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**TURKEY'S BALANCE OF PAYMENTS AND  
EXTERNAL DEBT THROUGH 1975 PROJECTED WITH  
FOUR-SECTOR ECONOMIC-SYSTEM MODEL**

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A.I.D. Discussion Paper No. 18

TURKEY'S BALANCE OF PAYMENTS AND EXTERNAL DEBT THROUGH 1975  
PROJECTED WITH A FOUR-SECTOR ECONOMIC-SYSTEM MODEL

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June, 1969

## NOTE

This paper was prepared while the authors were on the staff of the Office of Program and Policy Coordination in the Agency for International Development. An earlier version was presented and discussed in a seminar at the Agency, and the present version has benefited from constructive criticism during and following that seminar. In particular, the authors gratefully acknowledge the contributions of Drs. Paul Clark, Alan Strout, Glenn Lehmann, and Joel Bernstein.

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This study serves two purposes. First, it deals with substantive questions about Turkey's future external finances; it is to this purpose that most of the specific content of the report, beginning with the Introduction, is addressed. The second, more general purpose is to illustrate the usefulness of relatively simple quantitative models for some of A.I.D.'s needs, showing, at the same time, the methodology of a typical application. This general topic is discussed further in the remainder of the Preface.

It is not within A.I.D.'s purview to duplicate the detailed planning process in countries where national planning offices or equivalent entities do such work within the context of the national goals and political realities of the country. When a host government needs assistance in the technical aspects of development planning, A.I.D. will try to find suitable experts to work with or within the host government's organization. In one unusual case, economists in the A.I.D. Mission in Korea and non-A.I.D. experts from the United States have worked on complex planning models in close collaboration with Korean government planners. Normally, however, the role of A.I.D. or any other donor is to review and evaluate programs that have been planned by the host government in order to reassure itself that they are well conceived and have a reasonable chance of success. The donor's staff, also, must plan their own program to be compatible with and complementary to that of the receiving country. A.I.D., in addition, often advises host governments on broad policy matters.

In support of these activities, several useful functions can be performed by quantitative models that are fairly simple but designed to

focus on a limited set of questions. Just the process of formulating a model and estimating its coefficients from historical data can give the analyst a clearer picture of the basic relationships of the economy. Then, once the model has been completed and tested, it can be used for checking the orders of magnitude of the overall figures in a development plan -- checking, for instance, whether the G.N.P. growth rate and aggregate planned investment bear a plausible relation to each other, and whether total projected import requirements seem to be compatible with projected investment and income levels.

It is not meant to suggest that an A.I.D. economist with a rather crude model could tell the planner who has made a detailed study, "Your import projections are 10% too high". But he may be able to say "My projections, based on historical relations, show import requirements in the range from 200 to 300, depending on how I estimate certain coefficients. There must be some reason why your projection, at 400, is so far outside of that range. What is there in the development plan that implies so much more need for imports than the history-based model suggests?"

If it turns out that there is a good reason for the high estimate, both parties may have gained some useful knowledge. Beyond that, it may be relevant to consider whether the factor that leads to the high level of imports could and should be altered through some sort of policy change, or whether it actually makes a vital contribution toward achieving the national economic goals.

Another use for a model of this kind is in testing the sensitivity of the projected growth process to deviations from various assumptions and to possible variations in policy. In the present study, for example, the results proved relatively insensitive to fairly large changes in assumed savings behavior and highly sensitive to changes in assumed foreign exchange earnings. This result was reassuring, since the historical data did not provide a solid foundation for the private saving function. The policy implications are that -- under the conditions prevailing and expected to prevail in the next few years in Turkey -- an increase in domestic savings would not significantly improve the situation, while everything that is practical should be done to increase foreign exchange earnings from commodity exports and tourism. In another country, under different conditions, a similar model might show that tax collections and other components of savings should receive major attention.

On the question of Turkey's future capacity for borrowing on hard terms, which was the focus of the study, the results suggest policy guidelines both for the developing country and for donors of aid. They show that under some conditions hard-term loans can be a feasible shock absorber during the phase-out of large-scale development (concessionary) lending. They also suggest that the abruptness of the phase-out may be an important consideration.

Thus, beyond producing numerical projections, a not-too-complex model can be useful for judging the relative importance of different policies and can yield insight -- or at least identify problems and raise questions -- concerning those aspects of the economy that it is designed to represent.

In addition, the model and the comparisons it generates offer a frame of reference for discussions between donor and host government officials regarding programs and policies. A frame of reference of this sort enables differences in conclusions to be clearly related to differences in assumptions, thus helping focus the discussion on objective issues.

INTRODUCTION

Turkey is embarked on its Second Five Year Plan. Because of the Plan goal of economic viability by the mid 1970's, (i.e., continuation of a satisfactory rate of growth without recourse to concessional foreign assistance) and the decline in the total U.S. foreign aid program, it is now desirable to evaluate the chances of continuing Turkey's recent economic performance and of achieving Plan growth objectives with a declining flow of aid.

In order to address these issues specific estimates were made of the commitments and ensuing disbursements of development loans ("soft" loans). Various combinations of assumptions were made regarding factors that determine the future course of the economy, and for each combination the need for external capital was projected (by means of a model, described in Chapters I and II). Comparing the projected need with the assumed flow of soft loans, the analysis focused on the question of whether the remaining capital needs (if any) could be financed on "hard" terms without building up an excessive debt service burden.

In some respects the present work follows the path taken by Williamson in A.I.D.'s 1964 Summer Research Project<sup>1/</sup>, but some significant differences should be recognized. The Preface to the Williamson paper suggested that the study was useful as an illustration of methodology but that it did not provide realistic projections for Turkey, because a number of basic

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<sup>1/</sup> Williamson, Jeffrey G., Projected Aid Requirements for Turkey: 1960-1975. A.I.D. Discussion Paper No. 10

assumptions were open to doubt. We believe our projections are both illustrative and realistic. Of course we don't think we or any one else can forecast what will actually happen, but as contingent projections and comparisons of alternatives our results rest on relatively firm foundations. For one thing, Morgan, starting with a background of experience in the A.I.D. Mission in Turkey, had extensive knowledge of the country's statistical sources and economic studies. Moreover, we had the good luck to be formulating our model at a time when conditions had been stable and the economy growing steadily for six or seven years, so that recent data as well as longer-run trends could be used with some confidence for evaluating quantitative relations.

Professor Williamson was less fortunate. To avoid erratic data associated with political instability, economic recession, and exchange-rate devaluation (in stages), he had to rely mainly on data of the years up to 1958, a period when economic growth was decelerating and a number of economic policies were different than they are now.

The differences in structure between Professor Williamson's model and ours are numerous but not of primary importance. The reader interested in comparing the details will find that both models are completely and explicitly specified in the respective reports -- Williamson's in the A.I.D. Discussion Paper cited above, and ours in Chapter II of this paper.

Results of our analysis indicate that attaining the goals of the Second Five Year Plan with the flow of aid declining as postulated will depend on realizing the Plan's assumed large increases in exports

and other sources of foreign exchange. These increases, in our judgment, will be difficult to realize although not impossible. With our more conservative estimates of the foreign exchange components the feasible rate of growth of the economy would be lower than the Plan target but still significantly above the current rate of population growth. Fuller explanation of the assumptions underlying these general conclusions and of the effects of changing various assumptions will be found in Chapter III.

## CHAPTER I

### General Approach and Explanation of the Model

#### Model-Building Strategy

Models that have been designed for plan formulation or policy studies range from highly complex concatenations of details<sup>1/</sup> to simple sets of relations among a minimum number of totally aggregated variables.<sup>2/</sup>

Very complex models are often criticized -- or dismissed as impractical -- on the grounds that they require estimating a large number of parameters for which statistical evidence is meager, unreliable or absent. It is not clear that the lack of statistics is a valid basis for dismissing such models. Even with coefficients based on judgment they can probably increase our understanding of development problems if the relationships are qualitatively correct and if the models are used for exploration rather than for premature attempts at optimization. Even so, the application of such models is difficult and cumbersome, and the benefits are still sufficiently nebulous that a simpler approach is usually more appealing to the program planner.

Extremely simple models are often preferred because they require a minimum of statistical data. The Chenery-Strout model, for example, has

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<sup>1/</sup> Such as Eckaus, R.D. and K. Parikh, Planning for Growth - Multi-sectoral, Inter-Temporal Models Applied to India, M.I.T. Center for International Studies April, 1966. The model seeks to optimize the time profiles and allocation of investment among industries in an open economy.

<sup>2/</sup> For example, see Chenery, Hollis B. and Alan M. Strout, "Foreign Assistance and Economic Development," The American Economic Review, September, 1966. This model, without optimizing, attempts to relate the net foreign balance to the rate of growth of GNP as directly as possible.

only five base-year variables and six parameters to estimate. However, anyone who has gone through the process of estimating those six parameters from historical data and then tried to predict how they might change in the future with changes in import restriction policy, structural transformations, etc., knows that each of the few parameters represents the net effect of a combination of diverse and changing factors. The proper use of the simple model requires considerable analysis and deliberation about the possible behavior of each of its coefficients.

Our judgment, on which the present model is based, is that parameters like the aggregate capital output ratio or the marginal import coefficient are too abstract for practical estimation and that more reliable results can be obtained by estimating relationships at a slightly more concrete level even though the number of items to be estimated is thereby multiplied. An additional reason for disaggregation is to separate components that differ in their sensitivity to policy. For example, in the simplest model, national savings is generated through an aggregate marginal savings coefficient. But in actuality a change in tax policy has its primary impact on government revenue and its effect can be better approximated if government revenue and expenditure are separated from private savings.

The departures in this model from Chenery-Strout simplicity are for the most part limited to components that were known or believed to be pertinent for the area of investigation contemplated -- the needs for foreign capital and the debt burden. For studying other kinds of questions, either this model could be refined or other models used. Rather than try to formulate one model suitable for all likely purposes, it is probably

better to develop different models for different purposes. For example, while this model is focused on Turkey's external finances, a different kind of model with a better representation of Turkey's internal economic structure was formulated and used to find the phasing and relative sectoral growth rates that would best conserve scarce foreign exchange while maintaining a high rate of growth.<sup>1/</sup>

Another feasible approach, if questions are to be investigated sequentially, is to formulate a model like the one presented here for one set of questions, and then progressively modify it, adding new relationships to adapt it to each new investigation. In this way a model that was initially rather simple might become not only more and more elaborate but at the same time more and more versatile.

#### Explanation of the Model

Because of the focus on external finance, details of the balance of payments come in for major attention in the model used for this study. "Hard" and "soft" loans and debt balances are distinguished and debt service (interest and amortization) is computed and compared to foreign exchange earnings as a criterion of viability. Imports and exports are classified in various categories so that assumptions about their behavior can be more explicitly related to realistic considerations than when they are totally aggregated.

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<sup>1/</sup> The latter, an intertemporal optimizing model, is described in Çetin, Hikmet and Alan S. Manne, A Dynamic Five Sector Model for Turkey, 1967-82, Research Center in Economic Growth, Memorandum No. 61, Stanford University, June 1968.

The need for external capital could, under some circumstances, be determined by a shortfall in domestic saving rather than by structurally-determined import requirements in relation to foreign exchange earnings. Therefore, private and government saving are treated separately -- the latter in some detail.

The internal economy is disaggregated into four sectors. Production functions and demand relationships are not formulated with enough detail and realism to make this an adequate model for studying sectoral investment allocation. The breakdown was not made for that purpose but with the idea that it would provide a better basis for determining imports, overall investment, and the need for external capital.

Underneath the four-sector economy, the detailed balance of payments accounting, and the itemization of government revenue, the fundamental approach is like that of Chenery and Strout<sup>1/</sup> or of various United Nations projections.<sup>2/</sup> This model, like those, is of the "two-gap" variety, differing mainly in the degree of detail that is used in arriving at the magnitudes of the primary variables: investment, savings, imports, exports, and gross national product. As a framework for explanation of the present model, we first give the sequence of calculations and logical steps in the Chenery-Strout model (simplest version) as follows:

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<sup>1/</sup> Op. cit.

<sup>2/</sup> United Nations, Studies in Long-term Economic Projections for the World Economy, 1964, ST/ECA/80 and many more recent individual country projections made by the UNCTAD staff, the CDPPP, and by the regional Economic Commissions.

- (1) A rate of growth of GNP is set as a target.
- (2) By means of the gross capital-output ratio, the investment required to achieve the target growth rate in the first year is calculated.
- (3) This level of investment is checked to make sure that it does not exceed that of the previous year by more than a proportion postulated as the absorptive capacity limit. If it does exceed that limit, the level of investment is reduced to match the limit, and the increase in GNP reduced correspondingly. If the limit is not exceeded, the calculated investment is assumed to take place, with GNP growing at the target rate.
- (4) Saving, ex ante, is calculated from the previous year's level and the marginal propensity to save, and is subtracted from the investment to determine the "savings gap."
- (5) Imports of goods and services, ex ante, are calculated from the previous year's level and the marginal propensity to import.
- (6) Exports of goods and services, projected as a fixed proportion per year, are subtracted from ex ante imports to determine the "foreign exchange gap."
- (7) The larger of the two gaps is identified as the net volume of foreign capital that must flow in if the target growth rate is to be achieved.

(8) The two gaps, as calculated on an ex ante basis, are generally unequal, while in fact both differences must simultaneously be equal to the net capital inflow according to the ex post identity:

$$\begin{array}{ccccccccc} F & = & M & - & X & = & I & - & S \\ \text{net capital} & & \text{imports,} & & \text{exports,} & & \text{gross} & & \text{gross national} \\ \text{inflow} & & \text{goods \&} & & \text{goods \&} & & \text{invest-} & & \text{saving} \\ & & \text{services} & & \text{services} & & \text{ment} & & \end{array}$$

If, in Step 7, the net capital inflow has been equated to the import-export gap, then the other part of the identity is satisfied by assuming a reduction in saving below the ex ante level so that:

$$S = I - F$$

Alternatively, when it is the investment-saving gap that has set the capital inflow requirement, then imports are assumed to exceed their ex ante level so that:

$$M = X + F$$

(9) Steps 2 through 8, having been completed for one year, are repeated successively for as many years as desired.

The present model follows the same general logic, but incorporates refinements or more detailed considerations at most of the basic steps. Exact specifications of the individual relationships, including their estimation, are set forth in the next chapter. Here, to give a general picture, the principal features of the model are described in brief paragraphs corresponding to the steps outlined above:

- (1') Target growth rates are set for each of three sectors, services, agriculture, and industry (Broadly defined to include power, transportation, construction, and mining, as well as manufacturing). For the other sector -- residential housing services -- growth is endogenous, and growth of GNP, of course, is a composite of the growth of the four sectors.
- (2') In three of the sectors, investment is related to growth of output through a net-capital-net-output ratio and a coefficient for replacement of worn out capital stock. In the non-housing services sector a cruder approximation is used. The relation between investment and increased output in the agriculture and industry sectors involves lags distributed over two or three years rather than the usual one-year lag.
- (3') For the application to Turkey, where the sectoral growth rates are already close to levels that are relevant as target rates, it was not considered necessary to check the absorptive capacity limit.
- (4') Saving is divided into depreciation, net private saving, and net government saving. The last is determined from revenue coefficients applied to different bases for import duties, other indirect taxes, and direct taxes, with an assumed rate of growth of government current-account spending.

- (5') Imports are disaggregated so that intermediate goods can be related to current non-agricultural production while capital goods depend on investment. The latter relation allows for import substitution. Travel expenditures and profit transfers are exogenous, and interest payments are not included in imports but are dealt with separately under "debt service."
- (6') Exports are divided into four categories, each projected in terms of an exogenous schedule or a specified growth rate. While this disaggregation adds nothing to the explanatory power of the model, it serves to make the assumptions about the different categories explicit and to make it easy to change any of them independently.
- (7' and 8') The determination of the net capital inflow as the greater of the two gaps corresponds exactly to the Chenery-Strout procedure. Also, the accounts are reconciled in the same way, by adjusting either savings or imports as explained under Item 8 above.
- (9') Going beyond net capital inflow requirements, where the Chenery-Strout analysis stops, the present model projects the accumulation of external debt and the corresponding service payments. Separate accounts are kept for "soft loans" (development loans from the U.S. and other donors) and for "hard loans" (suppliers' credits or other loans

at commercial rates). Different interest rates and amortization formulae are applied to the two accounts, and the debt service thus determined is added to the net capital requirement in each time period to find the gross need for external capital.

Soft loans and private foreign investment are projected exogenously. Whatever additional finance is needed each year is automatically assumed to be supplied on commercial terms and is added to the hard debt balance.

## CHAPTER II

### Detailed Relations

#### General

Various data sources were used as the basis for formulating the structure of the model and for estimating coefficients. The most important were: The First Five Year Development Plan, 1963-1967; Economic and Social Indicators - Turkey, USAID, Ankara, June 1967; A Summary of the Second Five Year Development Plan of Turkey, 1968-1972; various issues of the Balance of Payments Yearbook, International Monetary Fund; Dr. Kenan Gurtan, A Report concerning the Correction and Standardization of Investment Accounts, (Turkish monograph); National Income, Total Expenditure and Investment of Turkey, 1948, 1958-1965, Publication #475, Turkish State Institute of Statistics; various Mission Staff Papers and reports which are identified in this report and several OECD reports which are also identified.

Turkey ranks relatively high among less developed countries in terms of volume of quantitative information and length of consistent sets of time series. In most cases, series are available covering the last twenty years. Based on our own experience and the experience of other students of the Turkish economy the weakest aspects of Turkish data which have been used here are probably the accuracy of estimates of cereals output, estimates of private investment, and estimates of depreciation. Also, as in many countries, total savings is derived as residual. Lacking is a time series for investment classified by economic sector before 1963 with

the exception of a 17 year series for housing investment. Also, it is important to note that inventory fluctuations are included in the estimate of private consumption.

National income series for Turkey classified by sector of origin are normally shown net of depreciation. Therefore, we have used net domestic value added at factor cost (V) as the measure of sectoral output and have disaggregated V into four sectoral components.

$$V = VA + VN + VH + VS$$

where

V = net domestic product at factor cost

VA = agricultural value added

VN = industrial value added (manufacturing, mining, power,  
transportation, and construction)

VH = value added in housing

VS = value added in other services (financial institutions and  
professions, commerce and  
government services)

Factor income from abroad, indirect taxes and depreciation are computed in the model, and, therefore, the model derives a value of gross national product at market prices. Depreciation is estimated by branch of origin by the Turkish State Institute of Statistics (SIS). The estimates of depreciation, particularly in agriculture, are abnormally low. However, they have been used in order to maintain comparability with the Turkish national income accounts. We have estimated depreciation as a proportion of net domestic product classified by sector on the basis of the SIS series for 1955-64.

In order to facilitate comparison with Plan projections, data are expressed in 1965 constant prices. In addition, historical time series for

the most important data covering the 1961-1966 period are shown in Tables II-VI in order for the reader to compare the most recent period with the projections.

We have attempted to use the definitions of variables as specified in the Second Five Year Plan. However, this is not true for savings. Whereas the Plan disaggregates gross savings into voluntary savings and public savings, our components are net government savings, depreciation, and other net savings--including household savings.

Formulation of the model's structure and estimation of coefficients are discussed below. It is convenient to divide the discussion into six parts: investment, savings, imports, exports, external debt service and the capital account.

### Investment

Gross fixed investment was disaggregated into four sectoral components despite the brevity of the historical series for sectoral investment.

$$I = IA + IN + IH + IS$$

where

I = gross fixed investment

IA = investment in agriculture

IN = industrial investment

IH = investment in housing

IS = investment in services (non-housing)

The relationship between agricultural investment and agricultural output was estimated using a net incremental capital output ratio (ICOR).

This is an unsatisfactory aspect of the model since both cultivated area and intermediate goods are also important determinants of agricultural output and since the ratios among the factors of production may vary over time. Additional work should be undertaken in this area. It would be desirable to estimate a simple agricultural production function based on amount of land cultivated, amount of land under irrigation, use of fertilizer, pesticides and insecticides, and tractors and equipment.

The net agricultural incremental capital output ratio was derived from the estimated gross ICOR for agriculture. The gross ICOR used is 2.7 which is based on the 1963-66 historical period and is consistent with the ICOR of the Second Five Year Plan.

The net ICOR of 2.1 was derived as follows:

$$\text{AKA net} = \text{AKA gross} - \frac{\text{ADKA}}{\text{RVA}}$$

where

AKA net = net incremental capital output ratio

AKA gross = gross incremental capital output ratio

$$\text{ADKA} = \frac{\text{depreciation in agriculture}}{\text{agricultural net domestic product}}$$

RVA = growth of agricultural value added

A further adjustment was made in order to take account of the distributed lag between investment and output that we assume exists--that agricultural investment reaches fruition at the rate of 50 percent in the year following investment and 50 percent in the next year. Assuming a constant rate of growth this correction is:

$$\text{AKA net adj} = \frac{\text{AKA net}}{g_1 + g_2(1+r) + g_3(1+r)^2}$$

where  $g_1 = .50$

where  $g_2 = .50$

where  $g_3 = 0$  (included in equation to permit assumption of distribution over three years if desired)

$$\text{AKA net adj} = 2.0$$

The increase in value added in agriculture from 1961 to 1967 corresponds to an average annual growth rate of over 4 percent. However, both 1966 and 1967 were excellent crop years because of unusually good weather. Adjusting for weather variations, the average annual rate of growth has been approximately 3 percent. For purposes of projection we have used 1967 as the base year, but have discounted agricultural value added in that year to bring it in line with the adjusted trend of the 1961-1967 period.

We have used two alternative growth rates for projection, 3 and 4 percent.

$$VA_t = VA_{t-1} (1 + RVA)$$

where  $RVA = .03$  and  $.04$

The 3 percent rate assumes continuation of the historical trend, abstracting from weather, and the 4 percent rate is close to the Plan projection, which is 4.2 percent for the 1968-1972 period.

As indicated earlier, the industrial sector consists of manufacturing, mining, power, transportation and construction. The gross ICOR used is 3.0

which is based on the 1963-1966 period. As in the case of agriculture, a net ICOR and an adjusted net ICOR were derived. For industry the net ICOR is 2.0, and the adjusted net ICOR is 1.8. It is assumed that industrial investment reaches fruition at the rate of .25 in the year following investment, and .40 and .35 in the second and third years, respectively.

The average annual rate of growth of the industrial sector between 1961 and 1967 was about 8 percent. Several alternatives have been used as basis for projection: (a) 8 percent - continuation of historical trend, (b) 10 percent - estimate of Second Five Year Plan for the 1968-1972 period and (c) 7 percent.

The historical growth of value added in housing services is reasonably well accounted for by a simple incremental capital-output ratio with a single year lag. The gross and net ICOR's determined from historical data are 14.0 and 10.6 respectively, and these values were used for all projections.

The level of investment in housing has been a relatively stable share of net domestic product throughout the 1953-1965 period, and the same relation was used for projecting historical trends into the future.

It is expressed as:

$$IH = AIH (V)$$

where  $AIH = .043$

The Second Five-Year Plan aims at accelerating the growth of agricultural and industrial output while restraining investment in housing, except

for utility-type dwellings. The Plan targets for the housing sector are matched in the model by using the alternative value:

$$AIH = .033$$

from 1968 on, and keeping the historical capital-output ratio.

Investment in non-housing services has been a relatively constant share of net domestic product excluding agriculture (VNA) and output of services has grown at a remarkable constant rate during the period 1950-67. On this basis the historical relationships can be represented and projected as follows:

$$IS = AIS (VNA)$$

where

$$AIS = .055$$

$$VS_t = VS_{t-1} (1 + RVS)$$

where

$$RVS = .08 \text{ historically,}$$

and

$$RVS = .06 \text{ for the Plan}$$

Although in the past this growth rate has been approximately the same as that for the industrial sector, the Second Five-Year Plan calls for only a 6% rate of growth of services, while that for industry is raised to 10%. There is reason to doubt that the service sector will or could be held down to this extent, especially because it includes government services, which are indicated in the budget as growing at 8.5% per year (implying that private-sector services grow at only 2.8%). Surprisingly, investment in non-housing services in the Plan is in about the same ratio to VNA as it was in the past, in spite of the reduced growth rate. Hence AIS was not altered.

In the sector-by sector explanation above, mention has been made of capital-output ratios that were estimated from historical data on a gross basis, on a net basis, and then with an adjustment for the lag distribution. In addition to the history based values, corresponding figures have been derived from the Five-Year Plan. For certain runs, the latter values were used as alternatives. Both sets are collected, with some related information, in Table I.

### Savings

Savings is derived as a residual in the Turkish national income accounts. Gross savings is defined as the difference between gross fixed investment and the balance of payments on current account, or alternatively, savings is the difference between gross national product and consumption.

We have disaggregated savings into three components. Gross savings is the sum of net government savings (SG), which is the difference between central government revenue and central and local current expenditures, depreciation (IDK) and the residual (SP), which is the combined net savings of the private sector (business and households) and the State Economic Enterprises.

$$S = SG + SP + IDK$$

Government savings is expressed as follows:

$$SG = TDIR + TMP + TNDR + TMSC - GOV$$

where TDIR = direct tax revenue (income tax, corporation tax, defense tax on buildings, motor vehicle tax, and inheritance and gift tax)

TMP = revenue from import taxes

TNDR = indirect tax revenue - excluding import tax revenue

TMSC = all other public revenue except counterpart funds and revenue from savings bonds

GOV = current government expenditures

TABLE I

SECTORAL CAPITAL-OUTPUT RELATIONS

	<u>ADK</u>	<u>RV</u>	<u>AK Gross</u>	<u>AK Net</u>	<u>AK Net Adj</u>	<u>RDK</u>
	Historical 1963-67					
Agriculture (A)	.019	.03	2.7	2.1	2.0	.009
Industry (N)	.099	.09	3.0	2.0	1.8	.050
Housing (H)	.270	.08	14.0	10.6	10.6	.025
Services (S)	.024	.08	*	*	*	*
	Plan 1968-72					
Agriculture (A)	.019	.041	2.8	2.3	2.2	.008
Industry (N)	.099	.102	3.5	2.5	2.25	.040
Housing (H)	.270	.059	22.2	17.6	17.6	.015
Services (S)	.024	.06	*	*	*	*

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ADK = the ratio of sectoral depreciation to sectoral net domestic product

RV = sectoral growth rate used to derive AK net

AK Gross = gross incremental capital output ratio

AK Net = net incremental capital output ratio

AK Net Adj = AK net adjusted for distributed lags

RDK = ADK/AK net; RDK represents sectoral depreciation as a proportion of sectoral capital stock.

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\* Information not necessary for the model. ADK is used only to estimate depreciation.

Personal and corporate income taxes account for the major share of direct tax revenue. Revenue from the agricultural income tax has been insignificant. Therefore, we have used net domestic product excluding agriculture as the explanatory variable. Between 1959 and 1966 direct taxes as a proportion of VNA averaged .09 with relatively minor fluctuations. Thus, we estimate that:

$$TDIR = ATDIR (VNA)$$

where  $ATDIR = .09$

We also make an alternative assumption--that  $ATDIR = .10$ , representing improved tax performance. For 1966, the most recent year for which information is available, the coefficient was .095.

Turkey has a large number of indirect taxes. Excluding taxes on imports, the most important are production taxes and consumption taxes on monopoly products. During the 1957-1966 period, indirect taxes as a proportion of net domestic product averaged .07. On this basis we estimate that:

$$TNDR = ATNDR (V)$$

where  $ATNDR = .07$

Import taxes account for a large share of total tax revenue--approximately 25 percent in 1966. As a result of increases in tax rates, import tax revenue as a proportion of commodity imports (excluding PL 480) increased from .42 in the early 1960's to .50 in recent years. We estimate that:

$$TMP = ATMP (MPCOM - M480)$$

where

MPCOM = commodity imports

M480 = PL 480 imports

and

ATMP = .50

Miscellaneous other government revenues are approximated as:

$$TMSC = .017 (V)$$

Government expenditures consist of the expenditures of (a) the General Budget, (b) the Annexed Budget Organizations and (c) local administrations. Between 1961 and 1965 the average annual rate of growth was 6 percent. However, the average rate of growth between 1961 and 1966 was about 7.4 per cent because of the large increase in government expenditures in 1966. The Plan projects an average annual increase of 8.5 percent for the Second Five Year Plan 1968-1972. We have assumed three alternatives:

$$GOV_t = (GOV_{t-1})(1 + RGOV)$$

where  $RGOV = .06, .074, .085$

As indicated above, the combined savings of the private sector and the State Economic Enterprises (SE) is equal to the difference between total savings and the sum of government savings and depreciation. During the 1962-1966 period the marginal rate of SE was extremely high, about 32 percent, but fluctuating. The high marginal rate was due primarily to the increase in private savings. Given the likelihood that Turkey will continue to experience political and economic stability it is likely that

the marginal rate of SP will continue to be high but it is questionable whether the historical rate can be maintained. We estimate that:

$$SP_t = SP_{(t-1)} + ASP (V_t - TDIR_t)$$

where  $ASP = .30, .25$

Because of the frequently observed instability of marginal savings coefficients for less developed countries, other values,  $ASP = .20$  and  $.15$ , were used in sensitivity tests.

### Imports

The import function explains all goods and services on current account except interest on external debt which is discussed with debt amortization in the section on debt service, below.

Imports were disaggregated into the following components;

$$MP = MKAP + MIGD + MCON + M480 + MTUR + MFPRO$$

where  $MP =$  total imports

$MKAP =$  imports of capital goods

$MIGD =$  imports of intermediate goods (excluding PL 480)

$MCON =$  imports of consumer goods (excluding PL 480)

$M480 =$  imports of PL 480 goods

$MTUR =$  payments for tourism and travel

$MFPRO =$  profit transfers of foreign enterprise

It is important to note that since the mid-1950's Turkey has had varying degrees of import control and restriction which create difficulties in estimating import functions. Greatest importance has been placed on Turkey's most recent experience.

One of the most difficult tasks proved to be estimating a function for imports of capital goods. Import substitution has taken place and Turkey's Plan attaches a high priority to import substitution in the future. Imports of capital goods can be defined as the difference between total demand for capital goods and domestic supply (assuming that domestic supply is less than total demand). Based on Gurtan's study<sup>1/</sup> which includes a time series for gross value of domestic capital goods output and imports of capital goods covering the period 1950-1960, we have estimated that capital goods account for 40 percent of gross investment. Using graphic analysis and focusing on the 1955-1966 period we derived an estimate of the relationship between domestic production of capital goods and industrial value added. (Data on gross industrial output is not readily available.) The resulting formulation is:

$$MKAP = AIQ(I) - AQD(VN)$$

where  $AIQ$  = the ratio of capital goods to gross investment

$I$  = gross fixed investment

$AQD$  = the ratio of domestic production of capital goods to industrial value added

and  $AIQ = .40$

$AQD = .14$

Since these coefficients were not firmly established by the data, alternative values were used in sensitivity testing-- $AIQ = .495$ ,  $AQD = .20$ .

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<sup>1/</sup> Dr. Kenan Gurtan, A Report Concerning the Correction and Standardization of Investment Accounts. (Turkish Monograph).

Imports of intermediate goods excluding PL 480 (MIGD) are estimated as a function of net domestic product excluding agriculture (VNA). Imports of agricultural intermediate goods have been nominal until recently. Although imports of fertilizer have been increasing. Turkey is in the process of expanding domestic capacity for fertilizer production. Moreover, historically we found a more stable relationship between MIGD and VNA than MIGD and V. Appealing to empirical observation of the 1960-1966 period we estimate:

$$\text{MIGD} = \text{AMIGD} (\text{VNA})$$

and  $\text{AMIGD} = .07$

Historically, Turkey's trade policies have had a significant influence on imports of consumer goods. Current policy seems to be reasonably well approximated by the formula that consumer imports (MCON) are held at a stable fraction of total commodity imports (excluding PL 480); thus MCON can be expressed as a ratio to (MKAP + MIGD). During the early 1960's this ratio was over .10. However, during the more recent 1963-1966 period the ratio has been about .08. Assuming continuation of import restrictions we assume:

$$\text{MCON} = \text{AMCON} (\text{MKAP} + \text{MIGD})$$

where  $\text{AMCON} = .08$

Imports under PL 480 are exogenously programmed for the historical period and--although the term remains in the equation--are assumed equal to zero in projections for the future. It is possible that Turkey will need to import cereals in poor crop years (poor because of abnormal weather conditions). Also, it is possible that some imports of tallow, cottonseed or soybean oil will occur (which in the past have been financed under PL 480). However, such contingencies cannot be foreseen.

Two components of the invisibles account have been treated specifically in the model--tourism and travel payments (MTUR) and profit transfers of foreign enterprise (FPRO). Regarding the former, the annual rate of increase has been a constant 10 percent since 1962; on this basis we have estimated:

$$MPUR_t = MPUR_{t-1} (1 + RMTUR)$$

where  $RMTUR = .10$

Also, we have used the Plan estimates, which show a sharp increase between 1967 and 1968, but a lower rate of increase thereafter--approximately 10 percent a year.

Profit transfers of foreign enterprise are determined by agreements between the Government of Turkey and the foreign companies. In 1967 profit transfer amounted to \$25 million. We have used the estimates for profit transfers set forth in the Second Five Year Plan for the 1968-1972 period and extrapolated to 1975 based on the 1968-1972 trend.

The other components of the invisibles account are included with "other invisibles net" which is discussed in the following section.

### Exports

Foreign exchange earnings have been disaggregated into four components:

$$XP = XCY + REM + TUR + XOT$$

where

- XP = foreign exchange earnings
- XCY = commodity exports
- REM = workers' remittances
- TUR = tourism and travel receipts
- XOT = other invisibles net

Turkey's commodity exports averaged \$365 million during the 1952-1954 period and did not achieve this level again until 1962. The decline during the 1950's is more than accounted for by the reduction in grain exports of approximately \$80 million. The recovery by the early 1960's and export growth during the 1960's is due primarily to the rapid increase in earnings from three commodities--cotton, tobacco and hazel nuts. However, apart from the replacement of cereals by other traditional exports, the structure of Turkey's exports has not changed significantly. Traditional agricultural exports still amount to about 85 percent of commodity exports.

During the 1960-1966 period the annual average rate of export growth was 7.1 percent. As indicated above, three commodities accounted for the major share of the increase. However, Turkey's share of world demand for these commodities did not increase during this period but rather she maintained a constant share of the expanding world market.

The USAID Mission after undertaking a study of Turkey's export sector concluded that it is possible for Turkey to maintain the recent export growth rate.<sup>2/</sup> The study, which is based in part on interviews with Turkish exporters, establishes export targets by commodities and discusses the actions that will be necessary to achieve individual commodity targets. The average annual growth rate necessary to achieve the 1973 target is 7.2 percent which is consistent with Plan estimates. The Plan projects an average annual rate of increase of 7.1 percent for the 1968-1972 period.

We believe that continuation of the trend since 1961 is possible but should be considered optimistic. As alternatives we project growth rates of

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<sup>2/</sup> Turkish Exports, Problems and Opportunities, Staff Paper, USAID, Ankara, Turkey, March 1967.

6 percent and 4.5 percent. The latter is the average annual rate of growth of commodity exports, excluding cereals, between 1952-1954 and 1966. Thus,

$$XCY_t = XCY_{t-1} (1 + RXCY)$$

where  $RXCY = .071, .045, .06$

Foreign exchange remitted by Turkish workers employed in Europe has contributed substantially to Turkey's recent economic growth. The number employed abroad reached a peak of nearly 200 thousand in 1966 but declined by the spring of 1967 to 170 thousand primarily because of the economic downturn in Germany. Corresponding to this decline, workers' remittances totaled \$115 million in 1966 and fell to \$93 million in 1967. <sup>3/</sup>

Most important for estimating future changes in remittances is the availability of employment in Western Europe. At present there are no grounds for predicting major increases in remittances resulting from increased emigration.

On the other hand, it is likely that remittances per worker will increase as Turkish workers become qualified for higher paying jobs. Currently, remittances per worker average about \$575 as compared to \$700 per worker for Italians employed abroad. Moreover, the exchange rate for workers' remittances has been increased this year from TL 11.43 to TL 12 = \$1.

We have assumed two alternatives: (a) that the level of remittances will stabilize at \$100 million beginning in 1968 and (b) that remittances will continue to increase--1968 = \$100 million, 1969 = \$120 million, with

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<sup>3/</sup> For a discussion of Turkey's recent experience see: Turkish Workers in Western Europe, a Comparative Study, USAID, Turkey, Staff Paper prepared by A. David Redding, June 5, 1967.

the level increasing by \$10 million per year thereafter and amounting to \$180 million by 1975. The latter estimate is comparable to but slightly less optimistic than the Plan projection which assumes that remittances will achieve a higher level in 1968 (\$140 million) and will increase thereafter at an average annual rate of 5.5 percent.

Despite Turkey's great tourism potential, official earnings from tourism and travel are low with no trend over time. In 1966, 364 thousand tourists visited Turkey but travel receipts amounted to only \$13 million. However, Turkish officials estimate that only one-third to one-half of the foreign exchange is transmitted through official channels. In the spring of 1968 the exchange rate for tourism was increased from TL 9 = \$1 to TL 12 = \$1 which should significantly reduce black market exchanges and also increase tourism earnings. One important lesson from the experiences of other countries is that tourism is very price elastic.

The major constraint to increased tourism earnings may be on the supply side. It is unlikely that Turkey can greatly expand tourism facilities quickly. Inter alia, with the exception of Istanbul, virtually all of Turkey's tourism attractions are located far from cities. Therefore, a major increase in construction of tourism facilities is required since the possibilities for converting residences into tourism homes is limited.

We have considered two alternatives, (a) that receipts from tourism and travel will increase at a rate of 30 percent per year:

$$TUR_t = TUR_{t-1} (1 + RTUR)$$

where  $RTUR = .30$

and (b) the Plan estimate, which is more optimistic--TUR = \$45 million in 1968, \$55 - 1969, \$77 - 1970, \$110 - 1971 and \$135 - 1972. This trend was extrapolated to 1975.

After reviewing the other components of the invisibles account (both payments and receipts) we decided to aggregate them because there has been no discernible trend with the exception of NATO infrastructure and offshore purchases which have been declining since 1964. During the 1961-1966 period these components, on a net basis, have fluctuated around a mean of \$30 million in receipts. We have used the Plan estimate which averages \$30 million in receipts with virtually no fluctuation between 1968 and 1972.

#### External Debt Service

The formulae used for external debt service payments were based on actual schedules for amortization and interest on existing loans from a variety of lenders.<sup>4/</sup> It was found that the debt balances could be aggregated, with very little loss of precision, into two categories, which we have labeled "soft" and "hard". Annual interest payments amounted consistently to 2.5% of the outstanding balance of soft loans and to 6% on hard loans. These rates correspond to what are anticipated for new development loans and suppliers' credits, respectively. In the model, these rates of interest are applied to the outstanding balances that result from the capital inflows and repayments explained below. Thus, external interest payments, in million dollars per year, are:

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<sup>4/</sup> Turkey's External Debt Position as of 31st December, 1967, Organization for Economic Co-operation and Development, Consortium/Turkey (68) 12, Paris, June 1968.

$$FINT = RI1 (DEBT 1) + RI2 (DEBT2)$$

where DEBT1 = outstanding debt on soft terms

DEBT2 = " " " hard terms

RI1 = interest rate on DEBT1, = .025

RI2 = " " " DEBT2, = .06

(for projections)

Future repayments of currently outstanding hard-term debts, according to the schedule cited above, were satisfactorily approximated by the following formula:

$$F2OUT = DEBT2/10.0$$

This formula was assumed to apply also for future hard loans and was used in the projection model.

Historically, with harder and less uniform terms on non-concessionary loans, the simple formula was not satisfactory. For runs that include the historical period, repayments were programmed exogenously. In addition, the hard interest rate, RI2, was .10 in 1961, gradually falling to .06 in 1966, where it is assumed it will remain for the future.

Repayments of soft-term loans are predetermined through 1974, inasmuch as a seven-year grace period is assumed to apply to soft loans. Beyond that year, additional repayments were projected in keeping with the assumed issuance of new loans, described below, and a 25-year amortization period. Total debt service payments, defined as interest and amortization on both categories of loans are:

$$FDTSRV = FINT + F1OUT + F2OUT$$

where F1OUT = repayments on soft loans (exogenous)

Gaps, Capital Inflows and Debt Balances:

Previous sections of this Chapter have explained the formulae and estimates for investment, savings (ex ante), imports (ex ante), and exports, as well as debt service. Net capital inflow required for the assumed growth rates (and other conditions) is determined as the greater of the two gaps:

$$F_{net} \geq \text{Investment-savings gap} = I - S(\text{ant.})$$

$$F_{net} \geq \text{Import-export gap} = M(\text{ant.}) - X$$

Then, as explained in the Chenery-Strout model in Chapter I, either savings or imports is adjusted to equate the smaller gap with the required net inflow (which is assumed to be supplied). Next, we add the debt service obligation to arrive at the gross requirement for foreign capital.

Four sources of capital inflow are distinguished: private foreign investment, imports with waiver, development (soft) loans, and suppliers' credits (hard).<sup>5/</sup>

Private foreign investment (FINVD) fluctuated around a mean of \$30 million during the 1961-1966 period and declined in 1967 to \$17 million. Assuming no changes in Turkey's foreign investment policies we believe it is likely that FINVD will remain at the recent historical level--\$30 million.

As an alternative we have accepted the Plan estimates which assume an annual average rate of growth of approximately 10 percent beginning from a base of \$40 million in 1968.

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<sup>5/</sup> For testing the model against history a fifth category was included--grants under U.S. PL 480--but for the future it is assumed that there will be no significant grants.

Imports with waiver (MWAV) are imports in kind brought into Turkey by workers employed in Western Europe. In 1967 MWAV amounted to \$12 million. The magnitude of this component is a function of Turkey's import regulations. Therefore we have used Plan estimates for projection which are as follows: 1968 = \$12 million, with the level increasing by \$2 million annually thereafter.

For development loans, we assume that undisbursed commitments as of December 31, 1967 will be drawn down in four equal installments beginning in 1968. In addition, new commitments are assumed as follows: 1968 - \$200 million, 1969 - \$200 million, 1970 - \$150 million, 1971 - \$150 million, 1972 - \$100 million and 1973 - \$50 million. New commitments will be disbursed over four years beginning in the year of the commitment.

Suppliers credits are computed as a residual in the model--the difference between the gross foreign balance (current account balance plus debt servicing) and other sources of foreign capital. If the computed residual is negative, the amount is used to prepay hard term debt.

We have assumed no changes in reserve movements. Although the Plan assumes that reserves will increase by \$30 million annually, this is most unlikely. Historically, donors have been unwilling to provide foreign aid in order to increase foreign exchange reserves.

TABLE II

NATIONAL INCOME BY SECTOR OF ORIGIN  
(TL billion -- 1965 prices)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u> (3)
Agriculture	20.5	21.7	23.8	23.8	23.1	25.7	26.1
Industry (1)	15.0	15.8	16.7	18.1	19.5	21.6	23.9
Housing	1.9	2.0	2.0	2.1	2.3	2.5	2.7
Other Services	13.2	14.0	15.3	16.4	17.8	19.2	20.8
Net Domestic Product at Factor Cost	50.6	53.5	57.8	60.5	62.6	68.9	73.4
Income From Abroad	-.4	-.2	-.2	-.2	.2	.5	.3
Net National Product at Factor Cost	50.2	53.3	57.6	60.3	62.8	69.4	73.7
Indirect Taxes, including Import Duty	5.5	5.8	6.2	6.7	7.1	7.7	8.3
Net National Product at Market Prices	55.7	59.1	63.8	67.0	69.9	77.1	82.0
Depreciation	2.6	2.7	2.9	3.1	3.3	3.5	3.8
GNP at Market Prices (2)	58.3	61.8	66.7	70.0	73.2	80.6	85.9

- (1) Consists of manufacturing, mining, power, transportation and construction.  
(2) Details may not add to totals because of rounding.  
(3) Provisional.

Sources: 1961-1962--Economic and Social Indicators--Turkey, U.S. A.I.D., June 1967.  
National income series in 1961 prices was converted to 1965 prices using  
a price inflator of 118.7.

1963-67--OECD, Statistical Annex to: Consortium/Turkey (68) 13, June 10, 1968.

TABLE III

SAVINGS  
(TL billion -- 1965 prices)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u> <sup>(1)</sup>
Total Savings (gross)	6.9	6.0	8.1	9.8	11.3	12.8	14.0
Public Savings (net)	1.4	1.4	2.8	3.3	2.9	2.9	--
Direct Tax Revenue	3.0	2.6	2.9	3.1	3.4	4.1	--
Miscellaneous Revenue	.1	.2	1.3	1.5	1.0	1.4	--
Indirect Tax Revenue (exc. Import Duty)	3.8	3.8	3.9	4.4	4.4	4.5	--
Import Tax Revenue	1.7	2.0	2.3	2.3	2.7	3.2	--
Total Revenue	8.6	8.6	10.4	11.3	11.5	13.2	--
Government Current Expenditure	7.2	7.2	7.6	8.0	8.6	10.3	--
Private Savings (net)	2.9	1.9	2.4	3.4	5.1	6.4	--
Depreciation	2.6	2.7	2.9	3.1	3.3	3.5	--

(1) Provisional

Sources: 1961-1966--Economic and Social Indicators--Turkey, U.S. A.I.D., June 1967. Savings data were converted from current prices to 1965 constant prices using the following price series: 1961 - 87.6, 1962 - 91.5, 1963 - 93.5, 1964 - 97.0, 1965 - 100.0, 1966 - 103.4. The price series used for consumption is 1961 - 83.0, 1962 - 88.8, 1963 - 95.1, 1964 - 97.3, 1965 - 100.0, 1966 - 104.0.

1967--OECD, Statistical Annex to: Consortium/Turkey (68) 13, June 10, 1968.

TABLE IV

INVESTMENT  
(TL billion -- 1965 prices)

a. <u>GROSS INVESTMENT BY SECTOR; 1963-1966</u> (cumulated)		b. <u>GROSS INVESTMENT BY YEAR</u> (all sectors)	
Agriculture	7.5	1961	8.4
Industry	21.8	1962	8.2
Housing	10.1	1963	10.8
Other Services	8.5	1964	10.8
		1965	12.0
Total	47.9	1966	14.3
		1967	15.0 (1)

(1) Provisional

Sources: A Summary of the Second Five Year Plan of Turkey, 1968-1972, Government of Turkey, State Planning Organization, September 1967. Economic and Social Indicators -- Turkey, U.S. A.I.D.; June 1967. Investment series 1961 prices was converted to 1965 prices using a price inflator of 114.1.

OECD, Statistical Annex to: Consortium/Turkey (68) 13, June 10, 1968.

TABLE V

BALANCE OF PAYMENTS  
( \$ million)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u> (1)
I. <u>Current Account</u>							
Imports (cif)	-510	-622	-688	-537	-572	-718	-685
Exports (fob)	347	381	368	411	464	490	523
Workers' Remittances	--	--	--	9	70	115	93
Travel Receipts	7	8	8	8	14	13	14
Travel Payments	-12	-18	-21	-22	-24	-27	-28
Profits Transfers	--	--	-1	-5	-15	-16	-25
Other Invisibles	28	39	65	61	17	10	29
Current Account Balance (excluding interest payments)	-140	-212	-269	-75	-46	-133	-79
Interest Payments	-30	-30	-31	-34	-32	-31	-35
Current Account Balance	-170	-242	-300	-109	-78	-164	-114
II. <u>Debt Repayment</u>	-84	-97	-119	-131	-184	-146	-125
III. <u>Total I. &amp; II.</u>	-254	-339	-419	-240	-262	-310	-239
IV. <u>Capital Transactions</u>							
Private Foreign Capital	34	36	21	25	22	30	17
Imports With Waiver	--	--	5	5	5	11	12
Suppliers Credits	15	26	10	10	--	--	--
Official Capital (aid)	232	249	356	237	303	277	273
Sub Total	281	311	392	277	330	318	302
Short Term Capital - Reserve Movements - Net Errors and Omissions	-27	28	27	-37	-68	-8	-63

(1) Provisional

Source: Ministry of Finance, Government of Turkey.

TABLE VI

COMMODITY IMPORTS CLASSIFIED BY USE  
(\$ million)

	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>
Total (1)	510	622	688	537	572	718	685
Investment Goods	185	228	254	197	197	289	--
Raw Materials	208	292	332	296	313	365	--
PL 480 (2)	7	20	43	26	4	2	--
Other	201	272	289	270	309	363	--
Consumer Goods	116	102	102	44	62	64	--
PL 480 (2)	59	51	45	8	20	15	--
Other	57	51	57	36	42	49	--

(1) Details may not add to totals because of rounding.

(2) PL 480 data for 1962 and 1963 have been adjusted to resolve a discrepancy between imports of PL 480 classified by use and PL 480 imports as reported in the balance-of-payments.

Source: U.S. A.I.D., Ankara, Turkey.

CHAPTER III

Comparative Projections

Combinations of Alternatives

Chapter II set forth alternative values for certain coefficients and sectoral growth rates. Using various combinations of the alternatives twenty-six projections were made.<sup>1/</sup> The combinations are listed in Table VII, and Table VIII shows the alternative assumptions for four exogenous balance-of-payment variables -- worker's remittances, payments for tourism and travel, receipts from tourism and travel, and private foreign investment. Estimated disbursements and repayments of development loans (soft loans) are shown in Table IX; these schedules were not altered.

Of the twenty-six projections, we have selected twelve for presentation in this paper. They are identified in Table VII by stars (\*). In the first eight of these projections growth of each of the four domestic sectors was programmed to continue at approximately the same rate as in the 1961-67 period (except in two cases where the growth rate of one sector was reduced). Variations within this set were concerned with assumptions affecting the balance of payments.

In the other four projections, the growth rates correspond to the Second Five Year Plan, which aims at accelerating growth of the agricultural and industrial sectors while reducing the rate of expansion

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<sup>1/</sup> Not including those that became obsolete due to changes and refinements that were made to the model in the course of the study.

of housing and other services. Comparisons within this series concern the sensitivity of the results to changes in foreign exchange earnings and to variations of investment gestation lags and capital-output ratios. The rates of GNP growth that result from the specified sectoral rates are about 6.5 percent per year in the projections that continue the historical trends (reduced to 6.2 percent in two cases, d and e) and 6.8 percent per year for the projections that follow the Plan.

Thus, all the projections analyzed have at least 6 percent per year rate of growth, which is enough to yield an annual increase in per capita consumption of about 3.5 percent if the population continues to grow at the observed rate of 2.5 percent per year. Some of the combinations, however, lead to a rapid build-up of hard-term debt, while in others the debt stays within manageable bounds.

The results for the twelve cases selected are given at the end of this chapter in the form of tabulated time series for the principal variables generated by the model. The various tabulations are identified by letters corresponding to those in Table VII.

A few of the column headings used in the tabulations need explanation. "Exports Etc." is the sum of commodity exports, workers' remittance, tourism and travel receipts, and other invisibles, net. "One Year Gross C.O.R." is the ratio of a one-year increase in GNP to gross investment in the year from which the increase is measured. Although sectoral net capital output ratios are used in the model with distributed lags for some sectors, the "one year" aggregate ratio -- calculated each year ex post -- is of interest for comparison of projections with

alternative gestation assumptions. Moreover, it is useful to measure the aggregate COR in conventional terms for comparison with values for other countries.

#### A Projection of Past and Future

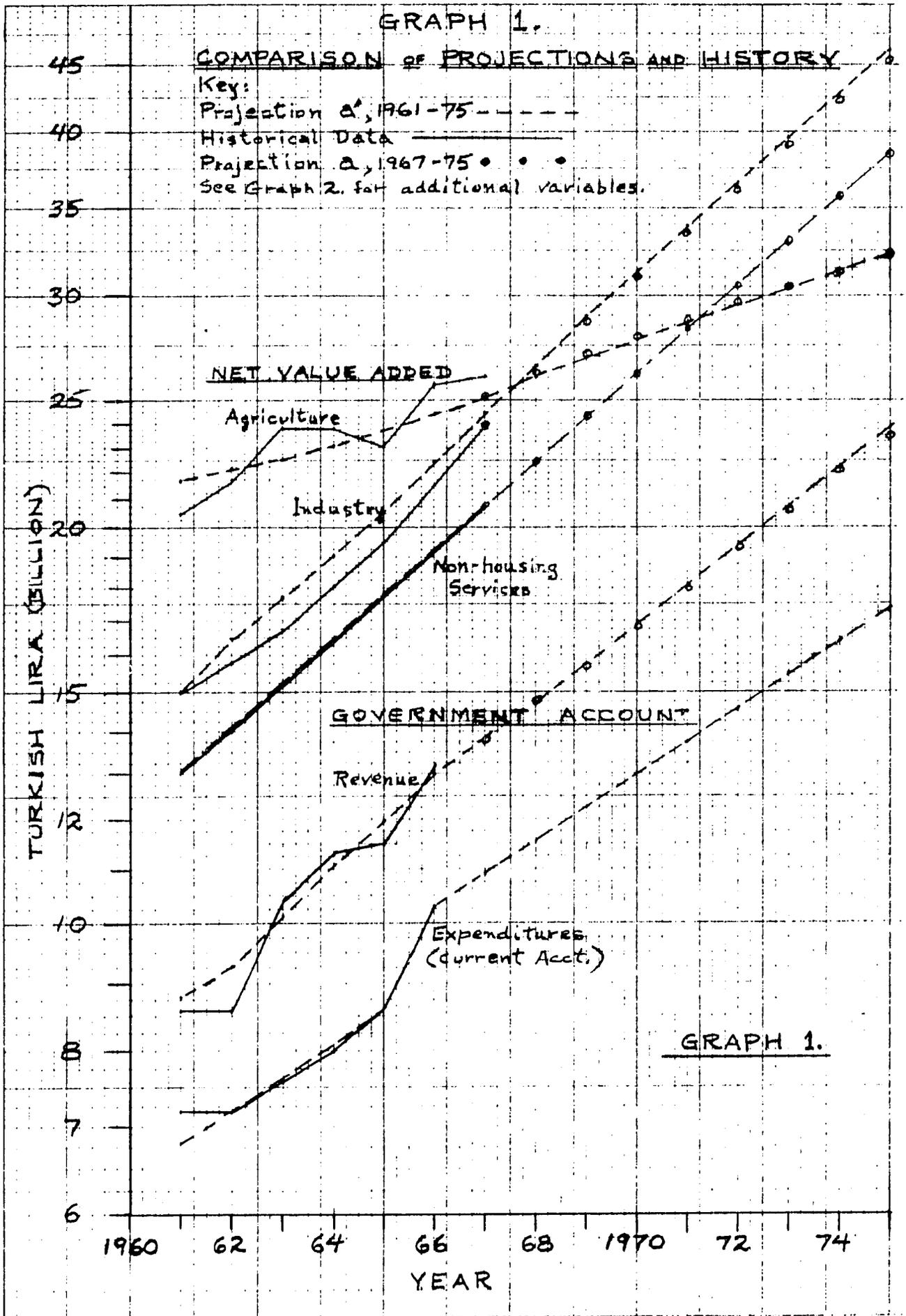
The descriptive capability of a model may be observed by comparing the values of its endogenous variables with actual values for a historical period. This is not a strong test of a model's predictive powers; such comparisons must almost always be made against the same data that were used both to estimate the coefficients and to make fine-tuning adjustments of the completed model. But it is reassuring to see that the model-builders have not failed in the minimum objective -- formulating a model that can reproduce past behavior of the economy.

Accordingly, the present model was used to make a projection starting from the conditions of 1961 and using historical data for the exogenous variables. For comparison with 1967-based projections, this one was continued through 1975. From 1961 through 1967, total gross investment from historical data was split among the sectors and programmed exogenously. After 1967, sectoral growth rate targets determined the levels of investment.

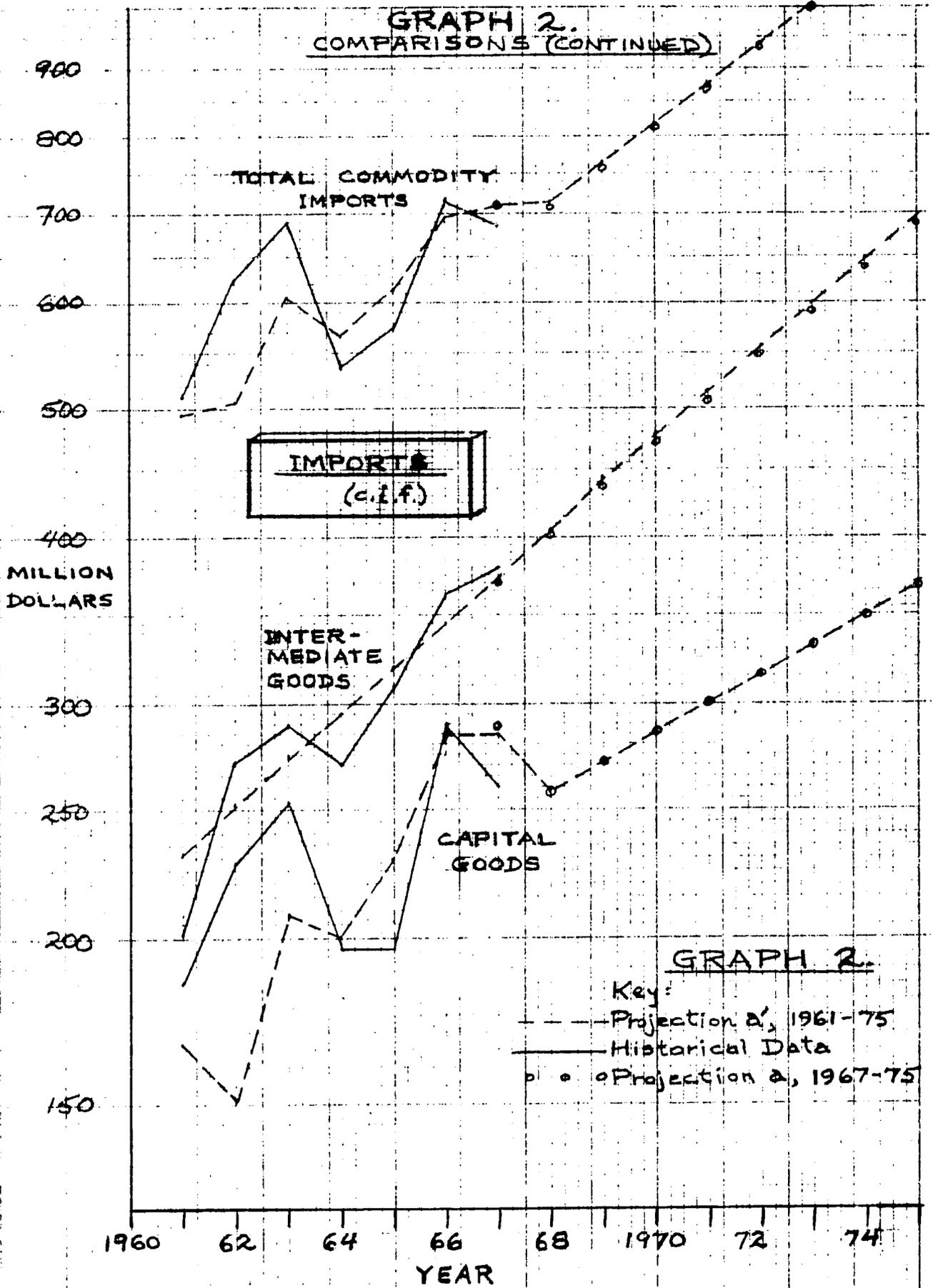
Results of this past-and-future projection, designated 'a'', are given in the first of the tabulations. Some of the principal variables are also shown in Graphs 1 and 2, together with corresponding historical data from the tables following Chapter II. The model reproduced history reasonably well, as far as the main trends are concerned, although the effects of weather variations on agricultural output were of course not reproduced. Imports were not accurately matched in the earlier years,

but it is notable that the timing of peaks and troughs corresponded and that the total was fairly close for the most recent years. Private saving (not graphed) deviated quite far from history. Fortunately, as suggested by its small absolute magnitude and confirmed by sensitivity tests, accuracy of this variable is not important within the range of conditions of the present study.

For the period 1967-'75, results of projection 'a' are graphed along with those of 'a/'. Projection 'a' starts from 1967 conditions and has the same coefficients as 'a/'. The close agreement confirms that the way the 1967 initial conditions are programmed for the model gives essentially the same results as if the projection had started earlier. There is, in other words, no "starting problem." This was confirmed with other runs, not included here, that start from 1961 and change growth targets in 1968.



**GRAPH 2.**  
**COMPARISONS (CONTINUED)**



**GRAPH 2.**

Key:  
--- Projection 1, 1961-75  
— Historical Data  
o • o Projection 2, 1967-75

### Analysis of Projections

Results of the projections indicate that the foreign exchange constraint will be the principal barrier to continuation of historical growth or realization of the Plan growth target. This is consistent with the experience of the 1960's, except perhaps for 1966 when an unusually large amount of foreign exchange was made available for imports. Symptomatic of the fact that the foreign exchange gap was critical were the low levels of foreign exchange reserves and the rationing of imports.

In many projections made with the model the M-X gap (import-export gap) exceeds the I-S gap (investment-saving gap) by a substantial margin. In fact, when growth rates based on historical experience are used the ex ante I-S gap is always negative; i.e., ex ante savings exceeds investment. In several of the projections based on the Plan targets the I-S gap exceeds the M-X gap for one or more of the first four years of the projection period, but the M-X gap then becomes critical, and in every projection except 'q' the I-S gap declines steadily during the projection period, usually becoming negative by 1975. The I-S gap remains binding throughout the projection period in only one projection, 'q', when the lowest marginal rate of savings for enterprises and households is assumed (ASP = .15), together with the highest export growth rate (RXCY = .071, with "BBBB").

Projection 'a' is the best representation of historical experience continued into the future. The projection reflects Turkey's good economic performance in recent years. While maintaining historical rates of growth, the M-X gap declines steadily and the reduction in the debt

service ratio (DSR)<sup>1/</sup> amounts to over 60 percent during the projection period. Although hard term loans are necessary to finance a portion of the foreign exchange requirement by the mid 1970's, the requirements for hard loans for 1974-75 are less than the decline in aid.

Projections 'b', 'f' and 'e' reflect the difficulties Turkey would encounter if exports were to increase at a substantially lower rate than during the 1961-65 period and workers' remittances were to remain at a constant level rather than increasing. The commodity export growth rate (RXCY = .045) corresponds to the average annual rate from 1952-54 to 1966, for all commodities except cereals. The change in this assumption from that used in projection 'a' is more important than the changed assumption for workers' remittances in explaining the difference in foreign exchange earnings.

In order to maintain the historical rate of national income growth, hard term financial requirements would increase rapidly after 1971 and the balance of payments situation would not be satisfactory at the end of the projection period. Neither a higher degree of import substitution (projection 'f') nor a reduction in the industrial growth rate (projection 'e') of the magnitudes assumed is sufficient to achieve a satisfactory balance of payments situation. The major policy implication of these projections is that Turkey's foreign exchange earnings must somehow be increased faster than in this group of runs if a national

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<sup>1/</sup> DSR = debt servicing (interest and amortization) divided by the sum of commodity exports, workers' remittances, tourism and travel receipts and other invisibles net.

income growth rate of at least six percent is to be maintained without a debt crisis.

Projection 'c' includes our "best estimate" of foreign exchange earnings. This projection, unlike 'b', 'f' and 'e', assumes a medium rate of export growth ( $RXCY = .06$ ). Although the projection results in a feasible balance of payments situation, in the mid 1970's hard term loans are at a high level and still increasing at a faster rate than the decline in aid. While the projection does not represent a crisis situation by 1975, continuation of the balance of payments trend could lead to difficulty.

Projection 'd' represents the policy alternative of reducing the rate of industrial growth, as might be done to compensate for the limited foreign exchange earnings corresponding to 'c'. The reduction of RVN to .07 significantly improves the balance of payments situation. It should be noted that the income growth rate is still above six percent. Another feasible alternative would be a higher degree of import substitution (projection 'u'). A comparison of 'u' and 'd' reveals similar results. Although the balance of payments gap is slightly larger in 'u' the growth rate is also higher.

Of the eighteen projections based on Plan growth targets, results are included for four -- o, x, s, and t. Projection 'o' is our best representation of Turkey's Second Five Year Plan. The derived national income growth rate and M-X gap are close to Plan targets. Moreover, the sum of new hard loan requirements derived in the model and disbursements of soft loans corroborates Plan estimates of "foreign financing requirements" during the Plan period, 1968-72. With the assumed level of

concessional foreign assistance which is lower than total financial requirements, hard loans begin to increase during the 1970's. After 1971 the annual increases in hard loans roughly correspond to the reduction in foreign assistance disbursements, i.e., hard loans replace foreign aid. As with projection 'c', the results do not indicate a crisis but rather a situation of potential difficulty if the trends continued. Even this marginal outcome is contingent on Plan assumptions regarding foreign exchange earnings, which we consider to be optimistic.

Projection 'x' reveals the difficulties Turkey would encounter in attempting to achieve Plan growth (including Plan RGOV) if exports and other exogenous balance of payments components were to grow at the less optimistic rates of our "best estimate" as in projections 'c' and 'd'. Foreign exchange earnings corresponding to our best estimate of the future would not support Plan growth targets. Our estimates are lower than the Plan projections for commodity exports, and differ even more significantly with respect to tourism and travel receipts, workers' remittances and private foreign investment. That is not to say that the Plan projections for these components are unattainable, but they are certainly ambitious in the light of past trends. Since all of these sources of foreign exchange are to some degree influenced by circumstances outside of Turkey's control, shortfalls may well occur in some of them, which would require even greater increases in the others if the income growth target is to be achieved and maintained with a satisfactory balance of payments situation.

Among various sensitivity tests, one of the most interesting is related to the distribution of gestation lags. The assumptions used in

projections 's' and 'o' are identical except that 's' assumes that conventional one year lag between investment and output instead of the distributed lag used in 'o' and most other runs for the industrial and agricultural sectors. A comparison reveals important differences in the results of 'o' and 's'. For equal growth rates, the shorter gestation periods result in lower investment requirements and in turn lower levels of imports. The M-X gap, hard loan requirements, and the debt service ratio are considerably lower in projection 's' than 'o' by the end of the projection period. With a one year gestation period the aggregate ICOR is reduced from 3.0 to 2.8. With steady rates of growth assumed, the effects of changing the gestation lag assumptions can be offset by altering the capital output ratios. Thus an increase in the net ICOR's for agriculture and industry from 2.2 and 2.25 to 2.3 and 2.5 respectively while maintaining the one year gestation assumption (projection 't') yields results comparable to projection 's' which assumes lower net ICOR's with distributed lags. Although it would appear that alternative assumptions regarding gestation lags are in effect equivalent to alternative ICOR's the relation will be different with different constant growth rates and will become invalid when sectoral or aggregate growth is accelerating.

Although our assumptions regarding distributed lags are based on judgment rather than statistical analysis, we believe they are more realistic than the conventional assumption that investment reaches fruition in one year. Because of the sensitivity of the gestation assumptions, research should be undertaken to provide more accurate sectoral estimates of the time relationship between investment and output.

Another comparison of projections provides a measure of the productivity of foreign capital when the foreign exchange gap is critical. The assumptions used in projections 'c' and 'd' are identical except that in the former a higher rate of industrial growth is assumed. Although a higher rate of income growth is achieved in projection 'c', a larger volume of foreign capital is required. The marginal requirement for foreign capital -- the ratio of the additional foreign capital input to the increase in GNP, measured in absolute terms -- is .9, i.e., each additional \$90 of foreign exchange permanently increases the level of GNP by \$100. The comparison indicates that income growth per unit of foreign exchange is considerably higher than growth per unit of investment, i.e., the net foreign capital inflow-output ratio is considerably lower (more favorable) than the capital-output ratio. Additional foreign capital is highly productive because it induces complementary domestic resources into investment and the production process. These results are approximately the same as those based on a different pair of projections, 'c' and 'w', where sectoral growth rates for both industry and agriculture were higher in 'w' than 'c'.

#### Policy Conclusions

The principal conclusions with implications for policy that have been derived from the analysis are as follows:

- a. The debt service ratio of the recent past can be reduced to a more tolerable level within a few years. Moreover, under the more favorable of the assumed alternatives it can be kept low even with the substitution of hard term loans for foreign aid; i.e., economic viability can be achieved.

- b. The achievement of Plan targets will depend on realizing a high rate of increase of foreign exchange earnings. The increase is not likely to be achieved without considerable effort in such fields as tourism and commodity exports whose volume is not demand limited. Since the markets for Turkey's main traditional exports are likely to be difficult to expand, exports of other goods will presumably have to receive increased emphasis.
- c. Because of the significance of the balance of payments, it will be important to maximize the contribution of foreign exchange to growth. Therefore, it will be desirable to select patterns of investment and production with relatively low import content and to develop efficient import substitution industries, i.e., industries which can produce at costs competitive with corresponding imports.
- d. Measures to increase savings do not appear to be as important as measures which will improve the balance of payments situation. Efforts to reduce the COR may or may not contribute to the attainment of Plan growth targets, depending upon the associated changes in import requirements.

TABLE VII  
 -- SUMMARY OF PROJECTIONS --  
Combinations of Growth Rates and Coefficients

Projection No.	Ltr.	Growth Rates					Foreign**				Coefficients					Gest.	Comments		
		A	N	S	G	XCY	1	2	3	4	ALIH	AKA	AKN	AIQ	AQD			ASP	ATDIR
79	a'*	.03	.08	.08	.06	.071	B	A	A	A	.043	2.0	1.8	.4	.14	.25	.09	distr.	History from 1961 1967-1975 More conservative
53	a*																		
54	b*				.074	.045	A												
55	c*					.06													
62	d*		.07																
63	e*					.045													like b. except imports like c. " "
57	f*		.08										.495	.20					
56	u*					.06													
75	g	.04	.10		.085								.4	.14					Plan growth, A, G
76	g <sub>1</sub>														.15				
22	h										2.2	2.25			.25				
23	i															.10			
24	j				.074														
25	k					.045											.09		
26	l				.085														
27	m					.06	B	B	B	B	2.0	1.8							
66	n			.06		.071				.033									Plan, except cor's Plan
67	o*										2.2	2.25							
30	p														.20				
31	q														.15				
68	r												.495	.20	.25				1-yr. lag
69	s*												.4	.14					
70	t*										2.3	2.5							distr.
64	w			.08	.074	.06	A	A	A	A	.043	2.0	1.8						
65	x*			.06	.085					.033									
78	z												.495	.20					Like n except FX earnings

\* Details of these runs included in this paper.  
 \*\* See Table VIII for definitions and values of "Foreign" items.

TABLE VIII

PROJECTIONS OF FOREIGN ITEMS\*  
( \$ million)

	<u>1</u>		<u>2</u>		<u>3</u>		<u>4</u>	
	Workers' Remittances (FREM)		Tourist and Travel Payments (FMTUR)		Tourism and Travel Receipts (FTUR)		Private Foreign Investment (FINVD)	
	<u>A<sub>1</sub></u>	<u>B<sub>1</sub></u>	<u>A<sub>2</sub></u>	<u>B<sub>2</sub></u>	<u>A<sub>3</sub></u>	<u>B<sub>3</sub></u>	<u>A<sub>4</sub></u>	<u>B<sub>4</sub></u>
1967	93	93	28	28	15	15	17	17
1968	100	100	31	45	20	45	30	40
1969		120	34	50	25	55		44
1970	constant	130	37	55	33	77	constant	48
1971	at	140	41	60	43	110	at	55
1972	100	150	45	66	56	135	30	59
1973		160	50	72	72	170		64
1974		170	55	80	94	200		71
1975		180	60	88	122	230		78

\* In all cases "A" grows less rapidly than "B". The "B" projections are Plan estimates.

TABLE IX

DISBURSEMENTS AND REPAYMENTS OF DEVELOPMENT LOANS\*  
(\$ million)

<u>Year</u>	<u>Disbursements</u>	<u>Repayments</u>
1967	273	115
1968	158	73
1969	208	107
1970	245	115
1971	283	80
1972	150	72
1973	113	66
1974	75	57
1975	37	59

\* Disbursements and repayments of development loans ("soft loans") are based on assumptions discussed in Chapter II, pp. 25-28.

	GROSS NATIONAL PRODUCT	RATE OF G.N.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRI-CULTURE	VALUE ADDED SERVICES +HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP BN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1961	58.8		51.4	21.7	14.7	15.0	2.14	238.	122.	113.	350.	.29
1962	62.4	.060	54.5	22.2	15.9	16.4	1.24	138.	114.	129.	267.	.31
1963	66.2	.061	57.6	22.6	17.2	17.7	1.69	188.	191.	150.	342.	.34
1964	70.4	.063	60.9	23.2	16.6	19.1	.50	55.	118.	163.	281.	.35
1965	75.3	.069	64.6	23.7	20.2	20.6	.23	26.	86.	216.	302.	.38
1966	80.7	.072	68.6	24.4	21.8	22.4	1.57	175.	92.	178.	352.	.27
1967	85.6	.062	73.1	25.2	23.5	24.4	.66	74.	102.	159.	261.	.24
1968	91.4	.068	78.2	26.1	25.4	26.6	-.87	-97.	57.	119.	176.	.17
1969	97.8	.070	83.5	27.0	27.5	29.0	-1.69	-188.	52.	150.	202.	.19
1970	104.3	.066	88.9	27.8	29.7	31.4	-2.52	-280.	53.	152.	204.	.18
1971	111.0	.065	94.6	28.7	32.1	33.9	-3.40	-377.	52.	120.	172.	.13
1972	118.3	.065	100.6	29.5	34.6	36.6	-4.35	-483.	51.	117.	168.	.12
1973	126.0	.066	107.3	30.4	37.4	39.6	-5.38	-598.	48.	113.	161.	.11
1974	134.4	.066	114.4	31.3	40.3	42.7	-6.49	-721.	43.	105.	147.	.09
1975	143.3	.066	121.9	32.3	43.5	46.2	-7.70	-856.	34.	110.	144.	.09

	G.N.P. PER CAPITA	GOVMT. TOTAL REVENUE	GOVMT. CURRENT EXPNTR.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS GOODS + EX POST	MLN. \$ SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS' ETC.'
1961	2072.	6.77	6.80	2.40	6.85	6.85	8.98	622.	506.	384.	347.	
1962	2143.	9.29	7.21	3.12	7.89	7.89	9.13	548.	523.	410.	372.	.067
1963	2219.	10.12	7.64	3.84	9.20	9.17	10.89	627.	627.	436.	398.	.064
1964	2302.	11.10	8.10	4.59	10.69	10.13	11.19	591.	591.	473.	426.	.085
1965	2401.	11.94	8.58	5.44	12.12	11.58	12.35	657.	657.	571.	457.	.206
1966	2510.	13.00	10.28	6.37	12.68	12.68	14.25	820.	738.	646.	489.	.132
1967	2600.	13.87	10.90	7.42	14.27	14.01	14.93	764.	764.	662.	524.	.024
1968	2709.	14.70	11.55	8.60	15.94	14.55	15.07	768.	768.	711.	561.	.074
1969	2828.	15.80	12.25	9.83	17.91	15.75	16.22	828.	828.	776.	601.	.091
1970	2940.	16.92	12.98	11.07	19.90	16.90	17.38	889.	889.	836.	643.	.078
1971	3054.	18.12	13.76	12.39	21.99	18.12	18.59	954.	954.	902.	689.	.079
1972	3173.	19.40	14.59	13.80	24.25	19.44	19.90	1025.	1025.	974.	738.	.080
1973	3300.	20.78	15.46	15.32	26.69	20.88	21.31	1101.	1101.	1052.	790.	.080
1974	3432.	22.27	16.39	16.94	29.32	22.45	22.83	1183.	1183.	1140.	846.	.084
1975	3571.	23.86	17.37	18.68	32.16	24.16	24.46	1272.	1272.	1239.	907.	.086

	GROWTH OF CONSUMPTIN. PER CAPITA	RATIO, INVSTMT TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS AGRI-CULTURE	INVESTMENT INDUSTRY ETC.	*IMPORTS EX ANTE* *BILLION LIRA *INTRMDT	EX ANTE* CAP.GD*	INTEREST PAYMENTS MN. \$	* DEBT BALANCES *MLN. DOLLARS 'SOFT' 'HARD'	NEW HARD LGANS	
1961		.153		1.32	3.82	2.08	1.49	29.	465.	190.	15.
1962	.023	.146	2.54	1.28	3.73	2.26	1.36	31.	572.	189.	26.
1963	.022	.164	2.39	1.59	4.90	2.45	1.87	31.	750.	170.	10.
1964	.032	.159	2.59	1.59	4.90	2.64	1.80	32.	855.	150.	10.
1965	.031	.164	2.31	1.88	5.45	2.86	2.05	32.	976.	119.	0.
1966	.042	.177	2.29	2.27	6.60	3.09	2.56	32.	1109.	100.	0.
1967	.029	.174	2.86	2.35	6.80	3.35	2.56	34.	1267.	90.	0.
1968	.049	.165	2.57	2.07	6.77	3.64	2.30	37.	1352.	57.	-24.
1969	.043	.166	2.35	2.14	7.38	3.96	2.42	37.	1453.	1.	-50.
1970	.039	.167	2.52	2.20	7.99	4.28	2.55	36.	1583.	-0.	-1.
1971	.038	.167	2.58	2.27	8.62	4.62	2.69	40.	1786.	0.	0.
1972	.039	.168	2.57	2.34	9.31	4.99	2.83	45.	1864.	-0.	-0.
1973	.039	.169	2.56	2.41	10.06	5.38	2.99	47.	1911.	0.	0.
1974	.039	.170	2.56	2.48	10.86	5.81	3.15	48.	1929.	18.	18.
1975	.039	.171	2.56	2.55	11.73	6.28	3.32	49.	1907.	57.	51.

a'

	GROSS NATIONAL PRODUCT	RATE OF G.R.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES + HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP (BIL. LIRA)	INV-SAV. GAP (MLN. \$)	IM-EX. CAP (MLN. \$)	DEBT SERVICE (MLN.\$)	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1												
1967	85.1	.069	72.7	25.3	23.5	23.9	1.07	119.	106.	159.	278.	.24
1968	90.9	.063	77.8	26.2	25.4	26.2	-.55	-61.	56.	119.	175.	.17
1969	97.3	.071	83.1	27.1	27.4	28.6	-1.25	-150.	51.	150.	201.	.19
1970	103.8	.066	88.5	27.9	29.6	31.0	-2.16	-240.	52.	151.	203.	.18
1971	110.5	.065	94.2	28.7	32.0	33.4	-3.02	-335.	51.	120.	171.	.13
1972	117.6	.065	100.3	29.6	34.5	36.1	-3.95	-439.	50.	117.	167.	.12
1973	125.4	.066	106.8	30.5	37.3	39.0	-4.95	-551.	48.	113.	160.	.11
1974	133.6	.066	113.8	31.4	40.3	42.1	-6.04	-672.	42.	105.	147.	.09
1975	142.5	.066	121.3	32.4	43.5	45.5	-7.22	-803.	33.	110.	143.	.09

	G.R.P. PER CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPNTR.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS EX POST	MLN. \$ * SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS (MLN. \$)	GROWTH OF 'EXPORTS ETC.'
1												
1967	2579.	13.79	11.10	7.30	13.91	13.81	14.88	780.	767.	661.	523.	.000
1968	2688.	14.50	11.77	8.43	15.46	14.41	14.91	766.	766.	710.	560.	.074
1969	2808.	15.76	12.47	9.71	17.42	15.61	16.07	826.	826.	775.	600.	.091
1970	2920.	16.62	13.22	10.95	19.33	16.75	17.22	887.	887.	835.	642.	.078
1971	3032.	18.01	14.01	12.26	21.44	17.96	18.42	952.	952.	901.	688.	.079
1972	3151.	19.28	14.85	13.67	23.66	19.27	19.72	1023.	1023.	973.	737.	.080
1973	3276.	20.65	15.75	15.17	26.07	20.68	21.11	1099.	1099.	1051.	789.	.081
1974	3407.	22.13	16.69	16.78	28.65	22.24	22.61	1181.	1181.	1139.	845.	.084
1975	3544.	23.71	17.69	18.51	31.45	23.93	24.23	1270.	1270.	1237.	905.	.086

	GROWTH OF CONSUMPTN. PER CAPITA	RATIO, INVESTMT TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRICULTURE	INDUSTRY ETC.	*IMPORTS, EX ANTE* BILLION LIRA *INTPRMT	INTEREST PAYMENTS (MLN. \$)	* DEBT BALANCES * (MLN. DOLLARS) 'SOFT' 'HARD'	NEW HARD LOANS		
1											
1967	.000	.175	.00	2.35	6.80	3.32	2.61	34.	1270.	90.	0.
1968	.048	.164	2.56	2.08	6.65	3.61	2.30	37.	1355.	56.	-25.
1969	.043	.165	2.33	2.14	7.27	3.92	2.42	37.	1456.	-0.	-50.
1970	.039	.166	2.50	2.21	7.87	4.24	2.55	36.	1586.	0.	0.
1971	.038	.167	2.57	2.28	8.50	4.58	2.69	40.	1789.	-0.	-0.
1972	.038	.168	2.57	2.34	9.13	4.95	2.83	45.	1867.	0.	0.
1973	.039	.168	2.55	2.41	9.91	5.34	2.99	47.	1914.	0.	-0.
1974	.039	.169	2.55	2.49	10.70	5.77	3.15	48.	1932.	18.	18.
1975	.039	.170	2.55	2.56	11.56	6.23	3.33	49.	1910.	66.	50.

a

	GROSS NATIONAL PRODUCT	RATE OF G.N.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES + HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP BN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1												
1967	85.1	.000	72.7	25.3	23.5	23.9	1.07	119.	106.	159.	278.	.24
1968	90.9	.008	77.6	26.2	25.4	26.2	-.39	-43.	70.	119.	189.	.17
1969	97.2	.068	83.1	27.1	27.4	28.6	-1.02	-113.	100.	152.	252.	.21
1970	103.5	.065	88.5	27.9	29.6	31.0	-1.63	-181.	128.	161.	289.	.21
1971	110.1	.064	94.2	28.7	32.0	33.4	-2.26	-252.	156.	128.	284.	.16
1972	117.2	.055	100.3	29.6	34.6	36.1	-2.94	-327.	185.	117.	302.	.14
1973	124.8	.065	106.8	30.5	37.3	39.0	-3.66	-407.	216.	129.	345.	.15
1974	132.9	.055	113.2	31.4	40.3	42.1	-4.44	-493.	245.	149.	394.	.16
1975	141.5	.055	121.3	32.4	43.5	45.5	-5.27	-585.	274.	189.	463.	.19

	G.N.P. PER CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPN'T.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS + EX POST	MLN. \$ * SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS' ETC.'
1												
1967	2579.	13.79	11.10	7.30	13.81	13.81	14.88	780.	767.	661.	523.	.000
1968	2688.	14.50	11.92	8.48	15.30	14.29	14.91	766.	766.	697.	547.	.054
1969	2802.	15.70	12.80	9.71	17.09	15.17	16.07	826.	826.	726.	571.	.042
1970	2911.	16.32	13.75	10.95	18.85	16.07	17.22	887.	887.	760.	597.	.046
1971	3022.	18.01	14.77	12.26	20.68	17.02	18.42	952.	952.	797.	624.	.049
1972	3139.	19.25	15.86	13.67	22.66	18.05	19.72	1023.	1023.	838.	652.	.052
1973	3200.	20.05	17.04	15.17	24.70	19.17	21.11	1099.	1099.	883.	681.	.054
1974	3387.	22.13	18.30	16.78	27.05	20.40	22.61	1181.	1181.	936.	712.	.060
1975	3520.	23.71	19.05	18.51	29.49	21.76	24.23	1270.	1270.	996.	744.	.064

	GROWTH OF CONSUMPTION PER CAPITA	RATIO, INVESTMENT TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRICULTURE	*INDUSTRY ETC.	*IMPORTS, * RILLION * INTRADT	EX ANTE* LIRA * CAP.GD*	INTEREST PAYMENTS MN. \$	* DEPT BALANCES * 'SOFT' 'HARD'	NEW HARD LOANS	
1											
1967	.000	.175	.00	2.35	6.80	3.32	2.61	34.	1270.	90.	0.
1968	.050	.164	2.56	2.08	6.65	3.61	2.30	37.	1355.	70.	-11.
1969	.045	.165	2.40	2.14	7.27	3.92	2.42	38.	1456.	62.	-0.
1970	.041	.166	2.55	2.21	7.87	4.24	2.55	40.	1596.	54.	-2.
1971	.040	.167	2.00	2.28	8.50	4.58	2.69	43.	1789.	2.	-47.
1972	.040	.168	2.59	2.34	9.18	4.95	2.83	45.	1867.	104.	102.
1973	.040	.169	2.60	2.41	9.91	5.34	2.99	53.	1914.	273.	180.
1974	.040	.170	2.61	2.49	10.70	5.77	3.15	64.	1932.	511.	265.
1975	.040	.171	2.61	2.56	11.56	6.23	3.33	79.	1910.	830.	370.

b

	GROSS NATIONAL PRODUCT	RATE OF G.N.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES + HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP LN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN. \$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1												
1967	85.1	.000	72.7	25.3	23.5	23.9	1.07	119.	106.	159.	278.	.24
1968	90.9	.068	77.8	26.2	25.4	26.2	-.39	-43.	62.	119.	181.	.17
1969	97.2	.068	83.1	27.1	27.4	28.6	-1.02	-113.	83.	151.	234.	.20
1970	103.5	-.065	88.5	27.9	29.6	31.0	-1.63	-181.	101.	157.	259.	.20
1971	110.1	.064	94.2	28.7	32.0	33.4	-2.26	-252.	119.	120.	239.	.14
1972	117.2	.064	100.3	29.6	34.6	36.1	-2.94	-327.	137.	117.	254.	.13
1973	124.8	.065	106.8	30.5	37.3	39.0	-3.66	-407.	155.	121.	276.	.13
1974	132.9	.065	113.5	31.4	40.3	42.1	-4.44	-493.	171.	130.	301.	.13
1975	141.6	.065	121.3	32.4	43.5	45.5	-5.27	-585.	185.	158.	342.	.15

	G.N.P. PER CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPNTR.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS + SERVICES EX POST	MLN. \$ * EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MLN. \$	GROWTH OF 'EXPORTS ETC.'
1												
1967	2579.	13.79	11.10	7.30	13.81	13.81	14.88	780.	767.	661.	523.	.000
1968	2686.	14.00	11.92	8.48	15.30	14.36	14.91	766.	766.	704.	554.	.066
1969	2802.	15.70	12.80	9.71	17.09	15.32	16.07	826.	826.	743.	588.	.054
1970	2912.	16.02	13.75	10.95	18.65	16.31	17.22	887.	887.	786.	623.	.058
1971	3022.	16.01	14.77	12.26	20.68	17.35	18.42	952.	952.	833.	660.	.060
1972	3139.	19.23	15.86	13.67	22.66	18.48	19.72	1023.	1023.	886.	700.	.063
1973	3261.	20.65	17.04	15.17	24.70	19.72	21.11	1099.	1099.	944.	742.	.065
1974	3339.	22.13	18.30	16.70	27.05	21.08	22.61	1181.	1181.	1010.	786.	.070
1975	3522.	23.71	19.65	18.51	29.49	22.57	24.23	1270.	1270.	1086.	834.	.074

	GROWTH OF CONSUMPTION PER CAPITA	RATIO INVESTMENT TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRICULTURE	INDUSTRY ETC.	*IMPORTS, EX ANTE* BILLION LIRA *INTPMNT CAP.GD*	INTEREST PAYMENTS MLN. \$	* DEBT BALANCES * MLN. DOLLARS 'SOFT'	'HARD'	NEW HARD LOANS
1										
1967	.000	.175	.00	2.35	6.80	3.32	2.61	1270.	90.	0.
1968	.049	.164	2.56	2.08	6.65	3.61	2.30	1355.	62.	-19.
1969	.044	.165	2.39	2.14	7.27	3.92	2.42	1456.	38.	-18.
1970	.040	.160	2.55	2.21	7.87	4.24	2.55	1586.	2.	-32.
1971	.039	.167	2.60	2.28	8.50	4.58	2.69	1789.	0.	-1.
1972	.039	.168	2.60	2.34	9.13	4.95	2.83	1867.	54.	54.
1973	.040	.169	2.59	2.41	9.91	5.34	2.99	1914.	160.	111.
1974	.039	.170	2.60	2.49	10.70	5.77	3.15	1932.	316.	172.
1975	.040	.171	2.60	2.56	11.56	6.23	3.33	1910.	534.	249.

C

	GRASS NATIONAL PRODUCT	RATE OF G.D.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRI-CULTURE	VALUE ADDED SERVICES + HOUSING	//- INDUSTRY ETC.	INV-SAV. GAP BN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. CAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
	1											
1967	85.1	.000	72.7	25.3	23.5	23.9	1.07	119.	106.	159.	278.	.24
1968	90.8	.007	77.6	26.2	25.4	26.2	-.84	-93.	34.	119.	153.	.17
1969	96.9	.008	83.0	27.1	27.4	28.5	-1.50	-166.	53.	146.	199.	.20
1970	103.0	.002	88.2	27.9	29.6	30.7	-2.11	-234.	67.	151.	218.	.19
1971	109.2	.000	93.5	28.7	32.0	32.8	-2.71	-301.	79.	120.	199.	.14
1972	115.8	.001	99.2	29.6	34.5	35.1	-3.36	-373.	92.	117.	208.	.13
1973	122.9	.001	105.3	30.5	37.3	37.5	-4.04	-449.	103.	114.	217.	.12
1974	130.4	.001	111.8	31.4	40.3	40.2	-4.77	-530.	112.	114.	226.	.11
1975	136.5	.002	118.2	32.4	43.4	43.0	-5.54	-615.	118.	131.	249.	.12

	G.D.P. PER CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPNTR.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS + SERVICES EX POST	MLN. \$ * SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
	1											
1967	2579.	13.79	11.10	7.30	13.81	13.81	14.88	780.	767.	661.	523.	.000
1968	2685.	14.48	11.92	8.48	15.13	14.03	14.34	739.	739.	704.	554.	.066
1969	2796.	15.55	12.06	9.69	16.91	14.94	15.42	795.	795.	743.	588.	.054
1970	2898.	16.81	13.75	10.69	18.55	15.85	16.45	853.	853.	786.	623.	.058
1971	2997.	17.71	14.77	12.12	20.19	16.77	17.48	912.	912.	833.	660.	.060
1972	3101.	18.90	15.86	13.43	21.95	17.77	18.59	978.	978.	886.	700.	.063
1973	3211.	20.10	17.04	14.64	23.82	18.85	19.78	1047.	1047.	944.	742.	.065
1974	3325.	21.52	18.39	16.34	25.82	20.04	21.05	1122.	1122.	1010.	786.	.070
1975	3444.	22.97	19.65	17.94	27.94	21.35	22.41	1204.	1204.	1086.	834.	.074

	GROWTH OF CONSUMPTION PER CAPITA	RATIO INVESTMENT TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRI-CULTURE	INDUSTRY ETC.	*IMPORTS, EX ANTE* * BILLION LIRA * *INTRMPT CAP.GD*	INTEREST PAYMENTS MN. \$	* DEBT BALANCES * MLN. DOLLARS *SOFT* *HARD*	NEW HARD LOANS		
	1										
1967	.000	.175	.60	2.35	6.80	3.32	2.61	34.	1270.	90.	0.
1968	.052	.153	2.61	2.08	6.08	3.61	2.07	37.	1355.	34.	-47.
1969	.043	.159	2.34	2.14	6.62	3.92	2.18	36.	1456.	-0.	-31.
1970	.038	.160	2.55	2.21	7.13	4.22	2.28	36.	1586.	0.	0.
1971	.035	.160	2.66	2.28	7.62	4.53	2.40	40.	1789.	-0.	-0.
1972	.036	.161	2.64	2.34	8.15	4.67	2.53	45.	1867.	8.	8.
1973	.036	.161	2.62	2.41	8.72	5.23	2.66	47.	1914.	60.	52.
1974	.036	.161	2.62	2.49	9.33	5.63	2.80	51.	1932.	151.	97.
1975	.036	.162	2.62	2.50	9.99	6.05	2.95	57.	1910.	292.	156.

d

	GROSS NATIONAL PRODUCT	RATE OF G.N.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES + HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEPT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
	1											
1967	85.1	.000	72.7	25.3	23.5	23.9	1.07	119.	106.	159.	278.	.24
1968	90.8	.007	77.8	26.2	25.4	26.2	-1.84	-93.	42.	119.	161.	.17
1969	90.9	.008	83.0	27.1	27.4	28.5	-1.50	-166.	69.	148.	217.	.20
1970	103.0	.062	88.2	27.9	29.6	30.7	-2.11	-234.	93.	152.	245.	.20
1971	109.2	.060	93.5	28.7	32.0	32.8	-2.71	-301.	116.	120.	235.	.15
1972	115.8	.061	99.2	29.6	34.5	35.1	-3.36	-373.	140.	117.	257.	.14
1973	122.9	.061	105.3	30.5	37.3	37.5	-4.04	-449.	164.	122.	286.	.14
1974	130.4	.061	111.8	31.4	40.3	40.2	-4.77	-530.	187.	132.	319.	.14
1975	138.4	.061	118.8	32.4	43.4	43.0	-5.54	-615.	208.	162.	370.	.16

	G.N.P. PER CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPEND.	PRIVATE NET SAV. EX ANTE	NATIONAL GF. SAV. EX ANTE	NATIONAL GP. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS + SERVICES EX POST	MLN. \$ * SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
	1											
1967	2579.	13.79	11.10	7.30	13.81	13.61	14.88	780.	767.	661.	523.	.000
1968	2685.	14.40	11.92	8.48	15.18	13.96	14.34	739.	739.	697.	547.	.054
1969	2796.	15.55	12.00	9.69	16.91	14.79	15.42	795.	795.	726.	571.	.042
1970	2898.	16.61	13.75	10.89	18.55	15.61	16.45	853.	853.	760.	597.	.046
1971	2997.	17.71	14.77	12.12	20.19	16.44	17.48	912.	912.	797.	624.	.049
1972	3101.	18.90	15.96	13.43	21.95	17.33	18.59	973.	978.	838.	652.	.052
1973	3210.	20.16	17.04	14.64	23.82	18.31	19.78	1047.	1047.	883.	681.	.054
1974	3324.	21.52	18.50	16.34	25.82	19.37	21.05	1122.	1122.	936.	712.	.060
1975	3442.	22.97	19.65	17.94	27.94	20.54	22.41	1204.	1204.	996.	744.	.064

	GROWTH OF CONSUMPTION PER CAPITA	RATIO, INVESTMENT TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS AGRICULTURE INVESTMENT*	INDUSTRY ETC.	*IMPORTS, * BILLION * IMPORTS	EX ANTE* LIRA * CAP.GD*	INTEREST PAYMENTS MN. \$	* DEBT BALANCE * MLN. DOLLARS * 'SOFT' * 'HARD'	NEW HARD LOANS	
	1										
1967	.000	.175	.00	2.35	6.80	3.32	2.61	34.	1270.	90.	0.
1968	.053	.158	2.61	2.06	6.08	3.61	2.07	37.	1355.	42.	-39.
1969	.044	.159	2.34	2.14	6.62	3.92	2.18	36.	1456.	3.	-35.
1970	.039	.160	2.55	2.21	7.13	4.22	2.28	37.	1586.	-0.	-2.
1971	.036	.160	2.66	2.28	7.62	4.53	2.40	40.	1739.	0.	0.
1972	.037	.161	2.64	2.34	8.15	4.87	2.53	45.	1867.	57.	57.
1973	.037	.161	2.63	2.41	8.72	5.24	2.66	50.	1914.	172.	121.
1974	.037	.161	2.63	2.49	9.33	5.63	2.80	58.	1932.	344.	190.
1975	.037	.162	2.63	2.56	9.99	6.05	2.95	69.	1910.	587.	277.

e

	GROSS NATIONAL PRODUCT	RATE OF G.O.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES + HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP BN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN. \$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1967	65.1	.060	72.7	25.3	23.5	23.9	1.08	120.	103.	159.	279.	.24
1968	90.8	.067	77.2	26.2	25.4	26.2	-.31	-34.	51.	119.	170.	.17
1969	97.1	.066	83.1	27.1	27.4	29.6	-.92	-102.	77.	149.	226.	.21
1970	103.4	.065	88.5	27.9	29.5	31.0	-1.51	-168.	101.	155.	255.	.20
1971	110.0	.064	94.2	28.7	32.0	33.4	-2.13	-236.	125.	120.	245.	.15
1972	117.0	.064	100.3	29.6	34.6	36.1	-2.78	-309.	150.	117.	267.	.14
1973	124.6	.065	106.2	30.5	37.3	39.0	-3.48	-387.	176.	123.	299.	.14
1974	132.7	.065	113.8	31.4	40.3	42.1	-4.23	-470.	200.	136.	336.	.15
1975	141.4	.065	121.3	32.4	43.5	45.5	-5.04	-559.	223.	168.	392.	.17

	G.O.P. PER CAPITA	GOV. T. TOTAL REVENUE	GOV. T. CURRENT EXPNTR.	PRIVATE NET SAV. EX ANTE	NATIONAL GP. SAV. EX ANTE	NATIONAL GP. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, MLN. \$ * GOODS + SERVICES EX POST	* EXPORTS, MLN. \$ * EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
1												
1967	2579.	13.76	11.16	7.20	13.00	13.80	14.88	791.	764.	661.	523.	.000
1968	2686.	14.92	11.92	6.48	15.22	14.45	14.91	748.	748.	697.	547.	.054
1969	2809.	15.00	12.30	9.71	16.99	15.37	16.07	903.	803.	726.	571.	.042
1970	2903.	16.70	13.75	10.95	18.73	16.31	17.22	961.	861.	760.	597.	.046
1971	3019.	17.37	14.77	12.26	20.54	17.29	18.42	922.	922.	797.	624.	.049
1972	3134.	19.12	15.66	13.67	22.50	18.36	19.72	988.	988.	838.	652.	.052
1973	3256.	20.47	17.04	15.17	24.60	19.53	21.11	1059.	1059.	883.	681.	.054
1974	3363.	21.92	18.50	16.75	26.85	20.81	22.61	1136.	1136.	936.	712.	.060
1975	3510.	23.43	19.55	18.51	29.26	22.22	24.23	1219.	1219.	996.	744.	.064

	GROWTH OF CONSUMPTION PER CAPITA	RATIO INVEST TO GDP	FIVE-YEAR GROSS G.O.P.	*GROSS INVESTMENT* AGRICULTURE	INDUSTRY ETC.	*IMPORTS, EX ANTE* * BILLION LIRA * *IMPORT	EX POST CAP. GD*	INTEREST PAYMENTS MN. \$	* DEBT BALANCES * MLN. DOLLARS *SOFT* *HARD*	NEW HARD LOANS	
1											
1967	.080	.175	.60	2.35	6.80	3.32	2.59	34.	1270.	90.	0.
1968	.046	.164	2.59	2.08	6.65	3.61	2.15	37.	1355.	51.	-30.
1969	.044	.166	2.40	2.14	7.27	3.92	2.24	37.	1456.	20.	-26.
1970	.061	.157	2.35	2.21	7.87	4.24	2.33	38.	1566.	0.	-18.
1971	.040	.163	2.61	2.25	8.50	4.58	2.43	40.	1739.	0.	0.
1972	.046	.166	2.61	2.24	9.19	4.95	2.54	45.	1857.	67.	67.
1973	.048	.159	2.60	2.41	9.91	5.34	2.65	51.	1914.	194.	134.
1974	.040	.170	2.61	2.49	10.70	5.77	2.77	60.	1932.	382.	207.
1975	.046	.171	2.61	2.56	11.56	6.23	2.90	71.	1910.	642.	209.

f

	GROSS NATIONAL PRODUCT	RATE OF GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES +HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP LN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1												
1967	65.1	.009	72.7	25.3	23.6	23.9	1.68	120.	103.	159.	279.	.24
1968	99.8	.067	77.8	26.2	25.4	26.2	-.31	-34.	43.	119.	162.	.17
1969	97.1	.058	80.1	27.1	27.4	28.6	-.92	-102.	60.	148.	208.	.20
1970	105.4	.065	88.5	27.9	29.6	31.0	-1.51	-168.	75.	151.	226.	.19
1971	110.0	.064	94.2	29.7	32.0	33.4	-2.13	-236.	88.	120.	208.	.14
1972	117.0	.064	100.3	29.6	34.6	36.1	-2.78	-309.	102.	117.	219.	.13
1973	124.6	.065	106.2	30.5	37.3	39.0	-3.48	-387.	115.	116.	231.	.12
1974	132.8	.065	113.8	31.4	40.3	42.1	-4.23	-470.	125.	118.	243.	.12
1975	141.5	.065	121.3	32.4	43.5	45.5	-5.04	-559.	133.	137.	271.	.13

	G.N.P. PER CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPEND.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS + SERVICES EX POST	MLN. \$ * EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
1												
1967	2579.	13.78	11.10	7.30	13.80	13.50	14.88	781.	764.	661.	523.	.000
1968	2886.	14.52	11.92	8.48	15.22	14.52	14.91	748.	748.	704.	554.	.066
1969	2800.	15.69	12.60	9.71	16.93	15.52	16.07	803.	803.	743.	588.	.054
1970	2909.	16.70	13.75	10.95	18.73	16.55	17.22	861.	861.	786.	623.	.058
1971	3019.	17.37	14.77	12.25	20.54	17.62	18.42	922.	922.	833.	660.	.060
1972	3134.	19.12	15.36	13.67	22.59	19.80	19.72	988.	988.	886.	700.	.063
1973	3257.	20.47	17.94	15.17	24.60	20.08	21.11	1059.	1059.	944.	742.	.065
1974	3384.	21.92	18.30	16.78	26.85	21.48	22.61	1136.	1136.	1010.	786.	.070
1975	3518.	23.48	19.65	18.51	29.26	23.03	24.23	1219.	1219.	1086.	834.	.074

	GROWTH OF CONSUMPTION PER CAPITA	RATIO INVEST TO GNP	ONE-YEAR GROSS C.O.P.	*GROSS INVESTMENT* AGRICULTURE	INDUSTRY ETC.	*IMPORTS, EX ANTE* * BILLION LIRA * *INTEREST CAP.GD*	INTEREST PAYMENTS MN. \$	* DEBT BALANCES * MLN. DOLLARS *SOFT* *HARD*	NEW HARD LOANS		
1											
1967	.000	.175	.00	2.35	6.80	3.32	2.59	34.	1270.	90.	0.
1968	.045	.164	2.59	2.08	6.65	3.21	2.15	37.	1355.	43.	-38.
1969	.043	.166	2.40	2.14	7.27	3.92	2.24	36.	1456.	-0.	-39.
1970	.040	.157	2.55	2.21	7.87	4.24	2.33	36.	1586.	0.	0.
1971	.033	.158	2.51	2.28	8.50	4.58	2.43	40.	1789.	-0.	0.
1972	.039	.158	2.61	2.34	9.19	4.95	2.54	45.	1867.	19.	19.
1973	.039	.159	2.59	2.41	9.91	5.34	2.65	48.	1914.	82.	66.
1974	.039	.170	2.56	2.49	10.70	5.77	2.77	53.	1952.	189.	114.
1975	.039	.171	2.60	2.56	11.56	6.23	2.90	60.	1910.	348.	178.

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	GRASS NATIONAL PRODUCT	RATE OF G.P.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES + HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP BN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1												
1967	85.7	.040	72.7	25.3	23.5	23.9	.49	54.	103.	159.	262.	.24
1968	90.6	.059	78.6	26.1	25.0	25.5	1.84	205.	178.	119.	324.	.16
1969	98.2	.069	81.0	27.1	26.5	27.5	1.77	196.	170.	172.	369.	.21
1970	102.4	.064	86.2	28.2	28.2	30.0	1.65	183.	166.	196.	379.	.22
1971	109.4	.069	92.1	29.3	29.7	33.1	1.51	168.	158.	171.	339.	.18
1972	117.0	.069	96.3	30.5	31.5	36.4	1.39	154.	161.	160.	322.	.15
1973	125.1	.069	105.1	31.7	33.4	40.0	1.28	143.	158.	167.	325.	.15
1974	133.6	.070	112.3	32.9	35.4	44.0	1.19	133.	154.	174.	338.	.14
1975	143.2	.070	120.2	34.3	37.5	48.4	1.12	125.	175.	196.	371.	.15

	G.N.P. PLR CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPNTH.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GP. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, MLN. \$ * GOODS + SERVICES EX POST	* EXPORTS, MLN. \$ * SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
1												
1967	2597.	13.79	11.10	7.30	14.39	13.96	14.88	764.	764.	661.	523.	.000
1968	2684.	15.91	12.04	8.20	15.45	15.65	17.70	940.	913.	735.	560.	.112
1969	2774.	15.95	13.07	9.24	17.13	17.13	18.90	1001.	975.	905.	600.	.095
1970	2881.	17.95	14.18	10.44	18.71	18.71	20.35	1063.	1046.	879.	642.	.093
1971	3004.	18.30	15.38	11.80	20.56	20.56	22.07	1136.	1126.	968.	689.	.101
1972	3133.	19.65	16.69	13.25	22.54	22.48	23.93	1213.	1213.	1052.	737.	.087
1973	3268.	21.10	18.11	14.61	24.66	24.53	25.95	1307.	1307.	1149.	789.	.093
1974	3411.	22.67	19.65	16.49	26.95	26.68	28.15	1409.	1409.	1245.	845.	.084
1975	3562.	24.36	21.52	18.31	29.44	28.98	30.56	1521.	1521.	1345.	905.	.080

	Growth OF CONSUMPTN. PER CAPITA	RATIO, INVESTM TO GRP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRICULTURE	*INDUSTRY ETC.	*IMPORTS, EX ANTE* *BILLION LIRA * *INTRNLT	INTEREST PAYMENTS MN. \$	* DEBT BALANCES * MLN. DOLLARS *SOFT*	*HARD*	NEW HARD LOANS	
1											
1967	.000	.174	.00	2.35	6.80	3.32	2.61	34.	1270.	90.	0.
1968	.019	.195	2.92	2.87	9.53	3.53	3.51	37.	1355.	195.	114.
1969	.030	.196	3.28	2.98	10.23	3.78	3.71	46.	1456.	278.	103.
1970	.032	.199	3.05	3.10	11.22	4.06	3.94	53.	1586.	320.	70.
1971	.037	.202	2.69	3.22	12.36	4.40	4.20	59.	1789.	273.	-15.
1972	.036	.205	2.92	3.35	13.60	4.75	4.48	61.	1867.	338.	93.
1973	.039	.207	2.95	3.48	14.96	5.14	4.78	67.	1914.	430.	125.
1974	.040	.210	2.97	3.62	16.46	5.56	5.10	74.	1932.	555.	168.
1975	.041	.213	2.99	3.77	18.10	6.01	5.44	82.	1910.	730.	231.

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	GROSS NATIONAL PRODUCT	RATE OF G.I.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRI- CULTURE	VALUE ADDED SERVICES THOUSANDS	-// INDUSTRY ETC.	INV-SAV. GAP LN. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
	1											
1967	85.7	.060	72.7	25.3	23.5	23.9	.49	54.	103.	159.	262.	.24
1968	90.9	.061	76.8	25.1	25.0	25.7	1.04	115.	134.	119.	253.	.16
1969	97.1	.063	82.0	27.2	26.5	28.3	.80	88.	130.	161.	290.	.20
1970	103.7	.066	87.4	28.5	28.0	31.1	.56	62.	125.	173.	299.	.20
1971	110.8	.069	93.4	29.4	29.7	34.2	.32	35.	112.	138.	250.	.14
1972	118.6	.070	99.7	30.6	31.5	37.7	.08	9.	111.	117.	228.	.11
1973	126.8	.076	106.6	31.8	33.4	41.4	-.15	-17.	103.	113.	216.	.10
1974	135.8	.070	114.0	33.1	35.4	45.6	-.39	-43.	104.	107.	211.	.09
1975	145.4	.071	122.1	34.4	37.5	50.1	-.61	-68.	109.	116.	226.	.09

	G.N.P. PER CAPITA	GOVMT. TOTAL REVENUE	GOVMT. CURRENT EXPNTR.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVEST- MENT	* IMPORTS, GOODS + SERVICES EX POST	MLN. \$ * SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
	1											
1967	2597.	13.79	11.10	7.30	14.39	13.96	14.88	764.	764.	661.	523.	.000
1968	2687.	14.85	12.04	5.26	15.79	15.62	16.83	869.	869.	735.	560.	.112
1969	2801.	15.92	13.07	9.45	17.49	17.03	18.20	935.	935.	805.	600.	.095
1970	2919.	17.07	14.12	10.72	19.14	18.57	19.69	1005.	1005.	879.	642.	.093
1971	3043.	18.32	15.38	12.09	21.01	20.31	21.33	1081.	1081.	968.	688.	.101
1972	3175.	19.66	16.69	13.57	23.03	22.10	23.11	1163.	1163.	1052.	737.	.087
1973	3314.	21.12	18.11	15.16	25.20	24.12	25.05	1252.	1252.	1149.	789.	.093
1974	3461.	22.69	19.65	16.88	27.55	26.23	27.17	1349.	1349.	1245.	845.	.084
1975	3616.	24.40	21.32	18.73	30.09	28.49	29.48	1455.	1455.	1345.	905.	.080

	GROWTH OF CONSUMPTN. PER CAPITA	RATIO INVESTMT TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRI- CULTURE	INDUSTRY ETC.	*IMPORTS, EX ANTE* * PILLION LIRA * *INTMDT CAP.GD*	INTEREST PAYMENTS MN. \$	* DEBT BALANCES * MLN. DOLLARS *SOFT*	'HARD'	NEW HARD LOANS	
	1										
1967	.000	.174	.00	2.35	6.60	3.32	2.61	34.	1270.	90.	0.
1968	.024	.185	2.86	2.82	8.63	3.55	3.13	37.	1355.	124.	43.
1969	.039	.187	2.71	2.93	9.55	3.23	3.32	41.	1456.	136.	24.
1970	.038	.190	2.76	3.05	10.51	4.14	3.52	45.	1586.	112.	-11.
1971	.038	.192	2.76	3.17	11.56	4.48	3.74	46.	1789.	-0.	-101.
1972	.040	.195	2.77	3.30	12.71	4.84	3.97	45.	1867.	0.	0.
1973	.040	.197	2.79	3.43	13.98	5.24	4.22	47.	1914.	16.	16.
1974	.041	.200	2.80	3.57	15.38	5.67	4.49	49.	1932.	56.	41.
1975	.042	.203	2.82	3.71	16.92	6.14	4.77	52.	1910.	135.	85.

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	GROSS NATIONAL PRODUCT	RATE OF G.N.P. GROWTH	NET DOMESTIC PRODUCT	//- NET AGRI-CULTURE	VALUE ADDED SERVICES +HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP BR. LIRA	INV-SAV. GAP MLN. \$	IM-EX. GAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
	1											
1967	86.0	.900	72.7	25.3	23.5	23.9	.17	19.	193.	159.	262.	.24
1968	91.1	.958	76.5	26.1	25.0	25.4	1.60	178.	192.	119.	301.	.16
1969	97.3	.966	81.6	27.1	26.5	28.0	1.41	157.	182.	168.	351.	.21
1970	103.8	.966	87.0	28.2	28.0	30.8	1.23	136.	183.	190.	372.	.22
1971	111.0	.968	92.9	29.4	29.7	33.8	1.05	117.	175.	164.	339.	.17
1972	118.6	.969	99.2	30.5	31.5	37.2	.88	98.	180.	154.	334.	.15
1973	126.9	.970	106.1	31.7	33.4	40.9	.72	80.	178.	163.	341.	.14
1974	135.6	.970	113.4	33.0	35.4	45.0	.57	63.	186.	173.	359.	.14
1975	145.4	.971	121.4	34.3	37.5	49.5	.43	48.	199.	199.	398.	.15

	G.N.P. PLR CAPITA	GOVMT. TOTAL REVENUE	GOVMT. CURRENT EXPNTP.	PRIVATE NET SAV. EX ANTE	NATIONAL GR. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS + EX POST	MLN. \$ * SERVICES EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
	1											
1967	2607.	13.79	11.10	7.30	14.72	13.96	14.88	764.	764.	661.	523.	.000
1968	2692.	15.01	12.04	8.18	16.17	16.13	17.77	917.	917.	735.	560.	.112
1969	2805.	16.09	13.07	9.36	17.82	17.59	19.23	987.	987.	805.	600.	.095
1970	2922.	17.26	14.18	10.63	19.60	19.18	20.82	1062.	1062.	879.	642.	.093
1971	3046.	18.52	15.36	11.99	21.51	20.98	22.56	1143.	1143.	968.	688.	.101
1972	3178.	19.86	16.69	13.46	23.57	22.84	24.45	1232.	1232.	1052.	737.	.087
1973	3316.	21.36	18.11	15.04	25.80	24.92	26.52	1327.	1327.	1149.	789.	.093
1974	3462.	22.96	19.65	16.74	28.21	27.11	28.78	1431.	1431.	1245.	845.	.084
1975	3616.	24.69	21.32	18.58	30.81	29.45	31.24	1544.	1544.	1345.	905.	.080

	GROWTH OF CONSUMPTN. PLR CAPITA	RATIO: INVEST TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRI-CULTURE	INDUSTRY ETC.	*IMPORTS, EX ANTE* * BILLION LIRA * *INTRMOT	INTEREST PAYMENTS MN. \$	* DEBT BALANCES * MLN. DOLLARS 'SOFT'	'HARD'	NEW HARD LOANS	
	1										
1967	.000	.173	.00	2.35	6.80	3.32	2.61	34.	1270.	90.	0.
1968	.015	.195	2.96	2.94	9.53	3.53	3.55	37.	1355.	172.	91.
1969	.036	.196	2.67	3.06	10.49	3.81	3.78	44.	1456.	240.	85.
1970	.036	.201	2.92	3.18	11.54	4.12	4.02	51.	1586.	279.	63.
1971	.038	.203	2.93	3.31	12.69	4.45	4.29	56.	1789.	236.	-15.
1972	.040	.206	2.93	3.44	13.96	4.81	4.57	59.	1867.	318.	105.
1973	.039	.209	2.96	3.58	15.36	5.20	4.88	66.	1914.	428.	142.
1974	.041	.212	2.98	3.72	16.89	5.63	5.21	74.	1932.	574.	189.
1975	.042	.215	3.00	3.87	18.58	6.09	5.56	83.	1910.	774.	257.

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	GROSS NATIONAL PRODUCT	RATE OF GROWTH	NET DOMESTIC PRODUCT	//- NET AGRICULTURE	VALUE ADDED SERVICES + HOUSING	-// INDUSTRY ETC.	INV-SAV. GAP LIRA	INV-SAV. GAP MLN. \$	IN-EX. GAP MLN. \$	DEBT SERVICE MLN.\$	GROSS INFLOW REQUIRED	DEBT SERVICE RATIO
1												
1967	65.1	.060	72.7	25.3	23.5	23.9	1.07	119.	106.	159.	278.	.24
1968	90.7	.065	77.4	26.2	25.0	26.2	.63	70.	102.	119.	221.	.17
1969	96.6	.065	82.4	27.2	26.5	28.7	.38	42.	122.	157.	279.	.21
1970	103.0	.066	87.9	28.3	28.0	31.6	.11	12.	142.	170.	313.	.22
1971	110.0	.068	93.9	29.5	29.7	34.7	-.16	-18.	164.	140.	304.	.17
1972	117.5	.069	100.4	30.6	31.5	38.2	-.44	-49.	186.	131.	317.	.15
1973	125.0	.069	107.3	31.9	33.4	42.0	-.72	-80.	208.	144.	352.	.15
1974	134.3	.069	114.8	33.1	35.4	46.2	-1.00	-111.	230.	163.	393.	.16
1975	143.7	.070	122.8	34.5	37.5	50.9	-1.28	-142.	250.	202.	452.	.19

	G.N.P. PER CAPITA	GOV'T. TOTAL REVENUE	GOV'T. CURRENT EXPNTR.	PRIVATE NET SAV. EX ANTE	NATIONAL GP. SAV. EX ANTE	NATIONAL GR. SAV. EX POST	GROSS INVESTMENT	* IMPORTS, GOODS + SERVICES EX POST	MLN. \$ * EX ANTE	EXPORTS ETC. TOTAL	COMMDTY EXPORTS MN. \$	GROWTH OF 'EXPORTS ETC.'
1												
1967	2579.	13.79	11.10	7.30	13.81	13.81	14.88	780.	767.	661.	523.	.000
1968	2680.	14.71	12.04	8.39	15.18	14.90	15.82	806.	806.	704.	554.	.066
1969	2786.	15.74	13.07	9.50	16.70	15.98	17.08	865.	865.	743.	588.	.054
1970	2898.	16.57	14.18	10.83	18.34	17.17	18.45	928.	928.	786.	623.	.058
1971	3019.	18.10	15.38	12.22	20.14	18.50	19.97	997.	997.	833.	660.	.060
1972	3147.	19.42	16.09	13.71	22.08	19.96	21.63	1072.	1072.	886.	700.	.063
1973	3282.	20.88	18.11	15.32	24.16	21.57	23.44	1152.	1152.	944.	742.	.065
1974	3424.	22.41	19.65	17.05	26.41	23.35	25.41	1240.	1240.	1010.	786.	.070
1975	3573.	24.09	21.32	18.92	28.84	25.32	27.57	1335.	1335.	1086.	834.	.074

	GROWTH OF CONSUMPTION PER CAPITA	RATIO, INVEST TO GNP	ONE-YEAR GROSS C.O.R.	*GROSS INVESTMENT* AGRICULTURE	*INDUSTRY ETC.	*IMPORTS, *BILLION *INTRMPT	EX ANTE* LIRA *CAP.GD*	INTEREST PAYMENTS MN. \$	* DEBT BALANCES * MLN. DOLLARS 'SOFT' 'HARD'	NEW HARD LOANS	
1											
1967	.000	.175	.00	2.35	6.80	3.32	2.61	34.	1270.	90.	0.
1968	.037	.174	2.89	2.62	7.83	3.58	2.66	37.	1355.	102.	21.
1969	.039	.177	2.67	2.72	8.60	3.87	2.81	40.	1456.	119.	27.
1970	.040	.179	2.66	2.83	9.44	4.17	2.96	44.	1586.	128.	22.
1971	.041	.182	2.64	2.94	10.39	4.51	3.13	47.	1789.	88.	-27.
1972	.041	.184	2.65	3.06	11.43	4.88	3.30	50.	1867.	196.	117.
1973	.041	.187	2.68	3.18	12.57	5.28	3.49	58.	1914.	364.	187.
1974	.042	.189	2.69	3.31	13.82	5.71	3.69	70.	1932.	591.	264.
1975	.042	.192	2.71	3.44	15.21	6.19	3.91	84.	1910.	891.	359.

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