996-2000 Sakernas results were used. Our analysis covers four sections: the first includes measurement of the “employed”, the second that of the “unemployed”, the third provides a comparative analysis of the results using alternative measurements and the final section provides our brief concluding remarks.

## II. EMPLOYMENT

Sakernas asks the following questions to determine the working status of a particular member of the household.<sup>2</sup>

1. Question 2.a: “What were your activities during the previous week?” (“Apakah melakukan kegiatan seperti di bawah ini selama seminggu yang lalu?”). Four categories are provided, with the answer expected to be a “yes” or a “no”:
  - Working
  - Attending school
  - House keeping
  - Other

This allows estimation of the number of people engaged in each activity (note that one person could be counted more than once).

2. Question 2.b: to identify the main activity, the household member is asked “From those activities to which you have answered “yes”, which one did you spend the most time on during the previous week?” (“Dari pertanyaan yang menyatakan “YA” di atas, kegiatan apakah yang menggunakan waktu terbanyak selama seminggu yang lalu?”). Those who say that “working” was their activity will, of course, be classified as employed and are expected to provide answers to further questions. Those who do not will be subjected to further filtering to determine whether they can be

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<sup>1</sup> *Selected Issues in Labor Force Statistics*, STAT Project Report #25, March, 2001.

<sup>2</sup> Question number refers to the code used in the 2000 questionnaire (see Appendix A). Other years have the same question but the code may be different.

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classified as employed in the broader definition of the ILO, namely if they have worked for at least one hour.

3. Question 3: “Did you work at least one hour during the previous week?” (“Apakah bekerja paling sedikit 1 jam selama seminggu yang lalu?”). If the answer is “yes” then they will be considered employed as in paragraph 2 and will be subjected to the same questions as those previously considered as employed.
4. Question 4: “Did you have a job but were temporarily not working during the previous week?” (“Apakah mempunyai pekerjaan/usaha, tetapi sementara tidak bekerja selama seminggu yang lalu?”). If the answer is “yes” then they will be considered employed as in paragraphs 2 and 3, and will be subjected to the same questions as those previously considered as employed.

Thus, according to the BPS definition of “employed”, which is the same as that of the broad definition of the ILO, total employment equals the sum of those considered “employed” in paragraphs 2, 3 and 4 above.<sup>3</sup>

### III. UNEMPLOYMENT

While BPS measurement of employment is generally consistent with the standard ILO definition, measurement of unemployment raises some questions. The current BPS definition of “unemployed” is based on the answer to only one question (Question 5: “Are you looking for a job?” --“Apakah sedang mencari pekerjaan?”). If the answer is “yes” then the respondent is considered unemployed. This question was designed by BPS in an attempt to follow the standard ILO definition of “unemployed”. However, Verma pointed out that the ILO also allows a relaxation of the “seeking work” criterion. The following paragraphs from the ILO manual sum up the argument very clearly:

“Seeking work is essentially a process of search for information on the labour market. In this sense, it is particularly meaningful as a defining criterion in situations where the bulk of the working population is oriented towards paid employment and where channels

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<sup>3</sup> Actually, the program computing the number of employed workers includes one further type of respondent: those who were not looking for a job (answer “no” to Question 5: “Are you looking for a job?” --“Apakah sedang mencari pekerjaan?”) but stating as the reason for not looking the fact that they already have a job (answer “4” to Question 19: “Main reason for not looking for a job”). These are sometimes referred to as “future starts”. However, the 1996-2000 Sakernas surveys did not identify any cases which fulfilled this criterion. Starting with the 2001 Sakernas, BPS will consider future starts as “unemployed”, in accordance with the ILO standard definition.

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for the exchange of labour market information exist and are widely used. While in industrialised countries these conditions are largely satisfied ..., this may not be the case in developing countries.

In many developing countries, most workers are self-employed, often in household enterprises. Labour exchanges and similar organisations are not fully developed ... . [That is why] the 1982 international standards introduced a provision which allows for the relaxation of the seeking work criterion in certain situations.”<sup>4</sup>

Verma reported that other questions in the existing questionnaire can be used (individually or collectively) to derive such a relaxed definition of unemployment, which would be more appropriate for Indonesia. These include:

- Question 16: “Type of effort made in looking for a job” (“Upaya apa saja yang pernah dilakukan dalam mencari pekerjaan?”)
- Question 17: “Duration of job search” (“Lamanya mencari pekerjaan”)
- Question 18: “Type of job you are looking for?” (“Pekerjaan yang dicari”)
- Question 19: “Main reason for not looking for a job” (“Alasan utama tidak mencari pekerjaan”)
- Question 20: “If you were offered a job, would you accept it?” (“Jika ada penawaran pekerjaan, apakah mau menerima?”)
- Question 21: “Have you ever worked before?” (“Apakah pernah bekerja sebelumnya?”)

While not all the above questions can, in their present form, be useful in redefining the “unemployed”, one question contains highly relevant information. Question 19, which asks for the main reason why the respondent is not looking for a job, allows the following answers:

1. “I feel that it is not possible for me to find a job” (“Merasa tidak mungkin mendapatkan pekerjaan”)
2. “Attending school” (“Sedang bersekolah”)
3. “Housekeeping” (“Mengurus rumahtangga”)
4. “I already have a job” (“Sudah mempunyai pekerjaan”)
5. “I feel that what I have is enough” (“Merasa sudah cukup”)

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<sup>4</sup> *Surveys of economically active population, employment, unemployment and underemployment: An ILO manual on concepts and methods*, International Labor Office, 1990, p. 107.

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6. “Unable to find a job” (“Tidak mampu melakukan pekerjaan”)
7. “Other, to be specified” (“Lainnya”)

Two of the answers are of particular interest: the fourth and the first. The fourth answer (“I already have a job”), which is generally equivalent to “future starts”, has been addressed in the previous discussion on employment. The first answer describes what is often referred to as a “discouraged worker”.<sup>5</sup> The reason why the respondent is not looking for a job, and thus not being considered as part of the labor force, is his/her perception that there is no work available for him/her. A relaxed framework would define such a person as unemployed rather than someone outside the civilian labor force.

By including “discouraged workers” in the labor force and considering them as part of the unemployed, the relaxed definition would predictably result in a higher labor force participation rate (since the numerator –labor force– would increase while the denominator –population 15 or older– remains the same) as well as a higher rate of open unemployment (since the relative increase in the numerator –the unemployed– would always be higher than the relative increase in the denominator –labor force). The issue which is worth exploring is how significant these increases are. In other words, would the labor force participation rate and more importantly the open unemployment rate for Indonesia have changed significantly in the past few years if such “discouraged workers” were included with the unemployed? The following sections attempt to answer this question at the national and provincial levels as well as by gender and geographic location.

#### A. National Level

Table 1 compares the main components used in computing the open unemployment rate using the current and the relaxed definitions. Two points are worth noting:

- a. First, it shows that **using the relaxed definition of open unemployment produces a noticeable increase in the labor force participation rate**. The increase was about 0.4 percentage points in 1996-1998 but climbed to 1.8 and 1.5 percentage points respectively in 1999 and 2000.
- b. Secondly, **the increase in the open unemployment rate is very significant**: increases of 0.5-0.7 percentage points (in absolute

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<sup>5</sup> The sixth answer (“unable to find a job”– “Tidak mampu melakukan pekerjaan”) may appear to the casual reader to refer to discouraged workers as well. However, the Indonesian wording, and the instructions in the operational manual, suggest that this category includes people unable to find a job because of a physical or a mental disability, not because they have been discouraged.

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terms) before 1999 and of 2.4 and 2.1 percentage points respectively in 1999 and 2000 (see also Figures 1 and 2) are produced. These translate into relative increases of about 13% before 1999, and 39% and 34% respectively in 1999 and 2000.

**Table 1**  
**Measures of Open Unemployment for Indonesia: Current vs Relaxed Definition<sup>1)</sup>**

	1996	1997	1998	1999	2000
<b>Computations According to Current Definition</b>					
Employed	82,747,193	84,231,997	86,407,683	87,897,736	92,195,453
+ Unemployed	4,228,115	4,135,526	5,011,220	5,985,014	5,965,795
= Labor Force	86,975,308	88,367,523	91,418,903	93,882,750	98,161,248
+ Not in Labor	43,108,652	44,812,508	45,166,026	45,781,085	46,714,478
= Population $\geq 15$	130,083,96	133,180,03	136,584,92	139,663,83	144,875,72
L.F. Participation	66.9%	66.4%	66.9%	67.2%	67.8%
Unemployment	4.9%	4.7%	5.5%	6.4%	6.1%
<b>Computations According to Relaxed Definition</b>					
Employed	82,747,193	84,231,997	86,407,683	87,897,736	92,195,453
+ Unemployed	4,761,909	4,787,934	5,711,926	8,524,066	8,183,934
= Labor Force	87,509,102	89,019,931	92,119,609	96,421,802	100,379,38
+ Not in Labor	42,574,858	44,160,100	44,465,320	43,242,033	44,496,339
= Population $\geq 15$	130,083,96	133,180,03	136,584,92	139,663,83	144,875,72
L.F. Participation	67.3%	66.8%	67.4%	69.0%	69.3%
Unemployment	5.4%	5.4%	6.2%	8.8%	8.2%

1) Figures were obtained from Sakernas and include all provinces in Indonesia except Maluku (and East Timor, for years prior to 2000). "Current" refers to what appears in current BPS publications. "Relaxed" refers to the inclusion of discouraged workers as unemployed instead of being excluded from the labor force.

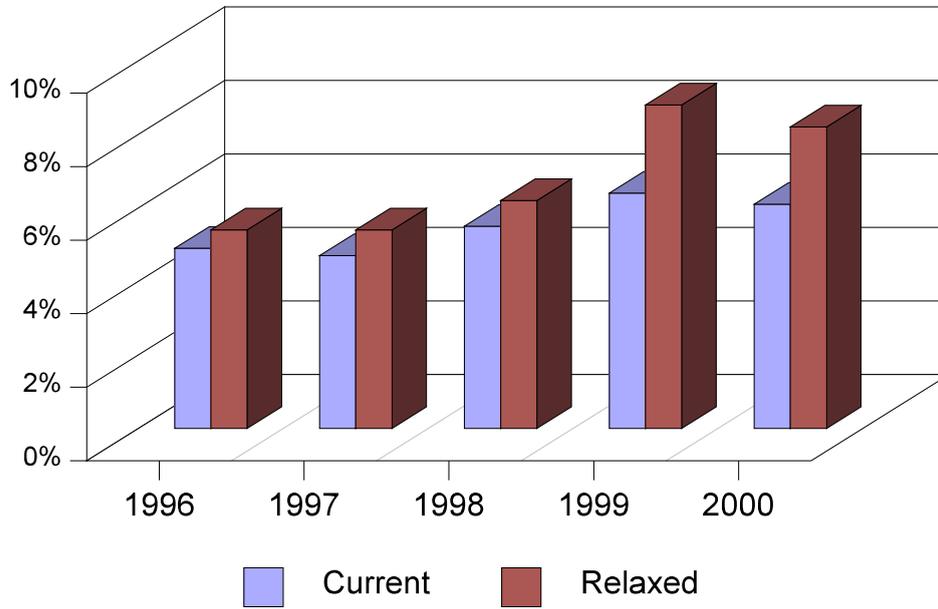
Overall then, adding "discouraged workers" to the rank of the openly unemployed makes a significant difference in the unemployment picture of Indonesia during the 1996-2000 period, particularly after the economic crisis. The 1997/98 crisis appears to have resulted in a substantial increase in the number of such workers at the national level.

What about the open unemployment rate by disaggregated categories?

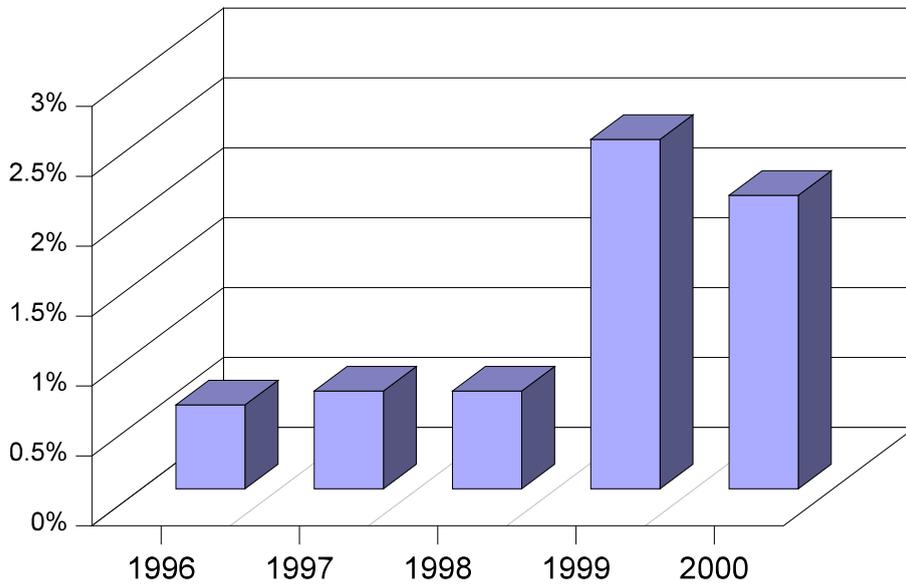
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**Figure 1: Unemployment Rate Using Current vs Relaxed Definition**



**Figure 2: Difference Between Current & Relaxed Measure of Unemployment**



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**B. Gender And Location**

Tables 2 through 5 show the effect of using the relaxed definition of unemployment by gender and location (urban vs rural). Note in particular the following:

- a. **Females are the most affected by changes, particularly after the crisis**, with twice the incidence of males. This effect holds whether one is looking at absolute or relative increases. In absolute terms, female unemployment rates increase by 3.8 and 2.9 percentage points in 1999 and 2000 respectively compared to an average of 1 point before 1999 (Table 4). But these correspond to relative increases of 55% and 44% in 1999 and 2000 respectively (Table 5). By contrast, relative increases for males have been 26% in 1999 and 2000.
- b. **Urban females not only have the highest unemployment rate under the current definition** (averaging 10.1% before 1999 and 10.9% since 1999 –Table 2), **but also have the highest incidence of discouraged workers and thus are the most affected by the change in definition**, whether measured by absolute or relative increase. Their absolute increase averaged 1.2 percentage points before 1999 and 3.6 points since 1999 (Table 4), while their relative increase averaged 11.7% before 1999 and 32.5% since 1999 (Table 5).
- c. On the other hand, **rural males**, who have the lowest unemployment rate under the current definition in every year (Table 2), **are the least affected**, in terms of absolute increase, by the change in definition (Table 4). In terms of relative change, however, urban males have been the least affected (Table 5), since their unemployment rates have been about 2.5 times that of rural males.

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**Table 2**  
**Open Unemployment Rate Using Current Definition<sup>1)</sup>**

	1996	1997	1998	1999	2000
<b>Urban</b>					
Male	7.1%	7.1%	8.6%	10.0%	8.5%
Female	10.3%	9.6%	10.5%	11.3%	10.4%
Male + Female	8.3%	8.0%	9.3%	10.5%	9.2%
<b>Rural</b>					
Male	2.6%	2.4%	3.0%	3.6%	3.8%
Female	3.8%	3.6%	3.9%	4.3%	4.5%
Male + Female	3.1%	2.8%	3.3%	3.9%	4.1%
<b>Urban + Rural</b>					
Male	4.2%	4.1%	5.1%	6.1%	5.7%
Female	5.9%	5.6%	6.1%	6.9%	6.7%
Male + Female	4.9%	4.7%	5.5%	6.4%	6.1%

1) Figures were obtained from Sakernas and include all provinces in Indonesia except Maluku (and East Timor, for years prior to 2000).

**Table 3**  
**Open Unemployment Rate Using Relaxed Definition<sup>1)</sup>**

	1996	1997	1998	1999	2000
<b>Urban</b>					
Male	7.6%	7.6%	9.4%	12.0%	10.3%
Female	11.4%	11.0%	11.6%	15.4%	13.5%
Male + Female	9.0%	8.8%	10.2%	13.3%	11.5%
<b>Rural</b>					
Male	2.9%	2.7%	3.5%	4.9%	5.1%
Female	4.7%	4.7%	4.6%	7.9%	7.4%
Male + Female	3.6%	3.4%	3.9%	6.1%	6.0%
<b>Urban + Rural</b>					
Male	4.6%	4.5%	5.7%	7.7%	7.2%
Female	6.8%	6.8%	7.0%	10.7%	9.7%
Male + Female	5.4%	5.4%	6.2%	8.8%	8.2%

1) Figures were obtained from Sakernas and include all provinces in Indonesia except Maluku (and East Timor, for years prior to 2000).

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**Table 4**  
**Increase in Open Unemployment Rate Between Current and Relaxed Definition**

	1996	1997	1998	1999	2000
<b>Urban</b>					
Male	0.42%	0.50%	0.78%	2.03%	1.79%
Female	1.12%	1.39%	1.07%	4.11%	3.06%
Male + Female	0.68%	0.83%	0.89%	2.82%	2.27%
<b>Rural</b>					
Male	0.29%	0.29%	0.52%	1.30%	1.29%
Female	0.88%	1.11%	0.75%	3.60%	2.86%
Male + Female	0.53%	0.62%	0.61%	2.22%	1.93%
<b>Urban + Rural</b>					
Male	0.34%	0.37%	0.62%	1.60%	1.51%
Female	0.96%	1.21%	0.87%	3.81%	2.94%
Male + Female	0.58%	0.70%	0.72%	2.47%	2.07%

Source: Tables 2 and 3.

**Table 5**  
**Ratio of Increase in Open Unemployment Rate Over Rate Using Current Definition**

	1996	1997	1998	1999	2000
<b>Urban</b>					
Male	0.06	0.07	0.09	0.20	0.21
Female	0.11	0.14	0.10	0.36	0.29
Male + Female	0.08	0.10	0.10	0.27	0.25
<b>Rural</b>					
Male	0.11	0.12	0.17	0.36	0.34
Female	0.23	0.31	0.19	0.84	0.64
Male + Female	0.17	0.22	0.18	0.57	0.47
<b>Urban + Rural</b>					
Male	0.08	0.09	0.12	0.26	0.26
Female	0.16	0.22	0.14	0.55	0.44
Male + Female	0.12	0.15	0.13	0.39	0.34

Source: Tables 2 and 4.

### C. Provincial Level

In evaluating the impact of the change in definition on provincial figures, one important point needs to be kept in mind, that is the impact of sample size. While Sakernas samples before the crisis averaged about 65,000 households, post-crisis samples shrank significantly due to severe budget constraints: The 1998 sample covered 49,000 households and that of 1999 covered 48,000 households. The 2000 sample covered even less (42,000 households) and provincial representation was dropped altogether in that year. Thus while one needs to be cautious about

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making historical comparisons at the provincial level (because of the increased sampling error in 1998 and 1999), comparisons between “current” and “relaxed” definitions for the same year remain valid for all years. Table 6 does that for every year. In addition, Tables 7 and 8 compare the average unemployment rate during the 1996-1999 period by province using the current and the relaxed definitions. Table 7 sorts provinces by declining absolute increase and Table 8 sorts them by declining relative increase.

**Table 6**  
**Open Unemployment Rate By Province: Current vs Relaxed Definition<sup>1)</sup>**

Province	1996		1997		1998		1999	
	Current	Relaxed	Current	Relaxed	Current	Relaxed	Current	Relaxed
DI Aceh	6.5%	6.7%	5.2%	5.7%	6.2%	7.2%	7.6%	12.7%
Sumatera Utara	6.3%	6.7%	5.2%	5.9%	7.1%	7.6%	7.7%	10.4%
Sumatera Barat	4.7%	5.8%	4.5%	6.2%	5.1%	6.4%	5.9%	9.9%
Riau	5.9%	6.5%	5.9%	6.4%	5.8%	6.0%	7.6%	10.8%
Jambi	3.8%	4.1%	4.1%	4.3%	2.6%	2.9%	3.5%	5.9%
Sumatera Selatan	4.0%	4.6%	4.1%	7.7%	2.4%	2.8%	5.0%	8.0%
Bengkulu	3.4%	3.5%	3.4%	3.6%	2.0%	2.5%	3.4%	5.5%
Lampung	4.2%	4.5%	3.4%	4.2%	4.3%	4.8%	4.6%	7.0%
DKI Jakarta	9.4%	10.5%	10.9%	11.6%	12.3%	13.3%	15.0%	18.1%
Jawa Barat	6.7%	7.5%	6.4%	7.1%	7.7%	8.8%	9.8%	13.1%
Jawa Tengah	3.7%	4.2%	3.9%	4.3%	5.1%	5.6%	4.4%	5.7%
DI Yogyakarta	4.1%	4.7%	4.0%	4.7%	3.7%	4.2%	3.7%	5.1%
Jawa Timur	3.5%	3.9%	3.3%	3.7%	4.1%	4.6%	5.0%	6.8%
Bali	2.7%	3.1%	2.6%	2.9%	3.1%	3.4%	2.5%	3.2%
NTB	2.6%	3.3%	1.7%	2.4%	3.1%	3.4%	1.4%	2.8%
NTT	2.2%	2.8%	2.4%	2.7%	2.6%	3.1%	2.9%	3.0%
Kalimantan	3.4%	4.4%	3.6%	3.8%	3.7%	4.0%	2.0%	3.1%
Kalimantan	3.0%	3.4%	4.0%	4.6%	4.5%	5.4%	3.7%	5.4%
Kalimantan	3.3%	3.5%	2.8%	3.3%	4.2%	4.7%	2.4%	4.4%
Kalimantan	7.6%	7.9%	6.9%	7.7%	8.5%	9.5%	11.0%	14.6%
Sulawesi Utara	9.2%	9.8%	8.0%	9.2%	5.5%	6.9%	7.8%	10.3%
Sulawesi Tengah	4.8%	4.9%	3.8%	4.2%	5.0%	5.4%	4.4%	5.8%
Sulawesi Selatan	5.3%	5.9%	4.5%	6.1%	5.3%	6.6%	6.5%	11.7%
Sulawesi	3.7%	3.8%	2.5%	3.2%	2.6%	3.5%	4.4%	7.6%
Irian Jaya	4.0%	4.4%	3.4%	4.1%	3.2%	4.1%	6.4%	7.8%
Total	4.9%	5.4%	4.7%	5.4%	5.5%	6.2%	6.4%	8.8%

1) No figures are available for 2000 because the Sakernas sample was too small for provincial representation. It was designed only for national representation (covering 42,000 households). Pre-2000 figures do not cover the same sample size: the sample size for 1996 and 1997 covered 65,000 households, the 1998 sample covered 49,000 households and the 1999 sample 48,000 households.

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**Table 7**  
**Average Open Unemployment Rate 1996-1999: Current vs Relaxed Definition**  
**Sorted by Absolute Increase**

Province	Rate		Increase	
	Current	Relaxed	Absolut	Relativ
Sulawesi Selatan	5.4%	7.6%	2.2%	0.40
Sumatera Barat	5.1%	7.1%	2.0%	0.40
Sumatera Selatan	3.9%	5.8%	1.9%	0.49
DI Aceh	6.4%	8.1%	1.7%	0.27
Jawa Barat	7.7%	9.1%	1.5%	0.19
DKI Jakarta	11.9%	13.4%	1.5%	0.12
Sulawesi Utara	7.6%	9.1%	1.4%	0.19
Kalimantan Timur	8.5%	9.9%	1.4%	0.17
Sulawesi Tenggara	3.3%	4.5%	1.2%	0.37
Riau	6.3%	7.4%	1.1%	0.18
Sumatera Utara	6.6%	7.7%	1.1%	0.16
Lampung	4.1%	5.1%	1.0%	0.24
Kalimantan Tengah	3.8%	4.7%	0.9%	0.24
Irian Jaya	4.3%	5.1%	0.9%	0.20
Kalimantan Selatan	3.2%	4.0%	0.8%	0.25
DI Yogyakarta	3.9%	4.7%	0.8%	0.21
Jambi	3.5%	4.3%	0.8%	0.23
NTB	2.2%	3.0%	0.8%	0.35
Jawa Timur	4.0%	4.8%	0.8%	0.19
Bengkulu	3.1%	3.8%	0.7%	0.24
Jawa Tengah	4.3%	5.0%	0.7%	0.16
Kalimantan Barat	3.2%	3.8%	0.7%	0.20
Sulawesi Tengah	4.5%	5.1%	0.6%	0.13
Bali	2.7%	3.2%	0.4%	0.15
NTT	2.5%	2.9%	0.4%	0.15
Total	5.4%	6.4%	1.0%	0.19

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**Table 8**  
**Average Open Unemployment Rate 1996-1999: Current vs Relaxed Definition**  
**Sorted by Relative Increase**

Province	Rate		Increase	
	Current	Relaxed	Absolut	Relativ
Sumatera Selatan	3.9%	5.8%	1.9%	0.49
Sulawesi Selatan	5.4%	7.6%	2.2%	0.40
Sumatera Barat	5.1%	7.1%	2.0%	0.40
Sulawesi Tenggara	3.3%	4.5%	1.2%	0.37
NTB	2.2%	3.0%	0.8%	0.35
DI Aceh	6.4%	8.1%	1.7%	0.27
Kalimantan Selatan	3.2%	4.0%	0.8%	0.25
Lampung	4.1%	5.1%	1.0%	0.24
Bengkulu	3.1%	3.8%	0.7%	0.24
Kalimantan Tengah	3.8%	4.7%	0.9%	0.24
Jambi	3.5%	4.3%	0.8%	0.23
DI Yogyakarta	3.9%	4.7%	0.8%	0.21
Kalimantan Barat	3.2%	3.8%	0.7%	0.20
Irian Jaya	4.3%	5.1%	0.9%	0.20
Jawa Timur	4.0%	4.8%	0.8%	0.19
Jawa Barat	7.7%	9.1%	1.5%	0.19
Sulawesi Utara	7.6%	9.1%	1.4%	0.19
Riau	6.3%	7.4%	1.1%	0.18
Kalimantan Timur	8.5%	9.9%	1.4%	0.17
Sumatera Utara	6.6%	7.7%	1.1%	0.16
Jawa Tengah	4.3%	5.0%	0.7%	0.16
Bali	2.7%	3.2%	0.4%	0.15
NTT	2.5%	2.9%	0.4%	0.15
Sulawesi Tengah	4.5%	5.1%	0.6%	0.13
DKI Jakarta	11.9%	13.4%	1.5%	0.12
Total	5.4%	6.4%	1.0%	0.19

The following points are noteworthy:

- a. While the impact of the change in definition may understandably be different for provinces from year to year, **the absolute impact on one province (West Sumatera) has been consistently significantly higher than the national average: 82%, 135%, 84% and 62% respectively between 1996 and 1999.**<sup>6</sup> By contrast, six provinces (Bengkulu, Central Java, East Java, Bali, South Kalimantan and South Sulawesi) show an absolute impact consistently lower than the national average.

<sup>6</sup> DKI Jakarta and West Java show the same behavior in all years except 1997.

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- b. **South Sulawesi bore the largest impact of the change in definition** over the 1996-1999 period. It had the largest absolute impact (an increase of 2.2 percentage points in the level of its unemployment rate --Table 7) and the second largest relative impact (a 40% increase --Table 8) among provinces.
- c. **The impact of the change in definition on DKI Jakarta**, which registered the highest average unemployment rate under the current definition (exceeding twice the national rate --Table 6), **was still one of the highest in the nation** in absolute terms (an increase of 1.5 percentage points --Table 7) but the lowest in relative terms (Table 8).

#### IV. CONCLUSIONS

“Discouraged workers” represent a significant phenomenon in Indonesia, particularly since the 1997/98 crisis. Treating them as part of the unemployed in the civilian labor force makes a substantial difference not only nationally, but by gender, urban/rural location and province as well. If one were to use the relaxed ILO definition, which considers them as unemployed rather than outside the civilian labor force, then the open unemployment rate in Indonesia would have been about 0.7 percentage points higher in absolute terms than the official rate prior to 1999 and over 2 percentage points higher since 1999. In relative terms, it would have been 12%-15% before 1999 and over 34% since 1999. The unemployment rate among the worst affected group (urban females) would have been 1-1.4 percentage points higher in absolute terms (and 11%-14% in relative terms) than the official rate prior to 1999 and over 3 percentage points higher (and over 29% higher in relative terms) since 1999. These numbers make a strong case for adopting the relaxed ILO definition of open unemployment.<sup>7</sup>

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<sup>7</sup>

While this paper has demonstrated that the current official BPS open unemployment rate understates unemployment measured according to the relaxed ILO definition, one should point out that the exclusion in Sakernas of another variable may result in over-estimating unemployment. To be classified as unemployed, as Verma argues in his report (*Ibid.*, p. 9), a person has to be “available” for work. Sakernas does not ask this question explicitly. Instead, it enquires about the person’s “willingness” to take a job (Question 20: “If you were offered a job, would you accept it?”). Had “availability” been explicitly measured in Sakernas, the result may have been a lower unemployment rate than the current official figure.

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Measuring Open Unemployment in SAKERNAS

## APPENDIX A

### SAKERNAS 2000 QUESTIONNAIRE



# BPS

## SURVEI ANGKATAN KERJA NASIONAL 2000

KETERANGAN RUMAHTANGGA

SAK2000.AK

Dibuat satu set  
Untuk BPS

RAHASIA

I. PENGENALAN TEMPAT		
1	Propinsi	<input type="text"/>
2	Kabupaten/Kotamadya *)	<input type="text"/>
3	Kecamatan	
4	Desa/Kelurahan *)	
5	Klasifikasi Desa/Kelurahan	Perkotaan - 1    Pedesaan - 2
6	Nomor Wilayah Pencacahan	<input type="text"/>
7	Nomor Kelompok Segmen	
8	Nomor Segmen	
9	Nomor Kode Sampel SAKERNAS	<input type="text"/>
10	Nomor Urut Rumah tangga Sampel	<input type="text"/>
11	Nama Kepala Rumah tangga	
12	Jumlah Anggota Rumah tangga	<input type="text"/>
13	Jumlah Anggota Rumah tangga Berumur 10 Tahun ke Atas	<input type="text"/>

II. KETERANGAN PENCACAHAN	
1 Nama dan NIP/NMS Pencacah : <input type="text"/>	4 Nama dan NIP Pengawas/Pemeriksa : <input type="text"/>
2 Tanggal Pencacahan :	5 Tanggal Pengawasan/ Pemeriksaan :
3 Tanda Tangan :	6 Tanda Tangan :

\*) Coret yang tidak perlu

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IV. KETERANGAN ANGGOTA RUMAH TANGGA BERUMUR 10 TAHUN KE ATAS																																							
<p>Nama: ..... No. urut art: ..... <input style="width: 20px;" type="text"/></p>	<p><b>R.6 s.d R.14 HANYA UNTUK ART YANG BEKERJA</b> (R.2b=1 atau R.3=1 atau R.4=1)</p>																																						
A. PENDIDIKAN																																							
<p>1a. Pendidikan tertinggi yang ditamatkan.</p> <table style="width: 100%; border: none;"> <tr> <td>Tdk/belum pernah sekolah</td> <td>1</td> <td>SLTA Umum</td> <td>6</td> <td rowspan="5" style="font-size: 3em; vertical-align: middle; padding-left: 10px;">}</td> <td rowspan="5" style="vertical-align: middle;">R.1b</td> </tr> <tr> <td>Tdk/belum tamat SD</td> <td>2</td> <td>SLTA Kejuruan</td> <td>7</td> </tr> <tr> <td>SD</td> <td>3</td> <td>Diploma I/II</td> <td>8</td> </tr> <tr> <td>SLTP Umum</td> <td>4</td> <td>Akademi/D.III</td> <td>9</td> </tr> <tr> <td>SLTP Kejuruan</td> <td>5</td> <td>Universitas/D.IV</td> <td>0</td> </tr> </table> <p>b. Jurusan pendidikan: ..... <b>DIISI di BPS</b> <input style="width: 20px;" type="text"/></p>	Tdk/belum pernah sekolah	1	SLTA Umum	6	}	R.1b	Tdk/belum tamat SD	2	SLTA Kejuruan	7	SD	3	Diploma I/II	8	SLTP Umum	4	Akademi/D.III	9	SLTP Kejuruan	5	Universitas/D.IV	0	<p>6. Jumlah jam kerja dari seluruh pekerjaan setiap hari selama seminggu yang lalu:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>Sen</th> <th>Sel</th> <th>Rab</th> <th>Kam</th> <th>Jum</th> <th>Sab</th> <th>Ming</th> <th>Jumlah</th> </tr> <tr> <td><input style="width: 20px;" type="text"/></td> </tr> </table>	Sen	Sel	Rab	Kam	Jum	Sab	Ming	Jumlah	<input style="width: 20px;" type="text"/>							
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SLTP Kejuruan	5	Universitas/D.IV	0																																				
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B. KEGIATAN SEMINGGU YANG LALU																																							
<p>2.a. Apakah melakukan kegiatan seperti di bawah ini selama seminggu yang lalu?</p> <table style="width: 100%; border: none;"> <tr> <td></td> <td style="text-align: center;">Ya</td> <td style="text-align: center;">Tidak</td> </tr> <tr> <td>1. Bekerja</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>2. Sekolah</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>3. Mengurus rumah tangga</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>4. Lainnya</td> <td style="text-align: center;">①</td> <td style="text-align: center;">2</td> </tr> </table> <p>b. Dari pertanyaan yang menyatakan "YA" di atas, kegiatan apakah yang menggunakan waktu terbanyak selama seminggu yang lalu?</p> <p>1 → R.5      2      3      4</p>		Ya	Tidak	1. Bekerja	1	2	2. Sekolah	1	2	3. Mengurus rumah tangga	1	2	4. Lainnya	①	2	<p>7. Lapangan usaha/pekerjaan tempat bekerja/perusahaan/kantor dari pekerjaan utama selama seminggu yang lalu: ..... <b>DIISI di BPS</b> <input style="width: 20px;" type="text"/></p> <p style="text-align: center;"><i>(Tulis selengkap-lengkapya)</i></p>																							
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2. Sekolah	1	2																																					
3. Mengurus rumah tangga	1	2																																					
4. Lainnya	①	2																																					
<p>3. Apakah bekerja paling sedikit 1 jam selama seminggu yang lalu? ( Jika R.2a.1 = 1, Ingkari kode 1 )</p> <p>Ya    1 → R.5      Tidak    2</p>	<p>8. Jenis pekerjaan/jabatan dari pekerjaan utama selama seminggu yang lalu: ..... <b>DIISI di BPS</b> <input style="width: 20px;" type="text"/></p> <p style="text-align: center;"><i>(Tulis selengkap-lengkapya)</i></p>																																						
<p>4. Apakah mempunyai pekerjaan/usaha, tetapi sementara tidak bekerja selama seminggu yang lalu?</p> <p>Ya    1      Tidak    2</p>	<p>9. Jumlah jam kerja pada pekerjaan utama selama seminggu yang lalu: ..... jam <input style="width: 20px;" type="text"/></p>																																						
<p>5. Apakah sedang mencari pekerjaan?</p> <p>Ya    1      Tidak    2</p>	<p>10. Status pekerjaan utama selama seminggu yang lalu.</p> <table style="width: 100%; border: none;"> <tr> <td>Berusaha sendiri</td> <td style="text-align: center;">1</td> <td rowspan="5" style="font-size: 3em; vertical-align: middle; padding-left: 10px;">}</td> <td rowspan="5" style="vertical-align: middle;">R.12</td> </tr> <tr> <td>Berusaha dibantu buruh/pekerja tidak tetap/pekerja tak dibayar</td> <td style="text-align: center;">2</td> </tr> <tr> <td>Berusaha dibantu buruh/pekerja tetap dibayar</td> <td style="text-align: center;">3</td> </tr> <tr> <td>Buruh /karyawan /pekerja dibayar</td> <td style="text-align: center;">4</td> </tr> <tr> <td>Pekerja tak dibayar</td> <td style="text-align: center;">5 → R.12</td> </tr> </table>	Berusaha sendiri	1	}	R.12	Berusaha dibantu buruh/pekerja tidak tetap/pekerja tak dibayar	2	Berusaha dibantu buruh/pekerja tetap dibayar	3	Buruh /karyawan /pekerja dibayar	4	Pekerja tak dibayar	5 → R.12																										
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Buruh /karyawan /pekerja dibayar	4																																						
Pekerja tak dibayar	5 → R.12																																						
	<p>11. a. Berapa upah/gaji bersih yang biasanya diterima selama sebulan dari pekerjaan utama?</p> <p>Upah/gaji berupa uang : Rp. <input style="width: 100px;" type="text"/></p> <p>Upah/gaji berupa barang : Rp. <input style="width: 100px;" type="text"/></p>																																						

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11.b. Keadaan sekarang dibandingkan setahun yang lalu.						17. Lamanya mencari pekerjaan: .....bulan <input type="text"/>	
<b>Karakteristik</b>	<b>Lebih baik</b>	<b>Sama baik</b>	<b>Sama buruk</b>	<b>Lebih buruk</b>	<b>Tidak tahu</b>		
1. Pendapatan	4	3	2	1			
2. Fasilitas tempat kerja	4	3	2	1	0		
3. Jaminan kesehatan	4	3	2	1	0		
4. Fasilitas keselamatan kerja	4	3	2	1	0		
5. Fasilitas transportasi	4	3	2	1	0		
6. Keadaan secara keseluruhan	4	3	2	1			
12. Kapan mulai bekerja/berusaha di pekerjaan utama? 31 Juli 1999 dan sebelumnya 1 Setelah 31 Juli 1999 2 → <input type="text"/> <input type="text"/> Bulan Tahun						18. Pekerjaan yang dicari. Pekerjaan penuh waktu ( <i>Full time</i> ) 1 } R.21 Pekerjaan paruh waktu ( <i>Part time</i> ) 2 }	
<b>D. PEKERJAAN TAMBAHAN</b>						19. Alasan utama tidak mencari pekerjaan. Merasa tidak mungkin mendapatkan pekerjaan 1 Sedang bersekolah 2 Mengurus rumah tangga 3 Sudah mempunyai pekerjaan 4 Merasa sudah cukup 5 } R.21 Tidak mampu melakukan pekerjaan 6 Lainnya (.....) 7	
13. Apakah selama seminggu yang lalu mempunyai pekerjaan tambahan? Ya 1 Tidak 2 → B.IV.E						20. Jika ada penawaran pekerjaan, apakah masih mau menerima? Ya 1 Tidak 2	
14. Lapangan usaha/pekerjaan tambahan utama: ..... ..... (Tulis selengkap-lengkapya) <input type="text"/>						<b>F. PENGALAMAN KERJA</b>	
<b>E. KEGIATAN Mencari PEKERJAAN</b> Lihat R.5, Jika "1" → R.15 Jika "2" → R.19						21. Apakah pernah bekerja sebelumnya? Ya 1 Tidak 2 → STOP	
15. Alasan utama mencari pekerjaan. Tamat sekolah/tidak bersekolah lagi 1 Tanggung jawab mencari nafkah/membantu ekonomi rumah tangga/keluarga 2 Menambah penghasilan 3 Pekerjaan yang ada kurang sesuai 4 PHK/usaha terhenti 5 Lainnya (.....) 6						22. Bila "Ya", apakah berhenti bekerja terjadi setelah 31 Juli 1999? Ya 1 Tidak 2 → STOP	
16. Upaya apa saja yang pernah dilakukan dalam mencari pekerjaan? (Bacakan setiap jawaban) Mendaftar pada bursa kesempatan kerja 1 Menghubungi perusahaan/kantor 2 <input type="text"/> Melamar melalui iklan 4 Menghubungi keluarga/kenalan 8						23. Alasan utama berhenti bekerja/pindah pekerjaan yang terjadi setelah 31 Juli 1999. PHK 1 Tidak ada permintaan/usaha terhenti 2 Pendapatan kurang memuaskan 3 Tidak cocok dengan lingkungan kerja 4 Lainnya (.....) 5	
17. Alasan utama berhenti bekerja/pindah pekerjaan terakhir: ..... ..... (Tulis selengkap-lengkapya) <input type="text"/>						24. Lapangan usaha/pekerjaan sebelum berhenti bekerja/pindah pekerjaan terakhir: ..... ..... (Tulis selengkap-lengkapya) <input type="text"/>	
18. Status pekerjaan sebelum berhenti bekerja/pindah pekerjaan terakhir. Berusaha sendiri 1 Berusaha dibantu buruh/pekerja tidak tetap/pekerja tak dibayar 2 Berusaha dibantu buruh/pekerja tetap dibayar 3 Buruh/karyawan/pekerja dibayar 4 Pekerja tak dibayar 5						25. Status pekerjaan sebelum berhenti bekerja/pindah pekerjaan terakhir. Berusaha sendiri 1 Berusaha dibantu buruh/pekerja tidak tetap/pekerja tak dibayar 2 Berusaha dibantu buruh/pekerja tetap dibayar 3 Buruh/karyawan/pekerja dibayar 4 Pekerja tak dibayar 5	

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IV. KETERANGAN ANGGOTA RUMAH TANGGA BERUMUR 10 TAHUN KE ATAS																	
Nama: ..... No. urut art: ..... <input style="width: 20px; height: 15px;" type="text"/>	<b>R.6 s.d R.14 HANYA UNTUK ART YANG BEKERJA (R.2b=1 atau R.3=1 atau R.4=1)</b>																
<b>A. PENDIDIKAN</b>																	
1a. Pendidikan tertinggi yang ditamatkan.																	
Tdk/belum pernah sekolah 1 Tdk/belum tamat SD 2 SD 3 SLTP Umum 4 SLTP Kejuruan 5	SLTA Umum 6 SLTA Kejuruan 7 Diploma I/II 8 Akademi/D.III 9 Universitas/D.IV 0	} <b>R.1b</b>															
b. Jurusan pendidikan: ..... <b>DIISI di BPS</b> <input style="width: 20px; height: 15px;" type="text"/>																	
<b>B. KEGIATAN SEMINGGU YANG LALU</b>																	
2.a. Apakah melakukan kegiatan seperti di bawah ini selama seminggu yang lalu?																	
	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;"></td> <td style="width: 25%; text-align: center;">Ya</td> <td style="width: 25%; text-align: center;">Tidak</td> </tr> <tr> <td>1. Bekerja</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>2. Sekolah</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>3. Mengurus rumah tangga</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>4. Lainnya</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </table>		Ya	Tidak	1. Bekerja	1	2	2. Sekolah	1	2	3. Mengurus rumah tangga	1	2	4. Lainnya	1	2	
	Ya	Tidak															
1. Bekerja	1	2															
2. Sekolah	1	2															
3. Mengurus rumah tangga	1	2															
4. Lainnya	1	2															
b. Dari pertanyaan yang menyatakan "YA" di atas, kegiatan apakah yang menggunakan waktu terbanyak selama seminggu yang lalu?																	
1 → R.5      2      3      4																	
3. Apakah bekerja paling sedikit 1 jam selama seminggu yang lalu? ( Jika R.2a.1 = 1, lingkari kode 1 )																	
Ya    1 → R.5      Tidak    2																	
4. Apakah mempunyai pekerjaan/usaha, tetapi sementara tidak bekerja selama seminggu yang lalu?																	
Ya    1                      Tidak    2																	
5. Apakah sedang mencari pekerjaan?																	
Ya    1                      Tidak    2																	
<b>C. PEKERJAAN UTAMA</b>																	
6. Jumlah jam kerja dari seluruh pekerjaan setiap hari selama seminggu yang lalu:																	
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Sen</td> <td style="width: 10%;">Sel</td> <td style="width: 10%;">Rab</td> <td style="width: 10%;">Kam</td> <td style="width: 10%;">Jum</td> <td style="width: 10%;">Sab</td> <td style="width: 10%;">Ming</td> <td style="width: 10%;">Jumlah</td> </tr> <tr> <td style="height: 20px;"></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Sen	Sel	Rab	Kam	Jum	Sab	Ming	Jumlah									<input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/>
Sen	Sel	Rab	Kam	Jum	Sab	Ming	Jumlah										
7. Lapangan usaha/pekerjaan tempat bekerja/perusahaan/kantor dari pekerjaan utama selama seminggu yang lalu: ..... <b>DIISI di BPS</b> <input style="width: 20px; height: 15px;" type="text"/>																	
<i>(Tulis selengkap-lengkapny)</i>																	
8. Jenis pekerjaan/jabatan dari pekerjaan utama selama seminggu yang lalu: ..... <b>DIISI di BPS</b> <input style="width: 20px; height: 15px;" type="text"/>																	
<i>(Tulis selengkap-lengkapny)</i>																	
9. Jumlah jam kerja pada pekerjaan utama selama seminggu yang lalu: ..... jam <input style="width: 20px; height: 15px;" type="text"/>																	
10. Status pekerjaan utama selama seminggu yang lalu.																	
Berusaha sendiri 1 Berusaha dibantu buruh/pekerja tidak tetap/pekerja tak dibayar 2 Berusaha dibantu buruh/pekerja tetap dibayar 3 Buruh /karyawan /pekerja dibayar 4 Pekerja tak dibayar 5 → R.12	} <b>R.12</b>																
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Upah/gaji berupa barang : Rp. ....	<input style="width: 100%; height: 15px;" type="text"/>																

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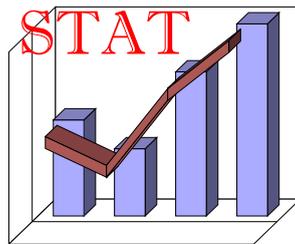
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5. Fasilitas transportasi	4	3	2	1	0		
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12. Kapan mulai bekerja/berusaha di pekerjaan utama? 31 Juli 1999 dan sebelumnya 1 Setelah 31 Juli 1999 2 → <input type="text"/> <input type="text"/> Bulan Tahun						18. Pekerjaan yang dicari. Pekerjaan penuh waktu ( <i>Full time</i> ) 1 } R.21 Pekerjaan paruh waktu ( <i>Part time</i> ) 2 }	
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# **EVALUATION OF THE FIRST ROUND OF THE INFORMAL SECTOR PILOT SURVEY**

Report # 45

by  
**Hananto Sigit**

February, 2002



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

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## I. INTRODUCTION

Employment has been substantially affected by the economic crisis. More than 5 million workers lost their jobs in 1998 and even more did in 1999. Open unemployment and under-employment increased and real incomes substantially declined. Employment opportunities in manufacturing, construction, banking/finance and other modern/formal sectors shrank. A large number of the displaced workers had to be absorbed in agriculture and in the informal sector, resulting in a reversal of the declining trend of the earlier years.

The shift in employment from the formal to the informal sector is reflected not only by the declining number of employees but also by an increase in the incidence of self-employment. Another resulting phenomenon is the increase in the number of children and other household members (mainly housewives) who had to work in order to compensate for the decline in family income. This worsening situation was further aggravated by the continuing annual addition of 3-4 million newcomers into the labor force.

These developments explain why employment creation is given a high priority in policy making circles and why suggestions for adopting an *employment-led economic recovery*, by developing an economy based on human and natural resources, is being given serious consideration. To support the government in designing employment oriented policies and to help it monitor their results, a quarterly pilot survey (Survei Triwulanan Pemulihan Kesempatan Kerja, STPKK) was proposed over one year ago.<sup>1</sup> Unlike the yearly Sakernas, which is designed to collect structural labor force and employment data, STPKK was designed to monitor short-term employment fluctuations caused by policy changes, business cycles and seasonality. The indicators produced from the survey must be able to quickly detect short term changes in employment in order to enable quick intervention. Four rounds of that pilot were planned. The first one was undertaken in November, 2001. This report covers that first round.

## II. METHODOLOGY

### A. Design of Pilot

#### 1. Domain of Estimation

The national economy was divided into a number of sub-economies based on the importance of employment, its homogeneity, the seriousness of the crisis impacts, and whether employment is affected by quarterly changes. The sub-economies chosen did not need to be

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<sup>1</sup> Sigit, Hananto, *Survei Triwulanan Pemulihan Kesempatan Kerja: A Proposed Survey to Monitor Short-term Employment & Earnings Changes*, STAT Project Report #17, December, 2000.

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statistically representative of the national economy, but they had to provide a picture of national employment.

Given budget limitations, the STPKK was conducted only in Jabotabek and was limited to informal sector activities in Manufacturing, Land Transportation, Trade and Restaurants (referred to in this pilot by the acronym IDAIn<sup>2</sup>). These are considered as one integral sector because there is no entry barrier among them. An individual may easily move from one sub-sector to another for employment. Agriculture was not included because employment problems in this sector were more structural and systematically affected by seasons. Similarly personal services were not included because such activities are generally considered as marginal with no clear distinction between working and not working, since no capital is needed and only very limited skill is required. Informal activities in electricity, gas and water, banking and finance, hotels, mining and quarrying were excluded for other reasons. In some of these sectors, informal activities are generally small. In others, sample selection is highly complex. In any case, all excluded informal sector activities can be covered in the Quarterly Sakernas together with formal activities. Thus, activities included in the STPKK cover the key sectors. They are substantially affected by economic changes, government policies and regulations. The resulting indicators, therefore, are expected to be sensitive to these changes and should provide a picture of employment in the national economy.

## **2. Selection of Enumeration Areas**

Only 10 of the 12 kabupaten/kota in Jabotabek were included.<sup>3</sup> From each kabupaten/kota, 2 enumeration areas (wilayah pencacahan, or “wilcah”) were purposively selected for a total of 20 wilcah. The selection of wilcah was based on information contained in SUSI. Wilcah in kabupaten/kota were first ranked according to the concentration of household enterprises engaged in industry, trade and land transportation. The 20 selected wilcah were distributed as follows: 10 with concentration in industry and 10 in land transportation; no trade wilcah was selected. Trade households were expected to be found in the industrial and land transportation wilcah, since trading households are plentiful and widely spread spatially. This way a sufficient number of households with different sub-sector enterprises can be included in the sample. The selection of wilcah was made purposively such that 2 wilcah in kabupaten/kota would be located within one kecamatan.

In the following quarter, half of the wilcah (10) would be re-enumerated, along with all the households previously enumerated. The re-enumerated wilcah will be distributed as follows:

---

<sup>2</sup> This acronym was derived from the Indonesian names of the sectors: *Industri* (manufacturing), *Dagang* (trade) and *Angkutan* (land transportation). *In* stands for Informal.

<sup>3</sup> Central Jakarta and Kota Tangerang were the two excluded.

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5 in industry and 5 in land transportation. The 10 new wilcah added in the following quarter would have the same distribution so that the distribution of all 20 enumerated wilcah in that quarter would remain as in the first quarter, that is: 10 in industry and 10 in land transportation. The same process will be repeated in the subsequent 2 quarters.<sup>4</sup> The industry and land transportation wilcah were distributed equally into the four quarters, so that every quarter would have similar wilcah. This is expected to produce a similar sub-sectoral distribution of workers in the sample. The list of selected wilcah for the four rounds of the survey is provided in Appendix A.

### **3. Selection of Households**

From each selected wilcah, 20 eligible households were selected. Households were considered eligible if at least one of their members currently worked or ever worked in the selected sectors as an employer, an own-account worker with or without assistance of unpaid workers, or as an employee. Household selection was based on a *random walk*: the first household was randomly determined; then every fifth household was visited to determine whether it was eligible; if so, then the household was selected; if not, then the next eligible household was selected, and so on. Once 20 households were selected from a particular wilcah, listing stopped. If not enough households were found in a particular wilcah, then enumerators would turn to the neighboring block to complete selection of the target number of households.

Visited households were enumerated using the STPKK-L questionnaire (see Appendix B for a prototype). Eligible households were clearly identified and given a sticker to enable re-enumerating them in the following quarter. This step was necessary because 50% of the households visited in a particular quarter would need to be re-enumerated in the following quarter. Overall then, after the first quarter, only 200 new households (of the 400) needed to be listed in a new wilcah, since the other 200 would be carried over from the previous quarter. The new households would be taken from a new wilcah, not from a wilcah which had been enumerated before. With 200 overlapping respondents every quarter, the survey expected to have a total of about 600 respondents.

The above sampling methodology should provide sufficient representation for the four target sub-sectors: industry, trade, restaurants and land transportation. Proportional representation of households within each sub-sector was not necessary. For the purpose of this survey, we believe that a minimum of 100 respondents in each sub-sector would provide sufficient representation.

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<sup>4</sup> One must note here that one wilcah may not contain a sufficient number of households. Listing in SUSI is done on the basis of buildings, not households. Buildings may only contain places where economic activities (e.g. production, trade) take place, not where households live. If such wilcah is encountered during field work, it must be reported, and a new wilcah of the same type must be substituted.

#### **4. Questionnaires**

Questionnaires used in the STPKK were different from those used in Sakernas and Susenas. In this survey the standard labor force approach was not applied, since the survey was not designed to collect information on structural employment. Rather, questions were directly addressed to groups working or who had ever worked. Questions focused on changes, intensity, income and employment shifts according to the main characteristics of the covered sub-sectors. That is because the main objective of the survey was to shed light on changes, not levels, of employment/earnings conditions in these sub-sectors.

Two questionnaires were used in this survey, one for household listing (STPKK-L) and one for enumeration (STPKK-S). Prototypes are provided in Appendices B and C respectively.

##### **a. Household Listing**

This questionnaire's main objective was to list and identify household and household members eligible to become respondents. Eligible households were defined as those with at least one member working or who had ever worked in the covered sub-sectors as employers, own-account workers with or without assistance of unpaid workers, or as employees. Those working as unpaid workers were not included because their work was considered marginal.

Household members were considered "working" if, during the previous week, they were involved in a production activity (of goods or services) for income for at least one hour. They were considered to have "ever worked" if, during the last 6 months, they worked in an activity in the covered sub-sectors but were currently not working in an activity in these sub-sectors. The precise definition of activities in the covered sub-sectors is:

- Manufacturing Industry, employing less than 10 workers,
- Land Transportation, employing less than 5 workers
- Trade, employing less than 5 workers
- Restaurants, employing less than 5 workers

Owners were included if they also work.

##### **b. Household Enumeration**

This questionnaire aimed at obtaining the necessary information which would allow us to monitor changes in employment/earnings conditions. It was divided into 3 categories of information:

##### ***Social/Demographic Information***

This information was needed as background for identifying respondents. Only a limited number of such information was collected: Name, Age, Sex, Length of Stay in Kabupaten/Kota (broken down into less than 3 months or 3-6 months)

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***Information on Job (for those currently working)***

1. Sub-sector and Employment Status. As mentioned above this information was necessary for weighting.
2. To understand productivity and intensity of work, working hours and wages/salaries/income were asked. To monitor changes in working hours, current working hours were compared with those in the previous quarter. Also enquired here was whether working hours were normal. For income, four questions were asked:
  - whether commensurate with labor productivity,
  - with education/qualification of the workers,
  - sufficient to support the family and
  - the changes compared to the previous quarter.

The first question evaluates whether income was commensurate with the share of labor in production. The second question enquires on whether workers were fully utilized. The third question was for monitoring whether family life could be normally supported by income just from one source. The last question was for monitoring income compared with the previous quarter: whether it improved, worsened or stayed the same.

3. For those working less than 6 months, the main previous activities were asked: whether working, seeking work, housework, or other. This attempts to understand activity shifts between quarters whether there was improvement / worsening of employment.
4. Also for those working less than 6 months, a follow up question on the sub-sector was asked. The sub-sectoral breakdown was: Agriculture, Mining, Quarrying, Industry with employment less than 10, Industry with employment 10 or more, Electricity, Gas and Water, Banking and Finance, Land Transportation with employment less than 5, Land Transportation employment of 5 or more, Other Transportation and Communication, Trade and Restaurant with employment less than 5, Trade and Restaurant with employment of 10 or more, Hotels, Institutional Services, Personal Services
5. Those working were asked about their employment status: whether as employer, own-account worker with/without assistance from unpaid workers, employee or unpaid worker. The question on status crossed with question in 4 was used to identify sub-sectoral shifts to understand whether there were economic conditions positively influencing employment. Basically four groups were identified: formal<sup>5</sup>, agriculture, informal in covered sub-sectors<sup>6</sup> and unpaid workers in covered sub-sectors. The shift of workers between the four groups could show increases or declines in employment.
6. Those working were finally asked whether they had additional jobs. This aims at

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<sup>5</sup> This includes: Mining, Industry with 10 or more employment, Electricity, Gas and Water, Banking and Finance, Land Transportation with 5 or employment, Other Transportation and Communication, Trade and Restaurant with 5 or more employment, Institutional Services, and Government.

<sup>6</sup> This includes: Industry with less than 10 employment, Land Transportation and Trade and Restaurants employing less 5 workers.

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understanding whether the main job was sufficient. An increasing number of those with additional jobs may indicate a worsening economic condition. At the same time, taking additional jobs may be an indication of having the opportunity to get additional income for family support. Thus interpreting this variable needs to be done with caution and in conjunction with other variables.

### *Information for those who have ever worked*

1. For this group the first question asked was what month they stopped working. Only those who stopped working within the last 6 months would qualify as respondents. This information was used to group respondents into those who stopped working in the current quarter and those in the previous quarter.
2. Reason why they stopped working: whether they did it of their own will or they were forced by worsening economic conditions.
3. Those who stopped working for not more than 6 months were asked about their current activities, in order to see changes in their activities, i.e. whether they were able to work in another job or not.
4. Those still working in point 3 were asked about the industry and status of their current job, in order to classify them into one of the four groups mentioned in questions 4 and 5 addressed to working respondents.

### **5. Indicators to be Produced**

The survey was designed for producing estimates in the form of **ratios or percentages** calculated from un-weighted sample values. Indicators were not weighted to statistically produce national or regional estimates, since the sample was small and not probabilistic. But the indicators here analytically provide a picture of employment changes in the covered sub-sectors. The following indicators can be produced:

1. Percentage Stay Less Than 3 months, or 3-6 months
2. Percentage of Employment by Age and Education
3. Percentage Stopped Working in the Previous 0-3 or 3-6 months
4. Percentage Stopped Working in Less Than 6 months by Reason
5. Percentage Started working in 0-3 and 3-6 months
6. Percentage Working for Less Than 15, 15-35 and 35+ hours
7. Average Working Hours by Industry
8. Percentage Experiencing Change in Working Hours.
9. Percentage Experiencing Below, Above or Normal Working Hours
10. Average Income by Industry
11. Percentage Experiencing Change in Income
12. Percentage of Income Less, More, or Commensurate with the Type of Job
13. Percentage of Income Less, More or Commensurate with Worker Qualification

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14. Percentage of income Less, More or Just Enough to Support Family Life
15. Percentage Where Previous Activity was Working, Looking for Work, or Not in Labor Force
16. Percentage Previously Working in Agriculture, Informal Sector, Unpaid Worker and Formal
17. Percentage Stopped Working But Currently Still Working, Looking for Work, In School, Doing Housework, and Others
18. Percentage Stopped Working and Moved to Agriculture, Formal Sector or Unpaid Work

#### **B. Relationship with Sakernas**

In 2002, BPS is planning to conduct a quarterly Sakernas with the main purpose of providing national unemployment data every three months. This survey is similar to the current yearly survey employing the labor force approach. However, the questions incorporated are those suitable and useful for monitoring quarterly changes in employment. As I understand it, Sakernas has always been designed for estimating figures for areas, provinces or the nation. If the quarterly Sakernas is conducted, then its implementation can be merged with the STPKK. Area estimation can be blended with estimation of sub-economies.

The quarterly Sakernas survey of 20 thousand households aims at providing a quarterly national estimate and an annual average provincial estimate. In the past, Sakernas-type surveys did not show clear quarterly fluctuations. One reason was the averaging of employment figures over the whole economy. Producing estimates for different sub-economies in a region will eliminate this averaging effect.

The STPKK pilot is to provide input to the planned quarterly Sakernas in terms of the questions asked, respondent selection procedure and the types of indicators to be produced. But the pilot must also aim at producing, on its own, quick indicators for the most important sub-economy. That is why, it will only be conducted through the third quarter. If operation of the pilot is successful, then BPS can opt to integrate it with the implementation of the quarterly Sakernas, or to maintain it as a separate survey to provide a quick indicator of employment changes. Integration of the STPKK and the quarterly Sakernas is not difficult, since most of STPKK questions are useful for the quarterly Sakernas as well, as both surveys aim at measuring short-term changes in employment. Incorporating STPKK domains of estimation can also be easily done by including the questions on characteristics used to divide the national economy into sub-economies. That will enable employment indicators to be produced for the sub-economies in provinces. Sub-economies as domains of estimation can, therefore, be maintained in the quarterly Sakernas.

### III. IMPLEMENTATION

#### A. Responsibilities

##### 1. Organization

The pilot was conducted by the BPS Directorate of Population Statistics. Specifically the sub-directorate of manpower statistics was technically responsible for all activities including selection of field-workers, preparation of questionnaires, processing and handling of all the documents, and training of field-workers. Another sub-directorate dealing with wages, under the same Directorate, assisted in implementation, particularly in data processing.

##### 2. Field Work

Enumerators and supervisors for the survey were selected from the staff members of the Directorate of Population Statistics. One enumerator was responsible for covering one wilcah. Thus a total of 20 enumerators covered the selected 20 wilcah.

One supervisor was selected for every regency / municipality to check the work of two enumerators. The supervisor also acted as the coordinator of the survey in the regency / municipality. Names of the enumerators with their working areas are provided in Appendix D.

##### **a. Enumerators**

Enumerators were required, along with their supervisors, to:

- walk around the boundary of the selected wilcah to identify its exact boundary and match it with the map drafts prepared during the implementation of the integrated household enterprise survey (SUSI) in the year 2000.
- list the building and households by using schedule STPKK-L (a prototype is provided in Appendix B) and simultaneously enumerate eligible respondents by using schedule STPKK-S (a prototype is provided in Appendix C). Enumeration was done systematically starting from the eligible household first found during the listing. This was to be followed by selection of every fifth household until the required number of households for the wilcah was obtained.
- re-examine the completed questionnaires STPKK-L and STPKK-S for further enumeration if errors were found.
- submit on time completed STPKK-L and STPKK-S and the copy of the map drafts to supervisors.
- adhere to the time schedule of survey implementation

##### **b. Supervisors**

Supervisors' responsibilities were to:

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- assist the Chief of the Sub-directorate of Manpower Statistics in recruitment of field workers.
- copy draft maps of selected wilcah used to identify working areas of survey.
- identify, together with enumerators, correct boundaries of the working areas by walking around the wilcah in order to be fully familiar with the dimensions of the working area.
- distribute survey documents to enumerators, and later collect completed questionnaires.
- submit all completed survey documents to the BPS regency / municipality.
- adhere to the survey time schedule

### B. Time Schedule

Questionnaire preparation was conducted during August and September 2001. A series of discussions was conducted with participants from the Directorate of Methodology and the Directorate of Population Statistics. Before the technical discussions, several meetings were conducted by BPS management to consider different aspects of data collection, especially of employment data. Training of field workers was conducted in October 2001. Trainers were the same staff involved in questionnaire preparation and sample selection.

## IV. RESULTS

Results of the first round of the pilot survey are summarized in Table 1.

**Table 1**  
**Main Results of the Pilot Survey**

<b>A. Demographic Characteristics</b>						
1. Sex:						
Male	Female	All				
74.0	26.0	100.0				
2. Age (years):						
15-19	20-29	30-39	40-49	50+	All	
6.6	18.9	31.1	25.8	17.6	100.0	
3. Marital Status:						
Single	Married	Divorced	All			
16.0	79.7	3.7	100.0			
4. Education:						
Less than ES	ES	Junior HS	Senior HS	Higher ed.	All	
20.3	44.3	21.3	12.5	1.6	100.0	
<b>B. Mobility</b>						
1. Move Between Regencies/cities:						
Job Related	Other	No Move	All			
3.5	0.8	95.7	100.0			

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<b>C. Sector and Employment Status</b>									
1. Sector:									
Manufact.	Land Trans.	Trade	Restaurant	All					
22.4	19.5	51.0	7.1	100.0					
2 Employment Status									
Own-Account	Assisted by Temp. workers		Assisted by Perm. Workers		Employees	All			
51.4	20.5		11.4		16.7	100.0			
<b>D. Days and Hours Worked:</b>									
1. Days Worked:									
Less than 5	6	7	all						
7.5	16.7	75.8	100.0						
2. Hours Worked									
0-19	20-34	35-49	50-69	70+	All				
2.7	8.1	28.9	26.4	33.9	100.0				
3. Current Hours Worked Compared to Last Quarter:									
Much less	Less	The same	More	Much	Others	All			
4.7	11.8	78.1	2.8	0.4	2.2	100.0			
4. Whether Current Hours Worked Normal:									
Much below	Below	Normal	Above	all					
1.2	7.4	88.1	2.5	100.0					
<b>E. Legality and Number of Workers in the Place of Work:</b>									
1. Legality:									
Inc.	Gov. license	Other Org.	Others	All					
0.8	4.1	5.9	89.2	100.0					
2. Number of Workers:									
1	2	3	4	5-9	All				
51.4	22.0	9.8	5.7	11.1	100.0				
<b>F. Earnings</b>									
1. Monthly Earning (thousand rupiah):									
100	101-200	201-300	301-500	501-1000	101-1500	1501-3000	4500+	All	
27	60	107	129	137	18	23	7	508	
(5.3)	(11.8)	(21.1)	(25.4)	(27.0)	(3.5)	(4.5)	(1.4)	(100.0)	
2. Whether Earnings Sufficient for Living:									
Greatly not	Not Suff.	Sufficient	More than	Much more than		All			
1.6	38.2	57.7	2.4	0.2		100.0			
3. Whether Earnings Commensurate with the Type of Job:									
Greatly not	Not Comm.	Comm.	More than	Much more than		All			
1.8	24.6	73.0	0.4	0.2		100.0			
4. Whether Earnings Commensurate with Qualification:									
Greatly not	Not Comm.	Comm.	More than	Much more than		All			
1.4	19.9	78.0	0.6	0.2		100.0			
<b>G. Job Shifting</b>									
1. Whether Have Other Jobs:									
Yes	No	All							
9.8	90.2	100.0							
2. Time Started Working in Main Job:									
Less than 6 months		6 months or more			All				
19		489			508				
3. For those who started work less than 6 months, activities before working:									
Work in other job		Looking for work		Others	All				
13		3		3	19				
4. Composition of Respondents:									
Working		Ever Worked		All					
508		4		512					

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These are briefly discussed in the seven sub-sections below.

#### **A. Demographic Characteristics**

As expected, the majority of respondents (379, or 74 percent) were male, but the number of females was still large (133, or about 26 percent). This indicates that women as a group constitute an important proportion which cannot be neglected. Most respondents were at the main working ages of 30-50 years: about 31 percent were between 30-39 and 25.8 percent between 40-49. Young workers, i.e. those below 30 years old, also had a substantial share (25.5 percent), while old workers, i.e. those above 50 years old, made up only 17.6 percent. This age distribution reflects the fact that IDAIn sectors play an important role: they provide employment and income to the core of the labor force. As expected, most respondents were married (79.7 percent), but the proportion of those remaining single was not small (16.6 percent). Most respondents, as expected, had no more than elementary school education (64.6 percent), but those with high school education made up a substantial proportion (33.8 percent). The surprise was to find that 8 persons out of the 512 respondents had more than high school education.

#### **B. Mobility**

As expected, the great majority of respondents had not moved during the last 6 months (95.7 percent). However, a sufficiently large percentage (3.5 percent) had moved for reasons related to their job.

#### **C. Sector & Employment Status**

The survey methodology was designed to capture a sufficient number of respondents engaged in industry, land transportation and trade. Those engaged in trade accounted for more than 50 percent, but those in restaurants/food vending were not well represented. Such an outcome, in our view, is acceptable since the survey does not aim at producing separate sectoral estimates. The methodology was designed to ensure that the sectoral distribution of respondents is similar every quarter. However, if the distribution turns out to be different, then this sectoral breakdown can be used to weight important variables in order to produce the relevant indicators. More than 50 percent of respondents were own-account workers; and 20.5 percent were helped by temporary workers, while only 11 percent were assisted by permanent workers. The remaining respondents worked as employees, but these were very likely working in the informal sector.

#### **D. Days and Hours Worked**

Most workers worked 7 days a week (75.8 percent). This is believed to be the typical number of days worked in informal sectors since they do not observe any official holidays. Another 16.7 percent worked 6 days a week, while those working 5 days or less were only 7.5

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percent. The number of hours worked by respondents was substantially higher than that applying to the rest of the economy. Only 2.7 percent worked below 20 hours per week, and only 8 percent were under-employed (i.e. worked less than 35 hours per week). A large proportion (28.9 percent) worked in the normal range of 35-49 hours. Another 26.4 percent worked between 50 and 69 hours. Those working long hours (i.e. more than 70 hours per week) represented 33.9 percent. The maximum number of hours worked was 98, the minimum was 7 and the mean was 60, with a large standard deviation (22 hours). These very high numbers and their substantial dispersion make the validity of the data questionable. They will need to be checked against data obtained from the subsequent rounds of the survey.

A few words are worth noting with regard to the number of hours worked. The very high number seems to be confirmed by the answer to the following two questions: a) "were the hours worked normal?" and b) "how did they compare with the previous quarter?" About 88.1 percent considered the number of working hours normal and 78.1 percent said that they were the same as last quarter. Surprisingly, only 2.5 percent mentioned that working hours were above normal, while 7.4 percent still believed they were below normal. With regard to the second question, only 3.2 percent experienced an increase in their working hours compared to the previous quarter, while 16.5 percent experienced a decline. These qualitative answers may be correct, even if the number of working hours was not. Accuracy of the number of hours can only be observed if respondents were using a daily log, which was not the case with respondents to the pilot.

#### **E. Legality of Work and Workers**

Questions on the legality of the place of work and of the number of workers were expected to help in refining the definition of the informal sector, as was suggested by the ILO's fifth conference of labor statisticians. Unincorporated enterprises are currently considered informal, but some may operate under license from the government or other organizations. It would be preferable if they were considered formal and taken out from the informal group.

The pilot suggests that most enterprises expectedly have no legal status. Only a small number had a "legal" place of work: 4 were incorporated, 21 licensed / registered with the government and 30 licensed / registered with other organizations. The majority (89.2) had no legal status at all. This finding is not surprising, and suggests that the data are sufficiently plausible. It also suggests that there is no need at this time to revise the informal sector definition by dropping registered enterprises, since their share is small.

Another possible indicator to be used for refining the definition of the informal sector is the number of employees. Unincorporated enterprises employing a large number of employees can safely be categorized as part of the formal sector. Where the cut-off number of employees lies is not precisely determined. The results of the pilot suggest that 89 percent of enterprises employed less than 5 workers. However, this cut-off point cannot be used for refining the

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definition of the informal sector, since we put limits on the number of workers from the outset: 10 for manufacturing and 5 for other sectors.

#### **F. Earnings**

In the design of this survey, we did not expect to obtain reliable data on income in kind, since they cannot capture the traditional food, clothing etc, which are often given as part of salaries in the informal sector. Out of 512 respondents, 500 reported no income in kind, 5 reported income in kind of only 9 rupiah, which is probably a default figure used by enumerators for “unknown”. Only 3 people reported a reasonable amount in the range 72-120 thousands rupiah per month.

Reported cash income was somewhat more reasonable. However, greater attention must be focused on standardizing the unit of measurement (whether in rupiah or in thousands, hundreds, ..). One person reported an income of 20 million rupiah, and 7 people reported an income above 4.5 million rupiah. The majority reported much lower income.

Data on both income in kind and in cash seem to have been already corrected. The mean earnings level was 385 thousand rupiah, while the standard deviation was very large (217.5 thousand rupiah). This is probably caused by the fact that the minimum income recorded were only 18 rupiah.

Besides the need for more attention to the unit of measurement and income in kind, reported data on earnings appear generally plausible. The majority of workers (373 out of 508, or 73.5 percent), had an income between 300,000 and 1 million rupiah. Hopefully, better data will be obtained in the next round. The generally low income levels were consistent with the response to the three questions on income comparison. About 33 percent mentioned that their income declined compared to last quarter, and 4 percent even mentioned a sharp decline. But still 17.6 percent mentioned an increase in income. The majority (45.3 percent), as expected, reported no change in income.

Only 3 people considered that their income was higher than what was adequate for their job. The majority (73 percent), as one would expect, considered that their income was commensurate with the type of job they had. However, a substantial number (26.4 percent) mentioned that their income was lower than what the job should have paid.

In terms of educational background, a large number of respondents (more than 21 percent) reported that their education level was too high for the type of job they had. Only a negligible number mentioned that they were overpaid relative to their educational qualification.

Even with relatively low incomes, the majority of respondents (57.7 percent) considered that their income was sufficient for daily living. About 40 percent considered their income insufficient, while 2.6 percent considered their income more than sufficient.

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### **G. Job Shifting**

Results show that respondents were very much dependent on their jobs. Around 90 percent had no other job, leaving only 10 percent with another source of income. The majority of respondents (96.3 percent) had been in their job for more than 6 months. Only 19 people (3.7 percent) started to work within less than 6 months, 14 (2.7 percent) started to work during the previous quarter, and 5 people (1 percent) during the previous two quarters.

Out of the 19 people who started to work within the previous 6 months, 13 were working before and 3 were looking for work, and another 3 were not in the labor force. Out of the 13 who were previously working, 7 were from the same IDAIn, while the remaining 6 had shifted from other industries: 3 from manufacturing industry with more than 9 workers, 1 from agriculture and 2 from land transportation.

The survey only recorded 4 respondents who had ever worked in IDAIn sectors but were not working there any more. Three were still looking for work but none had found a job. The small number of such cases was due to our methodology which selected only areas with IDAIn activities. Consequently, the only people captured would be those currently working in the specified sub-sectors, not those previously working there.

## **V. CONCLUSIONS**

Job shifting seems to be very small. Most respondents have been in their job for a long time, and they seem to be able to keep their job, making job shifting an unreliable indicator. But this still has to be confirmed in the subsequent rounds of this survey. It is not yet clear whether this rare event can be accurately captured and compared from quarter to quarter. Nevertheless, some of the results of this round of the survey may be useful and have relevant policy implications: for example, the number of people who have started their job within less than 6 months; the number of people who have moved to other regencies/cities; socio-demographic characteristics of workers; employment status, hours worked; changes in job intensity, productivity and earnings. But these indicators are only preliminary. If subsequent rounds of this survey point in the same direction, these conclusions can then be drawn on more solid grounds.

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**APPENDIX A**  
**LIST OF ENUMERATOR NAMES AND AREAS**

Code	Regency/City	Code	Sub-districts	Code	Villages	Wilcah No	Code of Working Area	Sample Code	Enumerators
3171	South-Jakarta	41	Pancoran	1	Kalibata	12B2	1	100776	Kemis
		20	Cilandak	1	Lebak Bulus	04B1	1	210613	Sri Yatmi
3172	East-Jakarta	10	Pasar Rebo	5	Gedong Pondok	04B0	2	100524	Titik Kurniasih
		12	Cipayung	1	Ranggon	04B2	1	200564	Titi Warliati
3174	West-Jakarta	31	Palmerah	1	Palmerah	09B0	1	210764	Diah Priyatni
		20	Cengkareng	5	East-Cengkareng	13B0	1	200649	Samsul Fajar
3175	North-Jakarta	10	Penjaringan	2	Kapuk Muara	09B1	1	200506	Tuti Suimarni
				5	Pejaringan	26B0	1	200543	Setyaningsih
3203	Bogor Regency	260	Parung Panjang	9	Gintung Cilejet	01B0	1	210247	Pepen Buchori Dadang
		160	Cibinong	10	Pabuaran	04B0	1	100630	Supendi
3218	Bekasi Regency	100	Taruna Jaya	2	Setia Asih	02B0	1	300095	Cecep
		30	Setu	2	Mukti Jaya	02B0	1	210013	Juwadi
3271	Bogor City	10	South-Bogor City	3	Bondongan	05B0	1	220510	Agus Saryanto
		20	East-Bogor City	1	Sukasari	01B0	1	110511	Maladi
3276	Bekasi City	70	North-Bekasi	1	Harapan Jaya	06B0	1	210620	Rohaeti Hendi
		40	Eas-Bekasi	5	Margahayu	19B0	1	220799	Karsenda
3277	Depok City	710	Pancoran Mas	4	Pancoran Mas	11B0	1	221253	Zairina
		730	Sukma Jaya	8	Bakti Jaya	19B0	1	220743	Erianto
3671	Tangerang City	50	Benda	1	Belendung	05B0	1	200160	Suradi
		10	Ciledug	6	Kreo	09B0	1	220533	Susmedi Aji





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## APPENDIX C

### QUESTIONNAIRE FOR HOUSEHOLD ENUMERATION



# BPS

## UJI COBA

### SURVEI TRIWULANAN

### PEMULIHAN KESEMPATAN KERJA 2001/2002

#### Keterangan Rumah tangga

STPKK-S

RAHASIA

 Bulan : .....  
 Tahun : .....


I. PENGENALAN TEMPAT		
1. Propinsi:		[ ] [ ]
2. Kabupaten/Kota:		[ ] [ ]
3. Kecamatan:		[ ] [ ] [ ]
4. Kelurahan/Desa:		[ ] [ ] [ ] [ ]
5. Klasifikasi Desa/Kelurahan:	Perkotaan -1      Pedesaan -2	[ ]
6. Nomor Wilayah:		
7. Nomor urut rumah tangga sampel:		[ ] [ ]

II. KETERANGAN RUMAH TANGGA	
1. Nama Kepala Rumah tangga (Kolom 3 Daftar STPKK-L)	
2. Jumlah ART seluruhnya (Kolom 5 Daftar STPKK-L)	
3. Jumlah ART yang bekerja di IDAIn (Kolom 6 Daftar STPKK-L)	
4. Jumlah ART yang pernah bekerja di IDAIn (Kolom 9 Daftar STPKK-L)	

III. KETERANGAN PENCACAHAN	
1. Nama pencacah :	4. Nama pengawas/pemeriksa :
2. Tanggal pencacahan :	5. Tanggal pengawasan :
3. Tanda tangan pencacah :	6. Tanda tangan pengawas :

IV. KETERANGAN RESPONDEN						
No Urut Responden*)	Salin dari kolom (8) dan Kolom (11) Daftar STPKK-L	Jenis Kelamin	Umur (Tahun)	Status Perkawinan	Pendidikan tertinggi yang ditamatkan	Apakah pernah pindah tempat tinggal antar kabupaten/kota dalam periode 6 bulan terakhir?
		Laki-laki -1 Perempuan-2		Belum Kawin -1 Kawin -2 Ceraai -3	<SD -1 SD -2 SLTP -3 SLYA -4 >SLTA -5	1. Ya, karena alasan pekerjaan 2. Ya, karena alasan bukan pekerjaan 3. Tidak pernah pindah
(1)	(2)	(3)	(4)	(5)	(6)	(7)

\*) Sesuai kolom 7 atau kolom 10 Blok III, Daftar STPKK-L

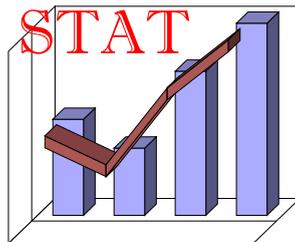
V. KETERANGAN ART YANG BEKERJA ATAU PERNAH BEKERJA DI SEKTOR IDAIn																						
Nama: ..... No. urut responden: ..... - Bila dari kolom 11 Daftar STPKR-L ➡ Blok B																						
<b>A. Kegiatan Bekerja (Pertanyaan 1 s.d 13 pekerjaan utama di IDAIn)</b>																						
1. Lapangan usaha/pekerjaan tempat bekerja/perusahaan/kantor dari pekerjaan utama selama seminggu yang lalu Industri -1      Perdagangan -3 Angkutan darat -2      Restoran/marang makan -4	12. Apakah mempunyai pekerjaan lainnya ? Ya -1      Tidak -2																					
2. Status/keudukan dalam pekerjaan utama selama seminggu yang lalu Berusaha sendiri -1 Berusaha dibantu buruh/pekerja tidak tetap/tidak dibayar -2 Berusaha dibantu buruh/pekerja tetap -3 Buruh/karyawan/pekerja -4	13. Kapan mulai bekerja pada pekerjaan utama? 1. Lebih dari 6 bln terakhir ➡ STOP 2. Kurang dari 6 bln terakhir. Bulan : .....																					
3. a. Apakah status tempat bekerja/usaha/kantor? Sebutkan: 1. Berbadan hukum (.....) 2. Ijin/terdaftar dari pemerintah (.....) 3. Ijin/terdaftar lainnya (.....) 4. Status lainnya (.....) b. Jumlah tenaga kerja: ..... Orang	14. Bila mulai bekerja pada pekerjaan utama yang sekarang kurang dari 6 bulan terakhir, aktifitas utama sebelum bekerja : Bekerja -1 Mencari pekerjaan -2 Sekolah -3 Mengurus rumah tangga -4 Lainnya -5 ➡ STOP																					
4. a. Jumlah hari kerja: ..... b. Jumlah jam kerja dari pekerjaan utama setiap hari selama seminggu yang lalu <table border="1"> <tr> <td>Sen</td> <td>Set</td> <td>Rab</td> <td>Kam</td> <td>Jum</td> <td>Sab</td> <td>Ming</td> <td>Ming</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Sen	Set	Rab	Kam	Jum	Sab	Ming	Ming									15a. Lapangan usaha/pekerjaan tempat bekerja/ perusahaan/kantor dari pekerjaan utama (pada pekerjaan R.14) Pertanian -1      Angkutan lainnya dan Komunikasi -9 Pertambangan -2      Perdagangan dan Restoran, dng TK >4 -10 Penggalian -3      Hotel -11 Industri dng TK >9 -4      Jasa perusahaan -12 Listrik, Gas dan Air -5      Bank dan Keuangan -7      Jasa perorangan -13 Konstruksi -6      Angkutan darat, dng TK >4 -8      Pemerintahan -14 IDAIn -15					
Sen	Set	Rab	Kam	Jum	Sab	Ming	Ming															
5. Jumlah jam kerja sekarang dibandingkan dengan triwulan sebelumnya : Jauh berkurang -1      Bertambah sedikit -4 Berkurang sedikit -2      Bertambah banyak -5 Tidak berubah -3      Lainnya -6	15b. Apakah masih bekerja pada R.15a Ya -1 ➡ STOP      Tidak -2																					
6. Apakah jam kerja sekarang normal? Jauh dibawah normal -1      Di atas normal -4 Di bawah normal -2      Jauh di atas normal -5 Normal -3	16. Kapan berhenti bekerja dari pekerjaan R.15a? Bulan ..... Tahun: .....																					
7. Berapa rata-rata upah/gaji/penghasilan yang biasanya diterima selama sebulan dari pekerjaan utama ? Dalam bentuk uang : Rp. .... Dalam bentuk barang : Rp. ....	17. Alasan utama berhenti bekerja: Kehendak sendiri -1      Pengurangan pegawai -4 Perusahaan tutup -2      Sebab lain (.....) -5 Usaha lelu -3      1,2,3,4,5 ➡ STOP																					
8. Apakah upah/gaji/penghasilan sepadan dengan pendidikan/keahlian? Sangat tidak sepadan -1      Lebih dari sepadan -4 Tidak sepadan -2      Sangat sepadan -5 Sepadan -3	<b>B. Khusus untuk yang pernah bekerja di sektor IDAIn (Khusus dari Kolom 11)</b>																					
9. Apakah upah/gaji/penghasilan sepadan dengan jenis/bertarungannya pekerjaan? Sangat tidak sepadan -1      Lebih dari sepadan -4 Tidak sepadan -2      Sangat sepadan -5 Sepadan -3	18. Kapan berhenti bekerja dari pekerjaan IDAIn? Bulan ..... Tahun: .....																					
10. Apakah upah/gaji/penghasilan dapat mencukupi kebutuhan rumah tangga ? Sangat tidak cukup -1      Lebih dari cukup -4 Tidak cukup -2      Sangat berlebih dari cukup -5 Cukup -3	19. Alasan utama berhenti bekerja: Kehendak sendiri -1      Pengurangan pegawai -4 Perusahaan tutup -2      Sebab lain (.....) -5 Usaha lelu -3																					
11. Apakah gaji/penghasilan sekarang mengalami peningkatan dibandingkan dengan triwulan sebelumnya ? Sangat menurun -1      Meningkat -4 Menurun -2      Sangat meningkat -5 Tetap -3      Lainnya -6	20. Apakah melakukan kegiatan seperti di bawah ini selama seminggu yang lalu? Bekerja -1      Mengurus rumah tangga -4 Mencari pekerjaan -2      Lainnya -5 Sekolah -3 (Bila Jawaban berkode 2 s.d 5 : STOP)																					
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	22. Status/keudukan dalam pekerjaan utama sekarang Berusaha sendiri -1 Berusaha dibantu buruh/pekerja tidak tetap -2 Berusaha dibantu buruh/pekerja tetap -3 Buruh/karyawan/pekerja -4 Pekerja tak dibayar -5																					
	23. Bagaimana perbandingan antara pekerjaan sekarang dengan pekerjaan di sektor IDAIn sebelumnya dalam hal sbbr: <table border="1"> <tr> <td></td> <td>Jam Kerja</td> <td>Upah/gaji/penghasilan</td> </tr> <tr> <td>Jauh berkurang</td> <td>1</td> <td>1</td> </tr> <tr> <td>Berkurang sedikit</td> <td>2</td> <td>2</td> </tr> <tr> <td>Tidak berubah</td> <td>3</td> <td>3</td> </tr> <tr> <td>Bertambah sedikit</td> <td>4</td> <td>4</td> </tr> <tr> <td>Bertambah banyak</td> <td>5</td> <td>5</td> </tr> <tr> <td>Lainnya</td> <td>6</td> <td>6</td> </tr> </table>		Jam Kerja	Upah/gaji/penghasilan	Jauh berkurang	1	1	Berkurang sedikit	2	2	Tidak berubah	3	3	Bertambah sedikit	4	4	Bertambah banyak	5	5	Lainnya	6	6
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Bertambah banyak	5	5																				
Lainnya	6	6																				

**EVALUATION  
OF THE  
INFORMAL SECTOR PILOT SURVEY**

Report # 65

by  
**Hananto Sigit**

November, 2002



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

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## I. INTRODUCTION

To support the government in designing employment oriented policies and to help it monitor their results, a quarterly pilot survey (*Survei Triwulanan Pemulihan Kesempatan Kerja*, STPKK) was proposed over one year ago.<sup>1</sup> Unlike the yearly Sakernas, which is designed to collect structural labor force and employment data, STPKK was designed to come up with potential indicators to monitor possible short-term employment fluctuations caused by policy changes, business cycles and seasonality. To be useful for policy, such indicators must be able to quickly detect short-term changes in employment in order to enable quick intervention. The survey was conducted in four rounds. The first round was undertaken in November, 2001 to cover the last quarter of 2001; and the last three quarters were implemented in February, May and August 2002. This report evaluates the results of all four rounds.<sup>2</sup>

## II. METHODOLOGY & FIELD WORK

### A. Methodology

#### 1. Domain of Estimation & Household Selection

The national economy was divided into a number of sub-economies based on the importance of employment, its homogeneity, the seriousness of the crisis impacts, and whether employment was affected by quarterly changes. The sub-economies chosen did not need to be statistically representative of the national economy, but they had to provide a picture of national employment.

Given budget limitations, the STPKK was conducted only in Jabotabek and was limited to informal sector activities in Manufacturing, Land Transportation, Trade and Restaurants (referred to in this survey by the acronym IDAIn<sup>3</sup>). These are considered as one integral sector because there is no entry or exit barrier among them. An individual may easily move from one sub-sector to another for employment. Agriculture was not included because employment

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<sup>1</sup> Sigit, Hananto, *Survei Triwulanan Pemulihan Kesempatan Kerja: A Proposed Survey to Monitor Short-term Employment & Earnings Changes*, STAT Project Report #17, December, 2000.

<sup>2</sup> An earlier evaluation (Hananto Sigit, *Evaluation of the First Round of the Informal Sector Pilot Survey*, STAT Project Report #45, February, 2002) was limited to results of the first round.

<sup>3</sup> This acronym was derived from the Indonesian names of the sectors: *Industri* (manufacturing), *Dagang* (trade) and *Angkutan* (land transportation). *In* stands for Informal.

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problems in this sector are more structural and systematically affected by seasons. Similarly personal services were not included because such activities were generally considered as marginal with no clear distinction between working and not working, since no capital is needed and only very limited skill is required. Informal activities in electricity, gas and water, banking and finance, hotels, mining and quarrying were excluded for other reasons. In some of these sectors, informal activities are generally small. In others, sample selection is highly complex. In any case, all excluded informal sector activities can be covered in the Quarterly Sakernas together with formal activities. Thus, activities included in the STPKK cover the key sectors. They are substantially affected by economic changes, government policies and regulations. The resulting indicators, therefore, are expected to be sensitive to these changes and should provide a picture of employment in the national economy.

From each selected wilcah, 20 eligible households were selected. Households were considered eligible if at least one of their members currently worked or ever worked in the selected sectors as an employer, an own-account worker with or without assistance of unpaid workers, or as an employee. Household selection was based on a *random walk*: the first household was randomly determined; then every fifth household was visited to determine whether it was eligible; if so, then the household was selected; if not, then the next eligible household was selected, and so on. Once 20 households were selected from a particular wilcah, listing stopped. If not enough households were found in a particular wilcah, then enumerators would turn to the neighboring wilcah to complete selection of the target number of households.

Visited households were enumerated using the STPKK-L questionnaire (see Appendix A for a prototype). Eligible households were clearly identified and given a sticker to enable re-enumerating them in the following quarter. This step was necessary because 50% of the households visited in a particular quarter would need to be re-enumerated in the following quarter. Overall then, after the first quarter, only 200 new households (of the 400) needed to be listed in a new wilcah, since the other 200 would be carried over from the previous quarter. The new households would be taken from a new wilcah, not from a wilcah which had been enumerated before. With 200 overlapping respondents every quarter, the survey had a total of about 600 respondents.

We believe that the above sampling methodology provided sufficient representation for the four target sub-sectors: manufacturing, trade, restaurant, and land transportation. Proportional representation of households within each sub-sector was not necessary. For the purpose of this survey, we believe that a minimum of 100 respondents in each sub-sector would have provided sufficient representation.

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## **2. Questionnaire**

Questionnaires used in the STPKK were different from those used in Sakernas and Susenas. In this survey the standard labor force approach was not applied, since the survey was not designed to collect information on structural employment. Rather, questions were directly addressed to groups working or who had ever worked. Questions focused on changes, intensity, income and employment shifts according to the main characteristics of the covered sub-sectors. That is because the main objective of the survey was to shed light on changes, not levels, of employment/earnings conditions in these sub-sectors.

Two questionnaires were used in this survey, one for household listing (STPKK-L) and one for enumeration (STPKK-S). Prototypes are provided in Appendices A and B respectively.

### **a. Household Listing**

This questionnaire's main objective was to list and identify household and household members eligible to become respondents. Eligible households were defined as those with at least one member working or who had ever worked in the covered sub-sectors as employers, own-account workers with or without assistance of unpaid workers, or as employees. Those working as unpaid workers were not included because their work was considered marginal.

Household members were considered "working" if, during the previous week, they were involved in a production activity (of goods or services) for income for at least one hour. They were considered to have "ever worked" if, during the last 6 months, they worked in an activity in the covered sub-sectors but were currently not working in an activity in these sub-sectors. The precise definition of activities in the covered sub-sectors was:

- Manufacturing Industry, employing less than 10 workers,
- Land Transportation, employing less than 5 workers
- Trade, employing less than 5 workers
- Restaurants, employing less than 5 workers

Owners were included if they also worked.

### **b. Household Enumeration**

This questionnaire aimed at obtaining the necessary information which would allow us to monitor changes in employment/earnings conditions. It was divided into 3 categories of information:

#### ***Social/Demographic Information***

This information was needed as background for identifying respondents. Only a limited number of such information was collected: Name, Age, Sex, Length of Stay in Kabupaten/Kota (broken

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down into less than 3 months or 3-6 months)

***Information on Job (for those currently working)***

1. Sub-sector and Employment Status. As mentioned above this information was necessary for weighting.
2. To understand productivity and intensity of work, working hours and wages/salaries/income were asked. To monitor changes in working hours, current working hours were compared with those in the previous quarter. Also enquired here was whether working hours were normal. For income, four questions were asked:
  - whether commensurate with labor productivity,
  - with education/qualification of the workers,
  - sufficient to support the family and
  - the changes compared to the previous quarter.

The first question evaluates whether income was commensurate with the share of labor in production. The second question enquires on whether workers were fully utilized. The third question was for monitoring whether family life could be normally supported by income just from one source. The last question was for monitoring income compared with the previous quarter: whether it improved, worsened or stayed the same.

3. For those working less than 6 months, the main previous activities were asked: whether working, seeking work, housework, or other. This attempts to understand activity shifts between quarters whether there was improvement / worsening of employment.
4. Also for those working less than 6 months, a follow up question on the sub-sector was asked. The sub-sectoral breakdown was: Agriculture, Mining, Quarrying, Industry with employment less than 10, Industry with employment 10 or more, Electricity, Gas and Water, Banking and Finance, Land Transportation with employment less than 5, Land Transportation employment of 5 or more, Other Transportation and Communication, Trade and Restaurant with employment less than 5, Trade and Restaurant with employment of 10 or more, Hotels, Institutional Services, Personal Services
5. Those working were asked about their employment status: whether as employer, own-account worker with/without assistance from unpaid workers, employee or unpaid worker. The question on status crossed with question in 4 was used to identify sub-sectoral shifts to understand whether there were economic conditions positively influencing employment. Basically four groups were identified: formal<sup>4</sup>, agriculture, informal in covered sub-sectors<sup>5</sup> and unpaid workers in covered sub-sectors. The shift of workers between the four groups could show

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<sup>4</sup> This includes: Mining, Industry with 10 or more employment, Electricity, Gas and Water, Banking and Finance, Land Transportation with 5 or employment, Other Transportation and Communication, Trade and Restaurant with 5 or more employment, Institutional Services, and Government.

<sup>5</sup> This includes: Industry with less than 10 employees, Land Transportation and Trade and Restaurants employing less 5 workers.

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increases or declines in employment.

6. Those working were finally asked whether they had additional jobs. This aims at understanding whether the main job was sufficient. An increasing number of those with additional jobs may indicate a worsening economic condition. At the same time, taking additional jobs may be an indication of having the opportunity to get additional income for family support. Thus interpreting this variable needs to be done with caution and in conjunction with other variables.

### ***Information for those who have ever worked***

1. For this group the first question asked was what month they stopped working. Only those who stopped working within the last 6 months would qualify as respondents. This information was used to group respondents into those who stopped working in the current quarter and those in the previous quarter.
2. Reason why they stopped working: whether they did it of their own will or they were forced by worsening economic conditions.
3. Those who stopped working for not more than 6 months were asked about their current activities, in order to see changes in their activities, i.e. whether they were able to work in another job or not.
4. Those still working in point 3 were asked about the industry and status of their current job, in order to classify them into one of the four groups mentioned in questions 4 and 5 addressed to working respondents.

### **B. Field Work**

The survey was conducted by the BPS Directorate of Population Statistics. Specifically the sub-directorate of manpower statistics was technically responsible for all activities including selection of field workers, preparation of questionnaires, processing and handling of all documents, and training of field workers. Another sub-directorate dealing with wages, under the same Directorate, assisted in implementation, particularly in data processing.

One enumerator was responsible for covering one wilcah. Thus a total of 20 enumerators covered the selected 20 wilcah. One supervisor was selected for every regency / municipality to check the work of two enumerators. The supervisor also acted as the coordinator of the survey in the regency/ municipality.

### **C. Timetable**

Questionnaire preparation was conducted during August and September 2001. A series of discussions was conducted with participants from the Directorate of Methodology and the Directorate of Population Statistics. Before the technical discussions, several meetings were conducted by BPS management to consider different aspects of data collection, especially of employment data. Training of field workers was conducted in October 2001. Trainers were the

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same staff involved in questionnaire preparation and sample selection. Since the same personnel were employed in all four rounds of the survey, training was conducted only once.

Data processing was completed shortly after the field work. Heavy editing was not done. As much as possible the original data from the field were accepted for analysis. This way better inputs could be obtained than when the data have undergone heavy editing.

### III. ANALYSIS OF RESULTS

Results are discussed below covering seven sub-sections.

#### A. Socio-Demographic Background

##### 1. Sex

Table 1 indicates, not surprisingly, that the majority of respondents (around 73-74 percent) were male. The smaller proportion of females does not mean that women can be neglected. Jobs in the informal sector are flexible and can be conveniently performed by both males and females. The survey also reflects consistent proportions of males/females during the four quarters, despite the fact that these proportions were not controlled. This reflects a proper design of the sample.

**Table 1**  
**Percentage Distribution of Respondents by Sex**

Sex	Nov. 01	Feb. 02	May 02	Aug. 02
Male	74.0	73.2	74.4	72.9
Female	26.0	26.4	25.4	27.1
Total	100.0	99.6	99.8	100.0
Sample	512	486	466	499

##### 2. Marital Status

As shown in Table 2, around 80 percent of respondents are married. This shows the importance of the IDAIn sector in the economy, given that its activities are not relied on only by individual workers themselves but also by family members. This sector is the main source of income for the whole family. Singles make up only 13-16 percent of respondents. The distribution of respondents by marital status shows slightly different proportions between the first two quarters on the one hand and the last two quarters on the other. It is difficult to see why other than to hypothesize that the difference is probably due to sampling error.

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**Table 2**  
**Percentage Distribution of Respondents by Marital Status**

<b>Marital Status</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
Single	16.6	16.5	13.7	13.3
Married	79.7	79.8	82.4	81.7
Divorced	3.7	3.4	3.7	5.0
Total	100.0	100.0	100.0	100.0
Sample	512	486	466	499

### **3. Age Distribution**

Table 3 indicates that a little more than one-half of respondents (around 57-59 percent) were in the main working age group (i.e. between 30 and 50 years old). Young workers, defined as those below 30 years old, have a substantial share (21-25 percent). This distribution is consistent with that in the previous table, and points to the importance of the role played by the IDAIn sector: it provides employment and income to the core of the labor force.

**Table 3**  
**Percentage Distribution of Respondents by Age Group**

<b>Age Group</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
15 - 19	6.5	3.3	2.3	6.0
20 - 24	7.1	7.8	7.2	6.8
25 - 29	11.8	11.5	12.9	8.8
30 - 34	15.9	15.4	14.4	13.6
35 - 39	15.0	17.5	16.8	16.8
40 - 44	17.3	17.1	17.0	17.0
45 - 49	8.7	9.1	9.5	12.2
50 - 54	8.1	7.0	9.5	9.4
55 - 59	3.4	4.1	4.3	3.8
60+	6.3	7.2	6.2	5.4
Total	100.0	100.0	100.0	100.0
Sample	512	486	466	499

### **4. Education**

Table 4 shows the distribution of respondents by education. Most respondents, as expected, have at most an elementary school education (60-65 percent), although in May that percentage was substantially lower (50 percent). The surprise was to find around 2 percent of respondents with more than high school education. The fact that such respondents exist needs to

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be kept in mind in the design of future surveys, because they have distinctly different characteristics: better educated workers likely earn more and generally have better working environments than average.

**Table 4**  
**Percentage Distribution of Respondents by Education**

Education	Nov. 01	Feb. 02	May 02	Aug. 02
< Elementary School	20.5	20.4	16.6	16.0
Elementary School	44.3	40.3	33.3	45.9
Junior High School	21.3	21.2	25.1	20.2
Senior High School	12.4	16.5	23.0	15.8
> Senior High School	1.6	1.7	2.1	2.0
Total	100.0	100.0	100.0	100.0

## 5. Spatial Mobility

As expected, the great majority of respondents had not moved during the last 6 months (96-98 percent, see Table 5). Some had moved for reasons related to their job. But that proportion was too small (despite the relatively larger proportion in Nov. 01) to be used as an indicator reflecting quarterly fluctuations, even when the proportion of those who moved for “other” reasons is added.

**Table 5**  
**Percentage Distribution of Respondents By Reason for Moving**

Reason for Move	Nov. 01	Feb. 02	May 02	Aug. 02
Job	3.5	1.0	1.6	1.2
Other	0.8	3.0	1.0	1.0
Did not move	95.7	96.0	97.3	97.8
Total	100.0	100.0	100.0	100.0
Sample	512	486	466	499

## B. Work Place

### 1. Legal Status of Establishments

In accordance with the recommendations of the ILO’s fifth conference of labor statisticians, questions on the legality of the place of work were designed to help refine the definition of the informal sector. By definition, “incorporated” establishments are formal, while those “unincorporated” could be considered informal. However, some unincorporated

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establishments may operate under license from the government or from other organizations, and thus have a *bona fide* “legal status”. Such establishments are better characterized as “formal”. What we consider as part of the “informal” group of enterprises are those with no *bona fide* legal status.

As expected, the survey shows (Table 6) that the great majority of respondents had no legal status. At most, less than 2 percent were incorporated, between 4-9 percent were licensed/registered with the government and 6-12 percent licensed/registered with other organizations. Such a distribution is not surprising since the survey was designed to cover only informal employment in the IDAIn.

**Table 6**  
**Percentage Distribution of Respondents by Legal Status of Work Place**

<b>Legal Status of Work Place</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
Incorporated	0.8	1.0	2.1	1.6
Government licensed/registered	4.1	8.8	8.6	7.6
Other licensed/registered	5.9	12.6	12.2	8.2
Other	89.2	77.6	77.0	82.6
Total	100.0	100.0	100.0	100.0
Sample	508	486	466	499

## **2. Number of Employees**

Another variable that could be used for refining the definition of the informal sector is the number of employees in the work place. In some countries, enterprises with no legal status employing a large number of employees are classified in the formal sector. What is the cut-off number of employees for determining separating the formal from the informal sector? This may differ by sector. In this survey we have determined it at 10 employees for manufacturing and 5 for other sectors. In other words, an establishment employing less than 10 workers in manufacturing or 5 workers in other sectors is considered as informal. Table 7 shows that if 5 is used as the cut-off number of employees, then around 95 percent of respondents work in informal establishments.

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**Table 7**  
**Percentage Respondents by Employment**

<b>Number of Employees</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
1	51.4	61.5	49.8	57.7
2	22.0	16.7	16.7	23.8
3	9.8	4.7	10.1	5.0
4	5.7	7.2	10.1	7.2
5	2.8	3.9	7.7	3.0
6	2.4	1.6	2.4	2.0
> 6	5.9	4.3	3.3	1.2
Total	100.0	100.0	100.0	100.0
Sample	508	486	466	499

### C. Economic Background

#### 1. Economic Sector

The survey methodology was designed to capture a sufficient number of respondents engaged in manufacturing, land transportation, trade and restaurants. It turns out that those engaged in trade accounted for more than 50 percent, while those in restaurants/food vending were not well represented (7-9 percent, see Table 8). This would not alter our conclusions, however, since we do not intend to produce individual sectoral distributions. Respondents in manufacturing accounted for 17-25 percent (with a substantially higher shares in Nov. 01 and Aug. 02) and those in land transportation 19-22 percent.

**Table 8**  
**Percentage Distribution of Respondents by Economic Sector**

<b>Economic Sector</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
Manufacturing	22.4	17.1	18.9	24.6
Land transportation	19.5	21.0	21.5	19.0
Trade	51.0	52.7	50.6	48.3
Restaurants	7.1	9.3	9.0	8.0
Total	100.0	100.0	100.0	100.0
Sample	512	486	466	499

#### 2. Employment Status

Table 9 shows the distribution of respondents by employment status. Around 50-62 percent are own-account workers; and 12-21 percent were helped by temporary workers. These

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two groups of employment status are flexible: workers easily move from one category to the other. The total employment of these two groups is around 70 percent.

**Table 9**  
**Percentage Distribution of Respondents by Employment Status**

<b>Employment Status</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
Own-account	51.4	61.5	49.8	57.7
Assisted by temporary	20.5	17.1	18.7	12.4
Assisted by permanent	11.4	6.4	10.9	10.2
Employees	16.7	15.0	20.6	19.6
Total	100.0	100.0	100.0	100.0
Sample	512	486	466	502

#### **D. Job Mobility**

##### **1. Exit**

Respondents selected in the survey covered two groups: those currently working and those who have worked in IDAIn in the past but who stopped working during the last 6 months. As expected, the number of respondents in the second category is small (Table 10) and it fluctuates markedly during the four quarters. One must keep in mind, however, the very small number of respondents for these categories, which makes it difficult to make any conclusive statements on this subject.

**Table 10**  
**Percentage of Respondents Who Have Ever Worked in IDAIn and Stopped Working in Last 6 Months**

<b>Months Stopped Working</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
0-3 months	-	43.8	70.0	100.0
4-6 months	100.0	56.3	30.0	-
Total	100.0	100.0	100.0	100.0
Sample	4	16	20	3

##### **2. Entry**

The percentage of those recently joining IDAIn can be a good indicator of better employment in IDAIn, sparked by better employment conditions in the formal sector. It may also

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be a sign of worsening economic conditions, with declining incomes forcing people to seek employment in this sector. So one has to be careful to interpret such changes in their right context.

As expected (Table 11), most respondents to the survey had been working in the sector for more than 6 months (around 96-98 percent). The very small number of new entrants makes it difficult to conclude anything about changes between quarters.

**Table 11**  
**Months Started Current Job**

Months	Nov. 01	Feb. 02	May 02	Aug. 02
< 3	2.7 (14)	0.6 (3)	3.0 (14)	1.0 (5)
3-6	1.0 (5)	3.3 (16)	1.3 (6)	0.4 (2)
> 6	96.3 (489)	96.1 (467)	95.7 (446)	98.6 (492)
Total	100 (512)	100 (504)	100 (466)	100 (499)

Previous activities of those recently joining the sector are shown in Table 12. Most of them were previously working. Thus they were actually “in between jobs”. Only a small number of them were previously looking for work, housewives or school children.

**Table 12**  
**Activities Before Joining IDAIn in Last Six Months**

	Nov. 01	Feb. 02	May 02	Aug. 02
Working	68.4	68.0	55.0	28.6
Others	32.6	32.6	45.0	71.4
Total	100.0	100.0	100.0	100.0
Sample	19	19	20	7

## **E. Days and Hours Worked**

These are variables measuring the intensity of work.

### **1. Days Worked**

As Table 13 shows, most workers worked 7 days a week (around 63- 76 percent). This is the typical number of days worked in the informal sector. Another 17-24 percent worked 6 days a week and only 7.5 percent worked 5 days or less. If the same quarterly pattern portrayed in Table 13 were to apply to a calendar year, then one can hypothesize that informal workers work more days in the last two quarters of the year, possibly in response to increasing economic activities prompted by the government budget cycle.

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**Table 13**  
**Percentage of Respondents by Number of Days Worked in a Week**

Days Worked	Nov. 01	Feb. 02	May 02	Aug. 02
< 6	7.5	10.1	12.7	10.5
6	16.7	23.9	24.2	20.0
7	75.8	66.0	63.1	69.5
Total	100.0	100.0	100.0	100.0
Sample		504	488	502

## 2. Hours Worked

The number of hours worked was substantially higher than that applying to the rest of the economy (Table 14). The majority (87-89 percent) worked more than 35 hours. The Nov. 01 survey showed a large percentage (29 percent) working in the normal range of 35-49 hours per week; another 26.2 percent working between 50 and 69 hours; and 33.6 percent working long hours (more than 70 hours). The maximum number of hours worked was 98, the minimum was 7 and the mean was 57, with a large standard deviation of 22 hours. These very high numbers and their substantial dispersion make the validity of the data questionable. Results for the other three quarters in Table 14 show that the findings in the Nov. 01 round were not atypical.

**Table 14**  
**Percentage of Respondents by Number of Hours Worked in a Week**

Working Hours	Nov. 01	Feb. 02	May 02	Aug. 02
< 15	2.0	1.9	1.5	1.4
15-34	8.9	11.3	11.2	10.8
35+	89.2	86.8	87.3	87.8
Total	100.0	100.0	100.0	100.0
Means	57.4	55.9	57.8	61.2

When average hours worked are broken down by gender (Table 15), one can see that in the informal sector females work harder.

**Table 15**  
**Mean of Weekly Hours Worked by Sex**

Sex	Nov. 01	Feb. 02	May 02	Aug. 02
Male	55.9	55.0	56.1	58.5
Female	61.6	58.5	63.3	68.5
Total	57.4	55.9	57.8	61.2

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Another possible breakdown is by marital status (Table 16). As expected, married workers work more hours than single workers, but the difference is not very large.

**Table 16**  
**Mean of Weekly Hours Worked by Marital Status**

<b>Marital Status</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
Single	54.2	48.3	51.6	59.8
Married	58.2	57.5	59.0	61.6
Divorced	55.4	52.4	51.8	58.5
Total	57.4	55.9	57.8	61.2

A Further breakdown can be provided by age of respondent (Table 17). Young workers tend to work the hardest, but the difference with other age groups is not large, except when compared with child workers of 15-19.

**Table 17**  
**Mean of Weekly Hours Worked by Age Group**

<b>Age Group</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
15-19	60.2	50.0	49.6	58.9
20-29	56.6	57.0	61.9	65.4
30-49	57.3	56.5	58.1	60.1
50+	57.7	56.5	53.5	60.7
Total	57.4	55.9	57.8	61.2

If one breaks down the number of hours worked by education (Table 18), one does not detect a clear relationship.

**Table 18**  
**Mean of Weekly Hours Worked by Education**

<b>Education</b>	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
< Elementary School	54.7	56.5	53.3	56.5
Elementary School	60.2	55.6	59.6	62.3
Junior High School	53.5	57.5	59.9	59.7
Senior High School	57.7	52.2	55.7	63.9
> Senior High School	65.6	70.8	65.3	67.9
Total	57.4	55.9	57.8	61.2

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A breakdown by economic sector (Table 19) shows that respondents in the restaurants sector had the longest working hours. That may be explained by the fact that such work not only includes serving food to customers, but also obtaining food supplies, setting up the food stall and preparing the food for serving. In the informal sector, restaurants open long hours; in some cases 24 hours to cater to late customers. Trade comes in second place and land transportation in third place.

**Table 19**  
**Mean of Weekly Hours Worked by Economic Sector**

Sector	Nov. 01	Feb. 02	May 02	Aug. 02
Manufacturing	54.7	48.7	47.7	52.8
Land transportation	48.1	50.6	50.8	57.0
Trade	61.4	59.8	62.6	65.8
Restaurants	63.0	59.0	68.7	69.4
Total	57.4	55.9	57.8	61.2

Table 20 shows an interesting finding on hours worked by employment status. Own-account workers assisted by family workers and temporary workers work the longest hours. This is probably because these are family businesses taking place on their own premises.

**Table 20**  
**Mean of Weekly Hours Worked by Employment Status**

Employment Status	Nov. 01	Feb. 02	May 02	Aug. 02
Own account worker	56.0	56.0	58.0	63.0
Assisted by temporary workers	62.0	61.0	64.0	68.0
Assisted by permanent workers	58.0	53.0	61.0	61.0
Employers	57.0	51.0	52.0	53.0
Employees	57.0	56.0	58.0	61.0

### **3. Whether Hours Worked Are Normal?**

Did respondents consider their work hours “normal”? As Table 21 shows, around 80-92 percent said yes. A small percentage even mentioned that they were below normal.

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**Table 21**  
**Whether Working Hours Normal**

	Nov. 01	Feb. 02	May 02	Aug. 02
Much below normal	1.2	1.2	1.7	1.8
Below normal	7.5	16.7	8.6	3.8
Normal	88.8	80.0	87.6	92.0
Above normal	2.6	2.1	2.2	2.4
Total	100.0	100.0	100.0	100.0
Sample		486	466	499

#### **4. Work Hours Compared to Previous Quarter**

How did work hours compare with the previous quarter? Table 22 suggests that the majority of respondents (73-83 percent), felt that there was no change. One possible reason, particularly if one combines these results with those of the previous section, is that there is very little room to put in more hours since some have already been working very long hours.

**Table 22**  
**Working Hours Compared to Previous Quarter**

	Nov. 01	Feb. 02	May 02	Aug. 02
Much less	4.7	5.6	4.9	3.2
A little less	11.8	13.8	14.8	8.2
No change	78.2	75.1	73.2	83.2
A little more	2.8	3.7	5.6	4.0
Much more	0.4	-	0.6	0.4
Other	2.2	1.9	0.9	1.0
Total	100.0	100.0	100.0	100.0
Sample		486	466	499

## **F. Income**

### **1. Income levels and Distribution**

Data on income are always difficult to collect. This survey attempted to collect monthly income from respondents for checking the qualitative information on income gathered in the survey. Table 23 shows the distribution of respondents by income group. The Aug. 02 round of the survey appears to have captured particularly higher income respondents as evidenced by the sharp increase in the mean value of monthly income.

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**Table 23**  
**Percentage of Respondents by Income Group**

Monthly Income	Nov. 01	Feb. 02	May 02	Aug. 02
< Rp. 250,000	18.7	14.8	11.8	15.4
Rp. 250,000-499,000	38.8	37.2	27.5	25.3
Rp. 500,000-999,000	29.9	34.2	36.1	29.5
Rp. 1,000,000+	12.6	13.8	24.7	29.9
Total	100.0	100.0	100.0	100.0
Mean (Rp. 000)	652	1130	1320	9947

## 2. Income by Socio-Demographic Variables

Table 24 shows that generally male workers earn more than female workers, although in Aug.02 that was not the case. The magnitude of the difference in income was not consistent from one quarter to another.

**Table 24**  
**Mean of Monthly Income by Sex (Rp. 000)**

Sex	Nov. 01	Feb. 02	May 02	Aug. 02
Male	677	1320	1372	974
Female	582	581	1159	1050
Total	652	1130	1320	995

Table 25 shows more consistent results of income by marital status. As expected, married workers earn more than single workers. The difference is around twice or three times. This reflects the fact that those married are assisted by family members. Part of their income may actually belong to their family members.

**Table 25**  
**Mean of Monthly Income by Marital status (Rp. 000)**

Marital Status	Nov. 01	Feb. 02	May 02	Aug. 02
Single	358	443	662	569
Married	703	1282	1451	1076
Divorced	827	593	508	797
Total	652	1130	1320	995

Looked at by age group (Table 26), average income level data show no consistent results.

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**Table 26**  
**Means of Monthly Income by Age Group (Rp. 000)**

Age Group	Nov. 01	Feb. 02	May 02	Aug. 02
15-19	2212	4304	5722	4915
20-29	5083	10651	11192	9358
30-49	6975	9696	15208	11383
50+	8456	2690	14018	9739
Total	6518	1130	1320	9947

When income data are broken down by education (Table 27), inconsistency of results is even more pronounced. The plausibility of the Rp. 6.5 million income of those with higher than senior high school education in Feb. 02 (compared to that of other income groups as well as that of the same group in other rounds of the survey) is questionable. So is that of the Aug. 02 round for the same category.

**Table 27**  
**Mean of Monthly Income by Education (Rp. 000)**

Education	Nov. 01	Feb. 02	May 02	Aug. 02
< Elementary School	425	474	603	615
Elementary School	522	794	1242	863
Junior High School	959	1285	1399	1291
Senior High School	858	2033	1916	1361
> Senior High School	1481	6472	1274	1161
Total	652	1124	1327	9947

### **3. Income by Sector and Employment Status**

Even more fundamental data on income broken down by economic sector and employment status are not consistent (Table 28).

**Table 28**  
**Mean of Monthly Income by Economic Sector (Rp. 000)**

Sector	Nov. 01	Feb. 02	May 02	Aug. 02
Manufacturing	572	672	1080	646
Land Transportation	717	556	602	812
Trade	679	1479	1743	1209
Restaurant	533	1252	1156	1146
Total	652	1124	1327	9947

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The breakdown of income by employment status is not better (Table 29).

**Table 29**  
**Means of Monthly Income by Employment Status (thousand rp)**

Employment Status	Nov. 01	Feb. 02	May 02	Aug. 02
Own-Account	509	886	965	938
Assisted by Temporary Workers	1027	1490	3202	1856
Employers	934	3968	1222	1343
Employees	440	516	524	435
Total	652	1130	1320	9947

In sum, data on absolute levels of income suffer from lack of consistency: differences by various categories above are erratic and implausible and no plausible quarterly trend can be established for any category. One possible explanation may be that income data are best collected using a detailed questionnaire asking about various sources of income and household assets, not a simple question asking about the level of income as this survey did.

#### **4. Relative Incomes**

The survey had a number of additional qualitative indicators on income, requiring respondents to assess their income in comparison to the previous quarter, type of work, education and cost of living.

##### ***a. Current Income Compared to Previous Quarter***

Table 30 shows, as expected, that the majority of respondents (around 43-46 percent) did not experience income changes, although the Aug. 02 result appears out of line with other quarters. In fact, the great majority of respondents (over 95%) experienced either no change or a slight change, although about the proportion of those experiencing a slight decline was about twice of the proportion of those experiencing a slight increase.

**Table 30**  
**Current Income Compared to Previous Quarter (%)**

	Nov. 01	Feb. 02	May 02	Aug. 02
Declined substantially	3.7	2.1	1.9	2.4
Declined somewhat	33.1	41.0	33.1	20.6
Remained the same	45.7	43.4	44.2	63.7
Increased somewhat	15.6	11.1	19.1	12.2
Increased substantially	2.0	2.5	1.7	1.0
Total	100.0	100.0	100.0	100.0
Sample		486	466	499

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***b. Does Income Cover Cost of Living?***

Data in Table 31 suggest that the majority of respondents witnessed improvement not only in money income but also in real income. Changes in general economic conditions affect both nominal income and prices, the latter being the main determinant of the cost of living. When nominal income increases by a higher rate than prices, i.e. when real income increases, people are better-off. That is reflected in the large share of respondents stating that their income is sufficient, or even more than sufficient, to cover their cost of living.

**Table 31**  
**Whether Income Sufficient to Cover Cost of Living (%)**

	Nov. 01	Feb. 02	May 02	Aug. 02
Highly insufficient	1.6	1.2	1.3	3.4
Insufficient	38.2	44.9	36.9	28.5
Sufficient	57.7	52.1	54.7	63.3
More than Sufficient	2.6	1.9	7.1	4.8
Total	100.0	100.0	100.0	100.0
Sample		486	466	499

***c. Income Compared to Job***

Table 32 provides data regarding income satisfaction relative to the job performed. As one would expect, the majority of respondents (about three fourths) said that their income was commensurate with their job, and about one fourth felt that their income was lower than what their job should have paid. A negligible percentage said that their income was much lower than what their job should have paid or was higher than the job should have paid. These latter categories may be within the margin of sampling error.

**Table 32**  
**Whether Income Commensurate with the Job (%)**

	Nov. 01	Feb. 02	May. 02	Aug. 02
Much lower	1.8	1.2	1.3	1.4
Lower	24.6	25.9	24.3	18.0
Commensurate	73.0	72.0	73.4	79.4
Higher	0.6	0.8	1.1	1.2
Total	100.0	100.0	100.0	100.0
Sample		486	466	499

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***d. Income Compared to Education***

Response to this variable is very similar to that of the previous section, presumably because education and the type of job may be highly correlated. The majority of respondents (over three fourths) felt that their income was commensurate with their education, and a little less than one fourth felt that it was lower than what their level of education should have provided.

**Table 33**  
**Whether Income Commensurate with Education (%)**

	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
Much lower	1.4	1.2	0.9	1.2
Lower	19.9	19.8	22.1	15.4
Commensurate	78.0	77.8	76.2	82.6
Higher	0.8	1.2	0.9	0.8
Total	100.0	100.0	100.0	100.0
Sample		486	466	499

**G. Multiple Jobs**

Respondents were asked to state whether they held other jobs, because workers in the informal sector typically hold more than one job to compensate for their low income. As Table 34 shows, about 90% said that they did not have any other job. One has to interpret the small proportion of those with more than one job very carefully. On the one hand, one might interpret it as a reflection of good economic times if workers do not need the other jobs because their current income is satisfactory. On the other hand, one might interpret it as a reflection of bad economic times if workers want other jobs to supplement their current income but cannot find them. With the small sample and the limited time coverage in this survey, it is difficult to tell which story is more applicable.

**Table 34**  
**Whether Have Other Jobs**

	<b>Nov. 01</b>	<b>Feb. 02</b>	<b>May 02</b>	<b>Aug. 02</b>
Have Other Jobs	9.8 (50)	5.8 (28)	10.7 (50)	9.4 (47)
No Other Jobs	90.7 (458)	94.2 (458)	89.3 (416)	90.6 (452)
Total	100 (508)	100 (486)	100 (466)	100 (499)

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#### **IV. CONCLUSION**

The STPKK survey was designed to provide a window into what type of employment or earnings indicator may be useful to consider which would reflect short-term labor market fluctuations. The focus was on a particular sub-economy, informal activities in manufacturing, land transportation, trade and restaurants because they can be considered as part of one integral sector given the lack of entry/exit barriers between them. Given budget limitations, the survey was limited to the Jabotabek area.

Results show that the most promising indicators refer to intensity of work and perceived adequacy of income. Table 35 lists 27 indicators derived from this survey which have the potential to provide useful insight into short-term labor market changes. It is recommended that BPS evaluate the possibility of introducing similar indicators in its future labor market surveys. Table 36 lists three additional potentially useful indicators which did not produce significant results in this survey, probably due to the small sample, but which may do so if applied to larger samples. Finally, although indicators of job shifting point to few respondents in this category, we believe that this is a very important potential indicator which should be kept in mind in designing future surveys.

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**Table 35**  
**Recommended Quarterly Indicators Based on STPKK**

Percentage of Respondents	Nov. 01	Feb. 02	May 02	Aug. 02
<b>Sex/Status</b>				
Females	26.0	26.4	25.4	27.1
Single workers	16.6	16.5	13.7	13.3
Young workers (less than 30)	25.4	22.6	22.4	21.6
<b>Days/Hours Worked</b>				
Working days less than 6	7.5	10.1	12.7	10.5
Hours worked less than 15	2.0	1.9	1.5	1.4
Hours worked more than 35	89.2	86.8	87.3	87.8
Average hours of own-account workers with no employees	62.0	61.0	64.0	68.0
Average hours worked by workers 30-49	57.3	56.5	58.1	60.1
Average hours worked by married workers	58.2	57.5	59.0	61.6
<b>Comparative Hours</b>				
Working hours less than previous quarter	16.5	19.4	19.8	11.4
Working hours same as previous quarter	78.2	75.1	73.2	83.2
Hours worked more than previous quarter	3.1	3.7	6.3	4.4
Working hours below normal	8.7	17.9	10.3	5.6
Working hours normal	88.8	80.0	87.6	92.0
Working hours above normal	2.6	2.1	2.2	2.4
<b>Income Compared to Previous Quarter</b>				
Decline	36.8	43.0	35.0	23.0
Same	45.7	43.4	44.2	63.7
Increase	17.5	13.6	20.8	13.2
<b>Income Compared to Cost of Living</b>				
Insufficient	39.7	46.1	38.2	31.9
Sufficient	57.7	52.1	54.7	63.3
<b>Income Compared to What Job Requires</b>				
Lower	26.4	27.2	25.5	19.4
Commensurate	73.0	72.0	73.4	79.4
<b>Income Compared to What Education Requires</b>				
Lower	21.2	21.0	23.0	16.6
Commensurate	78.0	77.8	76.2	82.6

**Table 36**  
**Potentially Useful Indicators**

Percentage of Respondents Who	Nov. 01	Feb. 02	May 02	Aug. 02
Ever moved	4.3 (22)	4.0 (20)	2.6 (12)	2.2 (11)
Stopped working within 6 months	8.0 (4)	3.3 (16)	4.3 (20)	0.6 (3)
Started working in last 6 Months	3.7 (19)	3.9 (19)	4.3 (20)	1.4 (7)





## APPENDIX B

### QUESTIONNAIRE FOR HOUSEHOLD ENUMERATION



BPS

UJI COBA

SURVEI TRIWULANAN

PEMULIHAN KESEMPATAN KERJA 2001/2002

Keterangan Rumah tangga

STPKK-S

Bulan 1 : .....

Tahun 1 : .....


**RAHASIA**

#### I. PENGENALAN TEMPAT

1. Propinsi:				
2. Kabupaten/Kota:				
3. Kecamatan:				
4. Kelurahan/Desa:				
5. Klasifikasi Desa/Kelurahan:	Perkotaan -1    Pedesaan -2			
6. Nomor Wilayah:				
7. Nomor urut rumah tangga sampel:				

#### II. KETERANGAN RUMAH TANGGA

1. Nama Kepala Rumah tangga (Kolom 3 Daftar STPKK-L)	
2. Jumlah ART seluruhnya (Kolom 5 Daftar STPKK-L)	
3. Jumlah ART yang bekerja di IDA/in (Kolom 6 Daftar STPKK-L)	
4. Jumlah ART yang pernah bekerja di IDA/in (Kolom 9 Daftar STPKK-L)	

#### III. KETERANGAN PENCACAHAN

1. Nama pencacah :	4. Nama pengawas/pemeriksa :
2. Tanggal pencacahan :	5. Tanggal pengawasan :
3. Tanda tangan pencacah :	6. Tanda tangan pengawas :

#### IV. KETERANGAN RESPONDEN

No Urut Responden*)	Salin dari kolom (8) dan Kolom (11) Daftar STPKK-L	Jenis Kelamin Laki-laki -1 Perempuan -2	Umur (Tahun)	Status Perkawinan Belum Kawin -1 Kawin -2 Cerai -3	Peridikan tertinggi yang diamatkan <SD -1 SD -2 SLTP -3 SLTA -4 >SLTA -5	Apakah pernah pindah tempat tinggal antar kabupaten/kota dalam periode 6 bulan terakhir? 1. Ya, berapa alasan pemindahan 2. Ya, berapa alasan bukan pemindahan 3. Tidak pernah pindah
(1)	(2)	(3)	(4)	(5)	(6)	(7)

\*) Sesuai kolom 7 atau kolom 10 Blok III, Daftar STPKK-L

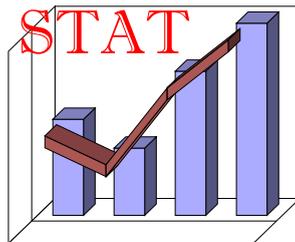


# QUARTERLY WAGE SURVEY OF LIVESTOCK AND FISHERY

Report # 68  
Statistical Paper #16

by  
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April, 2003



**Statistical Assistance to the Government of Indonesia (STAT) Project**  
USAID Contract No. PCE-I-00-99-00009-00

We would like to thank Mr. Syafi'i Nur and Mr. Sujono for their assistance in producing this report and Mr. Suwandhi Sastrotaruno for valuable comments on an earlier draft.

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## I. INTRODUCTION

BPS has been conducting a quarterly wage survey (*Survei Upah Buruh*, SUB) since 1979/80. This establishment survey, which covers three major economic sectors (non-oil mining, non-oil manufacturing and hotels), undertook several changes since then. Starting with the second quarter of 1998, coverage was expanded to include three other sectors: trade, construction and livestock and fishery. What prompted such coverage expansion is not certain, but appears to have been motivated by a desire to cover major sectors in the national accounts which did not have wage data from other sources.

To date, published data are limited to the original three sectors while data for the newly added sectors are still under evaluation by BPS. This report describes that part of the survey which covers the livestock and fishery sector (*Survei Upah Kegiatan Usaha Peternakan dan Perikanan*, SUKUPP). After a description of the survey's design and management (in Section II), results for the 1998-2002 period are evaluated (in Section III) using a simple wage computation methodology. Finally, Section IV provides our main conclusion, namely that results appear to be plausible. Our recommendation is for BPS to make these results available to users for feedback, following which a cost/benefit assessment can be made on whether to continue the survey or divert existing resources to improving the currently published SUB.

## II. DESCRIPTION

### A. Purpose

This survey was designed to enable computation of changes in average wages paid by establishments in the livestock and fishery sector in Indonesia. The livestock sector is defined as that including the following eight 5-digit ISIC codes:<sup>1</sup>

- 13110 (Breeding of large animals e.g. cattle, bulls, horses; *Pembibitan ternak besar*),
- 13120 (Breeding of small animals e.g. sheep, goats, pigs; *Pembibitan ternak kecil*),
- 13140 (Breeding of feathered animals e.g. poultry, birds; *Pembibitan ternak unggas*),
- 13210 (Culture of large animals; *Budidaya ternak besar*),
- 13220 (Culture of small animals; *Budidaya ternak kecil*),
- 13230 (Culture of animals not elsewhere classified; *Budidaya aneka*)

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<sup>1</sup> These codes pertain to KLUI (*Klassifikasi Lapangan Usaha Indonesia*) 1990, which is based on the International Standard Industrial Classification (ISIC) Revision 2.

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- 13240           *ternak*),
- 13240           (Culture of feathered animals; *Budidaya ternak unggas*) and
- 13244           (Culture of ducks; *Budidaya itik*).

The fishery sector is defined as that including the following four 5-digit ISIC codes:

- 17210           (Culture of sea animals; *Budidaya binatang laut*),
- 18210           (Fresh water biotic cultivation; *Budidaya/pembesaran biota air tawar*),
- 18230           (Brackish water biotic cultivation; *Budidaya biota air payau*) and
- 18240           (Brackish water biotic seedling; *Pembinihan biota air payau*).

The 1996 Economic Census was used as a sampling frame. It contained about 15,000 establishments in these ISICs, of which 273 were selected for this survey. Tables 1 and 2 provide the distribution of the original sample by province and ISIC respectively.

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**Table 1**  
**Original Sample by Province**

Province	Number of Establishments	Share
Aceh	1	0.4%
North Sumatra	9	3.3%
West Sumatra	2	0.7%
Riau	1	0.4%
South Sumatera	4	1.5%
Lampung	5	1.8%
DKI Jakarta	6	2.2%
West Java	98	35.9%
Central Java	46	16.9%
Yogyakarta	3	1.1%
East Java	56	20.5%
Bali	8	2.9%
West Nusa Tenggara	3	1.1%
East Nusa Tenggara	2	0.7%
West Kalimantan	6	2.2%
South Kalimantan	2	0.7%
East Kalimantan	6	2.2%
North Sulawesi	1	0.4%
Central Sulawesi	2	0.7%
South Sulawesi	7	2.6%
Southeast Sulawesi	2	0.7%
Maluku	3	1.1%
Indonesia	273	100.0%

**Table 2**  
**Original Sample by ISIC**

ISIC	Number of Establishments	Share
13110: Breeding of large animals	5	1.8%
13120: Breeding of small animals	5	1.8%
13140: Breeding of feathered animals	5	1.8%
13210: Culture of large animals	43	15.8%
13220: Culture of small animals	21	7.7%
13230: Culture of animals n.e.c.	2	0.7%
13240: Culture of feathered animals	120	44.0%
13244: Culture of ducks	1	0.4%
17210: Culture of sea animals	6	2.2%
18210: Fresh water biotic cultivation	7	2.6%
18230: Brackish water biotic	30	11.0%
18240: Brackish water biotic seedling	28	10.3%
Total	273	100.0%

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## B. Questionnaire

The five-page questionnaire (a prototype is provided in Appendix A) is divided into four major blocks:

- Block I contains characteristics for identifying the establishment surveyed, including geographic codes, main product, year production began, ownership status and destination of product.
- Block II contains items identifying selected work characteristics of production workers below the level of supervisor (*mandor*),<sup>2</sup> including normal number of hours worked per week, number of shifts, minimum and maximum pay. Items in this block are not used in computation of the average wage. Rather, they are used during the editing process in consistency and plausibility checks.
- Block III contains general information about the distribution of all workers by gender and type (Block III.A), and detailed information about production workers below the level of supervisor (Block III.B). These are divided into four categories:
  - a. daily casual workers (*harian lepas/kontrak*): these are casual workers, that is, they work only when hired to perform a particular task, which is determined day by day. Once the task is completed, the establishment is under no obligation to keep them. Their earnings are based exclusively on the number of days worked (or agreed in the contract). They are usually not entitled to any remuneration or benefit other than the basic wage. Specifically, they do not get:
    - (i) an additional thirteenth month wage every year (*Tunjangan Hari Raya, THR*)
    - (ii) severance pay
    - (iii) protection against layoff
    - (iv) the legal minimum wage, since no daily minimum wage exists in labor laws, only a monthly one.
  - b. *borongan*: like the daily casual workers above, these are casual workers not entitled to any remuneration or benefit other than their basic

---

<sup>2</sup> As is the case with the other sectors of the SUB, coverage of this sector is limited to workers below the supervisory level. The reason is that these are the wage earners of greatest interest for policy, since they are believed to be the most vulnerable to economic downturns and thus the most in need of government intervention during these times.

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wage. However, their earnings are based on the outputs that they produce, not the number of days worked, as is the case with daily casual workers.

- c. daily regular workers (*harian tetap*): these are regular employees on the establishment payroll who are paid based on the number of days worked. They may be entitled to employee fringe benefits such as health insurance, sick leave, vacation leave etc. Their earnings may vary depending on stipulations in their contract: some may only get a basic wage for days worked, others may get fringe benefits. They are usually entitled to the four types of benefits denied to casual workers (items (i) through (iv) above).
- d. permanent workers (*bulanan*)<sup>3</sup>: these are the establishment's permanent employees. They are paid on a monthly basis and may be entitled to employee fringe benefits (e.g. health insurance, sick leave etc.). The specific benefits to which they are entitled depend on what they would have successfully negotiated in their contract. At a minimum, they do get the four types of benefits denied to casual workers (items (i) through (iv) above).

The establishment is then required to provide the number of workers in each of the above four categories and to report on the relevant pay period (e.g. week, month).

- Block IV contains all the information required to compute the average wage rate of the establishment during the month surveyed. These include the payment period, number of days worked, number of workers (below the level of supervisor), wage components (basic salary, overtime, other payments) and the number of production workers.<sup>4</sup>

The average wage paid by the establishment during the month surveyed is then calculated in three

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<sup>3</sup> Although the questionnaire refers to this category of employee as *bulanan*, the description in the fifth page of the questionnaire (see Appendix A) allows for salary payments made two or more times per month. That is why we believe that our description of such workers as "permanent" is more accurate.

<sup>4</sup> This block also requires information on the number of workers and the total wage bill reported on the previous quarter's questionnaire. If the current quarter's number of workers or wage bill shows a change of 10% or more over that of the previous quarter, the establishment is asked to provide an explanation in Block V. However, very few establishments tend to provide such information.

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steps:

- First the total number of production workers during the month is derived from reported figures in Block III.B (column 6).
- A standardized total monthly wage bill for the establishment is computed from the various reported figures in Block IV (row 3d).
- The ratio of the monthly standardized wage bill to the number of workers is then calculated to represent the average monthly wage rate paid by the establishment.

### C. Survey Administration

The survey is conducted by the BPS Sub-directorate of Earnings Statistics, which controls the first stage of quarterly operations (sample selection) and the final stage (data entry, editing/cleaning, computations) while the BPS field offices control the interim stages (establishment visits, consistency checks). As is done with the existing SUB, the sub-directorate covers this survey quarterly where field work is expected to be conducted during the month following the relevant calendar quarter (namely in April, July, October and January). For ease of administration, all questionnaires for a particular calendar year are sent to the relevant BPS provincial offices in March of that year. It is then the responsibility of the individual provincial offices to distribute them to the relevant district offices and to ensure that enumeration is conducted properly by the Mantri Statistik every quarter in a timely fashion. Mechanical consistency checks of reported data are conducted by the BPS district offices, which are best placed to revisit establishments when corrections are needed. Once checked, questionnaires are then sent to the relevant BPS provincial office.

At the end of every enumeration month, the BPS provincial office sends the original questionnaires to the sub-directorate, which is responsible for data entry, editing and further cleaning when necessary.<sup>5</sup> The main output of this survey is basically two numbers for each establishment: the number of production workers below the supervisory level during the month and their total monthly wage bill. These are used to compute an average monthly wage rate. Note that, like the quarterly SUB, what is computed is an average wage for the *month* covered in the survey (March, June, September and December), not an average wage for the relevant *quarter*.

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<sup>5</sup> Despite the mechanical consistency checks performed by the district offices, some figures reported by establishments are sometimes implausible. Since the sub-directorate is ultimately responsible for providing the final results, its staff subject all reported figures to final plausibility checks by comparing figures from different blocks in the same questionnaire, and by comparing figures from different provinces and with other relevant national figures.

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### III. COMPUTATIONS & RESULTS

#### A. Computation Methodology

Like the existing SUB, the SUKUPP was designed to track quarterly *changes* in wages, rather than quarterly *levels*, because from a policy perspective it is the change in real wages that is of most interest. One effective and feasible way to measure such changes is by using quarterly indices. Given the data collected in this survey, we believe that one can construct two alternative methods:<sup>6</sup>

- the first is to compute an index at the establishment level, then aggregate it over all establishments in the survey;
- an alternative formulation would be to calculate an average monthly wage level for all establishments in a particular quarter, then compare that level with consecutive ones by indexing them.

The advantage of the first formulation is its higher accuracy, since it calculates wage changes at the source. However, its main disadvantage is that it is highly demanding in terms of data (only establishments responding in two consecutive quarters can be used; weighting establishments by size becomes necessary) as well as management. The second alternative's characteristics are the flip side of the first one: its greatest advantage is its simplicity and less demanding management and data requirements (data for any establishment responding in any quarter can be used) but its main disadvantage is its lower accuracy, particularly if, for example, we ended up comparing substantially different sub-sets of establishments between quarters. The latter disadvantage, however, can be mitigated if enough controls are exercised over the survey operation to ensure that coverage in various quarters includes establishments with similar characteristics.

In evaluating the plausibility of the results of this survey, this report opted for the second formulation. Despite what we believe is its lower level of accuracy, that method was chosen because of its simplicity, but more importantly because it is the procedure followed in the existing SUB. To do that, a database of 259 establishments was constructed following these three steps:

- First, all 494 establishments providing some response between

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<sup>6</sup> Other alternative indexing procedures can be used as well. However, they would probably possess more or less similar characteristics as the two used in this report. The two methods used here have been chosen primarily for illustrating major alternative characteristics.

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quarters 2, 1998 and 3, 2002 were grouped into a single data set.<sup>7</sup> A quick visual scan of the data set revealed a large number of establishments which had responded inconsistently or had provided questionable responses.<sup>8</sup>

- The next step was then to eliminate from that database the 235 establishments responding for less than 5 out of the 18 quarters of the period in consideration. That left a cumulative 259 establishments with an average of only 182 establishments per quarter for which average wage data were available and an average response per establishment of 13 quarters.<sup>9</sup> A further visual scan of data on the remaining establishments revealed a large number of gaps in response, which could further be corrected to improve coverage for any particular quarter.
- Gaps in response by establishments were then filled by interpolation. Thus an average monthly wage rate was estimated in a particular quarter only for an establishment which had responded in both a quarter *before* and a quarter *after* the one in question. Our implicit assumption was that the establishment must have remained in business during the period between responses. No attempt was made to backcast or to forecast data into periods of no response: only interpolation for a period *between* responses. This adjustment resulted in raising the average number of available entries per quarter to 215 (from 182) and raised the number of average response per establishment to 15 quarters (from 13).<sup>10</sup> Although the impact of this adjustment was not significant, we believe that it was necessary in order to ensure stability of the final results.

Tables 3 and 4 show the distribution of the 259 establishments by province and ISIC respectively. As the tables show, establishments are heavily concentrated in three provinces

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<sup>7</sup> Although the original sample had only 273 establishments (distributed as in Tables 1 and 2), it appears that over the 18 quarters in consideration substantial substitutions had taken place by the district offices. We have not investigated the procedure used for substitution by these offices for the purpose of this report. Should BPS decide to regularly publish results of this survey, a clear and uniform policy for establishment substitution will need to be instituted and closely monitored by the sub-directorate.

<sup>8</sup> Some of these cases appear to have been caused by data entry errors, others may have been caused by recording or reporting errors. We did not investigate them for the purpose of this report since our focus was solely on determining whether results of this survey to date were plausible. If BPS decides to regularly publish results of this survey, the sub-directorate will need to evaluate such cases and introduce necessary corrections.

<sup>9</sup> Ten wage bill entries, which were obvious data entry errors, were corrected.

<sup>10</sup> Of the final 3869 wage rate entries for the entire period, 593 (15%) were adjusted by interpolation, of which about one half (or 7% of all entries) were interpolations for one year, and a further 4% of all entries were interpolations for two consecutive years.

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(West, Central and East Java have 76%) and in two ISICs (about two-thirds are in ISIC 13240 –culture of feathered animals– and 13210 – culture of large animals). Such concentration has important operational as well as computational implications which we will not cover in this report.

**Table 3**  
**Sample Used in Computations by Province**

Province	Number of Establishments	Share
Aceh	1	0.4%
North Sumatra	6	2.3%
Riau	1	0.4%
West Sumatra	4	1.5%
Lampung	3	1.2%
DKI Jakarta	3	1.2%
West Java	94	36.3%
Central Java	44	17.0%
Yogyakarta	3	1.2%
East Java	59	22.8%
Bali	8	3.1%
West Nusa Tenggara	3	1.2%
East Nusa Tenggara	1	0.4%
West Kalimantan	3	1.2%
South Kalimantan	3	1.2%
East Kalimantan	7	2.7%
North Sulawesi	1	0.4%
Central Sulawesi	3	1.2%
South Sulawesi	6	2.3%
Southeast Sulawesi	3	1.2%
Maluku	3	1.2%
Indonesia	259	100.0%

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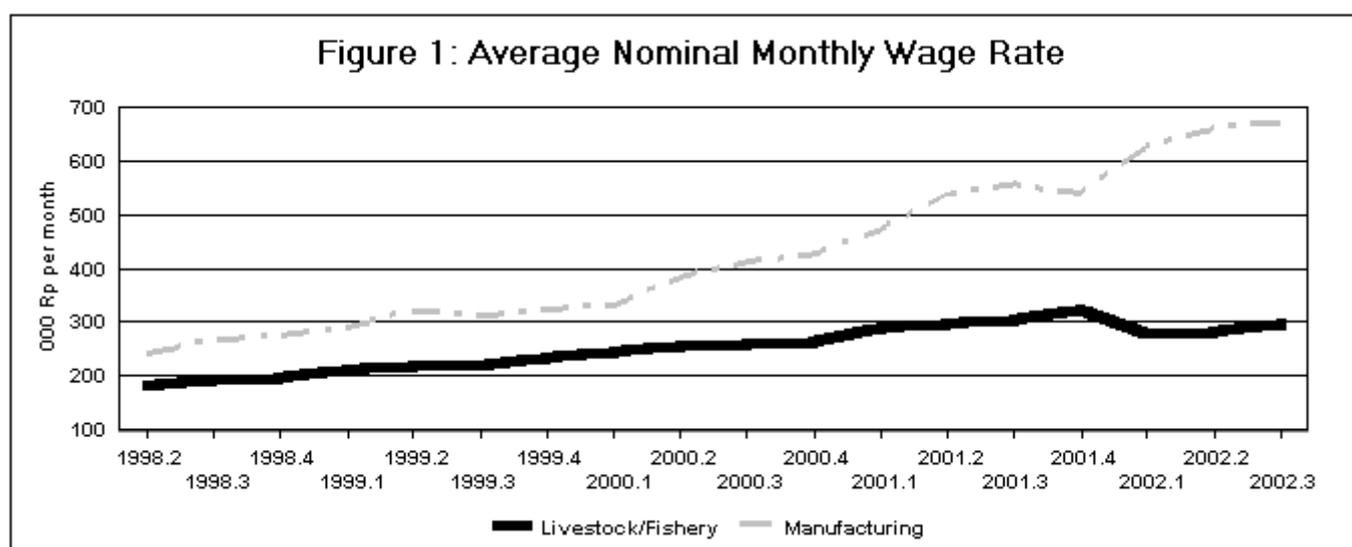
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**Table 4**  
**Sample Used in Computations by ISIC**

ISIC	Number of Establishments	Share
13110: Farming of large animals	2	0.8%
13120: Farming of small animals	4	1.5%
13140: Farming of feathered animals	5	1.9%
13210: Culture of large animals	40	15.4%
13220: Culture of small animals	21	8.1%
13230: Culture of animals n.e.c.	1	0.4%
13240: Culture of feathered animals	127	49.0%
13244: Culture of ducks	1	0.4%
17210: Culture of sea animals	6	2.3%
18210: Fresh water biotic cultivation	3	1.2%
18230: Brackish water biotic	25	9.7%
18240: Brackish water biotic seedling	24	9.3%
Total	259	100.0%

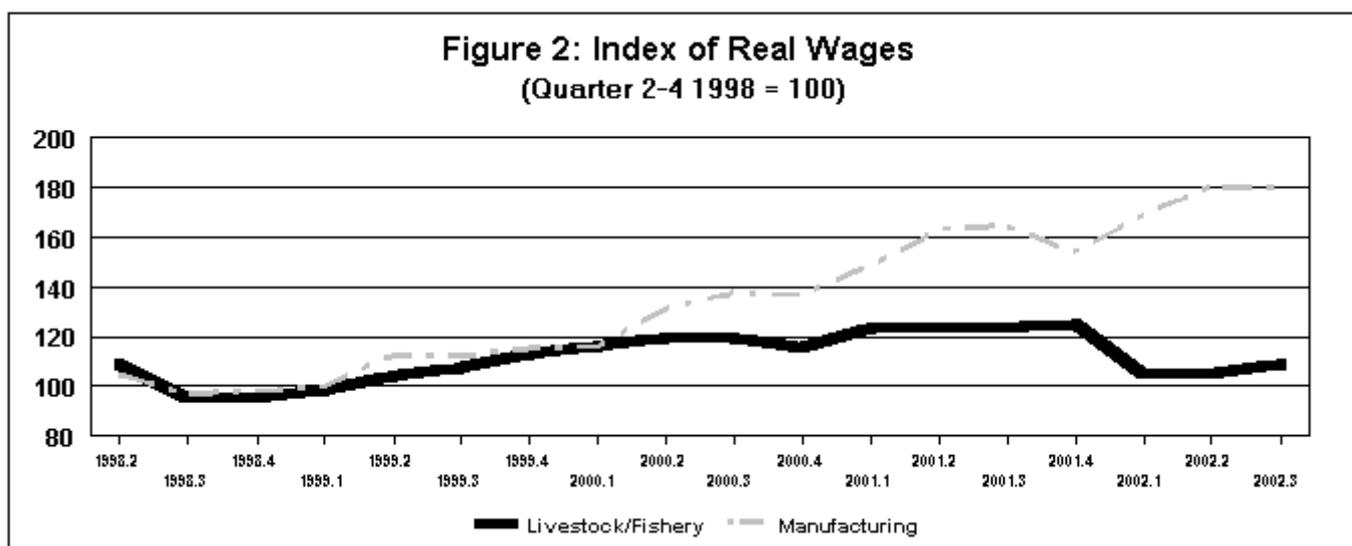
## B. Results

As the data used in this report have not yet been published by BPS, we will provide the results of our evaluation only in graphical form. Figure 1 provides the average nominal monthly wage rate calculated using the above methodology, and the same measure from the published manufacturing SUB for Indonesia for comparison. Figure 2 shows the two measures deflated by the CPI in index form with the average for available data in 1998 as a numeraire equal to 100.



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The graphs reveal two interesting points:

- First, nominal wages in Livestock/Fishery (Figure 1) have witnessed a more or less steady quarterly growth rate of about 3% during the period (with a tapering of that growth during 2002) while those in manufacturing grew by an average 6% with a clearly sharper trend since 2000.
- As a result, there is a clear continuous divergence between the two in real terms (Figure 2) starting in the second quarter of 2000. Whereas wages in Livestock/Fishery reached in 2002 levels 5-9% higher than in 1998, wages in manufacturing reached levels 80% higher than those in 1998.

Figure 3 compares the real index in Livestock/Fishery with that of agricultural wages in Java derived from the monthly agriculture wage survey conducted by BPS in rural areas of Indonesia for the purpose of computing the farmers terms of trade (*Survei Tukar Petani*).<sup>11</sup> Strictly speaking, the two measures are not comparable since:

- the first covers all Indonesia while the second covers only Java<sup>12</sup> and
- the first is deflated using the CPI which covers urban areas while

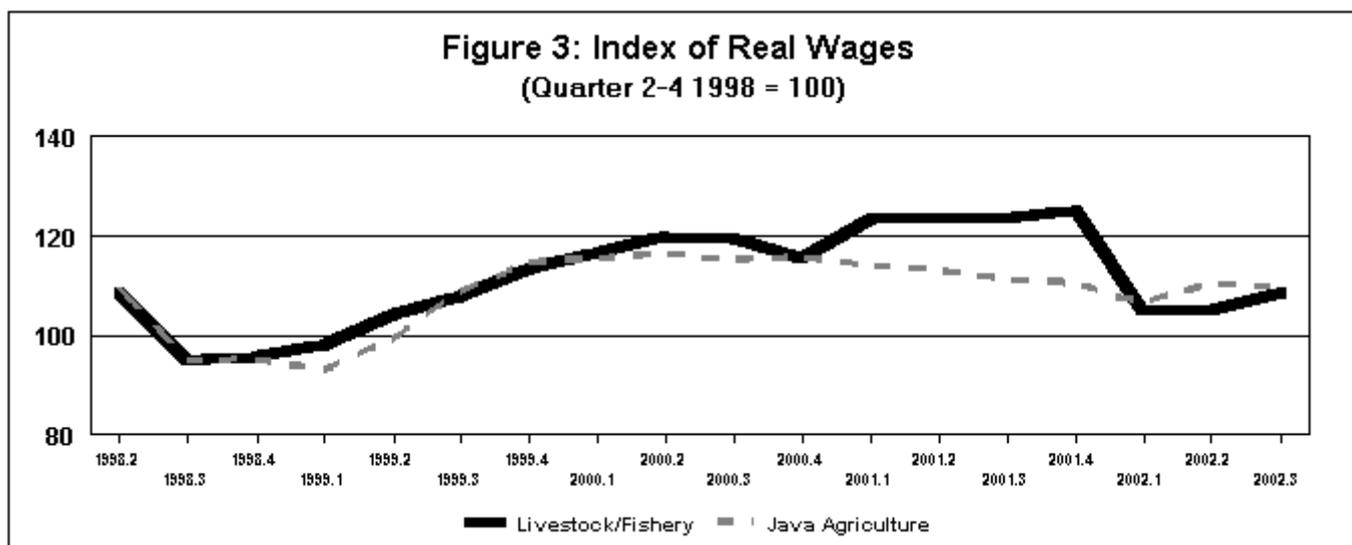
<sup>11</sup> Only data on the index of real wages (1996=100) were provided to us for this report.

<sup>12</sup> Although this is somewhat mitigated by the high Java concentration of the Livestock/Fishery survey.

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the second uses a deflator based on rural weights.



Nevertheless, a comparison may be useful in pointing towards potential implausibility in the Livestock/Fishery results. As Figure 3 shows, real wages in the two surveys followed a somewhat similar pattern during the period except for 2001. Both showed increasing index levels in 1999 and 2000 and comparable index levels in 2002. However, while agricultural wages were in steady decline in 2001, Livestock/Fishery wages showed an abrupt increase in the first quarter of 2001, steady index levels through the end of 2001 followed by an abrupt decrease in the first quarter of 2002.<sup>13</sup>

#### IV. CONCLUSIONS

Our main conclusion, therefore, is that the Livestock/Fishery survey provides plausible overall figures and our main recommendation is for BPS to share these results with users for their feedback. Beyond that, what should be done? If user feedback is positive and BPS desires to regularly publish quarterly results, then the following needs to be assessed before adoption on a regular basis is decided:

- A system needs to be put in place by the Sub-directorate of Earning Statistics for close monitoring of establishment substitution by district offices and for final cleaning of data. As reported in Section III.A above, the data used in this report were

<sup>13</sup> Wages in 2001 appear to have had larger shares of overtime and other remunerations than in the previous year.

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subjected to substantial cleaning, suggesting that the existing checks in the sub-directorate could be improved further. Ensuring a high enough response quarterly is essential for providing representative figures. In this report we used a cumulative panel data set, which made our job easier. However, when computing data from quarter to quarter, the sub-directorate will need to have clear explicit, transparent and verifiable rules regarding establishment substitution.

- Results need to be made available to users in a timely fashion for them to be useful. Ideally results would have to be published with a lag of one quarter. The longer the lag, the less useful the results.
- Given the above demanding requirements, and given BPS's limited expected future budgets, the sub-directorate needs to subject this survey to a cost/benefit evaluation. In other words, now that we know that this survey produces plausible results, and assuming that users further request these results on a regular basis, one has to determine whether it is more beneficial to concentrate limited existing resources on improving the widely used current Manufacturing SUB or continuing the Livestock/Fishery survey. It is not clear at this point that devoting resources to the latter survey is the answer.

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**APPENDIX A**  
**QUESTIONNAIRE**

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*sangat rahasia*



REPUBLIK INDONESIA  
BADAN PUSAT STATISTIK

**SURVEI UPAH  
KEGIATAN USAHA PETERNAKAN  
DAN PERIKANAN**

**DAFTAR VU-5**

SATU ASLI UNTUK BPS

SATU ARSIP PERUSAHAAN

**AKAN DIAMBIL**

Tanggal	Bulan	Tahun

Prop.    Kab.    #Kode Perusahaan    #Kec.    No. Unit

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BUBUN PELARANGAN

--	--

**BLOK I. KETERANGAN IDENTITAS PERUSAHAAN**

1. Nama Perusahaan : \_\_\_\_\_

2. Alamat Perusahaan/Unit Produksi : \_\_\_\_\_  
 \_\_\_\_\_ Kec. \_\_\_\_\_ Telp. \_\_\_\_\_

3. (a). Jenis Kegiatan Utama : \_\_\_\_\_  
 \_\_\_\_\_ Diisi BPS PUSAT

(b). Apakah produk utama berubah sejak triwulan yang lalu ?  
 YA -1      TIDAK -2.      Bila "YA", jelaskan di BLOK V

(c). Tahun mulai produksi : \_\_\_\_\_

(d). Status modal usaha : \_\_\_\_\_

PMDN -1      Negara (BUMN, Persero, dsb)      -3

PMA -2      Gabungan      -4

Lainnya - (sebutkan \_\_\_\_\_)      -5

3. Apakah ada hasil yang diekspor tahun lalu ?

Ya -1 \_\_\_\_\_ %      TIDAK -2

**PERHATIAN**

1. **Kewajiban** setiap responden untuk **memberikan keterangan yang diperlukan** dalam penyelenggaraan statistik dasar oleh BPS, diatur dalam pasal 27 Undang-Undang Nomor 16 Tahun 1997 tentang Statistik.
2. **Kewajiban** penyelenggara kegiatan statistik untuk **menjamin kerahasiaan** keterangan yang diperoleh dari responden, diatur dalam pasal 21 dan pasal 24 Undang-Undang Nomor 16 Tahun 1997 tentang Statistik.
3. Agar penyajian hasil survei tepat waktu, urek bahan sidang perencanaan di Jakarta, perusahaan diharapkan dapat menyelesaikan pengisian kuesioner paling lambat **1 (satu) minggu setelah tanggal penerimaan**.

**DITERIMA DI:**

	Tanggal	Bulan	Tahun
BPS KAB/KOTA			
BPS PROP			
BPS PUSAT			

**PENGECEKAN KARTU LAPORAN PERUSAHAAN (Y/T)**

	Diisi dan Terlengkap	Buku 2B Ada "YA"	Alasannya jelas ?
BPS KAB/KOTA			
BPS PROP			
BPS PUSAT			

**BLOK II. KETERANGAN UMUM PERUSAHAAN HANYA UNTUK KARYAWAN PRODUKSI DI BAWAH TINGKAT PENGAWAS/MANDOR**

**1. HARI DAN JAM KERJA BIASA TANPA LEMBUR**

Hari Kerja Seminggu	Jam Kerja Seminggu	Jumlah Shift/Plug Sehari
(1)	(2)	(3)
<input type="text"/> hari	<input type="text"/> jam	<input type="text"/> kali

**2. TUNJANGAN YANG DIBAYARKAN SECARA TERATUR DALAM BENTUK NATURA**  
(lingkari nomor yang sesuai)

1. Makan saja       2. Angkutan/jemputan saja

3. Natura lainnya (sebutkan) .....

4. Kombinasi

B. Tidak ada tunjangan dalam bentuk natura

**3. UPAH TERENDAH/TERTINGGI (Termasuk tunjangan teratur) KARYAWAN PRODUKSI DIBAWAH TINGKAT PENGAWAS/MANDOR PER HARI/MINGGU/BULAN**

(a). Terendah Rp.  per  Kode

(b). Tertinggi Rp.  per

Kode 1 = Hari      4 = Lainnya \*) sebutkan  
 2 = Minggu      .....  
 3 = Bulan

**BLOK III. KETERANGAN KARYAWAN PERUSAHAAN**

**A. JUMLAH KARYAWAN**

JENIS PEKERJAAN	Laki-laki	Perempuan	Laki-laki + Perempuan
(1)	(2)	(3)	(4)
1. Bukan Tenaga Kerja Pelaksana			
a. Manajer	.....	.....	<input type="text"/>
b. Administrasi/Kantor	.....	.....	<input type="text"/>
c. Lainnya (Resepsionis, Sekretaris, Sepor, dsb)	.....	.....	<input type="text"/>
2. Tenaga Kerja Produksi			
a. Tenaga Kerja Ahli/Teknisi	.....	.....	<input type="text"/>
b. Tenaga Kerja Pengawas/Mandor	.....	.....	<input type="text"/>
c. Karyawan Produksi di Bawah Tingkat Pengawas/Mandor	<input type="text"/>	<input type="text"/>	<input type="text"/>
<b>JUMLAH SELURUHNYA</b>	<input type="text"/>	<input type="text"/>	<input type="text"/>

*Anggaran UPAH tidak perlu dimasukkan di BLOK IV*

**B. JUMLAH KARYAWAN PRODUKSI DI BAWAH TINGKAT PENGAWAS/MANDOR DI DAFTAR GAJI**

SISTEM PEMBAYARAN	STATUS KARYAWAN				JUMLAH	Data UPAH di isi di BLOK IV pada
	Harian Lepas/Kontrak	Borongan	Harian Tetap	Bekas		
(1)	(2)	(3)	(4)	(5)		
1. Mingguan	<input type="text"/>	KOLOM 2				
2. Bulanan	<input type="text"/>	KOLOM 3				
3. Periode pembayaran lainnya **)						KOLOM 4
a. .... <input type="checkbox"/>	<input type="text"/>	KOLOM 5				
b. .... <input type="checkbox"/>	<input type="text"/>					
<b>JUMLAH</b>	<input type="text"/>					

\*) Hanya untuk Karyawan produksi di bawah tingkat pengawas/mandor, dan untuk semua shift sesuai Blok III A. Rincian 2c.)  
 \*\*) Lainnya : 2 mingguan, 4 bulanan, 10 hari sekali atau periode lain (sebutkan)

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**BLOK IV. KETERANGAN KARYAWAN PELAKSANA \*) MENURUT SISTEM PEMBAYARAN UPAHNYA SELAMA SATU KALI PERIODE PEMBAYARAN**

RINCIAN	SISTIM PEMBAYARAN **)			
	MINGGUAN	BULANAN	SISTIM LAINNYA (Sebutkan)	
			.....	.....
(1)	(2)	(3)	(4)	(5)
1. PERIODE PEMBAYARAN DAN HARI KERJA (WALAU PERIODE PEMBAYARAN TERAKHIR BULAN PELAFORAN)			<input type="checkbox"/> Diisi oleh BPT Pusat <input type="checkbox"/>	
a. Periode pembayaran upah dari tanggal berapa sampai berapa	Tgl..... s/d.....	Tgl..... s/d.....	Tgl..... s/d.....	Tgl..... s/d.....
b. Jumlah hari kerja biasa pada periode pembayaran upah tsb	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Jumlah hari kerja lembur pada hari libur selama periode pembayaran upah tsb	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2. JUMLAH KARYAWAN PELAKSANA DI DAFTAR GAJ SESUAI JUMLAH YANG DI ISIKAN PADA BLOK III Kolom 6  (Laki-laki + Perempuan)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
3. JUMLAH UPAH GAJ DAN TUNJANGAN YANG DIBAYARKAN KEPADA SEMUA KARYAWAN PELAKSANA DI BAWAH TINGKAT PENGAWAS/MANDOR	(Dalam ribuan Rp.)	(Dalam ribuan Rp.)	(Dalam ribuan Rp.)	(Dalam ribuan Rp.)
a. Uprah gaji pokok atau upah kotor kelas tunjangan tetap tidak dapat dibatalkan	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Tunjangan lainnya yang dibayarkan dalam setiap periode pembayaran secara kotor dalam bentuk uang ***)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
c. Upah lembur pada hari kerja biasa dan pada hari libur	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
d. Jumlah (a + b + c)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
4. RATA-RATA UPAH PER KARYAWAN UNTUK SISTEM PEMBAYARAN UPAH YANG SAMA  (Rincian 3d ÷ Rincian 2 x 1000)	(Dalam Rupiah)	(Dalam Rupiah)	(Dalam Rupiah)	(Dalam Rupiah)
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
5. KETERANGAN YANG DESALIN DARI KUESIONER VLS TERDULAN SEBELUMNYA	Jika terjadi perubahan > 10 % terhadap periode pembayaran terakhir terwujud ini, harap di cek apakah data tersebut akan terwujud dan melacak di BLOK V di halaman berikutnya			
a. Jumlah karyawan (BVA IV Rincian 2, termasuk sebelumnya)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
b. Jumlah upah/gaji dan tunjangan (Blok IV Rincian 3d, termasuk sebelumnya)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Catatan:**  
 \*) Ditinjau Tingkat Pengawasan/Mandor sesuai dengan BLOK III di Kolom 4  
 \*\*) Diisi hanya untuk sistem pembayaran yang ada di perusahaan Anda  
 \*\*\*) Tidak termasuk THR, bonus/musim/tahunan, semesteran, kwartalan dan tunjangan dalam bentuk natura

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**BLOK V. CATATAN****KETERANGAN LEGALISASI**

Daftar ini diterima oleh perusahaan pada tanggal ..... :  
 Diselesaikan selama ..... jam  
 Dikembalikan kepada petugas tanggal ..... :

Pemberi keterangan,

Petugas Pencacah,

Petugas Pemeriksa,

Jabatan, .....  
 (Bubuhi Cap Perusahaan)

NIP. 34.....

NIP. 34.....

**PENJELASAN**

**Karyawan Produksi** adalah karyawan yang terlibat secara langsung dalam proses produksi diantaranya operator mesin, pemeliharaan, laboratorium, pesuruh di bagian produksi, dsb.

**Tidak termasuk karyawan produksi** antara lain: eksekutif, trucking, kredit, maintenance, pembelanjaan/penjualan, kantin, instalasi, keuangan, urusan pegawai, pembukuan, pemasaran, keamanan (security), klinik, product development dan sebagainya yang tidak berkaitan langsung dengan proses produksi.

**Catatan:** *Upah untuk pengawas/mandor, teknisi/ahli mesin dan tingkatan dilatasinya tidak dicakup dalam pengisian upah dan jumlah karyawan pada Blok IV daftar ini.*

## Daftar VU-5

## PENJELASAN

**BLOK II. KETERANGAN UMUM PERUSAHAAN (HANYA UNTUK KARYAWAN PRODUKSI DI BAWAH TINGKAT PENGAWAS/MANDOR)**

- 1.a. **Hari kerja biasa** adalah hari-hari yang ada kegiatan kerja biasa selain hari libur yang dipakai untuk lembur. Hari minggu yang umumnya pakai untuk bekerja shift/plug dimasukkan sebagai hari kerja biasa.
- b. **Jam kerja seminggu** adalah banyaknya jam kerja biasa/normal dalam satu minggu yang biasa digunakan untuk bekerja tidak termasuk jam istirahat/lembur.
2. **Tunjangan yang dibayarkan secara teratur dalam bentuk natura.**  
Lingkari salah satu kode yang sesuai dan tuliskan dalam kotak.
3. **Isikan upah terendah/tertinggi (termasuk tunjangan teratur) dari karyawan produksi di bawah tingkat pengawas/mandor yang dibayarkan secara teratur.**  
Isikan kode satuan waktu di kotak paling kanan. Per hari berkode 1, per minggu berkode 2, per bulan berkode 3 dan kode 4 untuk periode pembayaran lainnya (tuliskan periode pembayarannya misalnya 2 minggu, 10 harian, dsb).

**BLOK III. KETERANGAN KARYAWAN PERUSAHAAN****A. JUMLAH KARYAWAN PERUSAHAAN**

1. **Bukan Tenaga Kerja Produksi** adalah karyawan yang tidak secara langsung melakukan kegiatan produksi.
  - a. **Manajer** adalah yang merencanakan, mengorganisasikan, mengkoordinasikan dan memimpin perusahaan.
  - b. **Administrasi/Kantor** adalah yang menjalankan semua kegiatan tata usaha/ administrasi di kantor (seperti urusan pegawai, pembukuan, dll).
  - c. **Lainnya** adalah karyawan bukan tenaga kerja produksi yang tidak termasuk dalam kategori a dan b (misalnya sopir, penjaga kantin, dll).
2. **Tenaga Kerja Produksi** adalah karyawan yang secara langsung bekerja dalam proses produksi.
  - a. **Tenaga Kerja Ahli/Teknis/Ahli Mesin** adalah karyawan yang merawat dan memperbaiki alat-alat produksi.
  - b. **Tenaga Kerja Pengawas/Mandor** adalah karyawan yang bertugas mengawasi dan mengkoordinasikan kegiatan para karyawan pada unit/sektor produksi.
  - c. **Tenaga Kerja Di Bawah Tingkat Pengawas/Mandor** adalah karyawan produksi yang tidak termasuk dalam kategori a dan b meliputi kepala regu, peneriman, operator mesin, pabrikasi, dll.

**B. JUMLAH KARYAWAN PRODUKSI DI BAWAH TINGKAT PENGAWAS/MANDOR DI DAFTAR GAJI**

Isikan jumlah karyawan produksi sesuai daftar karyawan menurut status karyawan dan sistem pembayaran termasuk yang sedang cuti, sakit, dsb.

**STATUS KARYAWAN**

1. **Harian Lepas** adalah status karyawan yang dibayar berdasarkan jumlah hari kerjanya. Umumnya upah mereka tidak dapat dipisahkan antara gaji/upah pokok dan tunjangan lainnya. **Kontrak** adalah status karyawan yang dibayar berdasarkan kontrak kerja.
2. **Borongan** adalah status karyawan yang dibayar langsung oleh perusahaan berdasarkan hasil kerja yang dihitung per satuan hasil, tidak termasuk karyawan borongan yang bekerja di rumah sendiri secara makloon.
3. **Harian Tetap** adalah status karyawan yang dibayar berdasarkan jumlah hari kerjanya. Biasanya upah mereka terdiri dari upah pokok dan tunjangan tetap yang mungkin dapat dipisahkan sehingga kalau karyawan/pekerja absen, bisa dihitung potongan upahnya sesuai aturan yang berlaku.
4. **Bulanan** adalah status karyawan yang menerima upah/gaji pokok secara tetap setiap periode pembayaran (umumnya bulanan kecuali tunjangan-tunjangan dan perangsang lainnya yang tergantung jumlah hari kerjanya/jam kerja karyawan yang bersangkutan). Bila karyawan bulanan dibayar 2 kali atau lebih dalam sebulan tetap dimasukkan sebagai karyawan bulanan.

**SISTEM PEMBAYARAN (PAY ROLL)**