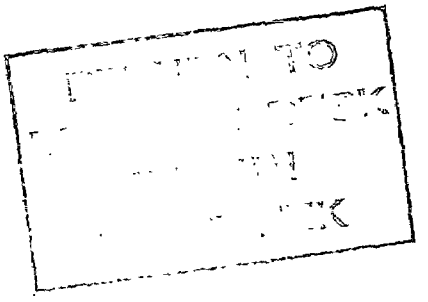
DOCUMENT OF INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

Not For Public Use



Report No. 38-BR

THE ECONOMIC AND SOCIAL DEVELOPMENT OF BRAZIL

(In eight volumes)

VOLUME I

THE MAIN REPORT

March 12, 1973

Latin America and the Caribbean Department

CURRENCY EQUIVALENT

Currency Unit: Cruzeiro. (Prior to May 15, 1970, the currency unit was called the "Cruzeiro Novo" or "New Cruzeiro", the adjective was dropped in May 1970, without any change involved.)

Exchange Rates Effective December 15, 1972

Selling Rate:	US$1.00	= Cr$6,215
Buying Rate:	US$1.00	= Cr$6,165

Average Exchange Rates

US$1.00	=	Cr$4.594	Cr$5.285
US$1 million	=	Cr$4,594,000	Cr$5,285,000
Cr$1 million	=	US$217,675	US$189,215

This report is based on the findings of a mission to Brazil in August-September, 1972, composed of:

Roger P. Hipskind (Chief of Mission)
Francesco Abbate (Deputy Chief of Mission)
Joseph J. Brooks (Fiscal Economist);
Jayme Garcia dos Santos (Econometrician)
Michael Devaux (General Economist)
Marc Blanc (General Economist)
Miss Noemia Primo (Secretary)

TABLE OF CONTENTS

COUNTRY DATA - BRAZIL

AREA
8,512,000 km^2

POPULATION
93.2 million (mid-1970)
Rate of Growth: 2.9% (from 1960 to 1970)

DENSITY
11.2 per km^2
33.5 per km^2 of arable land

POPULATION CHARACTERISTICS (1970)

Crude Birth Rate (per 1,000)	37
Crude Death Rate (per 1,000)	8
Infant Mortality (per 1,000 live births)	110

HEALTH (1970)

Population per physician	2,120
Population per hospital bed	280

INCOME DISTRIBUTION (1970)

% of national income, lowest quintile	3.2
highest quintile	62.2

DISTRIBUTION OF LAND OWNERSHIP (1970)

% owned by top 10% of owners	45.0
% owned by smallest 10% of owners	1.5

ACCESS TO PIPED WATER (1970)

% of population - urban	55.0
- rural	2.5

ACCESS TO ELECTRICITY (1970)

% of population - urban	..
- rural	..

NUTRITION (1968)

Calorie intake as % of requirements	102
Per capita protein intake	63.0

EDUCATION (1970)

Adult literacy rate %	68.0
Primary school enrollment %	96.3

GNP PER CAPITA in 1971 [1/] : US $450

GROSS NATIONAL PRODUCT IN 1971

	US $ Mln.	%
GNP at Market Prices	42,180	100.0
Gross Domestic Investment	7,870	18.7
Gross National Saving	6,600	15.6
Current Account Balance	-809	1.9
Exports of Goods, NFS	3,174	7.5
Imports of Goods, NFS	3,983	9.4

ANNUAL RATE OF GROWTH (%, constant prices)

	1960-65	1965-70	1971
GNP at Market Prices	4.6	7.2	11.3
Gross Domestic Investment	4.5	7.1	13.3
Gross National Saving	9.8	3.4	4.5
Current Account Balance	.	.	.
Exports of Goods, NFS	2.3	9.1	6.0
Imports of Goods, NFS	-8.1	17.9	27.0

OUTPUT, LABOR FORCE AND PRODUCTIVITY IN 1970

	Value Added (f.c.)		Labor Force [2/]		V. A. Per Worker	
	US $ Mln.	%	Mln.	%	US $	%
Agriculture	6,027	20.2	13.1	44.2	460	45.6
Industry	8,822	29.7	5.3	17.8	1,665	165.2
Services	14,897	50.1	11.1	38.0	1,342	133.1
Unallocated	.	.			.	.
Total/Average	29,746	100.0	29.5	100.0	1,008	100.0

GOVERNMENT FINANCE

	General Government [3/]			Central Government		
	(1971 Cr$ Mln.)	% of GDP		(1971 Cr$ Mln.)	% of GDP	
	1971	1971	1969-71	1971	1971	1969-71
Current Receipts	59,234	26.3	26.1	22,946	10.2	9.7
Current Expenditure	47,268	21.0	20.7	16,744	7.4	7.2
Current Surplus	11,966	5.3	5.4	6,202	2.8	2.5
Capital Expenditures	13,822	6.1	6.0	6,874	3.1	2.9
External Assistance (net)	658	0.3	0.4	-	-	-

1/ The Per Capita GNP estimate is at 1970 market prices, calculated by the same conversion technique as the 1972 World Atlas. All other conversions to dollars in this table are at the average exchange rate prevailing during the period covered.

2/ Total labor force; unemployed are allocated to sector of their normal occupation. "Unallocated" consists mainly of unemployed workers seeking their first job.

3/ Excludes public enterprises and official financial intermediaries.

.. not available
. not applicable

COUNTRY DATA - BRAZIL

MONEY, CREDIT and PRICES	Dec. 1965	Dec. 1969	Dec. 1970	Dec. 1971	June 1971	May 1972
		(Million Cr$ outstanding end period)				
Money and Quasi Money	8,058	26,691	34,380	45,965	38,249	48,590
Bank Credit to Public Sector (net)	1,676	478	-1,003	-4,781	-4,542	-8,745
Bank Credit to Private Sector	3,230	25,012	34,072	49,705	40,304	56,546
			(Percentages or Index Numbers)			
Money and Quasi Money as % of GDP	21.9	20.8	20.5	20.4	17.0	16.8
General Price Index (1963 = 100)	300	840	1,025	1,227	1,145	1,318
Annual percentage changes in:						
General Price Index	56.8	20.8	19.8	20.4	22.0	17.7
Bank credit to Public Sector 1/	10.4	-7.9	-5.5	-11.0	-10.3	-8.6
Bank credit to Private Sector 1/	43.8	37.6	33.9	45.5	18.1	14.9

BALANCE OF PAYMENTS

	1969	1970	1971
	(Millions US $)		
Exports of Goods, NFS	2,522	2,993	3,174
Imports of Goods, NFS	2,528	3,172	4,028
Resource Gap (deficit = -)	-6	-179	-854
Interest Payments (net)	-180	-234	-302
Workers' Remittances	-	-	-
Other Factor Payments (net)	-126	-170	-166
Net Transfers	31	21	14
Balance on Current Account	-281	-562	-1,308
Direct Foreign Investment	124	108	124
Net MLT Borrowing			
Disbursements	370	715	819
Amortization	-269	-447	-425
Subtotal	101	268	394
Capital Grants	-	-	-
Other Capital (net)	522	680	1,164
Other items n.e.i	147	24	210
Increase in Reserves (+)	613	518	584
Gross Reserves (end year)	989	1,486	2,063
Net Reserves (end year)	955	1,473	2,057

MERCHANDISE EXPORTS (AVERAGE 1969-71)

	US $ Mln	%
Coffee	883	33.3
(of which, soluble coffee)	(42)	(1.6)
Other Agricultural Products	781	29.5
Main Minerals	223	8.4
Manufactures	358	13.5
All Other Commodities	406	15.3
Total	2,651	100.0

EXTERNAL DEBT, DECEMBER 31, 1971

	US $ Mln
Medium and Long-Term Borrowing	3,408
Financial Credits	3,193
Total outstanding & Disbursed	6,601

DEBT SERVICE RATIO for 1971 2/

	%
Amortization of MLT Borrowing	13.4
Net Interest on MLT and Financial Credits	9.5
Total	22.9

RATE OF EXCHANGE

December 31, 1971
US $ 1.00 = Cr$5.635
Cr $ 1.00 = US $0.1775

November 22, 1972
US $ 1.00 = Cr$6.165
Cr $ 1.00 = US $0.1622

IBRD/IDA LENDING, (October 31, 1972) (Million US$):

	IBRD	IDA
Outstanding & Disbursed	464.2	.
Undisbursed	687.9	.
Outstanding incl. Undisbursed	1,152.1	.

1/ Annual expansion as percent of money supply at beginning of year.
2/ Ratio of Debt Service to Exports of Goods and Non-Factor Services.

not available

not applicable

SUMMARY AND CONCLUSIONS

Factor Endowment

1. Totalling some 3.3 million square miles, Brazil's land area is the world's fifth largest. Having grown at an annual rate of about 2.9 percent during the 1960's, Brazil's population totalled 93.2 million in 1970, making Brazil the world's seventh largest country in respect to population. About 44 percent of Brazil's 29.5 million man labor force was occupied in agriculture in 1970. However, this share has been diminishing with rapid rural-urban migration. As compared to its overall, 2.9 percent demographic growth rate, Brazil's urban population growth rate averaged 5.2 percent annually during the 1960's. Most of the urban population resides near the country's 4,600 mile Atlantic coast line; of Brazil's 60 cities of more than 100,000 population only a few are located in the interior of the country. Brazil is rich in a variety of natural resources of which only a few are fully exploited. Of Brazil's 279 million hectares of arable land, 88 million are unexploited and much of the remainder exploited only extensively. Readily accessible hardwood stands in coastal regions and pinewood stands in the state of Parana have been depleted but access to some 250 million hectares of tropical rain forest in the Amazon region is only just now being made practical by the government's Amazon highway program. Exploitation of rich deposits of iron ore and manganese now is proceeding rapidly but commenced in large scale only a few years ago. Bauxite, copper and tin reserves have been identified but have yet to be exploited in significant degree. The hydraulic resources of Brazil's three major river systems — the Amazon, Sao Francisco and Plate — are being taken advantage of in systematic fashion by the rapidly growing power sector. Petroleum and coal are in short supply; the former being expected to cover no more than about one-third of Brazil's crude petroleum requirements despite thorough prospecting and exploitation by the state petroleum monopoly, and the latter being of inadequate quality for use as coking coal.

Economic Trends

2. Until the late 1960's when very substantial export diversification was achieved, the Brazilian economy remained heavily dependent on the production and export of one or a few primary commodities. Brazil wood cutting and sugar cane planting, beginning in the 16th century in the coastal areas of the Northeast and Central regions of the country; gold and diamond mining in the 17th and 18th centuries in the central state of Minas Gerais; natural rubber production in the Amazon late in the 18th century; cocoa and cotton production at that same time in the Northeast and Central regions; and, finally, coffee production early in the 20th century in the Center-South were the primary determinants of the pattern of Brazil's settlement and of its economic and social orientation.

3. Industrialization commenced in Brazil on significant scale at the time of the first World War. Its progress was facilitated by the collapse of the world coffee market in the 1930's and by the emergence of Getulio Vargas who governed Brazil from 1930 until 1954. Vargas was installed as the result of a military revolt against the rural oligarchy which had dominated the executive and legislative branches of the government. Under his leadership and with the impetus of heavy protection and a well defined market for imported manufactures, industrialization proceeded rapidly along both horizontal and vertical lines. Attesting to the "deepening" impact of this development on Brazil's industrial structure is the fact that by 1950 Brazilian industry was supplying about 50 percent of the country's equipment requirements.

4. With the exception of coffee and sugar, whose producers formed strong political pressure groups, Brazil's development strategy in the 1940's and 1950's ignored agriculture deteriorating its internal terms of trade through high levels of industrial protection and resulting inefficiencies in that sector, and contributing to the massive pace of rural-urban migration. Economic strategy also ignored exports which remained crucially important to the development of the country because of the nature of Brazil's factor endowment — substantial amounts of petroleum, coal and wheat had, in any case, to be imported — and because of residual requirements for imported capital and intermediate goods. Finally, failure to control the politically powerful coffee sector led to gross overproduction of coffee which eventually exacerbated balance of payments problems and caused internal stresses as the result of the need to finance huge accumulation of coffee stocks. Fortuitously, the development strategy of the 1940's and 1950's was assisted by a steady rise of coffee prices over most of the period. Beginning in the mid-1950's, however, overproduction and stock accumulation led to a drastic decline in world prices. In real terms, New York prices for Brazilian coffee had dropped by 1962 to about 40 percent of the peak level they had reached in 1954.

5. During the late 1950's and early 1960's the Government's reactions to increasing economic problems tended to focus on the manifestations rather than the causes of imbalanced development. In large part this was the result of human error. To a significant extent, however, it reflected political constraints on government economic policy. The Government reacted to the underemployment problem by indiscriminately expanding its payroll. It attempted to protect the consumer against accelerating inflation by freezing rentals and utility rates and by subsidizing the importation of essential commodities through a system of multiple exchange rates. It reacted to deepening regional income disparities by building enormous water reservoirs in the Northeast which, until today, remain largely unutilized. It attempted to promote the geographic dispersion of economic development by investing huge sums in the construction of a new federal capital at Brasilia which, for many years, remained almost totally unproductive.

6. Inflation in Brazil averaged 14 percent annually during the first half of the 1950's and 22 percent during the second. On a year-to-year basis it amounted to 74.5 percent in 1962-63 and was proceeding at a 144 percent annual pace during the first quarter of 1964. Balance of payments crisis were experienced in 1961 and 1964, external debt reschedulings being required in both of these years. Through 1962, economic growth remained rapid — averaging 7 percent annually over the 1950-62 period — but in 1963 it amounted to only 3 percent. Economic stresses were associated with three major political upheavals experienced by Brazil between 1954 and 1964: the suicide of President Vargas in the former year; the abandonment of the presidency in 1961 — after only eight months in office -- by the popular Janio Quadros and the revolution of 1964 which installed in power another military government.

7. A stabilization program was carried out during 1964-67 with the object of restoring financial order. Fiscal, monetary and incomes' policy restrained aggregate demand, reducing the Treasury deficit from 4.3 to 1.2 percent of GDP and yielding external trade surpluses which permitted the retirement of commercial arrears and the amortization of refinanced debt. By 1967-68 the Government has succeeded in reducing inflation to 24 percent and in restoring balance of payments equilibrium, setting the stage for an acceleration of economic growth. However, as would be expected, the period 1964-67 was one of slow economic growth and of a deterioration of real wages. The latter was a result of wage adjustment guidelines tending to lag behind increases in prices in order to break the spiral. In addition, personal incomes were adversely affected by corrective price adjustments designed to rehabilitate public utilities and other sectors decapitalized by inflation-bred distortions in relative prices.

8. During 1964-67, however, the Government also established the institutional basis for economic recovery and sustained growth. Institutional reforms concentrated on savings generation, the efficiency of resource allocation and the efficacy of aggregate demand management. They covered the tax structure and public administration, monetary management and the capital market and balance of payments management. One of the most interesting features of these reforms was the creation of mechanisms for forestalling distortions in relative prices in a still inflationary environment. Two of the most important of these were the application of "monetary correction" (i.e., adjustment of principal value proportionate with price level changes) to fixed income savings instruments and to long term (i.e., more than one year) lending and the adoption in August 1968 of a flexible (i.e., "crawling peg") exchange rate. During the 1964-67 period the Government also improved and expanded public sector investment programs in transportation, power, education, housing and regional development.

9. By 1968, therefore, the Government was able to shift into a rapid development posture. Except for agriculture where some degree of rationing had to be applied owing to the subsidization of agricultural interest rates, bank credit to the commodity producing sectors was allowed to expand as demand dictated. This was reinforced — and made consistent with the gradual

additional decline of the rate of inflation which has been achieved since 1968 -- by the allocation of public savings to the commodity producing sectors through the banking system. Very important in this respect was the control which the Government achieved over the coffee sector in 1965-66. The diversification out of coffee production which it promoted permitted coffee stocks to be reduced, generating coffee sector financial surpluses which were made available to the other productive sectors through the banking system.

10. Wage policy also was relaxed, in the sense that private sector wage adjustment guidelines began calling for slight increases in real wage rates, while annual legal minimum wage adjustments which — in 1964-67 -- were held well below prevailing rates of inflation were brought almost up to parity with them. This probably contributed to the ensuing upsurge of internal demand in a psychological sense but its impact on wage rates is unclear. During the 1964-67 period when government wage guidelines called for reductions in real wage rates, they coincided with economic stagnation and with other incomes policies -- corrective price adjustments -- which helped make them effective. During the post-1967 upturn, however, it appears that wage guidelines have been exceeded by actual wage adjustments in the manufacturing sector and in parts of the agricultural sector owing to the short supply of skilled and semi-skilled labor.

11. The shift into a rapid growth posture brought immediate results. Over the 1968-71 period annual increases in GDP averaged 9.6 percent. In 1971 the economy grew by 11.3 percent and appears to have grown approximately as fast in 1972. Also, in 1972 the rate of inflation appears to have been held to 15 percent.

Development Strategy

12. Taking into account the enormity of Brazil's resource base, the nascency of its exploitation and the excess capacity which had accumulated in the economy by the end of the 1964-67 retrenchment period, Brazil's recent rapid growth is no miracle; rather it is the logical result of improved economic management. The Government now is implementing a 1972-74 development program which calls for sustaining growth at 8 to 10 percent at least through the latter year. Within this overall target, industry would continue the 11-12 percent growth pace it has achieved since 1968, while agriculture would grow by 7 percent annually compared to 6 percent since 1968 and to 4.4 percent over the last two decades.

13. Present development strategy differs in a very salutary way from that of the 1940's and 1950's in that it concentrates on improving the balance of growth. This is especially true with regard to exports, the expansion and diversification of which is regarded by the government as the key to sustained growth. As Brazil's exports expanded at a 17 percent pace over the 1967-72 period, coffee exports — although increasing in absolute terms — declined from 44 to 27 percent of the total. In large part this is attributable to rationalization of exchange rate policy. The Government also has mounted a system of incentives for manufactured exports which

promises to enable them to surpass coffee as exchange earners in a few years. It is now implementing a program of "export corridors" designed to increase the competitiveness of Brazilian coarse grains, soybeans and beef exports by greatly improving marketing infrastructure. As a corollary to its export promotion efforts, Brazil has liberalized the importation of capital and intermediate goods; not in the sense of reducing nominal tariff rates but of freely exempting such goods from import duties.

14. As is implied by its sectoral growth targets, the Government also intends to improve the sectoral balance of growth. It is working to add technological improvement to the impact on agricultural output of increased use of the land factor which, until now, has been the predominant cause of agricultural growth. Agricultural price supports and credit have improved the internal terms of trade of the sector and the government now is concentrating credit resources on the acquisition of technical inputs and is investing in programs designed to accompany this with improved agricultural research and extension facilities. The export corridors program will tend to equalize as between industry and agriculture the benefits of external economies especially in the form of transport and marketing facilities.

15. Improvement of the internal terms of trade of agriculture is expected to be rounded out by increasing the efficiency of the industrial sector. To a certain extent this is a question of scale; expansion of nitrogenous fertilizer production facilities, for example, should permit the Government to lower the 95 percent level of effective protection presently afforded Sao Paulo producers. In large part it is a question of increasing exposure to competition of industries where nominal tariffs already are redundant. The rapid growth of manufactured exports is helping in this respect since it is accustoming domestic industry to external competition and increasing the scale of production in some lines. Finally, for Brazil's very inefficient traditional industry which produces wage goods and accounts for about 40 percent of manufacturing employment, the government is using credit incentives to promote reequipment and — to a lesser extent — merger and administrative reorganization.

16. Improvement of the regional balance of development is one of the most difficult tasks facing the Government. Regional underdevelopment is concentrated in the Northeast which contains 30 percent of Brazil's population but accounts for only 15 percent of its ouput. Here, social organizations has evolved since the days when sugar cane, cacao, and cotton were produced with slave labor far less rapidly than in the rest of Brazil. There has been massive migration from the rural Northeast to cities both within and outside that region which has shifted some of the incidence of poverty from the rural to the urban scene. Nevertheless, the pattern of land use in the Northeast remains a problem. Most Northeast rural workers are landless and many farms are too small to afford their owners an adequate income. Moreover, Northeast agriculture is far less benefitted by agricultural credit — the Government's main tool of agricultural development — than is the rest

of the sector, as compared to one agricultural credit for every four farms in Brazil as a whole agricultural credit incidence in the Northeast is about one per 16 farms; as compared to one tractor for every 17.6 farms in Brazil as a whole, there is one tractor for every 366.8 farms in the Northeast.

17. Evolving from the reservoir building phase of the 1950's, the Government's Northeast regional development strategy in the 1960's concentrated on Northeast industrialization. It was, in part, because of this program that the growth of Northeast output could keep pace with that of the rest of the country in the 1960's, but the direct employment effect of the program was small, especially by comparison with the rapid accumulation of urban underemployment. The Government has established a revenue sharing mechanism which transfers central government savings to the Northeast for regional development purposes in amounts equal to about one percent of GDP -- or 5 percent of total domestic savings -- annually. In 1971 and 1972 the Government altered in very significant fashion the content of the regional development program financed with these and other resources. Although a substantial industrial development component is retained, the program now focuses on improving rural worker productivity and thereby slowing the pace of rural-urban migration. The most spectacular of the elements of the new effort is the Amazon road building and colonization program. Although very important for the long term development of Brazil, this program element resettled only about 4,000 families during its first year of operation. Thus, in addition, the new program contains elements designed to: redistribute land in certain areas of the Northeast; reorganize the grossly inefficient Northeast sugar industry which, while accounting for a good deal of Northeast employment, has not been able to pay its workers the minimum wage, and, provide technical inputs to Northeast farmers.

18. Another of the very difficult tasks facing the government is improvement in the balance of development between its human and material resources. Spectacular progress in education has been made in recent years; primary, secondary and university enrollments increased at average annual rates of 6, 14, 16 percent during the 1960's as public expenditures on education rose from 2.1 to 3.3 percent of GDP and literacy in the population 10 years of age and older increased from 60.6 to 68.0 percent. Despite these substantial efforts, however, the educational attainments of the labor force remain low and highly skewed regionally and sectorally. In 1970 only about 16 percent of the labor force had lower cycle secondary school training or better; in the Northeast only about 8 percent of the labor force had such training; in agriculture, only about one percent. The barriers impeding progression of primary school matriculants into secondary school are many. Inefficiency is an important one, because of high dropout and repetition rates the system now has to provide about 8 student years of teaching for every student graduated from the 4 year primary cycle; in the Northeast it has to provide about 11 years. Other important barriers include the stiff secondary school entrance examination, the paucity of secondary school facilities and their lack of vocational curricula, especially serious in an environment in which early entrance into the labor force is a necessity.

19. In 1971 the Government promulgated legislation completely reforming the education system. The reform moves grades 5 through 8 back from the secondary into the primary cycle and greatly increases the vocational content of the curricula for these four years. Thus, primary school graduates now will be equipped with skills enabling them to take up productive employment even if they do not go on into the new 3 year secondary cycle. Brazil's overall education reform contains many other elements, one of the most attractive of which is the nationwide adult literacy campaign, underway since 1970 which has as its goal reduction of illiteracy in the 15 to 35 year old age group from 8 to 2 million persons by 1974. As specified by the 1972-74 public sector budget, expenditures on education are to rise to 4.5 percent of GDP by 1974 while primary (new definition) and secondary school enrollments increase at average annual rates of 8 and 19 percent respectively.

20. The financial and administrative burden imposed by these ambitious goals is enormous and most of it falls on local governments. The goal of increasing the coverage of Brazil's urban water system from the present 55 percent of the urban population to 80 percent by 1980 also burdens local government enormously despite the fact that half of the cost of this program will be financed by the National Housing Bank and external lenders. Finally, the rapid growth of Brazil's major urban agglomerations has imposed a third major burden on the center-south states, namely that of financing tremendously expensive systems of mass transport. Thus, another major issue of development balance which confronts the government is the distribution of taxing capacity over the various levels of government.

21. Brazil's total tax burden presently is a very high 29 percent of GDP and is tending to increase owing to improvements in tax elasticity achieved in recent years. Central government revenues have increased much more rapidly than local revenues. Moreover, the revenues of the more developed states are increasing more rapidly than those of the less developed ones owing in part to the nature of the state value added tax which is shifted forward to consumers, thereby benefitting exporting states at the expense of importing states, and, in part, to the tax holidays being conceded by poorer states to attract industry. Recently, the Northeast states, responding to difficulties in financing education and health programs, requested that the state value added tax on interstate imports be split between the state of origin and the state of destination. Since the bulk of interstate trade takes place outside of the Northeast region, the overall effect of such a measure would be entirely out of proportion to the resource needs of the Northeast. It would mainly benefit other relatively affluent states in the Center-South at the expense of the major exporting state, Sao Paulo, which, while also relatively affluent, confronts Brazil's most severe urbanization problem. The Central Government shares its revenues not only with the Northeast but with all states and municipalities in Brazil. Not only are its taxes more elastic than those of the states but its current expenditures are likely to increase less rapidly. Thus, at least part of the solution for the poor states' revenue problems may be for the central government to increase its tax sharing. Present sharing arrangements are progressive as participation

in shared revenues is inversely proportionate to per capita state product, but largely automatic. Additional revenue sharing should be selective and contingent upon adequate efforts on the part of the state to generate revenues and upon the capacity of the state to absorb additional resources.

22. The final major component of the Government's development strategy is additional import substitution. Opportunities for such substitution on an economic basis are by no means exhausted in Brazil. In part, they relate to needed, and either ongoing or planned, expansion of existing production capacity where expansion will not only substitute for imports but have a beneficial impact on domestic efficiency. This is the case of ongoing steel industry expansion and of expansion of nitrogenous fertilizer production. In part, they relate to new activities with respect to which Brazil has some comparative advantage. This is the case of the planned mining and processing of Brazil's considerable copper deposits in Bahia. It is also the case of Brazil's first petrochemical pole, now being installed in Sao Paulo, and of a second one, to be located in Bahia near natural gas reserves already identified in that state, and others being prospected on the continental shelf off the state of Bahia. In addition to natural gas Brazil has another, more important, comparative advantage in petrochemicals production, the massive size of the domestic market.

23. Perhaps the most serious question with respect to additional import substitution, however, has to do with the expansion of the domestic capital goods industry. This industry had increased its share of the domestic equipment market to 78 percent by 1967. However, with the absorption of excess industrial capacity in 1968 and 1969 and the very rapid overall rate of growth the country started an investment boom with which domestic equipment suppliers were unable to keep pace. Although they increased their output at a 17 percent pace over the 1968-71 period their share of the domestic market dropped to 72 percent in the latter year as equipment imports increased at a 23 percent pace in real terms.

24. Domestic sources of long-term loan capital are expensive; the interest cost of such capital presently averages about 12 to 14 percent in real terms, much higher than in the developed countries. Brazil's capital equipment suppliers have been at a disadvantage vis-a-vis their foreign competitors in respect both of the cost and term of suppliers' credits. Recently, the Government created a capital goods financing fund — FINAME — and authorized it to make suppliers' and buyers' equipment loans on terms of up to 10 years and with full monetary correction plus 8 percent interest. Although expanding rapidly, FINAME operations covered only 4 percent of total Brazilian equipment output in 1971. Moreover, they were concentrated on shelf items like heavy trucks whereas the major need is for the financing of made-to-order items. Late in 1972, therefore, the government opened a new line of FINAME credit for made-to-order equipment. This credit line features terms of up to 15 years and interest over monetary correction of 3 to 6 percent.

25. Another factor which has worked against the domestic capital goods industry, especially with respect to made-to-order items, has been liberal exemption from import tariffs of imported equipment. In international competition -- that is, under international competitive bidding in connection with Brazilian investment projects financed by official lenders -- Brazilian equipment manufacturers, with a 15 percent preference margin, have supplied about 15 percent of the equipment procured. Thus, in addition to expanding and reorienting FINAME operations, the Government is considering lowering tariff rates on capital goods and modifying its system of tariff exemptions.

Structural Problems: Labor Absorption by Manufacturing Industry

26. There are a number of additional structural issues associated with the Government's development strategy. One of these is the question of labor absorption by manufacturing industry, Brazil's growth leader. Presently, this sector accounts for 15 percent of Brazil's GDP but only 8 percent of its employment. Over the last two decades employment in the sector increased at a 3.2 percent annual pace or only 40 percent as fast as the increase in manufacturing value added. Since 1967 the elasticity of manufacturing employment creation has been only 25 percent, owing in part to the more rapid growth of the capital intensive subsectors, especially chemicals, and also in part to the fact that employment in the textile industry has been reduced in absolute terms with the reequipment of some firms and the bankruptcy of others.

27. In 1970 monthly wage rates in manufacturing averaged the equivalent of US$100, putting their recipients in the 9th decile of Brazil's size distribution of income. Additionally, however, employers bore non-wage burdens totalling 43 percent of wage rates in the form of the many payroll taxes which finance a variety of important social programs. These taxes have been increased very rapidly over the last two decades. In 1949 they amounted to only 12 percent and even in 1966, before the tax which financed Brazil's housing program was instituted, they amounted to 38 percent.

28. It has been asserted that distortions in labor and capital costs have impeded labor absorption in Brazil. While loan capital was cheap in the past, in general this is no longer the case. As noted, domestic loan capital is quite expensive. Equity capital is becoming available in significant quantity through the stock market as a result of institutional improvements and fiscal incentives for investment in equity shares. However, not only have new issues tended to be underpriced until recently because investors were accustomed to large capital gains, but only just now are entrepreneurs relaxing their resistance to going public. These factors are offset to a certain extent by the easy availability of external capital and by high after-tax profitability in manufacturing industry. Even in the Northeast where equity capital has been heavily subsidized, the average costs of job creation in manufacturing industry have not exceeded significantly those elsewhere in the country.

29. Attempts to correlate the slow pace of labor absorption to labor costs alone have foundered by virtue of not being able to take into account technological constraints which, in fact, are likely to have presented entrepreneurs with little alternative as to factor mix in specific production lines. On the other hand, increases in labor costs associated with burgeoning payroll taxation, together with earlier distortions in capital costs may have skewed the structure on industry, concentrating it more than need be on lines which necessarily are capital intensive. Thus, it would seem to be desirable to replace, to the greatest feasible extent, the payroll taxes with neutral sources of financing for the Government's social programs.

30. One such neutral source would be application of some form of pay-as-you-go to the discharge of corporate income tax liabilities. Presently these are discharged in 12 consecutive monthly installments commencing in February of the year following that in which the income was earned. If these payments were subject to full monetary correction and interest, the resulting increase in corporate income tax yields would approximately equal current net accruals to the Tenure Guarantee Fund which finances Brazil's housing program. The government fears, however, that the reduction of after-tax profits which would result from such application of pay-as-you-go would be detrimental to investment. The financing of corporate investment presently is heavily dependent upon retained earnings. Consequently, the Government is considering replacement of some of the payroll taxes with higher value added tax levies on consumer durables and luxury goods.

Agricultural Credit, Extension and Research

31. Through directed credit mechanisms, Brazil has increased the stock of agricultural credit from 21.9 percent of gross agricultural product in 1967 to 37.5 percent in 1971. As part of its policy to improve the internal terms of trade of this sector, it subsidizes agro-credit, limiting agro-interest rates to 15 percent in the case of larger loans, to 13 percent in the case of smaller ones (US$2,350 or less) and to even lesser amounts for special agro-credit lines such as that for modern inputs (7 percent) and for coffee trees planting (3 percent). The much higher limits on interest rates in the case of industrial loans (26 to 30 percent) are prevented from impeding the allocation of credit to agriculture by the requirement that commercial banks direct at least 10 percent of their deposit resources into agriculture and by the fact that the bulk of agro-credit in any case is supplied by official banks. Moreover, for the special credit lines, the difference between interest at lower rates and that at 15 percent is made up to the financial intermediary by the monetary authorities. The only exceptions to this are the ordinary small agro-credits at 13 percent interest. To overcome the impediment represented by this lower rate to smallholder lending, the Government ought to extend its compensation arrangement to this type of credit as well.

32. Although there are no data permitting firm definition of unsatisfied agro-credit demand, lack of smallholder access to agro-credit may be a serious problem. As indicated, only about one in every four farm establishments benefits from agro-credit. The government has created a cooperative credit bank but this institution has been unable to mobilize deposit resources and, moreover, has had its capital eroded by negative real interest rates, by high default rates and by unenthusiastic management. It would appear to be worthwhile for the Government to investigate the feasibility of a special program in this field; one which would provide increased capital support (including provision to cover a measure of default and the difference between nominal borrowers' rates on the one hand, and the rate of inflation plus administrative costs on the other), a more adequate institutional framework and coooperative organization and extension work in the field.

33. Expanded and better research-based extension services are required in any case, especially now that the Government is emphasizing modern inputs credit at highly subsidized rates. The extension service is linked to the agro-credit system, but outside the state of Sao Paulo only about 6 percent of all agro-credit in 1970 was accompanied by extension work. The 1972-74 development program makes provision for a 65 percent increase in extension workers together with a more comprehensive, multidisciplinary approach to agricultural research. These programs merit highest priority.

34. Although agro-credit administration has improved dramatically in recent years, credit subsidization still is liable to misallocate resources. As the internal terms of trade of the sector improve with increased efficiency in fertilizer production, with the increased external economies generated by the export corridors program and with other developments, the need for agro-credit subsidization in any case will be reduced. The government ought to consider expanding use of ex-post monetary correction in the agro-credit field. This can be combined initially with relatively low rates of nominal interest to impart a degree of subsidization. On loans of more than one year term, this method has the advantage of fixing the degree of subsidization enabling calculation of financial rates of return and avoiding windfall gains in the event of the sharp agro-price fluctuations to which Brazil still is susceptible.

The Mix of Agricultural Output

35. Success in meeting the export goals of the export corridors program would boost exports of coarse grains, soybean and meat from 1.2 million, 1.1 million and 150,000 tons, respectively, in 1971 to 5.0 million, 4.0 million and 500,000 tons late in the 1970's. These export surpluses are feasible, if Brazil achieves reasonable improvements in crop and livestock productivity, avoids deterioration of beef producers' prices and continues to bring new land under cultivation at about the same rate as in the past. Success in achieving export corridors program goals would greatly facilitate overall export growth.

36. Brazilian coffee is at the outset of its third production cycle since 1918. Average annual production capacity has been reduce to about 22 million bags, or to about 80 percent of total annual demand, as the result of the mid-1960's diversification program. Stocks, which totalled 71 million bags in 1966, have been reduced more rapidly than expected, owing largely to the 1969 frost which held 1970 output to only 10 million bags. By June 1972 stocks totalled only 27 million bags. The Government has established a program to plant 600 million trees over the 1972-74 period and to increase the average productivity of old trees through better tree spacing and application of fertilizer and pesticide.

37. However, coffee producers face problems not prevalent at the outset of either of the two previous production cycles. The last cycle expanded cultivated area into the frost zone of northern Parana, exposing production to a climate risk not previously confronted. In 1970 Brazilian coffee areas were invaded by a fungus known as "coffee rust" which, while controllable, raises the cost of coffee production. Finally, and probably most seriously, no mechanized technology has been developed for coffee production which puts it at a disadvantage vis-a-vis production of the crops promoted by the export corridors program, especially with some indications of an emerging rural labor shortage in the Center-South.

38. The Government has increased coffee relative to other agricultural producers' prices, taking advantage of rising world prices and reducing the coffee export tax. From the end of 1967 until the first quarter of 1972 coffee producers' prices increased 4.4 fold in nominal terms while farmgate prices in general increased 2.8 fold. Responding to this strong price signal, producers, late in 1972, contracted financing for the planting of 360 million new trees in that year alone. Looking toward the late 1970's, the problem is whether this new cycle may not again lead to over-production of coffee.

Regional Development Programs

39. Two of the problems associated with Brazil's regional development programs have already been mentioned; (i) the skewed distribution of agro-credit; and (ii) the fact that local governments in the Northeast may need additional revenue transfers from the Central Government in order to finance education, water and sewerage and other infrastructural programs. With particular regard to rural development in this region, however, there is a converse problem; the capacity of the region to absorb rural development resources efficiently is quite limited. In part, this is attributable to the inefficiency of public agencies operating in this field and to the failure of the government to develop any one agency to which clear authority for overseeing the rural development effort could be delegated. A good example of the type of problem which results is the fact that the sugar reorganization program, which will liberate considerable land and labor presently underemployed, has not been accompanied by planning for the occupation of these factors.

40. Another reason for limits on the capacity of the Northeast to absorb rural development resources is lack of an adequate research base. As part of its overall agricultural research program and in connection with a proposed agro-industries project for the Northeast, the Government is beginning to try to fill this gap. As indicated, its efforts merit fullest support.

41. Finally, the overall program allocates a very large part of available resources to the construction of Transamazon and peripheral trunk roads which are not altogether necessary for its settlement and rural development goals.

Income Distribution

42. Although the overall growth and management of the Brazilian economy in recent years has been outstanding, Brazil continues to experience unequal distribution of income accompanied by considerable incidence of absolute poverty. In 1970, the most affluent 20 percent of Brazil's income earners received 62.2 percent of total money income while the poorest 20 percent received 3.2 percent of total money income; i.e., the richest one-fifth of the population received 19 times as much income as did the poorest one-fifth. There was a substantial reconcentration of income during the 1960's; in 1960 the income received by the most affluent fifth of the population was 16 times as great as the income received by the poorest fifth. Absolute increases in money income levels were achieved in every decile of the size distribution of Brazilian money income during the 1960's. In the 9th and 10th deciles -- the highest income brackets -- the increases were greatest, averaging 3.1 and 5.2 percent annually in real terms, respectively. In the lowest four deciles annual increases in real money incomes averaged 1.7 percent. In part, the increases reflect increased monetization of the economy.

43. The distribution of income was compared with other population characteristics and it was found that changes in these characteristics probably explain about half of the overall reconcentration of income which took place. These changes include the decline in the average age of the labor force, increasing female labor force participation, and increasing labor force concentration in urban areas; incomes being more unequally distributed in urban than in rural areas although lower in the latter. Perhaps the most important change in labor force characteristics from the income distribution point of view, however, was the fact that, although they remain a small part of the labor force, workers with lower secondary cycle education or better increased much more rapidly as a percentage of the labor force than did workers with primary education only. Since the average income of these better educated workers places them in the 9th and 10th deciles of the size distribution their relative increase deteriorated the overall equality of the distribution.

44. Both the high wages commanded in Brazil by workers with technical training and the superior social status of the parents of students with upper school academic training probably enter into the explanation of the impact on income distribution of changing education characteristics. It may be that the emphasis now placed on technical education will continue to have a negative distributional impact until such time as the dualism of the Brazilian economy is substantially alleviated. In any case changing labor force characteristics probably explain only a part of the income reconcentration of the 1960's. The rampant inflation of the early 1960's played a role in this process; subsequent stabilization and its adverse effect on lower income groups, to some extent inevitable, was another factor.

45. In 1970 the incidence of absolute poverty in Brazil continued to be high: one-third of total income recipients were receiving less than Brazil's lowest legal minimum wage, about US$25 per month. It should be added that the comparisons of changes in real terms suffer from more than the usual statistical limitations in view of the degree of the Brazilian inflation.

Development Prospects

46. The major thrust of the Brazilian Government's development strategy is to sustain the maximum rate of growth compatible with balance of payments viability. While Brazilian economic planning nominally aims at growth rates in the 8 to 10 percent range, the annual average increase in GDP over 1971-72 has exceeded 11 percent. The increasing levels of aggregate demand associated with this rate of growth have produced a rapid expansion in the external resource gap. Analysis of the probable future availability of external credit resources and Brazil's debt servicing capacity indicate that it will be difficult to continue financing resource gap of the magnitude experienced in 1972. In order to stabilize the size of the resource gap, the rate of growth of imports must be held below that of exports. This could be accomplished by moderating the rate of growth to 8-9 percent per year. Alternatively, the saving rates should be shifted sharply upwards, as shown below.

47. Analysis of the prospect for Brazil's exports indicates that growth rates on the order of 13 to 14 percent in real terms, or 16 percent in nominal terms are sustainable. On the other hand, import requirements are also likely to be high. Most excess industrial capacity had already been absorbed by 1970 and the capital output ratio, which has been below 2:1 can, therefore, be expected to rise. Future requirements for imported capital goods will reflect both the growth rate and the likely higher capital output ratios. For the period 1968-72, import demand elasticity has been 1.7. With marginal import requirements of this magnitude, continuation of growth at the 1971-72 pace could result in a widening resource gap which could be sustained only by a level of external borrowing which would ultimately endanger Brazil's creditworthiness.

48. Data on domestic saving indicate that, although increasing, they have not kept pace with rapidly expanding investment opportunities or with the corresponding rapid increase in outlays for both public and private investment which have been taking place. Even sustaining a growth rate in the lower range of the Government's targets, or 8 to 9 percent annually without producing excessive strain on the external sector, will require a considerable expansion of domestic saving, from 17 percent of GDP in 1968-71 to about 20 percent by 1978. While this increase, which implies a marginal saving rate of 0.23, seems attainable, higher rates of GDP growth would severely test the nation's internal saving capacity. The public sector currently accounts for 60 percent of total domestic saving and current revenues have tended recently to grow more rapidly than GDP and current expenditures. Thus, public saving is expected to continue increasing. On the other hand, the Government does not seem to have adequately considered the implications of its growth strategy, which emphasizes production of consumer durables, for private saving.

49. While growth in the 10 to 11 percent range may not be sustainable over the longer term, it should be possible to sustain growth at an 8 to 9 percent annual rate. Growth rate of 8.5 percent annually would moderate the expansion of import requirements as a lower import elasticity of demand could be expected. Some dampening of growth would give the domestic capital goods industry a chance to regain some of the domestic market share it has lost during the past five years. Although the resource gap would continue to widen somewhat for the next five years, even along an 8.5 percent growth path, it would average US$1.3 billion over 1973-78 (compared to US$1.1 billion in 1972) and will have begun to turn down by the end of the period.

50. Disbursements of official external loans have increased markedly in recent years but, at US$0.5 billion in 1972, they were still well below new official loan commitments. Not only the buildup of the pipeline of official loans, but also the fact that investment projects calling for the commitment of some US$8 billion in external finance over the next few years have been defined by the Government, and listed by this report, suggest that the volume of external loan disbursements will continue to rise very sharply. The direct foreign exchange component of the projects listed averages about 16 percent of total project cost, and the indirect foreign exchange component of locally supplied equipment and civil works brings the total foreign exchange component up to around 30 percent of investment costs. On the other hand, financing will have to average about 40 percent of total project cost if Brazil's requirements for external medium- and long-term loans capital are to be met. On the average, therefore, external lenders should plan to cover not less than 40 percent of project costs, and to accept that on the average 25 percent of their loans are applied to local expenditures. Since suppliers' credits will be available for local expenditures only to a slight degree, official lending agencies should be prepared to have more than half of their lending apply to local costs. Even assuming however, that official loan commitments rise by 50 percent above 1972 levels as of 1975 and that suppliers finance about one-third of Brazil's capital goods imports -- as they have recently -- Brazil would still need to cover a significant portion of its exchange requirements with external financial credits if the resource gap does, in fact, average US$1.3 billion.

51. Accumulation of financial credits accounted for US$3.2 billion of Brazil's US$6.6 billion external debt disbursed as of the end of 1971. In 1972, more than US$4.7 billion in gross loan capital, of which more than US$3.5 was in the form of financial credits, flowed into Brazil. Financial credits represent, to some extent, a substitute for foreign direct investment which takes this form because of more favorable tax and administrative treatment accorded to interest payments than to profit remittances. They are also a result of foreign borrowing by Brazilian private and public enterprises necessitated by imperfections in the financial market which make loan and equity funds both expensive and scarce. Their growth in recent years reflects the attractiveness of Brazilian prosperity and stability to the international financial community. However, the accumulation of financial credits has been greater than the Government expected and in order to prevent accumulation of this foreign debt from causing liquidity problems, the authorities have imposed comprehensive controls on debt maturities. The average term on new financial credits in 1972 was four years, compared to two years in 1971. In addition, the Government is following a monetary policy which results in substantial foreign exchange reserve accumulation. The need to offset much of the increase in financial credits with foreign exchange reserve accumulation reduces greatly their contribution toward financing the resource gap. These credits are only a partial and imperfect substitute for long-term capital and they cannot be depended upon on such a large scale as in the recent past, if the debt service burden is to remain manageable.

52. Brazil's overall external debt disbursed probably exceeded US$9.4 billion by the end of 1972, of which financial credits are $5.4 billion. The country's overall debt service ratio is very high; it was 54 percent in 1972 and, because of debt accumulated during the year, it will be higher in 1973. However, the buildup of foreign exchange reserves, which will exceed US$4 billion by the end of 1972, should be taken into consideration in appraising international liquidity.

53. Although Brazil's overall debt service ratio is very high, reserve accumulation makes Brazil more liquid than it was in 1968 when the accumulation of debt commenced. An overall liquidity indicator would have to take into account Brazil's "free" reserves-- i.e., that portion of reserves in excess of a certain minimum, defined by this report as the equivalent of three months' imports -- as well as debt service and exports. In Brazil this indicator -- debt service minus free reserves divided by exports -- improved from 53.8 percent in 1968 to 31.7 percent in 1972. It is thus clear that, however measured, Brazil's debt service obligations are high. Despite this, the country's economic management is of such demonstrated high caliber that its international creditworthiness is not in question.

54. Brazil's development prospects depend quite substantially on the willingness of external financial creditors to continue to expand their assets in Brazil and on the Government's management of this debt and of its implications for aggregate demand. In 1972 the reserve buildup associated with this debt was so great as to cause monetary management problems. Thus,

in October, the Government imposed a marginal, 25 percent reserve requirement on the cruzeiro counterpart of financial credits. The most important effect of this requirement was to increase the cost to the borrower of financial credits. Thus both borrowers and lenders may in the future be unwilling to increase Brazil's financial indebtedness at the same pace as in 1972.

55. External financing requirements associated with sustaining an 8.5 percent growth rate over 1973-78 would result in a somewhat less favorable external debt picture than at present. By 1978 the overall debt service ratio would amount to about 70 percent, compared with 54 percent in 1972. On the other hand, the overall liquidity indicator -- which, in effect, subtracts "free" reserves from the debt burden -- would improve slightly, from 31.7 percent in 1972 to 29.5 percent in 1978. Despite reserve buildup, good export performance and strong support from private lenders, Brazil's external capital requirements are so large as to require as large a volume of long-term capital as possible from official lenders.

56. The Government believes that sustained, rapid growth is the most efficient basis on which to increase the total welfare of the community. However, in recent years it has been introducing some programs designed to provide a better distribution of the benefits of growth. Social programs have been expanded in education, urban housing and nutrition. Some of these programs are new and others are still small scale; nevertheless, they indicate a recognition by the authorities of broader social goals. On the other hand, it appears that the pace of industrial growth in the Northeast may be adversely affected by the diversion of resources to other programs. The report has identified and the Government is considering various requirements of existing strategy which could have beneficial distributional effects without requiring significant sacrifice in terms of overall growth. Among these are:

(i) improvement of the capacity and strengthening of the authority of regional development agencies in the Northeast to absorb productively the resources transferred to them by the fiscal mechanism;

(ii) upon demonstration of need and of absorbtive capacity, expansion of arrangements for sharing central government revenues with the Northeast;

(iii) improvement of the distribution of agricultural credit; and,

(iv) replacement of the payroll taxes with a more neutral mechanism for financing social security type programs.

57. Although it seems far removed from the question of income distribution, the balance of payments analysis of this report in fact deals with an issue of great distributional significance. Regressive wage policies are a likely if not an inevitable outcome of external liquidity problems. Avoiding "stop and go" development in the future, therefore, would appear to be an important component of equitable development strategy. It is thus doubly encouraging that the Government attaches great importance to the steadiness as well as to the overall magnitude of Brazilian economic growth.

I. FRAMEWORK OF THE REPORT

1. A few paragraphs are required to explain the orientation of this report, the type of field investigation upon which it is based and its interrelationship with previous work, particularly that contained in the IBRD's last economic report on Brazil, WH-210a of November 30, 1971.

2. WH-210a examined Brazil's macroeconomic performance and strategy for overall economic growth. It was justifiably enthusiastic about the enormous improvements made by Brazil in recent years, first in bringing aggregate demand under rational control, reestablishing order in the balance of payments and reducing the rate of inflation to tolerable dimensions in the process, and then in enormously improving domestic savings capacity and in expanding and diversifying exports. WH-210a examined in detail the elements which are crucial to Brazil's strategy for rapid economic growth: private and public savings mechanisms; the system of incentives for manufactured exports; external debt management. WH-210a noted that there had been a change in incomes policy designed to give the worker a fairer share of the benefits of growth, but did not go deeply into the question of income distribution because of date limitations. WH-210a did call attention to the changes in policy for developing Brazil's poorest region -- the Northeast -- then being made but was unable to evaluate these policies by virtue of their still being in the formulation stage. WH-210a also testified to the need for further investigation of structural problems in the agricultural and industrial sectors which treatened to impede balanced growth. Finally, WH-210a tentatively evaluated the public investment program and its link to the balance of payments but noted that further work would have to be done when the Government's 1972-74 Investment Budget was available.

3. The investigative work undertaken in support of the present report responded to these gaps. Early in 1972, a mission was dispatched to Northeast Brazil to evaluate the program for developing that region. Special emphasis was given to the rural development, social infrastructure and industrial expansion components of the program as well as to the capacity of the Federal Government to generate the interregional resource transfers which would be called for.

4. A number of other investigative missions took place during 1972. The appropriateness of the product mix of agricultural output in Central-South Brazil was examined from the point of view of internal demand and export opportunities. Agricultural institutions also were studied, particularly those for research, extension and agricultural credit. It had been noted that Brazil's traditional industrial subsectors -- textiles, clothing, shoes and other leather goods -- were lagging behind the rest of the industrial sector in their development. These sectors are very significant socially since they are labor intensive and produce wage goods. Thus, a mission investigated these sectors in detail and covered as well the fertilizer subsector, so important for agricultural growth. Missions to survey the power, transport and telecommunications sectors were also dispatched so that respective components of the public investment program could be properly evaluated and Brazil's overall need for public investment resources more realistically assessed.

5. The year's final mission updated information on socio-economic development policies at the national level. Both the Government and independent researchers had utilized the results of Brazil's 1970 census in quantifying and analyzing income distribution and the results of this work are dealt with in this report. A more comprehensive identification of the project-by-project needs for external finance of the public sector investment program was made possible by the considerable institutional progress with respect to project identification and control made by the Brazilian Government. New departures in debt management policy permitted a more realistic forecast of balance of payments developments and evaluation of external creditworthiness.

6. This first volume of the report attempts to summarize the results of all this work. The various other volumes attempt, respectively, to:

(i) compile in accessible form the mass of statistical data which was accumulated (Volume II);

(ii) describe and quantify in both detailed and summary form public sector investment projects suitable for external financing (Volume III);

(iii) evaluate the efforts being made to develop Brazil's Northeast region (Volume IV);

(iv) analyse in detail population, employment and education trends in the Northeast (Volume V);

(v) analyse the problems and prospects of agriculture in the Center-South Volume VI);

(vi) analyse in detail the textile, leather goods and fertilizer subsectors (Volume VII); and,

(vii) survey the power sector (Volume VIII).

7. Its authors have the feeling that the report does not do justice to the wealth of information so generously made available to them by the Brazilian Government and, more particularly, by the hundreds of Brazilian and foreign administrators and technicians whom they visited. In large part this is due to limitations of time. Hopefully, however, the report does deal with the major elements of Brazil's economic progress, problems and prospects.

II. ECONOMIC AND SOCIAL TRENDS

A. Factor Endowment and Historical Development

8. Totalling some 3,286,000 square miles, Brazil's land area is the world's fifth largest. Population-wise, Brazil ranks seventh in the world. In 1970, Brazil's population totalled 93.2 million persons and its average population density amounted to 28.4 persons per square mile. Brazil's population is highly concentrated along or near its 4,600 mile Atlantic coast line. Some 18 million Brazilians, or 19 percent of the total population, reside in cities of more than one-half million residents. Only one of these cities -- Brasilia, the new capital -- is located in the interior. Vast areas of the country, particularly the Amazon region and the far-western state of Mato Grosso have population densities well below one person per square mile and have been exploited economically very little. Variation around the US$410 average per capita income registered in Brazil in 1970 also is very wide; in that year per capita incomes in Northeast Brazil, a region comprising nine of Brazil's 22 states and containing 30.8 percent of its population, amounted to about half the national average and to approximately one-fourth of per capita incomes in the relatively affluent states of Sao Paulo and Guanabara.

9. Brazil has a very favorable factor endowment which begins with its continental dimensions. Subsoil resources presently being exploited on a large scale include iron ore, manganese, bauxite, lime stone, petroleum, natural gas and coal. Copper and tin reserves have been identified but have not yet been tapped. Brazil is a major world exporter of iron ore and manganese. On the other hand, it is required to import about two-thirds of its petroleum requirements and about 70 percent of the coking coal consumed by its steel mills. Three major river systems -- the Amazon, Sao Francisco and Plate -- will permit Brazil to rely predominantly on hydroelectric generating facilities to meet rapidly increasing power demand for some time to come. These rivers, together with the long and accidented coast line, facilitate internal transport and international trade. Brazil's wide continental shelf contains excellent fisheries, particularly of high value species such as lobster and shrimp. Forest resources are enormous. Unfortunately, readily accessible hardwood stands in coastal areas as well as the once rich pinewood forests of Parana have been seriously depleted. The Amazon region, however, contains about 250 million hectares of tropical rain forests which will become more accessible to exploitation with the Amazon highway program currently being implemented by the Government. Brazil's arable land area amounts to 279 million hectares, or about 33 percent of its total land area, of which 88 million hectares have yet to be cultivated. A wide range of climatic zones permits Brazil to meet all of its food requirements, save for about one-third of its wheat consumption, and at present, to be a major exporter of coffee, cotton, cocoa, sugar, corn, soybean, tobacco and beef. As of 1970, Brazil's cattle, hog and sheep populations totalled 76, 66 and 39 million head, respectively. Brazil has maintained a very liberal attitude toward immigration. Consequently, its original Portuguese, African and Dutch settlers have in the last several decades been joined by waves of immigrants from western, central and southern Europe, the Levant and Japan. Today the ethnic hetero-

geneity of Brazil's population, at least in the central and southern regions of the country, is reminiscent of that of the United States.

10. Brazil's colonial period ended in 1822. In that year the son of the then-reigning Portuguese King declared the country independent and was crowned Don Pedro I, Emperor of Brazil. The Brazilian monarchy endured until 1899 when, in a period of economic turmoil largely attributable to the abolition of slavery one year earlier, Don Pedro II abdicated in favor of a republican government headed by General Deodoro da Fonseca. Successive booms based on the production and export of primary products dominated the economy until World War I and to a diminishing but still important extent until the post World War II period. Brazil-wood cutting and sugar cane planting and processing stimulated the settlement of the littoral in the Northeast and Central regions of the country beginning in the 16th century. Gold and diamond mining prompted settlement of the central state of Minas Gerais in the 17th and 18th centuries. Natural rubber production brought planters into the Amazon jungle late in the 19th century and prompted the construction of a major city, Manaus, at the junction of the Negro and Amazon Rivers 1,000 miles from the sea. However, with the emergence of rubber production in the British and Dutch East Indies in 1910 Brazil's rubber exports, suffering from the comparative disadvantage of long haulage to the nearest Atlantic seaport, dropped from 90 to 10 percent of the world total, reducing total Brazilian exports by one-third. Cocoa production in the Atlantic littoral of the state of Bahia and cotton production in the interior regions of various Northeast states provided a new impetus for the Northeast early in the 20th century but, at least in the case of cotton, was prevented from leading to sustained regional development by the periodic droughts which have afflicted the Northeast's inland plateau during the last several decades. Large scale coffee production began in Brazil late in the 19th century, eventually bringing planters into the interior of the states of Sao Paulo and Parana and accounting for the bulk of Brazil's exports between the two World Wars and through the early 1960's. However, the difficulty of adjusting production capacity to external and internal demand led to problems of stock accumulation and price fluctuation which not only yielded sharp variations in export earnings but also constituted a major source of internal inflationary pressure. Inordinate dependency of the economy on one major primary product export was only overcome with the emergence of large scale iron ore and manufactured product exports as well as diversification of agricultural product exports since the mid-1960's.

11. Industrial manufacture in Brazil was prohibited during the colonial period. During most of the 19th century industrialization was discouraged by the prevailing free trade relationship with Britain as well as by lucrative alternative investment opportunities in the exploitation of primary products. World War I provided the first major impetus to Brazilian industry. Interdiction of manufactured goods imports and a wartime economic boom in Brazil provided a dynamic market for domestically produced manufactures. A second impetus was provided by the collapse of the world coffee market in the 1930's which moved investors out of coffee and into industrial activities. World

War II induced a broadening and deepening of Brazil's industrial structure which until then had been concentrated in textile production and agricultural products processing; Brazil's first large steel mill was installed in 1944. Political changes supported the industrialization process. Until 1930 the presidency had alternated between the rural oligarchies of the states of Sao Paulo and Minas Gerais and the legislature as well was structured so as to give predominant weight to the interests of rural landowners. In that year, military intervention installed Rio Grande do Sul Governor Getulio Vargas as president. Independent of the primary commodity power groups, Vargas gradually evolved a politico-economic strategy calling for the installation of import substituting industry behind high tariff barriers and for the construction of a political power base in the government organized and preferentially treated industrial worker class.

12. These policies were continued through the presidency of Juscelino Kubitschek which ended in 1960. By that year industrial value added constituted 32 percent of Gross Domestic Product, agriculture 23 percent and services the remaining 45 percent. In terms of economic growth, the strategy was quite successful, as annual increases in output averaged 7 percent throughout the 1950's. However, by failing to provide for balance in the structural evolution of the economy this strategy yielded stresses, manifested by accelerating inflation and balance of payments problems, which eventually stymied the growth process.

13. Investment in the infrastructure needed to support rapid industrial growth, together with attempt to absorb the rural underemployed who swelled urban populations at an even faster rate than the overall 3.1 percent annual demographic growth rate experienced by Brazil during the 1950's, expanded the financial burden of the public sector much more rapidly than its effective taxing power. Resort to the printing press to finance resulting deficits provided an inflationary impetus which soon resulted in severe secondary distortions. One of the worst of these was a system of multiple and overvalued exchange rates which discouraged exports and imposed an additional burden on government finance in the form of subsidization of essential imports. Another was distortion of the price of capital which inhibited voluntary private savings and destroyed capital market institutions. Coffee played a particularly disruptive role. Although its policies emphasized industrialization, the goverment during the last half of the 1950's did not take effective steps to discourage the overproduction of coffee which had been induced by world prices in the upswing phase of the world coffee cycle during the late 1940's and early 1950's. The 50 million bags of surplus stocks accumulated by the Government during the 1956-60 period not only added to inflationary pressures but also contributed to a drastic decline in world coffee prices.

14. The Quadros and Goulart administrations which governed Brazil from 1961 until 1964 were unable to cope with the economic distortions which by then had emerged. Inflation, which had averaged 21 percent annually during the 1950's, accelerated abruptly during the early 1960's, reaching 80 percent in 1963 and a peak level of 93 percent in 1964. With the constant (1962)

U.S. dollar price for Brazilian coffee exports having declined from US$0.70 per pound in 1955 to US$0.30 per pound in 1963, Brazil experienced successive balance of payments crises in the early 1960's and had to reschedule its external debt in 1961 and 1964. By 1963, the growth of the economy had come to a near halt and per capita product registered a 1.2 percent decline in that year.

B. Recent Evolution of Economic Policy

15. Economic upheaval was certainly the underlying if not the immediate cause of the revolution experienced by Brazil in 1964. The revolution installed the series of military governments which continue to rule the country. Although constituted by the military, these governments have relied on civilian technicians and administrators for the management of the economy. Moreover, while state ownership of production factors is widely dispersed in Brazil, especially in the form of mixed public/private ventures, the Government has increased the reliance of the Brazilian economy on the private sector and on the price mechanism to allocate available resources. Private entrepreneurship, both Brazilian and foreign, plays a key role in the Government's economic strategy. Thus, incomes policies attach great significance to profit as a motivating factor.

Stabilization

16. Initially, the military Government was forced to attach dominant priority to the reestablishment of economic order. Macro-economic policy during the 1964-67 period was designed to restrain aggregate demand so as to reduce the rate of inflation and to yield an external trade surplus which would permit the retirement of the debt rescheduled in 1964 and of the commercial arrears and "swaps" which had been accumulated. Policy elements included, inter alia: (i) restriction of credit expansion in accordance with ambitious price stabilization targets; (ii) reduction of the central government deficit from the level of 4.3 percent of GDP which it had reached in 1963; (iii) controls on wage adjustments which reduced their frequency from several to one per year for each salary group and sought to hold their percentage value below prevailing rates of inflation; and (iv) unification at a reasonable level of multiple exchange rates which previously had encouraged imports and discouraged exports.

Institutional Reform

17. These policies delayed the recovery of the economy from the crisis of 1963-64. However, during the 1964-67 retrenchment period the Government did take many institutional steps which eventually alleviated the savings and foreign exchange constraints on growth and vastly improved the efficiency of resource allocation. On the savings side, reforms were concentrated in the fiscal, monetary and capital market sectors. On the resource allocation side, the reforms concentrated on correcting distortions in relative prices which had developed over the years of accelerating inflation and on installing a number of automatic price adjustment mechanisms designed to forestall reemergence of price distortions.

Fiscal Reforms

18. In the fiscal area, the Government sought to rationalize both public administration and the tax structure. With regard to expenditures these reforms had the effect of decelerating sharply the rate of current expenditure growth, especially for salaries, simultaneously with improving relative to private sector salary rates the remuneration of key personnel. As is implied by the foregoing, the number of civil servants was considerably reduced; some being retired out of the civil service (many of these still burden the treasury's pension bill) and others transferred into the private sector. With regard to revenues, numerous statutory changes have made the tax system very elastic to changes nominal GDP and also have imparted to it great flexibility as a counter-cyclical tool. Incorporated in the ambit of the fiscal reforms were the decentralized agencies -- public enterprises in the transportation, communications and energy sectors -- particularly as regards the economic pricing of their products. The effect of fiscal reforms is discussed more fully in Chapter IV. It suffices to note here that, in addition to reducing the pressure of fiscal deficits on the price level, they improved drastically public sector savings capacity and the efficiency of public resource allocation. It is also appropriate to mention that while the reforms did not create a highly progressive tax structure they certainly reduced the regressiveness and inequity which previously existed, largely by reducing tax evasion across the entire tax spectrum but especially in the income tax category.

Monetary and Capital Market Reforms

19. In the monetary and capital markets sector, the Government found the tools of monetary management sadly lacking and private sector capital market institutions atrophied almost to the point of extinction by the increasing inflation of the 1950's and early 1960's. The Government created, for the first time in Brazil, a central bank and equipped it with the entire gamut of monetary management tools including -- largely by virtue of the rehabilitation of the Treasury's creditworthiness -- open market operations. It promulgated and implemented the legislation necessary for the effective operation of capital market institutions such as system of housing finance, investment banking, mutual funds and securities exchanges. Perhaps most importantly, it introduced the principle of monetary correction of the value both of fixed income savings instruments and of medium- and long-term loans. Access to external savings and technology was improved by legislation lifting the interdiction on remittance abroad of capital income -- profits, royalties, technical assistance, payments -- which had been imposed in 1962 by the previous government.

Relative Prices

20. The correction of distortions in relative prices and the creation of machinery to keep them from reemerging was a key element of the entire reform effort undertaken beginning in 1964. This was the principle behind public utility pricing policy and the monetary correction of capital market instruments. Perhaps the most important application of this principle was also the most delayed; the introduction in August 1968, of the flexible, or "crawling peg", exchange rate policy. Although a reasonable unified rate

had been established in 1964, continuing inflation necessitated further adjustment. Between April 1964 and August 1968 the exchange rate was adjusted four times. The average magnitude of these adjustments was approximately 28 percent. Their magnitude and infrequency triggered speculation and resulting problems with capital flight and monetary management and also discouraged diversification of exports, particularly of manufactured exports. The small, frequent adjustments characteristic of the flexible exchange rate policy have eliminated speculation and contributed greatly to the recent upsurge of manufactured exports by affording the export manufacturer a firm dollar cost and profit horizon.

Incomes' Policy

21. These reforms delayed to a certain extent the achievement of price stabilization as well as of steady growth. Initially they involved so-called "corrective" price adjustments making up for the previous lag of certain prices behind overall rates of inflation. Corrective price adjustments not only exerted a heavy "cost-push" impact on the price level but also, in the context of the Government's wage policy and especially when wage goods were involved, discouraged demand. The income distribution effect of this set of policies deserves special emphasis. Rentals are a good case in point. Rentals had been frozen for many years prior to 1964 and rental values descended to ridiculously low real levels. The landlord-to-tenant income transfer involved, along with the atrophy of institutions of housing finance, limited housing construction largely to that of luxury units in which the wealthy invested as a hedge against inflation. However, the period of corrective rental adjustments initiated in 1964 imposed a heavy burden on labor whose wage adjustments tended to fall below prevailing inflation rates until 1968. The same can be said of corrective adjustment of utility rates; reversal of the income transfers which previously had decapitalized the public utilities also imposed a heavy burden on the wage earner.

22. That reversal of decapitalizing income transfers was necessary is unquestionable. However, it probably was not accomplished in equitable fashion. Only late in 1967 were government controls applied to the sales prices and consequently to the incomes of private manufacturing industry. Improvement of the efficiency of corporate income taxation, initiated in 1964 and still taking place, may have offset, to some extent, this favorable treatment of industrial profits in the context of government incomes policy. The Government also increased the rate of industrial payroll taxation from about 38 to about 46 percent during this period, largely in order to finance its housing and education programs. However, rather than being financed out of profits, these taxes probably were largely passed onto the consumer. Moreover, while they formed part of a rationalization of the liberal package of social security legislation introduced decades earlier by Getulio Vargas, the payroll taxes have discouraged the absorption of labor by the industrial sector.

Internal Terms of Trade

23. The Government did focus explicitly on intersectoral price distortions during the reform period. At the outset of this period agriculture

suffered generally from unfavorable internal terms of trade. There were some extremely significant exceptions the most important having to do with coffee. The political power of the coffee growers arising from their position as Brazil's predominant source of foreign exchange earnings had prevented the Government from acting to discourage overproduction and accumulation of coffee stocks which, in turn, had been a focal point of demand inflation. Establishment of control over internal coffee prices in 1965 was one of the Government's most important successes, permitting implementation of a coffee rationalization program which reduced stocks and helped to improve price stability as well as exchange earnings. Unduly low prices in most of the rest of the agricultural sector were attributable in large degree to price limits and marketing controls, the latter being especially true in the case of beef. The Government eliminated most of these controls and replaced them with a system of price supports and agricultural credit which led to a substantial increase in agricultural prices relative to industrial prices. However, while much of industry remains highly protected, most agricultural producers prices are below world price levels. To offset this residual intersectoral distortion which only the structural evolution of the industrial sector can finally correct, the Government resorted to the subsidization of agricultural credit. Unfortunately such credit, even today, is available to only about one out of every four farm operators because of various institutional factors.

The Shift to a Rapid Growth Posture

24. By 1968 the Government had reduced the pace of inflation to an annual rate of about 25 percent, had established an adequate external reserve position, liquidating arrears and swaps, had improved very substantially the nation's savings capacity and had eliminated most of those price distortions impeding investment and output growth. Moreover, the inflationary process had been transformed from the "demand pull" into the "cost push" variety. It was clear that this residual inflation could not be eliminated rapidly unless continuing economic stagnation were to be accepted; supply problem arising from structural defects in agriculture, rising world prices for important imports and exports such as petroleum and beef, and the few corrective price adjustments remaining to be made meant that the government would have either to permit these cost push elements to be translated into general price increases by the automatic adjustment mechanisms or to accept further distributional changes, probably along the lines of the 1964-67 period, impeding economic recovery. The Government rejected the hypothesis that continuation of restrictive monetary policy could resolve this problem. Its decision reflected the cost push nature which inflation had assumed. Enterprises already were operating at such a low level of capacity that further demand restraints could be expected to increase, rather than decrease, their costs and prices while further depressing employment.

25. In 1968, therefore, the Government adopted its present rapid growth policy. Most of the elements of this policy are designed to stimulate supply. Subject to some limits, such as the proportioning of agricultural credit expansion in conformity with the volume of output, working capital credit to the commodity producing sectors has been allowed to expand as demand dictates. Massive amounts of public sector savings are being transferred to

finance investment in the commodity producing sectors by a variety of official and private financial intermediaries. Tax exemptions and tax credits are used to promote the expansion of manufactured exports. Prolongations of remittance periods for federal sales tax collections have enhanced the working capital of industrial and commercial firms. Public resources are being used to finance the cost of agricultural credit subsidization. The importation of capital and intermediate goods has been stimulated by greatly liberalizing the concession of exemptions from import duties. A number of institutional changes additional to the abovementioned reformation of capital income remittance legislation have effectively facilitated the access of the productive sectors to foreign loan and equity financing.

26. With respect to internal demand, the most important element of the development strategy adopted by the Government in 1968 was movement towards neutralization of 'incomes' policy. Essentially, restraints on wage adjustments in the commodity producing sectors were relaxed so that -- rather than tending to reduce them each year in real terms -- government wage restraints permitted wage rates to increase more than proportionately with changes in the general prices level, thereby giving the worker a measure of the benefits of the increasing productivity associated with economic recovery.

27. With respect to external demand, the flexible exchange rate policy and the Government's incentives for manufactured exports have improved greatly the price competitiveness of non-traditional Brazilian exports -- i.e., those other than coffee, sugar and cacao of which Brazil traditionally has been a major world market supplier -- thereby making possible diversification as well as expansion of exports. In 1972 the Government intensified its efforts aalong these lines by undertaking an "export corridors" program. This program aims to coordinate investment in processing, storage and transport infrastructure so as to reduce the price of bulk exports. Thus coarse grains and soybeans are likely to join iron ore as major bulk constituents of the gamut of Brazil's export products. Export promotion also can be expected to have a secondary effect on internal demand. By widely exposing Brazilian producers to international competition, increasing the scale of their operations and intensifying the benefit of externalities such as transport facilities, internal prices can also be expected to be reduced in relative terms, thereby stimulating internal demand especially where price elasticities, e.g., for manufactures, are high.

28. Most of the policies discussed in this section are described in greater detail below. The discussion here is designed to place government policies in perspective both historically and with regard to each other. Without such an overview, neither the policies themselves nor the achievements and ongoing problems which they manifest can be well understood.

C. Production, Expenditure and the Price Level

29. The behavior of Brazilian economic aggregates mirrors the policy evolution described above. From 1950 until 1962 Brazilian economic growth averaged 7 percent annually. This growth was led by the industrial sector

which grew at an average 9 percent pace, as the internal market for imported industrial goods was rapidly taken advantage of by newly installed import substituting industry. Agricultural growth, on the other hand, averaged a modest 4.7 percent over the 1950-62 period, as the sector kept pace with the growth of internal demand for foodstuffs but failed to expand its exports. Over the period, the share of agriculture in total Brazilian GDP dropped from 29.4 to 22.8 percent, while that of industry increased from 26.4 percent to 33.0 percent. As was to be expected, the supply of imported goods increased only very slightly over the period as the import coefficient dropped from 16.5 to 8.1 percent of GDP. The export coefficient dropped even more sharply, however, from 19.5 to 7.8 percent of GDP, as exports declined in absolute terms. Although the transition from an external resource surplus to an external resource gap which emerged from this variance in the behavior of imports and exports did assist Brazil's domestic savings effort, domestic savings increased from 17.5 to 18.8 percent of GDP. It is hard to reconcile this savings behavior with the acceleration of inflation and increasing public sector deficits which took place during the 1950-62 period unless one accepts the hypothesis that inflation functioned as a sort of compulsory savings mechanism, helping to cover the cost of public infrastructural investment.

Table 1: AVAILABILITY AND USE OF RESOURCES IN SELECTED YEARS

(% Distribution of Product and Expenditure and Annual Average Rates of Change)

	1950	1962	1967	1971	Average Annual % 1950-62	1962-67	1967-71
Gross Domestic Product	100.0	100.0	100.0	100.0	7.0	3.4	9.6
Agriculture	29.4	22.8	23.0	20.2	4.7	3.6	6.1
Industry	26.4	33.0	32.2	34.6	9.0	2.9	11.5
Services	44.2	44.2	44.8	45.2	7.0	3.7	9.8
Resource Gap	-3.0	1.5	0.1	1.9			
Imports	16.5	8.1	7.4	9.3	0.9	1.7	16.1
- Exports	-19.5	-7.8	-7.3	-7.4	-2.3	5.3	10.0
Expenditure of Available Resources	97.0	101.5	100.1	101.9	7.4	3.2	10.0
Consumption	82.5	81.2	84.9	83.4	6.8	4.4	9.1
Investment	14.5	20.3	15.2	18.5	9.9	-2.8	15.1
Financing of Investment	14.5	20.3	15.2	18.5			
Domestic Savings	17.5	18.8	15.1	16.6	7.6	-1.5	12.1
External Savings	-3.0	1.5	0.1	1.9			

Source: Getulio Vargas Foundation.

30. With the near hyperinflation of 1963-64, the external liquidity crisis of the latter year and the retrenchment efforts of 1964-67, the average rate of economic growth dropped to 3.4 percent or to about 0.5 percent on a per capita basis. Industrial production growth during the 1963-67 period averaged only about 2.9 percent annually, or about as much as population growth. Relative to industry, agricultural growth fell very little, averaging 3.6 percent annually during these years. Save for 1963 the external trade balance was positive throughout the 1963-67 period. After having declined by more than 50 percent between 1950 and 1962 to only 8.1 percent GDP in the latter year, the import coefficient declined still further, to 7.4 percent of GDP, over the 1963-67 period. The export coefficient also continued its long-term decline, from 7.8 percent of GDP in 1962 to 7.3 percent in 1967, but at a much decelerated rate, as exports grew in absolute terms by about 5.3 percent annually. With Brazil transferring savings abroad as the result of these positive trade balances and with investment opportunities in any case limited by the retrenchment program and the accumulation of excess capacity in the industrial sector, investment declined in absolute terms throughout 1963-67, reaching the low level of 15.2 percent of GDP in the latter year.

31. The adoption in 1968 of aggressive, development-oriented policies yielded immediate results. GDP grew by 8.4 percent in 1968 and 9.0 percent in 1969 and is estimated to have grown by 9.6 percent in 1970 and 11.3 percent in 1971. Moreover, crop estimates and industrial output indicators (see Table 2) indicate that growth in 1972 may at least equal that of the previous year.

Table 2: INDICATORS OF INDUSTRIAL OUTPUT

(Base 100 = level of output during equivalent period in previous year)

	First Semester	
	1971	1972
Non-metallic Minerals	114.9	115.2
Metallurgy	104.3	115.3
Mechanical	101.9	133.6
Electrical and Communications Equipment	119.8	121.1
Transportation Equipment	119.9	122.1
Paper	105.0	111.6
Rubber	118.1	107.3
Chemicals	122.4	112.7
Soaps, Cosmetics, etc.	111.8	110.9
Plastics	115.0	123.2
Textiles	110.4	108.8
Clothing and Shoes	104.6	96.4
Food Products	105.1	116.9
Beverages	106.6	104.5
Tobacco Products	104.9	105.0
TOTAL	112.2	114.0

Source: IBGE Data Processed by IPEA.

32. As in the 1950's, recent rapid overall growth has been led by industry, whose output has increased at an 11.5 percent pace since 1968. Agricultural sector growth has averaged 6.1 percent annually since that year. At first, industrial growth was facilitated by the excess capacity prevailing at the end of 1967 -- estimated at about 30 percent of total capacity installed. By 1970, however, industrial surveys showed capacity utilization at 85 percent on average so that further expansion of industrial output in 1971 and 1972 has depended on installation of additional production capacity. This has been reflected in the balance of payments. Imports have grown at an annual rate of about 16 percent since 1968, in real terms, and by about 22 percent annually in dollar terms. About half of all import growth during this period is attributable to capital goods. In dollar terms capital goods imports increased at an annual rate of about 29 percent during 1968-71 and were increasing at a 37 percent pace in 1972.

33. At 10 percent annually in real terms, exports also grew rapidly but not rapidly enough to keep pace with imports so that a large external resource gap (the trade deficit was equal to about 1.9 percent of GDP in 1971) has emerged. This has reinforced the domestic savings effort which, nevertheless, has been very substantial; domestic savings growing at an annual pace of 12 percent in real terms since 1968. Moreover, improved debt management, vastly increased support from external lenders and diversification of exports all contribute to far greater ability on the part of Brazil to sustain large external resources gaps than was the case at the time of its 1964 balance of payments crisis. On the other hand, the divergency between import and export growth observed since 1968 eventually will have to be reversed if external liquidity problems are not to recur.

34. On a year-to-year basis, inflation in Brazil averaged about 14 percent during the first half of the 1950's and 22 percent during the second half. By 1962-63 it had accelerated to 75.4 percent and in 1963-64 peaked at 88.9 percent. In fact, during the first quarter of 1964 inflation ran at an annual rate of 144 percent. Deceleration from this peak level was rapid until 1966-67 when prices increased by 28.4 percent. Thereafter, until 1971-72, inflation decelerated slightly although fairly steadily: in 1970-71 it amounted to 20.4 percent. In 1971-72, however, it appears that there will again occur a fairly significant drop in the rate of inflation -- to about 16 percent. The government established a 15 percent, January-December, target for inflation calendar year 1972 and appears to have been successful in achieving it. In 1972 practically no corrective price adjustments remained to be made and, more importantly, very good climatic conditions yielded record levels of output for most crops so that producers price adjustments could be dampened without damage to production incentives.

Table 3 : YEAR-TO-YEAR PRICE LEVEL CHANGES
(Percent)

Year	General Price Index 1/	Wholesale Price Index	Guanabara Cost of Living Index	Construction Cost Index
1959-60	29.2	31.3	29.3	17.4
1960-61	37.0	40.5	33.2	43.6
1961-62	51.6	50.2	51.5	42.3
1962-63	75.4	76.0	70.8	88.3
1963-64	88.9	81.3	91.4	82.3
1964-65	56.8	53.6	65.9	69.7
1965-66	37.9	41.1	41.3	36.6
1966-67	28.4	26.7	30.5	41.4
1967-68	24.2	22.7	22.3	31.9
1968-69	20.8	19.1	22.0	18.0
1969-70	19.8	19.3	22.7	16.7
1970-71	20.4	21.5	20.2	15.1
July 1972-July 1971	16.0	15.9	16.3	18.1

1/ A composite index made up of the Wholesale Price Index (60%) the Guanabara Cost of Living Index (30%), and the Construction Cost Index (10%).

Source: Getulio Vargas Foundation.

D. Income Distribution

35. The acceleration of inflation until 1964 and the stabilization policy of the 1964-67 period probably resulted in substantial changes in the distribution of income over the last decade. Data on the size distribution and absolute value of Brazilian incomes has been compiled by the government from the results of the 1960 and 1970 censuses. These data do, in fact, show a substantial reconcentration of personal income over the intercensal period.

Table 4 : SIZE DISTRIBUTION OF BRAZILIAN INCOME 1960 AND 1970

	%Share of Total Income			Average Monthly Income (1970 Cr $)		
Deciles	1960	1970	%	1960	1970	Average Annual %
1st	1.17	1.11	-5.13	25	32	2.5
2nd	2.32	2.05	-11.64	48	58	1.9
3rd	3.42	2.97	-13.16	71	84	1.7
4th	4.65	3.88	-16.55	96	110	1.4
5th	6.15	4.90	-20.32	127	139	0.9
6th	7.66	5.91	-22.75	158	168	0.6
7th	9.41	7.37	-21.68	195	210	0.7
8th	10.85	9.57	-11.80	225	272	1.9
9th	14.69	14.45	-1.64	305	411	3.1
10th	39.66	47.79	+20.50	815	1,360	5.2
Highest 5%	27.69	34.86	+25.90	1,131	1,984	5.8
Highest 1%	12.11	14.57	+20.32	2,389	4,147	5.7
Lowest 40%	11.57	10.00	-13.57	60	71	1.7
Middle 20%	13.81	10.81	-21.73	142	153	0.7
Highest 40%	74.62	79.19	+6.13	385	563	3.9
TOTAL	100.00	100.00		206	282	3.2

1/ The results of this work are reported by Carlos Geraldo Langoni of the Getulio Vargas Foundation in his study "Distribuicao de Renda e Desenvolvimento Economico de Brazil". As of the writing of this report Langoni's study was still in manuscript.

36. A point-by-point comparison of income distribution which spans a 10-year period is subject to a good deal of bias depending upon the normalcy of either or both of the two years in question. The years 1960 and 1970 were similar years in most respects. The economy grew by 9.7 percent in 1960 and by 9.5 percent in 1970. Agricultural and industrial output were up by 4.9 and 10.6 percent, respectively, in the former year and by 5.6 and 11.1 percent in the latter. The January-December rate of price increase was 26.3 percent in 1960 and 19.8 percent in 1970. There were important dissimilarities, the Northeast, which contains about 30 percent of the agricultural labor force — suffered a serious drought in 1970 that reduced agricultural output in that region by 22 percent while owing to a freeze in the previous year the coffee crop, which absorbs large numbers of seasonal labor, was half its normal level in 1970. On balance, however, 1970 was probably sufficiently similar to 1960 to make this comparison representative of trends over the intercensal period.

37. Other, more basic, differences also may bias the comparison, however. The data on which the calculations are based cover all of the economically active population including those without monetary income. Due to increased monetization of the rural economy and to rural-urban migration, the percentage of non-money income earners in the total economically active population declined from 15 percent in 1960 to 9.5 percent in 1970. This, in turn, would tend to make the growth of money income shown above greater than the growth of total income, particularly in the lower income brackets. On the other hand, the growth in real money income shown by Table 4, at 3.2 percent annually in real terms, does compare closely with the growth in average per capita income, 3.0 percent, implied by the overall economic and demographic growth rates. Moreover, there were increases in non-monetary income associated with sharp expansion of government social services, education and health in particular, which would tend to offset the upward bias imparted by the increasing monetization of earned incomes during the intercensal period.

38. Even with due regard to these data limitations, however, it is clear that the distribution of Brazilian personal income, which was not unusually unequal in 1960 1/ considering the stage of development of the country, deteriorated very sharply during the 1960's. All but those income recipients in the highest decile lost some of the share of total income which they had held in 1960. On the other hand, in no decile was there a decline in absolute money income levels. The lowest rates of absolute gain occuring in the 5th to 6th deciles where they averaged about 0.7 percent annually, and the highest in the 8th to 10th deciles where they averaged 3.4 percent annually. In the lowest four deciles annual money income gains averaged 1.9 percent in real terms.

1/ In 1960 Brazilian income was distributed very similarly to that of the U.S. in 1929. Of course, at about US$200 per family in 1970 dollars, mean Brazilian family income was only a fraction of the mean family income in the U.S. in that year; i.e., about US$800 in 1929 dollars.

Table 5: COMPARISON OF U.S. AND BRAZILIAN INCOME DISTRIBUTION

Quintiles	Brazil (Personal Income) 1960	Brazil (Personal Income) 1970	U.S. (Family Income) 1929	U.S. (Family Income) 1935-36	U.S. (Family Income) 1950
1st	3.5	3.2		4.1	4.8
2nd	8.1	6.9		9.2	10.9
3rd	13.8	10.8	13.8	14.1	16.1
4th	20.2	16.9	19.3	20.9	22.1
5th	54.4	62.2	54.4	51.7	46.1
Total	100.0	100.0	100.0	100.0	100.0
Highest 5%	27.7	34.9	30.0	26.5	21.4

Source: U.S. Bureau of the Census and Carlos Langoni, op. cit.

39. The nature of Brazil's census data permits income levels and income distribution to be related to population characteristics. It has been demonstrated 1/ that in 1960 workers in families with incomes below the poverty line (i.e., the legal minimum wage for the rural Northeast) tended to be concentrated in one region of the country, the Northeast, to be employed in agriculture, to be illiterate, to be female, to be in the lower age brackets, and, significantly, to be non-migrants. The results of the 1970 census show that these relationships continue to exist. The incomes of illiterate persons remained practically constant in absolute terms over the decade and, on average, are below the minimum wage level. The average income of female workers in 1970 was about 60 percent as large as the average income of male workers. Average incomes rise sharply with age until the 40-49 year old bracket is reached. Average income in the primary (i.e., rural) sector are 38 percent as large as the average income in industry and 35 percent as large as the average income in commerce and services. The average money income in the Northeast is 36 percent as large as the average income in the industrialized states of Guanabara, Rio de Janeiro and Sao Paulo.

40. Changes in the characteristics of the labor force contributed greatly to the decline in equality of income distribution experienced over the last decade.

41. Although they constituted only 16 percent of the total labor force in 1970, workers with junior high school education or better increased very rapidly both in absoulute numbers and as a proportion of the labor force over the decade. In contrast, illiterates declined sharply as a percentage of

1/ Professor Albert Fishlow: "Brazilian Size Distribution of Income", American Economic Review, May 1972.

total workers while those in the primary education category increased only slightly more rapidly than the total labor force over the decade. In terms of enrollment expansion, the overall education effort of the 1960's was very impressive but it did concentrate on secondary and higher education. At the same time, the structure of the Brazilian economy, particularly industry and certain services such as banking, was evolving along increasingly technical lines. This placed a premium on technical training, particularly at the senior high school and university level. Computer programmers, for example, are paid at higher rates in Brazil than in the United States. Thus, not only did technically trained people increase very rapidly as a percentage of the labor force, but their salaries also increased much more rapidly than did salaries in other education brackets of the labor force. This evolution of educational attainments undoubtedly was responsible in substantial degree for the reconcentration of income which took place in the 1960's.

42. In view of sex-related variance in salary levels, the substantial increase in female labor force participation which took place over the 1960's probably also contributed to the deterioration in distributional equality. The same probably is true, although in lesser degree, of the intercensal change in the age structure of the labor force, as workers in the 10/24-year-old bracket increased from 27 to 30 percent of the labor force over the decade.

43. The sectoral structure of the labor force also changed markedly during the intercensal period as the result of massive rural-urban migration on the one hand and variance in the growth rates of the agricultural and urban economies on the other. Agricultural workers declined as a share of the total labor force from 46.6 percent in 1960 to 40.1 percent in 1970. Despite the much higher average value of urban than of rural wage levels, this structural change probably contributed to the deterioration of income distribution rather than mitigating it. While industry and certain tertiary subsectors have provided well-remunerated employment, the expansion of such employment has by no means been as rapid as has been urban population growth, reinforced as it has been by migration. Thus, a pool of underemployed has accumulated in the cities, constituting a focus of the poverty problem which perhaps is even more important than the Northeast regional rural poverty problem. It has been said that equal distribution of poverty is of little avail from a welfare point of view and this -- at least in some degree -- characterizes Brazilian agriculture in certain regions of the country, especially the No heast where 50 percent of all rural workers are concentrated.

44. Changing labor force characteristics explain some of the income reconcentration which took place during the 1960's and these changes clearly are related to government economic policy. However, as indicated in paragraph 35, economic policy also relates to the distributional deterioration in other ways, particularly as policy errors led to stop and go development, i.e., to rapidly accelerating inflation followed by the almost inevitable dependence of stabilization efforts on regressive incomes policies.

45. Between 1950 and 1960, the previous intercensal period, Brazil's population increased at an average annual rate of 3.04 percent. During the last intercensal period, 1960-70, population growth averaged 2.89 percent annually. In view of the declining death rate, which averaged about 9.5 per thousand during the 1960's as compared with 13.4 per thousand during the 1950's, fertility rates must have declined significantly over the last two decades.

46. Notwithstanding its magnitude, the income reconcentration which did take place during the 1960's is probably less important than the problem of absolute poverty which today, just as in 1960, faces Brazil. In 1970, fully one-third of all income earners received incomes falling below the average legal minimum wage, about US$25 per month, prevailing for Northeast rural areas over the year. The major welfare challenge which confronts the government is to generate the resources and to devise the methods needed to reduce absolute poverty. In the last analysis this probably amounts to overcoming the dualism of Brazil's economic structure. As this dualism is mitigated and the pools of surplus urban and rural labor absorbed, income distribution probably can be expected to improve. However, it should not be forgotten that the pace at which dualism can be overcome is restrained by Brazil's need to exploit its factor endowment efficiently, by its dependence on the rest of the world for sophisticated equipment, technology and certain primary materials, i.e., by the foreign exchange constraint.

E. Population and Employment

47. To a certain extent, declining fertility must be attributable to the growing urbanization of the population. As compared to the above-mentioned 3.04 percent and 2.09 percent average demographic growth rates, urban population growth averaged 5.4 percent annually during the 1950's and 5.2 percent annually during the 1960's. In 1970 the urbanized population constituted 56.0 percent of the total, compared to 45.1 percent in 1960 and 32.6 percent in 1950. Migration from the rural Northeast to urban areas, both in that region and in the Center-South, has been a principal element of total rural-urban migration over the last two decades. Intraregional rural-urban migration has been important throughout Brazil. Between 1960 and 1970 the five largest cities (Sao Paulo, Rio de Janeiro, Belo Horizonte, Recife and Salvador) grew at a rate of 4.1 percent annually. The 55 medium sized cities (100,000 to one million population in 1970) grew at 5.3 percent annually. The fastest growing urban group, however, was the smaller cities (10,000 to 100,000 population in 1970) which grew at an annual rate in excess of 7 percent over the last decade. Many of these smaller municipal units are included in the greater metropolitan areas of the five largest cities. Thus, the urbanization problems of these urban centers are greater than the above-cited growth statistics would indicate.

Table 6 : REGIONAL POPULATION DISTRIBUTION
(Percent)

	1950	1960	1970
North 1/	3.6	3.7	3.9
Northeast 2/	34.6	31.6	30.3
Southeast 3/	43.4	43.8	42.7
South 4/	15.1	16.7	17.7
West Central 5/	3.4	4.2	5.5
TOTAL	100.0	100.0	100.0

1/ Rondonia, Acre, Amazonas, Roraima, Para, Amapa.
2/ Maranhao, Piaui, Ceara, Rio Grande do Norte, Paraiba, Pernambuco, Alagoas, Sergipe, Bahia.
3/ Minas Gerais, Espirito Santo, Rio de Janeiro, Gauanabara, Sao Paulo.
4/ Parana, Santa Catarina, Rio Grande do Sul.
5/ Mato Grosso, Goias, Brasilia.

48. After declining slightly with the accelerated demographic growth of the 1950's, the proportion of the total population 10 years of age and older increased from 69.9 percent in 1960 to 70.4 percent in 1970. Despite an increase in the female component of the labor force from 17.9 percent in 1960 to 20.8 percent in 1970, the overall labor force participation of this 10 years and older age group declined from 46.5 percent in 1960 to 44.8 percent in 1970, probably largely on account of increased school attendance in the 10/19-year-old age group. Thus, during the last decade Brazil's labor force increased at an average annual rate of 2.7 percent. As of 1970 the annual labor force increment was on the order of 780,000.

Table 7 : SECTORAL DISTRIBUTION OF LABOR FORCE

('000 workers)

	1950		1960		1970		Average Anuual % 1950 1960	1960 1970
	Number	%	Number	%	Number	%		
Labor Force	17,117	100.0	22,651	100.0	29,545	100.0	2.8	2.7
Agriculture	10,254	59.9	12,163	53.7	13,071	44.2	1.7	0.7
Industry	2,347	13.7	2,963	13.1	5,264	17.8	2.4	5.9
(Manufacturing)	(1,282) 1/		(n.a.)		(2,340)	(7.9)		
(Mining & Construction)	(n.a.)		(n.a.)		(2,924)	9.9		
Commerce	959	5.6	1,520	6.7	2,624	8.9	4.7	5.6
Services	1,673	9.8	2,732	12.1	3,261	11.0	5.0	1.8
Transport and Communications	697	4.1	1,089	4.8	1,259	4.3	4.5	1.5
Social Activities	434	2.5	700	3.1	1,415	4.8	4.9	7.3
Public Administration	513	3.0	662	2.9	1,155	3.9	2.6	5.7
Other	241	1.4	822	3.6	1,496	5.1	13.1	6.2

1/ 1949.
Source: IBGE.

49. In Brazil unemployment is far less important phenomenon than is underemployment whether the latter is measured in terms of hours worked per week, remuneration or productivity. The reason for this has to do with the dualism of the economy and the fact that unskilled workers will accept employment in marginal occupations such as street corner peddling rather than declare themselves to be unemployed.

50. The National Household Sample Survey (PNAD) conducted during the first quarter of 1970 shows a national overt unemployment rate of only 2.4 percent, down from 3.8 percent in 1968. It also shows that 21 percent of the total employed worked less than 40 hours per week, down from about 26 percent in 1968. Of those workers employed less than full time as of the first quarter 1970, about one-fourth declared themselves to be seeking full-time work. In terms of monetary remuneration, the 1970 census shows that at least 60 percent of total agricultural workers and at least 20 percent of total urban workers were earning less than the lowest legal minimum wage (about US$25/month, on average) prevailing in Brazil in that year.

Table 8: DISTRIBUTION OF EMPLOYED BY HOURS WORKED PER WEEK

	1968		1970	
	'000 Workers	% of Total	'000 Workers	% of Total
Total Workers	28,222	100.0	29,570 1/	100.0
Temporarily Absent	1,779	6.3	1,560	5.3
to 14 years	427	1.5	224	0.7
15 to 34 hours	3,967	14.1	3,688	12.5
35 to 39 hours	1,045	3.7	762	2.6
40 to 49 hours	13,091	46.4	15,783	53.4
50 or more hours	7,884	27.9	7,553	25.5
Unknown	29	0.1	-	-
Part-time Workers Desiring Full-time Work (% of Total Workers)	1,144	4.1	1,575	5.3

1/ The IBGE sample survey shows a total labor force of 30,295,000 workers as of the first quarter 1970 of which 29,570,000 were employed. The labor force total estimated by the survey is 2.5 percent greater than that shown by the census. The results of the sample survey are well within a reasonable confidence interval vis-a-vis the census not only as to the overall labor force and employment but also as to the sectoral distribution of the labor force.

Source: IBGE.

51. As indicated above, census-based data provide no information on changes in employment and income trends within the long intercensal period. This is especially important for Brazil during the 1960's when three widely divergent sets of economic policies prevailed; the inflationary policies terminating early in 1964; the stabilization policies of 1964-67 and the rapid growth policies from 1968 onward. Unfortunately, there are no year-to-year data showing the employment effects of these policies. Data sources which became available after the middle of the decade do indicate, however, that productive employment opportunities have increased more rapidly than the labor force since the undertaking of a rapid overall development strategy in 1968. Brazilian legislation requires that at least two-thirds of the employees of firms located in urban centers be Brazilian nationals. In accordance with this "law of two-thirds" Brazilian firms report to the Labor Ministry as of April 25 each year their employment levels, wage rates, etc. Since 1967 this information has been tabulated and published by the Labor Ministry. The information can be regarded to cover the larger firms in the urban sector; in 1970 it showed some 5.7 million workers employed as compared to the 16.3 million urban work force shown by the national census. The law of two-thirds data register an annual average increase of almost 700,000 in employment by the firms covered from April 1968 to April 1971 (see Table 9.5, Statistical Appendix). This suggests that since 1968 creation of employment opportunities by organized urban firms alone has been almost sufficient to absorb annual labor force increments. This would be consistent with the recent decline in overt unemployment and in part-time work as a percent of the total indicated by the National Household Sample Survey.

52. Manufacturing industry is one of the highest wage sectors. In 1970, at about Cr$100 per month, the monthly average salary prevailing in this sector was about equal to mean income in the 9th decile of the overall size distribution of Brazilian income (see Table 4). However, in that year this sector employed only about 7.9 percent of the total labor force (see Table 7). Clearly, absorption of labor by this sector is crucial to the improvement of personal income levels.

53. Over the 20 year period ending in 1969, for which end point and some interim data are available, manufacturing employment increased 42 percent as fast as did the real value of manufacturing value added (see Tables 8.3 and 8.12, Statistical Appendix). From 1968 through 1971, over which period industrial value-added appears to have increased by 55 percent, industrial employment apparently has increased by only about 14 percent. This much lower employment elasticity, 25 percent, of the recent rapid manufacturing growth period probably is attributable at least in part to the utilization of excess capacity which characterized 1968, 1969 and 1970. The slow pace of labor absorption by Brazil's manufacturing industry has been attributed to distortions in the relative prices of capital and labor above. 1/

1/ See Edmar Lisboa Bacha, Milton da Mata and Rui Lyrio Modenesi "Encargos Trabalhistas e Absorcao de Mao de Obra", IPEA/INPES, Rio de Janeiro, 1972.

This report finds no correlation between changes in the relative prices of capital and labor and the overall cost of job creation. 1/ Moreover, there is no indication that job creation costs have been significantly higher in the recent Northeast industrialization scheme (the Art. 34/18 scheme) than elsewhere in Brazil, despite the massive capital subsidization associated with that scheme (see para. 66/Volume IV). This probably is the result of very limited choice as to technology. It may also reflect deficiencies in the educational system and resulting short supply of skilled labor. While there may have been little choice as to technology in specific production lines, distortions in factor prices may have stimulated undue specialization types of activity which, by their nature, are necessarily capital intensive.

F. Wages

The Minimum Wage

54. Since 1940 Brazil has had a system of legal minimum wages. The legislation presently governing their application (Decree-Law 5452 of May 1, 1943) states that the minimum wage shall ensure to the worker command over the minimum necessities of nutrition, clothing and housing. After three adjustments between 1940 and November 1943, the nominal value of the minimum wage was left constant until December 1951. In Guanabara the cost of living increased by about 120 percent over this period so that the average annual purchasing power of the minimum wage declined by more than 50 percent. However, in December 1951 the nominal value of the minimum wage was tripled. Nominal minimum wage rates were adjusted again in 1954, 1956 and 1959. From the latter year until 1972 the nominal value of the minimum wage has been adjusted each year.

55. With the tripling of the nominal minimum wage in 1951, it became a standard basic wage in the industrial sector rather than a measure of the subsistence minimum. In Guanabara, average wage rates in industry were equal to 2.08 times the minimum wage in 1946, 2.87 times the minimum wage in 1949 and 3.35 times the minimum wage in 1951. From the time of the minimum wage tripling in November of that year until the outset of the stabilization program in 1964, average industrial wage rates in Guanabara ranged tightly around a mean 1.15 relationship with the minimum wage. 2/ From 1952, the first year of this new role for the minimum wage, its average annual level in real terms increased in irregular fashion to a maximum level 30 percent greater than the 1952 value in 1957. Subsequent to 1957 it tended to decrease. By 1963 it has returned almost to its 1952 value.

1/ See methodological notes to foreign exchange requirement projections, Table 3.13 Statistical Appendix.

2/ Source for data on Guanabara industrial wages is Edmar Lisboa Bacha, op. cit., p. 77.

Table 9 : AVERAGE REAL AND NOMINAL VALUES OF THE GUANABARA (BASIC LEGAL) MINIMUM WAGE

	Nominal Value (Cruzeiros)	Index of Real Value 1/ 1965 = 100
1944	0.38	86
1945-47	0.38	63
1948-50	0.38	47
1951-53	0.95	82
1952	1.20	107
1954-56	2.37	120
1957	3.80	138
1957-59	3.86	117
1960-62	10.30	118
1963	21.00	108
1964	40.25	108
1965	62.00	100
1966	81.00	93
1967	101.50	89
1968	125.50	89
1969	147.20	87
1970	176.80	85
1971	212.80	85
1972	254.40	87 (Estimated)

1/ Guanabara cost of living index used as a deflator.

Source: Anuario Estatistico IBGE and Conjuntura Economica, Fundacao Getulio Vargas.

56. The four nominal minimum wage adjustments conceded between December 1959 and February 1964 averaged about 60 percent on an annual basis the February 1964 adjustment was 100 percent. Although they contributed greatly to the inflationary spiral, these adjustments did not prove to keep pace with accelerating inflation, which ran at an annual rate of 144 percent during the first quarter of 1964. Thus, the fact that the minimum wage lost ground in real terms early in the 1960's was contrary to the intent of the Government.

57. By 1963-64 the annual minimum wage adjustment had become one of the most important factors determining expectations as to inflation in Brazil. The new Government which took office in April, 1964, believed that in order to stabilize the economy it had to dampen the contribution of minimum and other wage adjustments to inflationary expectations. Also, the new Government believed it could reduce the rate of inflation more rapidly than proved to be possible. Thus, the nominal wage adjustments authorized during the 1964-67 period led to a more precipitous decline of real minimum wage rates

than the Government had anticipated. In annual average terms, the purchasing power of the minimum wage declined to 92.5 percent of its 1964 level in 1965 and to 82 percent of this level in 1967.

58. With the shift of its incomes' policies in 1968, the Government began conceding minimum wage adjustments almost proportionate with prevailing rates of inflation. Thus, the fast pace of real minimum wage rate reduction of the immediately preceding three years was slowed to a crawl. Moreover, in 1972 the Government effected a minimum wage adjustment which, at 19 percent, was well in excess of the 15 percent rate to which it appears to have reduced inflation during the year.

59. Interestingly, the real value of the minimum wage in 1972 is approximately equal to its value in 1944. The policy evolution of the last 30 years may have restored to the minimum wage its original significance as a subsistence standard. In any event, the minimum wage clearly has lost the significance it had during the 1950's as a standard for urban wage rates.

Wage Guidelines

60. The role of the minimum wage as an industrial wage standard began to be dissipated in 1963-64. This was true not only in terms of the magnitude of industrial wage adjustments but also of their frequency. Industrial workers in individual firms were receiving adjustments as frequently as quarterly during this period. Thus, the new Government adopted, late in 1965, a distinct policy for adjustment of the wages of unionized workers, most of whom are employed in the industrial sector. It published each month guidelines for these adjustments. At first, enforcement of these guidelines depended exclusively on the labor courts which were to apply them in adjudicating wage disputes. With the adoption late in 1967 of direct price controls on manufacturing firms, however, a new enforcement method was acquired. CIP -- (the Price Control Council) would not recognize that portion of any wage adjustment in excess of these guidelines in authorizing price adjustments which otherwise were to be proportionate to increases in production costs. Like the minimum wage adjustments, the guidelines for adjustment of unionized worker wages published by the government through 1967 implied substantial annual declines in real wage levels.

Table 10: PRIVATE SECTOR WAGE GUIDELINES

(Annual percent change)

	Average Wage Guideline	Average Annual Difference In General Price Level
1966	28.8	37.9
1967	21.3	28.4
1968	23.7	24.2
1969	24.1	20.8
1970	23.9	19.8
1971	22.3	19.7
1972	22.3	16.1 (mid-year to mid-year)

Source: Table 9.4, Statistical Appendix.

61. The shift of government incomes' policy which took place in 1968 is more clearly manifested by its private sector wage guidelines since that year than by minimum wage adjustments. During 1969-71 the magnitude of annual changes in wage adjustment guidelines has been sufficient to increase real wage rates by about 3 percent annually. Early in 1972 the spread between these guidelines and inflation was widened substantially.

Actual Wage Rate Changes in Manufacturing

62. During the first 4 years of the post-1967 rapid economic growth period real wage rates in industry appear to have increased at a 5 percent annual pace. During the first seven months of 1972 they were 7 percent greater in real terms than during the same months in 1971. This pace of increase has exceeded not only the minimum wage adjustments but also the Government's private sector wage guidelines. Taking into account the treatment of wage adjustments by the CIP price control machinery, the bargaining power of scarce skilled and semi-skilled industrial labor must have forced industry to finance a portion of such adjustments since 1968 out of unit profits. Despite rapid real wage gains, however, the slow pace of labor absorption by industry may have reduced the share of wages in industrial value-added since 1967. Any reduction of unit profit margins necessitated by rising wage costs and CIP price controls appears to have been more than offset by increasing industrial productivity.

Table 11: WAGE SHARE OF GROSS MANUFACTURING VALUE ADDED

(Monetary values in millions 1971 Cr$, unless otherwise indicated) 1/

	1949	1958	1966	1967	1968	1969	1970	1971
Manufacturing Value Added	13,118	25,420	47,883	45,599	51,908	56,026	62,861	69,807
Average Annual Wage Rate (Cr$)	2,917	4,329	5,345	5,314	5,564	6,030	6,338	6,503
Employment ('000 Workers)	1,282	1,719	2,140	2,158	2,305	2,325	2,337	2,444
Total Wages	3,740	7,444	11,438	11,465	12,827	14,022	14,811	15,892
Wage Share	28.5	29.3	23.9	25.5	24.7	25.0	23.6	20.8

1/ Current values deflated by National Accounts deflator through 1969 and by General Price Index (Disponibilidade Interna) thereafter. Through 1969 data are taken from "Producao Industrial (IBGE)"; thereafter data are taken from monthly "Industrias de Transformacao (IBGE)" series as processed by IPEA for the Boletim Economico. Since only output and not value-added data are available for 1970-71 the numbers for these years assume that the 1969 output/value-added relationship remains constant. Wage rate data are especially precarious because they simply are the product of the total manufacturing wage bill divided by the number of workers; i.e., they do not take into account the number of hours worked per week.

Labor Share of Value Added

63. Table 11 suggests that labor is not maintaining its share of the rapid national income growth which has taken place since 1967. The evidence on this issue, however, is not complete. Manufacturing employment occupies only about 8 percent of the labor force. Even in manufacturing, recent increases in non-wage social security type labor costs have offset at least some of the decline in the wage share of value-added. As indicated (para. 51), "Law of Two-Thirds" data show rapid increases in urban employment other than manufacturing. The same source suggests that from April 1967 to April 1970 wage rates in these other urban sectors increased by about 5 percent annually in real terms (see Table 9.5, Statistical Appendix). In the coffee sector, daily wage rates for agricultural workers also are gaining rapidly in real

terms (see para. 153, Volume VI). In sum, the evidence is conflicting and incomplete. Nevertheless, it is not unlikely that some additional reconcentration of income will take place as Brazil's surplus labor economy grows rapidly.

64. The most important implication of this discussion of the evolution in Brazilian wage policy has to do with limitations on the effectiveness of such policy in determining real wage levels. In the late 1950's and early 1960's when policy was designed to increase real wage rates it, in fact, contributed to their decline. Since 1968, market conditions have yielded more rapid real wage rate increases in manufacturing than were envisaged by wage policy. During the 1964-67 stabilization period wage policy goals and actual wage behavior do appear to have been consistent with each other but this reflects not only the inclusion of wage policy in a generally regressive incomes' policy but also the economic crisis which inaugurated this period and the depressed economic conditions which prevailed throughout it. In the last analysis, market forces appear to have been the long-term determinants of real Brazilian wage levels. The challenge for the Government appears to be: (a) to forestall price distortions impeding development along lines taking full advantage of the labor supply, and (b) to improve the quality of the labor supply, especially through education. It would appear that only a general change in ownership of assets could bring about a quick and large scale improvement of the distribution of income, but, such a change in asset ownership is not the policy of the Government.

G. Social Security

65. Since 1945, the incidence of social security type taxes on monthly Brazilian payrolls has risen from 9.9 to 43.9 percent.

Table 12: SOCIAL SECURITY TYPE PAYROLL TAXES

(% incidence on annual payrolls)

	1949	1958	1966	1967	1968	1969	1970	1971
Social Security (INPS)	4.0	8.0	8.0	8.0	9.0	8.0	8.0	8.0
SESI-SESC	2.0	2.0	2.0	1.5	1.5	1.5	1.5	1.5
SENAI-SENAC	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
INCRA-FUNRURAL	-	0.3	0.4	0.4	0.4	0.4	0.4	2.6
Brazilian Assistance Legion	0.5	0.5	0.5	-	-	-	-	-
13th Month Wage	-	-	8.3	8.3	8.3	8.3	8.3	8.3
INPS on 13th Wage	-	-	0.6	0.6	0.6	0.6	0.6	0.6
Education - Wage	-	-	1.4	1.4	1.4	1.4	1.4	1.4
Family Bonus	-	-	4.3	4.3	4.3	4.3	4.3	4.3
Housing Bank	-	-	1.2	-	-	-	-	-
Unemployment Fund	-	-	1.0	-	-	-	-	-
Accident Insurance	1.9	2.5	3.0	3.0	3.0	3.0	3.2	3.2
Indemnification Fund	1.6	3.5	6.0	9.0	7.6	6.9	6.0	5.0
Tenure Guarantee Fund	-	-	-	8.0	8.0	8.0	8.0	8.0
TOTAL	12.0	18.4	37.7	45.5	44.1	43.4	42.7	43.9

Source: Edmar Bacha, op. cit., p. 68.

The beneficiaries of the various taxes are explained below.

66. The Social Security Institute (INPS) presently is funded by an 8 percent payroll tax. The social security system was reorganized in 1966 when a number of different, industry-oriented social security agencies were unified. The INPS provides medical insurance and services as well as pension and survivors' benefits. In 1970 active workers covered by the INPS, retired workers and the dependents of these workers totalled about 40 percent of Brazil's population. Annual INPS receipts recently have been the equivalent of about 31 percent of central government tax revenues or of about 4 percent of GNP.

67. SESI-SESC, which presently receive the proceeds of a 1.5 percent payroll tax, are the social welfare agencies of the National Confederations of Industry and Commerce, respectively. SENAI-SENAC are, respectively, the National Industrial and Commercial Apprenticeship Services. These

agencies benefit from a one percent payroll tax. They maintain well-equipped vocational training facilities which accept the personnel of contributing firms upon request.

68. The National Colonization and Agrarian Reform Institute (INCRA) received the proceeds of an 0.4 percent payroll tax until 1971. In that year the tax was increased to 2.6 percent of which 2.4 points are destined for the new Social Security Fund for Agricultural Workers (FUNRURAL). This urban-rural social security resource transfer is not the only resource available to FUNRURAL. It is also supported by taxes borne by rural employers and workers at rates ranging from 4 to 8 percent times the local minimum wage for each worker employed and by central government budgetary contributions. The administration of these taxes in the rural sector has been diffcult.

69. The 13th Month Wage is a compulsory bonus equal to one month's wage. Formerly, it was paid in December, exerting considerable pressure on the banking system as employers borrowed to meet this obligation. Now it is payable in two installments.

70. The Education Wage was created in October 1969 in line with the constitutional requirement that enterprises with more than 100 employees provide primary education to the children of these employees. This 1.4 percent payroll tax is paid in lieu of providing such facilities directly. Half of the proceeds of this tax are retained by the state of origin while the remainder accrues to the federal Ministry of Education which uses these resources to fund, inter alia, the national school lunch and text book programs as well as equipment for vocational schools. The rate of the education wage is to be increased to 2.8 percent.

71. Legislation enacted in 1963 requires the enterprise to pay to each worker a Family Bonus equal in amount to 5 percent of the local minimum wage for each child of that worker under 14 years of age. This has been administered by the INPS which collects from the employer an amount equal to 4.3 percent times the local minimum wage for each employee, married or single, and then discharges for the employer the family bonus obligation. If INPS disbursements on this account are less than the amount collected from the employer, the difference is deducted from the other obligations of the employer to the INPS. If the reverse is true the employer makes an appropriate additional payment to the INPS.

72. Accident Insurance premium accrues to the INPS. Private accident insurance coverage was prohibited by law in 1967. Premium rates are variable, depending upon the risk of the occupation involved. The 3.2 percent rate shown in Table 12 represents the average incidence of such premiums.

73. The Tenure Guarantee Fund was created in September, 1966 as an alternative to the system of indemnification for termination of employment. The 8 percent Tenure Guarantee Fund payroll tax accrues to accounts owned by the workers and held by the National Housing Bank (BNH). Workers may withdraw these deposits if they become unemployed, upon their retirement or death or in order to finance education expenses or the purchase of a home. Meanwhile, the deposits are subject to monetary correction and bear interest

at the rate of 3 percent. The "float" formed by these funds has been used by the BNH to finance a massive housing program which has been one of the principal sources of employment creation in urban areas.

74. The system of labor Indemnification obliged the employer to pay the workers discharged without cause after one year's service an amount equal to one month's pay for each year's work. After 10 years' service this amount was doubled. Moreover, for workers with 10 years' tenure the definition of just cause was much more stringent so that to establish cause in the labor courts was practically impossible. This system gave rise to the custom of discharging workers systematically before 10 years' tenure was accumulated. At the time of the creation of the alternative Tenure Guarantee System, workers were given the option of remaining under the older system. The fact that many of them chose to do so accounts for the ongoing indemnification outlays which are estimated to have been equivalent to 5 percent of payrolls in 1971.

75. If the impact on labor costs of these social security costs is taken into account, it can be seen that over the long term (1949-71) the labor share of manufacturing value added has remained almost constant despite the decline in the wage share. It also appears that the large increase in non-wage labor costs associated with the creation, late in 1966, of the Tenure Guarantee Fund could have had some relationship to the particularly low income elasticity of manufacturing employment demand associated with the rapid increase in manufacturing output of the 1968-71 period. It might, for example, have figured in the choice between overtime work and additional hiring in connection with the utilization of excess production capacity.

76. Historically, these increases in non-wage labor costs associated with payroll taxes may be one reason for the slow growth of employment relative to manufacturing value added. This is probably not so much a question of the choice of factor mix in specific production processes as of the evolution of the overall structure of manufacturing industry along capital-intensive lines.

77. In any case, it can be asserted that non-wage labor costs which do not redound to the benefit of the worker might well be eliminated. Although workers do receive substantial benefit from the programs funded by the payroll taxes, such benefit undoubtedly is of far lower magnitude than would be that of receiving these taxes as wages. Interestingly, in view of the fact that manufacturing workers are located in the upper two or three deciles of the distribution of Brazilian income, some of these taxes probably have a progressive income redistribution effect. This is almost certainly true of the construction employment created by the Tenure Guarantee Fund-financed housing program. On the other hand, the housing program, education, and apprenticeship training could be funded in ways which would be neutral as far as labor absorption is concerned. For example, the burden of funding these programs could be shifted from payroll to sales taxes by eliminating the former and increasing the rate of the latter, leaving sales prices constant.

Table 13: LABOR SHARE OF GROSS MANUFACTURING VALUE ADDED

(Values in millions 1971 Crs, unless otherwise specified)

	Annual Values								Average Annual %		
	1949	1958	1966	1967	1968	1969	1970	1971	1949-71	1958-71	1966-71
Manufacturing Value Added	13,118	25,420	47,883	45,599	51,908	56,026	62,861	69,807	7.9	8.8	7.8
Annual Wage Rate (Cr$)	2,917	4,329	5,345	5,314	5,564	6,030	6,338	6,503	3.7	3.2	4.0
Payroll Taxes/Workers (Cr$)	350	770	1,572	1,976	1,993	2,118	2,180	2,313	9.0	8.8	8.0
Labor Cost Per Worker 1/	3,267	5,099	6,917	7,290	7,571	8,148	8,518	8,816	4.6	4.3	5.0
Employment ('000 Workers)	1,282	1,719	2,140	2,158	2,305	2,325	2,337	2,444	3.0	2.7	2.7
Total Labor Costs	4,189	8,768	14,801	15,729	17,418	18,944	19,906	21,549	7.7	7.1	7.8
Labor Costs/Value Added	31.9	34.5	30.9	35.0	33.6	33.8	31.7	30.9			

1/ This is the total of the non-wage costs specified in Table 13, excluding the 13th month wage which is part of the annual salary rates shown.

Source: IBGE, IPEA and Edmar Bacha, op.cit.

78. Another alternative would be to replace the payroll taxes with higher corporate income taxes. The basic corporate income tax rate is 30 percent. This is reduced at present rates of inflation to about 25 percent by virtue of the fact that tax liabilities are discharged over a 12-month period beginning in February of the year after that in which the income is earned. Investment tax credits through 1970 permitted this liability to be reduced by 50 percent, i.e., leaving the effective tax rate at 12-13 percent. Modification of the tax credit mechanism in 1971 in connection with the North and Northeast Regional Development programs (see para. 100) halved these tax credits, raising the effective corporate income tax rate to approximately 19 percent. Argument against a shift from payroll to higher corporate income taxes would assert that such a shift could dampen entrepreneurial incentives. However, balance sheet data on Brazil's 500 largest firms which has been processed by the Getulio Vargas Foundation annually since 1967 shows after-tax profits increasing as a percentage of enterprise capital from 12.6 percent in 1967 to 16.5 percent in 1970 (Table 8.18, Statistical Appendix). On the other hand, sources of loan finance for industrial investment in Brazil still are very limited so that retained earnings have financed a large portion of such investment. A recent study shows that for all those industrial investment projects reviewed by Brazil's Industrial Development Council and/or supported by Brazil's official development financing agencies since 1966 about 25 percent of total financing has come from retained earnings. 1/ Thus, although some increase in the corporate income tax may well be warranted any adjustment of this tax should be carefully studied from the point of view of its impact on industrial investment.

79. A fourth alternative, i.e., neither payroll, nor sales, nor income taxation, was employed by the Government in 1971 in funding a new social security mechanism, the Social Integration Program. This fourth alternative takes advantage of the fact that the existing tax mechanism was generating resources in excess of public sector requirements. Thus, legislation was promulgated requiring firms to deposit in worker-owned accounts in the Federal Savings Bank gradually increasing percentages of (a) income tax liability and (b) gross sales. The portion of income tax liability to be so deposited rose from 2 percent in 1971, to 3 percent in 1972 and to 5 percent in 1973 and thereafter. Deposits as a share of gross sales are to increase from 0.15 percent of the latter in 1971 to 0.25 percent in 1972, to 0.40 percent in 1973 and to 0.50 percent in 1974 and thereafter. For its part, the Government (a) eschewed any increase in the rate of the corporate income tax; and (b) undertook to reduce the incidence of both federal and state sales taxes by about 3 percent (not percentage points) a year over the 1971-74 period. Thus, the Government transferred some of public sector revenues to the workers by reducing taxes and requiring firms to deposit roughly equivalent amounts in worker-owned deposits known collectively as the Social Integration Fund.

1/ Wilson Suzigan, Jose Eduardo de Carvalho Pereira, Ruy Alfonso Guimaraes de Almeida: "Financiamento de Projetos Industriais do Brasil"; IPEA, Rio de Janeiro, 1972.

80. Contributions to the Tenure Guarantee Fund from the manufacturing sector presently amount to about 0.9 percent of its gross output and those to the new Social Integration Fund should amount to 0.6 to 0.7 percent of output by 1974. While the former are incident upon payrolls and thus distort labor costs, the latter would appear to be completely neutral in impact. In terms of direct benefit to the worker, the two funds are very similar. Deposits in the Social Integration Fund are subject to monetary correction and bear minimum interest of 3 percent. Profits from the management of the Fund by the Federal Savings Bank in excess of this interest value also accrue to the workers. However, withdrawals of principal values are restricted much in the same way as are those from the Tenure Guarantee Fund (i.e., death, retirement, unemployment, home purchase, education, etc.). On the other hand, workers are free to withdraw interest earnings and distributed profits from the Social Integration Fund without restriction.

81. The "float" from the Social Integration Fund is being used to finance industrial investment in ways which are helping to develop Brazil's capital market. The underwriting of new share issues by industrial firms is one of the most important of these. Eventually, Social Integration Fund resources also are expected to be used to finance the underwriting of debenture issues, thereby facilitating the emergence of this type of financing which so far does not exist in Brazil. In the short run some fund resources are being used to stabilize the Brazilian stock market which, by virtue of its nascency, is subject to very unsettling fluctuations.

H. Education

82. As compared to increases in school age population averaging about 3 percent annually, Brazilian primary school (grades 1-4), lower secondary school (grades 5-8), upper secondary school (grades 9-11) and university enrollments grew at average annual rates of about 6, 13, 14 and 16 percent, respectively during the 1960's. Although comparison of enrollments with respective population age groups is misleading because of overage students, particularly at the primary level, it is nevertheless significant that, over the decade, these relationships increased from 73 to 96 percent at the primary level, 11 to 26 percent at the lower secondary level, 4 to 10 percent at the upper secondary level and 1.5 to 5 percent at the university level. As measured by the 1960 and 1970 censuses, literacy in the population 10 years of age or older increased from 60.6 to 68.0 percent while the average number of years of schooling achieved by labor force participants increased from 2.2 to 2.9 years over the decade. Moreover, in line with comparative rates of enrollment increase, the improvement in the educational attainments of the labor force was concentrated in the secondary and university education strata. Public expenditure on education (at the federal, state and municipal levels) increased from about 2.1 percent of GDP in 1960 to about 3.3 percent of GDP in 1970.

Table 14: CHANGES IN ENROLLMENT LEVELS

	Enrollments ('000)			% Age Group		% Population	
			Average Annual				
	1960	1970	%	1960	1970	1960	1970
Primary	7,458.0	12,812.0	5.6	73.4	96.3	10.6	13.7
Lower Secondary	910.3	3,080.2	13.0	10.6	26.4	1.3	3.3
Upper Secondary	267.7	1,003.4	14.1	3.7	9.8	0.4	1.1
University	93.2	425.5	16.4	1.5	5.1	0.13	0.46
TOTAL	8,729.2	17,321.1	7.1			12.4	18.6

Source: Ministry of Education: Education and Culture Statistical Service.

83. Despite the very substantial improvements which have been made, the general level of educational attainment of Brazil's population and labor force remains quite low. The 1970 census shows that of Brazil's economically active population only 2.5 percent had university level training, only 5.2 percent upper secondary school training and only 8.0 percent lower secondary school training. Some 29.8 percent of the labor force was illiterate. Moreover, there was tremendous sectoral variation in labor force education attainments. Secondary and university trained workers constituted only 1.1 percent of the agricultural labor force of which 53 percent was illiterate.

Table 15: EDUCATIONAL ATTAINMENTS OF THE LABOR FORCE, 1970

	Agriculture		Urban Sector	
Education	'000 Persons	% Distribution	'000 Persons	% Distribution
Illiterate	5,571.2	53.3	2,186.9	14.0
Primary	4,760.6	45.6	9,444.9	60.4
Lower Secondary	83.1	0.8	2,012.0	12.9
Upper Secondary	19.6	0.2	1,346.4	8.6
University	10.6	0.1	644.4	4.1
TOTAL	10,445.1		15,634.5	

Source: IBGE.

84. Volume V of this report deals in great detail with education in Northeast Brazil where the educational attainments of the labor force are about half of the national averages shown above in Table 15. (See Table 1.9 of the Statistical Appendix for a regional breakdown of the educational attainments of the population 10 years of age and older.) In dealing with Northeast education, Volume V also covers the dimensions, organization, financing and problems of the national education system. The principal problems

which presently afflict this system -- particularly as regards qualitative improvement of the labor force -- are described in the following paragraphs.

85. One of the principal problems of Brazil's education system is the inefficiency of the primary cycle caused by repeaters and dropouts. Only about 36 percent of first grade matriculants succeed in completing the 4-year primary cycle taking, on average, 8 years to do so. As many as half of first grade enrollments consist of first grade repeaters. Inefficiency and the low primary school retention rate are attributable to:

(i) a testing structure which sets unrealistic goals in view of the relatively small number of annual class hours (in the state of Guanabara, for example, public primary schools run on a schedule of as many as three shifts daily), the cultural background of most of the students, particularly in rural areas, and the low level of qualification and pay of primary schools teachers;

(ii) the lack of classroom facilities and text books, especially in rural areas; and,

(iii) late first grade matriculation and early entrance into the labor force on the part of many primary students. Brazil's 1964 school census showed that although the primary cycle is designed to matriculate first graders at seven years of age, some 40 percent of the first graders enrolled during that year were 10 years of age or older.

86. Retention in both parts of the secondary cycle is much higher than in the primary cycle. About half of first year matriculants complete the first four-year part of the cycle (ginasio) while about one-third of these matriculants go on to complete the second three-year part of the cycle (colegio). However, only about half of the primary cycle graduates continue on to secondary school. This low primary to secondary cycle progression rate reflects:

(i) the paucity of publicly-financed secondary school facilities. Almost half of existing Brazilian secondary school facilities are privately operated as compared with about 10 percent at the primary level; and,

(ii) stiff examination requirements for admittance into the secondary school curriculum.

87. In addition to these constraints, Brazilian secondary level education is designed primarily to prepare people for higher education rather than to equip them with the practical skills which would be much more meaningful for working class children. About 75 percent of secondary enrollments typically have been in schools offering academic curricula, another 20 percent in commercial and normal schools and the remaining 5 percent in industrial and agricultural training schools. In addition to restricting social mobility, this system is out of phase with Brazil's labor force requirements.

For example, foreman-type jobs in Brazil's industrial sector tend to be filled by university-graduated engineers because of the lack of machinists' training facilities. Needed improvement of Brazil's agricultural extension service is impeded by the lack of facilities for practical training in agronomics.

88. This excessively academic orientation may partially explain the fact that, despite shortages of skilled and semi-skilled labor, calculations of rates of return to investment in various levels of education, although high, do not show an upward progression.

Table 16: ECONOMIC RATES OF RETURN ON EDUCATION INVESTMENT IN BRAZIL[1/]

	Belo Horizonte (C.M.Castro 1967-68)	Sao Paulo (S. Levy, 1968)	Brazil (C. Langoni, 1969)
A. Complete Primary Versus Illiterate	38	22	32
B. Complete Ginasio Versus Complete Primary	22	20	19
C. Complete Colegio Versus Complete Ginasio	37 (Technical School)	16	21
D. University Versus Complete Colegio	n.a.	5	12

1/ Costs include current and prorated capital expenditures per student. Benefits are average salary differentials, e.g., the average salary earned by "colegio" graduates minus the average salary earned by "ginasio" graduates in the case of item C.

Source: Summary by Claudio M. Castro of studies done by himself, by Samuel Levy and by Carlos Langoni in article entitled: Investimento em Educacao do Brasil, Comparacao de Tres Estudos; Pesquisa e Planejamento, Vol. 1, No. 1, Rio de Janeiro, June 1971.

89. The Brazilian Government is well aware of the deficiencies of the educational system and, in 1971, it enacted legislation (Law 5692) reforming the structure of the system and adopted a 1972-74 public sector investment budget which nearly will double public expenditures on education, bringing them to about 4.5 percent of GDP by the end of the period. The structural reform moves grades 5 through 8 back from the secondary and into the primary

cycle so that students will have access to an initial eight years of schooling without having to overcome the obstacle of the old ginasio entrance examination. Curricula and promotion procedures also are modified with emphasis on the incorporation of vocational training in both the primary and secondary cycles. Here the objective is to equip school drop-outs even at the primary level with skills enabling them to take up productive employment. Another very important part of the overall program, one that got underway in 1970, is the nationwide adult literacy campaign which aims to reduce illiteracy in the 15 to 35 year old age group from 8 million to 2 million persons by 1974. Educational TV, adult vocational training, secondary and university level teacher qualification programs, and improvement of the quality of higher education, particularly in the sciences and at the post-graduate level, also are emphasized. The program envisages secondary 1/ and university enrollments increasing at annual rates of about 19 percent and primary enrollments 1/ at about 8 percent.

90. The implementation of this crucially important education reform will depend primarily,on state and municipal governments for administration and funding. Although the Federal Government provides financial support through tax sharing arrangements which bear an inverse relationship to state per capita income it still is likely that implementation will be less complete in the poorer states. It is largely on this account that this report's analyses of Northeast regional developments suggests the federal tax sharing with that region may need to be increased.

91. The greater concentration on vocational training as opposed to lower-level primary education and the fact that in any case the reform is likely to be better implemented in the city than in the countryside may widen the rural-urban income gap. It would make little sense, however, to oppose the reform on these grounds.

1/ New definitions.

III. DEVELOPMENT STRATEGY

A. Macroeconomic Goals

92. The Government has promulgated a 1972-74 public investment program which supports its Plan for National Economic and Social Development for these years. The Plan aims to sustain an 8 to 10 percent rate of economic growth at least until 1974. The sectoral composition of this growth is summarized in Table 17.

Table 17: 1972-74 GROWTH AND EMPLOYMENT TARGETS

(percentages)

	Historical Output Growth Rates		Output	Growth Targets Employment
	1970-71	1967-71	1972-74	
Agriculture	4.7	6.1	7 to 8	1.2
Industry	7.9	11.5		4.1
Manufacturing			10 to 12	3.5
Mining			10 to 12	
Construction			8 to 9	4.6
Services	6.7	9.8		4.7
Transport and Commerce			9 to 10	
Electricity			11 to 12	
Other			7 to 9	
TOTAL	6.6	9.6	8 to 10	3.1

Source: Ministry of Planning and Economic Coordination.

93. The interruption of the mid-1960's notwithstanding, Brazil's growth over the last two decades has been rapid. Besides the institutional reforms and relative price adjustments which have been made in recent years, one new feature of the new growth strategy is its international orientation. Although it has not dismantled its high tariff structure, the Government has been very liberal with tariff exemptions in an effort to ensure that access to capital equipment and intermediate goods not produced in Brazil is unobstructed. This, of course, calls for very good performance not only in expanding but also in diversifying exports. The Government very energetically is pursuing export expansion and diversification in the industrial and agricultural sectors.

94. The Government does not, however, plan to rely entirely on domestic savings to finance the investment needed to support rapid growth. Even with

good export performance, it anticipates a large external resource gap and the transfer of a substantial volume of savings from abroad. The fact that foreign investment now is welcome in Brazil supports this aspect of the Government's strategy but this is not a new phenomenon; foreign investment played a crucial role in the rapid development of the 1950's. The Government does prefer that such investment take joint venture form and that it not displace Brazilian investment or enter into already competitive subsectors. Finally, the Government has recently made steady progress in formulating investment projects suitable for external development agency and supplier finance. This effort to mobilize medium- and long-term loan capital is part of an effective overall system of debt management the installation of which was completed by the Government in 1971.

95. The public sector can be expected to continue to generate most of Brazil's domestic savings. Rather than reduce the tax burden, the Government's policy has been to direct public savings to the commodity producing sectors through official financial intermediaries. In this way it can better control the structural implications of investment. Simultaneously, however, the Government is working hard to mobilize private savings, essentially by promoting the development of the capital market.

96. The Government's employment creation target, at 3.1 percent per year, is about 15 percent higher than the anticipated pace of labor force growth. Moreover, it implies a shift into urban activities of more than half of new labor force entrants originating in rural areas. The Government has specific plans, discussed below, to make those remaining on the farm more productive. It counts on rapid growth of industry and services and on the education program, described in the preceding chapter, to reduce urban underemployment. The Government's incomes' policies are not entirely neutral because they do rely very heavily on the profit motive to break production bottlenecks. On the other hand, the Government is channelling massive amounts of public savings resources to regional development programs in the most poverty afflicted areas of the country.

97. The following sections of this chapter discuss in detail regional, agricultural and industrial development.

B. The Northeast Regional Development Effort [1/]

98. The Northeast, with about 28 million people, is the poorest region in Brazil. Its per capita GDP, US$180, is half of the national average. Moreover, income inequality is such that the per capita income of the poorest 50 percent of Northeast population is about US$50. Social indicators, such as high illiteracy, malnutrition and inadequate health facilities also

---

1/ This section is a verbatim reiteration of the Summary and Conclusions to Volume IV, "The Northeast Development Effort".

manifest the region's underdevelopment. Regional income disparity has been a function of more than just poor soils and recurrent droughts. An archaic land tenure system, unfavorable interregional terms of trade and neglect by public policy, until as recently as the late 1950's, played major roles in hampering Northeast growth.

99. Until the 1950's federal programs to aid the Northeast were largely concentrated on construction of hydraulic works in an attempt to temper the ravages of drought on agricultural production. Traditionally, a severe drought has been required to spur the authorities into action. After the 1958 drought, a Northeast regional development agency (SUDENE) was created and the emphasis of federal programs was shifted to more comprehensive regional development efforts. The thrust of the Government action in the Northeast during the 1960's was on heavy investment in infrastructure, mainly transport and power, and on industrialization, which was stimulated through an ingenious investment tax incentive scheme (known as the Art. 34/18 program). By most standards, Northeast economic growth in the last decade was impressive. Much of the credit for the rapid growth of the Northeast during the 1960's is attributable to the considerable volume of federal resources transferred to the region. Federal policies have not narrowed the regional gap, but have prevented the gap from widening. On the other hand, those Northeasterners living at the subsistence level were not directly affected in significant degree by the Government's regional development efforts, although their situation was alleviated to some extent by inter-regional migration. Government policies in the 1960's had little impact on Northeast poverty, mainly because agriculture was relatively neglected. The main bottlenecks to agricultural development (highly skewed pattern of land tenure, lack of credit, extension and research facilities, marketing deficiencies) persisted despite some improvement of the programs for dealing with them. In addition, the industrialization program, which attained significant proportions only in the late 1960's, was not able to generate sufficient employment opportunity to keep pace with the rapid growth of the urban labor force. Thus, a pool of underemployed labor accumulated in the urban sector.

100. As in 1958, the 1970 drought jolted the Government into a major reformulation of its policy towards the Northeast. The vulnerability of the Northeast economy was emphasized by the drought. The limited role of industry in absorbing surplus labor was recognized. It was decided that for the time being the main solution to agricultural underemployment and poverty must lie within agriculture itself. Two new dimensions were added to Government policy: labor mobility and agriculture. With the creation of the National Integration Program (PIN) in 1970 and the Program of North/Northeast Land Redistribution and Agricultural Development (PROTERRA) in 1971, 50 percent of the 34/18 income tax credit resources, corresponding to about US$280 million annually, were preempted and channelled to finance agricultural development and related infrastructure in the Northeast and Amazon regions through 1976. Another principal component of the new regional development strategy is a program to reorganize the inefficient Northeast sugar industry. Together, these new programs constitute a major effort to ease the agricultural underemployment in the Northeast, by removing workers from this area to new agricultural frontiers and, more importantly, by increasing the productivity of workers remaining in the area.

101. Clearly, the Government has taken a political decision to change its regional policies so as to bring them to bear more directly on human welfare. Unfortunately, the institutional and informational base needed to make such a change effective is still far from complete.

102. In addition to the construction of various irrigation works in the Northeast, the PIN is financing the construction of two Amazon highways and the colonization of areas adjacent to these roads. The Government balanced the national security and political objectives of the Amazon roads against the Northeast underemployment problem. Had the second objective been preponderant, the nature and the phasing of the program probably would have been different. More time for planning and surveying, construction periods spaced out, priority given to the more easily accessible pre-Amazonian region in Maranhao and Para. A 1,000 km penetration road such as the Maraba-Altamira first section of the Transamazonica Highway can be economically justified as a component of a colonization scheme. A 5,000 km construction program in areas where the ecological and agricultural environment is unknown, is more difficult to defend on economic grounds. Moreover, highway investment does not seem to be a necessary condition for prospecting and exploiting more remote mineral resources in the Amazon Region.

103. Preliminary studies of the construction of a third major Amazon highway have been undertaken. This would be a peripheral route, tracing Brazil's 4,400 km northern border. Evidence of the economic justification of this massive additional road project has not yet been developed.

104. Government colonization schemes along the new Amazon highways are proceeding at a much slower pace than originally forecasted, as a settlement policy still is in the process of definition. Regarding the planning basis for such projects, Brazilian authorities gradually are shifting from an ad hoc system which simply allocated fixed areas for settlement to a system which has as its basic objective the achievement of resettled family income targets. A number of different methods of promoting settlement are being used. Over the past few years, there has been a great deal of spontaneous settlement along the Belem-Brasilia highway, which was largely unsuccessful as settlers acquired no legal tenure and were not assisted either financially or technically by the Government. Along the new Amazon highways, the Government has introduced limits on spontaneous settlement, although it will be difficult to enforce them fully once road access has been provided. The Government also has started to establish some controlled settlement in that area. Besides being very expensive (over US$10,000 per settler), controlled settlement to date has absorbed an exhorbitant amount of limited administrative talent. Fortunately, the Government has undertaken to experiment with an alternative controlled settlement model similar to the IBRD-financed Alto Turi project in Maranhao, which represents a practical, low-cost approach to the problem, somewhere between the intensively administered schemes and undirected spontaneous settlement.

105. Another issue in colonization policy is the relative desirability of the various frontier regions and their settlement over time. The Central-West and the frontier Northeast states still appear to offer the best coloniza-

tion alternative at present, in view of their proximity to markets and the quality of their soils.

106. Regardless of what mix of colonization techniques eventually emerges and where they are applied, the greatest need appears to be for the Government to prepare itself now for making adequate titling arrangements and for orienting settlers in terms of the cropping pattern and production techniques.

107. With regard to Northeast irrigation, the third component of the PIN, it appears that the Government rightly wants to proceed cautiously, by implementing only a few clearly viable projects in the next few years. Although a large number of irrigation projects have been tentatively identified, the viability of many of them is doubtful owing to various factors, e.g., overestimation of markets for high unit value products.

108. The aim of PROTERRA, promulgated in mid-1971, is to facilitate the access of Northeast peasants to the land, to create better conditions of rural employment and to stimulate the growth of agro-industry in the North and the Northeast. Not until late 1972 were the implementing regulations issued. The delay in the definition of the PROTERRA illustrates that technical and administrative limitations are serious constraints to implementing any North/Northeast agricultural development strategy. It also shows the difficulty of striking a balance between market-oriented policy instruments -- such as credit and price incentives -- and programs directed to structural factors such as unsatisfactory land tenure, inadequate research and extension, poor rural education, etc.

109. Nevertheless, PROTERRA may bring about the first significant progress in agrarian reform to be made in the Northeast. In certain designated areas of that region, underexploited lands in properties of 1,000 hectares or greater will be redistributed to an estimated 15,000 families in 1973. Owners who cooperate with PROTERRA by presenting acceptable programs for splitting up their estates will be exempt from expropriation and receive payment for their land in cash. The program thus seeks to place as much of the administrative burden of land reform as possible on the landowners, limiting the role played by INCRA, the Government agrarian reform agency. Whether this will prove to be commensurate with the social goals of the program remains to be seen, however. Although the limited technical capacity of INCRA is recognized, more Government participation in the program may be needed to avoid biases in the redistribution of land as well as to assure ready availability of extension services, inputs and credit to the beneficiaries. Finally, if the target is to reach the maximum number of families within the existing financial constraints, compensation procedures should perhaps be modified to lower capital costs to the Government.

110. In terms of financial resources, the agricultural credit component of PROTERRA is more important than its land reform component. Involved are a series of credit lines for fertilizers, improved seeds, farm mechanization, farm improvement and agro-industries. These credit lines bear nominal interest rates varying from zero (for fertilizers) to 17 percent (for agro-industries).

111. PROTERRA plans for massive injections of subsidized credit assume that increased use of modern inputs is economic and that distortions in relative prices are impeding their application. This is true to a certain extent, as is demonstrated by the high cost of fertilizer. On the other hand, the use of subsidized credit as a rural development technique ignores two problems. The first is the problem of equity; existing credit mechanisms simply are not capable of extending credit, subsidized or not, to the majority of small farmers. Further, negative real interest rates create excess credit demand and in the rationing process funds are mainly absorbed by those who are first into the credit market. The second problem applies over the entire range of potential subsidized credit beneficiaries. Present knowledge of optimum agriculture production functions in the Northeast is far from sufficient to justify a massive shift in production techniques. Moreover, the Government is not yet institutionally organized to conduct the volume of research needed in the Northeast. Fortunately, appropriate institutional changes at the national level are underway.

112. The sugar industry reorganization program centers on the provision of subsidized credit for producers who agree to merge and reequip sugar mills and/or to integrate and relocate cane production and milling. An important stimulus to achieve economies of scale through this program is constituted by the fact that the present 20 percent difference between Government-fixed producer prices for the Northeast and the Center-South (equivalent to the interregional production cost differential) will be gradually eliminated by 1979. Although improvement of the efficiency of Northeast sugar production is a sinequanon for the development of the areas occupied by this industry, the reorganization program does need to take more expeditiously into account the problem of the cane field and mill workers who will be displaced by it. At least some of the areas which have been designated for land reform are in the sugar zone. However, efforts to insure that displaced sugar workers will be the beneficiaries of the reform and/or to design production and marketing systems that would permit the redistributed land to be employed in the production of other crops are lagging. This situation is attributable to a lack of coordination between Brazil's sugar institute (IAA) which is administering the sugar reorganization program, and INCRA, the agrarian reform agency.

113. The recent reorientation of the Government's regional development strategy is certainly a step in the right direction. For the first time, Government programs are tackling on an appropriate scale the problems of Northeast agriculture. It should be emphasized, however, that the efficiency of regional development resource allocation is impeded by two factors. The first is the presence of numerous loosely coordinated agents participating in the regional development process. The second is the shortage of technical talent in agencies dealing with Northeast agriculture. Fortunately, the Government is aware of the problem and is working toward its solution. Finally, there is a danger that the desire to obtain quick production results may jeopardize adequate focus on structural problems. If the ultimate goal of PROTERRA is, in fact, one of alleviating poverty its emphasis should be on the rural poor.

114. Northeast development agencies, which are engaged in indicative planning for Northeast development in the 1970's, consider a 10 percent regional growth target feasible. This reflects both the concern of the Government with narrowing the interregional per capita income gap and its ambitious national growth targets. With an expected population growth of 2.4 percent, 10 percent regional growth would double the per capita income of the Northeasterners by 1980. Expansion of Northeast industrial and agricultural output will have to be accelerated if this regional growth path is to be achieved.

115. Detailed analysis of the demand for and supply of Northeast agricultural products suggests that the targeted 6.5 percent regional agricultural growth rate is feasible, provided that adequate Government policies are implemented. In addition to improving the efficiency of existing programs along the lines suggested in the preceding paragraphs, the government might consider the desirability of promoting interregional production shifts. Labor-intensive crops such as sugar and cotton, which are grown both in the Northeast and in the Center-South, will become increasingly inappropriate in the Center-South where they are already encountering stiff competition from other products (soybean, corn, pasture). In the Northeast, alternative agricultural opportunities are less attractive and labor is abundant.

116. Despite the shift in Government policies, manufacturing industry is likely to remain the leading sector for regional growth. Notwithstanding its lack of carefully formulated priorities and the factor bias implied by its capital subsidization, the 34/18 industrialization process does not appear to have brought about serious resource misallocation. Having concentrated on resource based activities, the industrialization program successfully boardened the region's economic base and exposed it generally to a modernization process. Newly installed subsidiaries of Southern firms have brought with them an inflow of experienced senior managerial staff that is already providing a stimulus to local entrepreneurship. Lack of local entrepreneurial capacity is the main cause of the failures which have occurred. As a result of the great improvement in the federal highway system which accompanied the industrialization program, transport costs no longer constitute a barrier to efficient development of Northeast industry. The new firms have close linkages to the region, which is providing most of their inputs as well as their principal markets. Thus, fears that newly installed industries would be burdened by heavy transport costs would appear to have been unwarranted. Despite SUDENE's efforts to disperse industrialization throughout the Northeast, most new firms are concentrated in three main growth poles so that economies of scale and external economies are being exploited.

117. However, major bottlenecks must be eliminated before the growth of Northeast industry becomes self-sustaining. Interindustry relations in the Northeast still are primitive due to the lack of subcontractors, component suppliers, maintenance units, etc. Regional development agencies should promote the installations of small and medium industries which could exploit the linkages of the industrialization program. Another bottleneck facing Northeast industry is the shortage of skilled blue collar workers as well as of middle level manpower. Hopefully, regional education reform will respond to this need.

118. Looking toward the future, projects already approved by SUDENE but not yet in operation will account for most of the expected 15 percent increase in regional manufacturing output throughout the mid-1970's. For new industrial projects, SUDENE should increasingly emphasize exploitation of regional natural resources (mineral and agricultural) as well as the use of cheap labor since it is in this way that the region's comparative advantage can be exploited. This does not mean that Northeast industry can be expected to contribute significantly to the regional pool of underemployed urban labor. Physical resource based industries necessarily tend to be capital-intensive. In any case, if Northeast industry is to compete in the rest of Brazil as well as abroad, the choice of techniques is, in practice, very narrow. Labor absorption by industry can be improved economically, however, by directing new investment to labor-intensive industry branches such as garment production, appliance assembly, etc. SUDENE should also give more emphasis to production for export abroad. The recent decision of the Federal Government allowing duty-free transfer to Brazil of entire used industrial establishments on conditions that at least one-third of their output be exported, should have a positive impact on Northeast exports.

119. Rapid growth, however, is not sufficient of itself to insure visible improvement of the quality of life for the Northeast poor. Another necessary condition is that the policy mix emphasize that aim. The present regional development policy does contain ingredients -- land reform and colonization -- oriented to a rapid increase in the incomes of the poorest sections of the population. Migration to the Center-South can be expected to continue to alleviate the Northeast surplus labor problem. Another area which is increasingly receiving Government attention is education. Quantitatively, the education and training system of the Northeast has responded impressively to the growing national commitment to education. Despite these gains, however, there remain significant interregional and intraregional disparities regarding the distribution of educational opportunities and attainments as well as the efficiency and quality of the education system. The same is true of public health. Only about 30 and 7 percent of Northeast urban dwellers are served by adequate water and sewerage facilities, respectively, as compared to 65 and 26 percent in the Center-South. It is difficult to see how local governments in the region can generate the resources needed to overcome these disparities, even gradually.

120. The massive problems of adequate rates of job creation and expansion of social infrastructure could be simplified in the future if fertility and demographic growth rates were reduced. There are indications that regional rural-urban migration is reducing fertility rates but mortality rates also appear to be declining in the Northeast. Brazil's Family Welfare Society (BENFAM), an affiliate of the International Planned Parenthood Federation, is active in the Northeast as it is elsewhere in Brazil. Recent relaxation of official attitudes contrary to family planning portend an increase in organized family planning activity in the future. At least during the decade of the 1970's, however, it is unlikely that regional fertility decline will be of sufficient magnitude to, say, ease pressure on the schools.

121. In order to improve the living conditions of the poorest sections of the Northeast society as well as to achieve the concomitant goal of regional growth, it is necessary to increase the productivity of the existing capital stock and to stimulate a rapid growth of investment while improving the administrative structures. A 10 percent growth path is likely to require a 14 percent annual increase in regional investment. Moreover, an increasing share of the total investment burden is likely to have to be borne by the public sector. Government investment plans and an independent estimate of needs for education and feeder roads indicate a 22 percent rate of public sector investment growth over the next 5 years.

122. The adequacy of resources to meet such public investment requirements is largely predicated on the flow of federal funds to the Northeast in the form of direct federal investment and federal transfers to the states. Fortunately, the strong fiscal situation which is expected to prevail at the national level for at least the next few years bodes well for the timely channelling of needed federal resources to the Northeast. However, the regional need for transferred resources will be greater than the amounts presently budgeted by the federal government in the event that the local governments in that region do not succeed in improving the elasticity of their revenue structure. The size of this gap between needs and already budgeted allocation may be as much as (1971) Cr$600 million annually over the 1972-76 period.

123. Unfortunately, it is precisely the social investment programs of the local governments which are most likely to be jeopardized by failure to fill this gap.

124. The Northeast states, whose tax powers virtually are limited to the imposition of a value-added tax (ICM), are urging the Federal Government to make substantial changes in ICM administration which would raise their share of overall ICM collections. Presently, the incidence of the ICM is heavier in the state of origin of the product than in the state of destination. The Northeast states are advocating that the ICM revenues generated by interstate trade be equally split out between the exporting state and importing state. The adoption of such an arrangement would certainly increase the revenues of all Northeast states, although in a very uneven way. But since the bulk of Brazil's interstate trade takes place in the more affluent Center-South, ICM splitting might well prove to be a very inefficient way of responding to the resource needs of the Northeast. Both from an administrative and political standpoint, it may be desirable to increase instead federal revenue-sharing with the Northeast by increasing the magnitude of the so-called Special Fund which presently allocates 2 percent of federal income and sales tax revenues to the Northeast. 1/

1/ The Federal Government maintains two revenue-sharing funds, the Participation Fund containing 10 percent of federal income and sales tax receipts and the above-mentioned Special Fund which is destined almost exclusively for the Northeast. Participation Fund distribution also is welfare oriented, the Northeast receiving about 40 percent of these resources.

125. Any additional transfer of resources (whether federal or state) to the Northeast will be either directly or indirectly at the expense of the other states. The advocates of the more affluent states, such as Sao Paulo, argue that a reduction of resource availability for investment in the Center-South would impair the rate of growth of the overall Brazilian economy and, in turn, absorption by the Center-South of Northeast surplus labor as well as Center-South resource transfers to the Northeast. Their argument is based on the hypothesis that the productivity of capital is higher in the Center-South than in the Northeast, a hypothesis which has yet to be demonstrated. But even assuming that a productivity differential exists, it must be recalled that the additional interregional transfer suggested here is marginal for the Center-South economy, but substantial for the Northeast. Moreover, the purpose of the transfer is to decrease the disparity between the availability of public services provided by the Center-South states and those available in the Northeast states. Finally, the additional resource transfer is advocated within the context of adequate tax effort on the part of the Northeast states as well as increased Northeast absorptive capacity.

126. Expansion of private sector investment will also be essential to achieving the rapid growth targeted for the Northeast economy even though the pace of its expansion need not equal that of public investment. The amount of resources available for Northeast private investment in the next few years mainly depends on the flow of the 34/18 funds and the expansion of credit by the regional banking system. As a result of the allocation of 50 percent of 34/18 funds for the PIN and PROTERRA program, there will be a reduction in the availability of such resources for private investment. The impact of this shrinking could fall primarily on industrial investment which received the lion's share of 34/18 resources in the past. Among possible offsetting measures are: a shift of all SUDENE agricultural projects out of the 34/18 scheme and into the PROTERRA scheme; and, more importantly, a reduction in the maximum contribution of 34/18 funds to industrial project cost. A potential absorber of scarce 34/18 funds is the Bahia petrochemical complex (see para. 196). Given the national relevance of the project and its low labor absorption, a smaller participation of 34/18 funds than presently envisaged, associated with a larger inflow of external resources, may be justified.

127. Another question which arises as a result of the shift in regional policy is the prospective amount of resources available to the Bank of the Northeast (BNB). Besides federal government contributions to the bank's capital, a principal source of the BNB's loanable funds has been the deposits of the 34/18 investment funds of the private sector. These resources are held in blocked BNB accounts pending SUDENE approval of an investment project to which they may be applied. As a consequence of the diversion of 30 percent of 34/18 investment funds for PIN, coupled with more rapid approval by SUDENE and implementation by investors of 34/18 projects, the 34/18 deposits are projected to decline very rapidly in the next few years. The 34/18 funds (20 percent) diverted to PROTERRA will continue to be deposited in the BNB which will transfer them to the agricultural sector. However, the "float" emerging from this operation is likely to be of relatively short term. Thus, the BNB will need to find additional resources in order to expand industrial

credit. To fulfill its mandate as a development bank, the BNB also needs to be more aggressive in its industrial lending and more oriented towards the small farmer in its agricultural lending.

128. Overall, the outlook for the volume of resources which can be expected to be mobilized outside the region to support Northeast investment is good. This conclusion is based on prospects for continuation of rapid national economic growth and of good federal fiscal management. These are the two main factors affecting the flow of private and public savings to the Northeast. However, gaps in the financing of the projected regional investment program could arise unless presently budgeted federal transfers are increased and means are found to permit the BNB to expand its lending beyond presently envisaged levels.

129. External assistance so far has played a minor role in the development of the Northeast. It is unlikely that the role of external assistance could be expanded substantially in quantitative terms. In any case, as indicated, federal government funds will cover the bulk of required public investment financing. Moreover, individual projects suitable for external financing not only are sparse but also tend to be small and to have only minor foreign exchange components. This is not to say that, quantitatively, external assistance cannot be significant. Some projects, such as the Bahia petrochemical pole, are substantial and, in a marginal sense, all investment resources are important. Rather these comments are designed to emphasize the fact that external assistance can have much greater qualitative than quantitative impact. Northeast regional development is impeded by the lack of technical information on resource potential and development methodology. It is in the field of technical assistance that foreign aid can play a major role for the development of the region. There is a clear need to increase the Northeast's absorptive capacity by improving the operating efficiency of economic and social institutions and by identifying, through research, the region's comparative advantage in agriculture as well as in industry.

130. Project lending has to be preceded by substantial assistance in project preparation, in many cases with a long lead time. Considerable technical assistance in the organization and management of project institutions in sectors such as agriculture and education will be needed. These problems and the relatively small size of individual projects should not deter official lending agencies from seeking to direct their lending to the following three priority areas: welfare projects (nutrition, low-cost housing, sewerage); production projects (agricultural credit, agro-industry, feeder roads, tourism, industry); and long-term projects (agricultural research, education). An appropriate mix of lending in these three areas is essential for the success of assistance in the Northeast.

C. Agriculture in the Center-South

131. Volume VI of this report analyzes in detail the performance, problems and prospects of agriculture in the Center-South of Brazil. The following paragraphs summarize the results of this analysis.

132. Agriculture in the Center-South is poised for a shift in technology which the Government aims to facilitate by providing subsidized credit for the acquisition of technical inputs and tractors, by launching a multi-disciplinary research effort focusing initially on coarse grains, rice, beans, soya and forages, by developing the supply of improved seed and by increasing the staff and improving the facilities of the extension service (ABCAR).

133. Until 1971 the bulk of agricultural output increase was attributable to expansion of cultivated area. Vast amounts of uncultivated area remain, predominantly in the central western states of Goias and Mato Grosso but also, to a significant degree, in the eastern and southern states of Minas Gerais, Parana, Rio Grande do Sul and, to a lesser extent, Sao Paulo. Much of this uncultivated land, about 1.3 million km^2, is covered by the acid laterite soil known as "cerrado". With liming and some fertilization this land would support coarse grain and oilseed production in place of and/or together with the intermittent and extensive cattle ranching presently taking place upon it. Thus, in addition to its efforts to improve technology in the more accessible and already cultivated regions of the Center-South, the Government is mounting a program of land use research in the "cerrados" regions.

Fertilizer

134. From 1965 until 1971 the use of fertilizer by Brazilian agriculture increased at an annual rate of 35 percent, from 281,000 tons of nutrients in the former year to 1,150,000 in the latter. However, fertilizer consumption is mainly for wheat and coffee, and even in the case of coffee only about 30 percent of Brazil's trees are fertilized. Fertilizer also is applied in limited degree on sugar cane, cotton, corn and rice. About 60 percent of total fertilizer consumption takes place in the Central-East, 30 percent in the South and only 10 percent in the Northeast. In 1971 domestic fertilizer producers supplied about 27 percent of all of the nitrogen nutrient (N) consumed in Brazil, 53 percent of the phosphate nutrient (P_2O_5) but none of the potassium nutrient (K_2O). Domestic production, especially of N, is inefficient and its protection has resulted in a level of domestic fertilizer prices which constitutes an impediment to technology improvement.

135. Nominal levels of protection and inland transport costs raise the price of fertilizer in Sao Paulo to a level of 40 percent above the Santos CIF import price. This nominal protection, in combination with a system of tax-free fertilizer import quotas, affords to the Sao Paulo fertilizer producer very high levels of effective protection; by controlling total fertilizer supply, mixing duty-free imported nutrients with their own production and selling at a price 40 percent above the CIF Santos import price, the Sao Paulo fertilizer manufacturers can produce at a cost of 94 percent in excess of world prices plus CIF in the case of N and 50 percent in the case of P_2O_5 (see paras. 120-123, Volume VI). Moreover, Brazilian fertilizer producers and mixers have developed an oligopolistic distribution system which raises farmgate fertilizer prices in the interior far above the level which even this degree of protection plus transport costs would warrant.

136. PETROQUISA, the petrochemical subsidiary of PETROBRAS, Brazil's state petroleum enterprise, plans to install a 1,000 TPD ammonia/urea plant in Bahia, utilizing local natural gas. A significant apatite deposit located on the border between the states of Sao Paulo and Minas Gerais will be exploited by private P_2O_5 producers. These and other investments will greatly increase domestic production of N and P_2O_5. Nevertheless, prospects for domestic consumption increase are such that total supply will continue to depend heavily on imports (see paras. 38 to 50, Volume VII). Fortunately, increases in production scale and expected improvement in the operating efficiency of the existing principal, but small scale, N producer (ULTRAFERTIL), should permit a decline in the level of protection. In reducing protection, however, the Government should bear in mind that the duty free import/local production ratio of the fertilizer import quota system is inversely related to the level of effective protection afforded the producer. Any increase of this ratio would be more likely to benefit the producer than the farmer.

Liming

137. Liming is required to make fertilizer use fully effective not only in the "cerrados" region but throughout much of the Center-South. For large areas of Rio Grande do Sul, for example, it has been estimated that application of three to five tons of lime per hectare every three years or so may be required to support effective fertilizer use. In 1972, however, the price of agricultural lime to Rio Grande farmers was a prohibitive US$13 per ton. This reflects the lack of an organized agricultural lime producing and distributing industry, in turn, a function of a lack of awareness on the part of farmers of the benefits of liming. Limestone deposits apparently are plentiful and well dispersed in the Center-South. In fact, many limestone deposits which have been passed over by Brazil's booming construction materials industry because of other minerals content (manganese, copper, sulfur) would be especially suitable for agricultural purposes since these other minerals are micro-nutrients needed by Brazilian soils. Needed is government effort to promote the organization of an agricultural lime industry and to teach farmers about liming through extension work.

Extension

138. Only in the state of Sao Paulo, which operates an independent extension service, are extension facilities reasonably adequate. The national extension agency (ABCAR), a federation of state organizations, is linked to Brazil's system of rural credit which allocates two percentage points of the interest rate on agricultural credit to ABCAR when such credit is accompanied by technical assistance. The limited dimension of ABCAR's operations is best exemplified by the fact that in 1970 only 5.7 percent of all agricultural credit operations outside Sao Paulo were accompanied by technical assistance (see Table 25, Volume VI). In that year ABCAR's staff totalled 2,896 persons. ABCAR's field agronomists (university training) and technicians (secondary level training) received salaries averaging US$265 and US$147 a month, respectively. Although they fell in the 10th decile of Brazil's size distribution of income in that year, these salaries were not

sufficient to retain the better ABCAR technicians who tended to move into private agronomical consulting firms where the availability of their services was limited to the wealthier farmers.

139. The 1972-74 Development Program provides for a 65 percent increase in ABCAR staff. This should alleviate the dearth of extension facilities, even if it does not totally satisfy the need for them. Some increase in ABCAR salaries may be required. More important, however, is the Government's effort to increase training in agronomy at both the university and secondary level. Presently, the limited supply of technicians appears to distort the price of their services relative to other prices in agriculture, thereby imposing a very severe financial constraint on ABCAR. The same also applies to the willingness of the technician to live in rural areas, particularly the remoter ones. Until technical training facilities, at least at the secondary level, are better dispersed not even high salaries are likely to produce adequate extension services in the remoter areas.

Research

140. The multidisciplinary approach to agricultural research provided for by Brazil's 1972-74 Development Plan is encouraging. Until now Brazilian agricultural research has been discipline rather than commodity oriented with the result that practical prescriptions -- ones taking into account markets, prices and profits as well as technical relationships -- have not been forthcoming. Along with the new multidisciplinary approach, Brazil's program of agricultural research is to undergo a profound institutional reform. Its planned transformation from an 850-man department of the federal Ministry of Agriculture into an independent mixed enterprise not only will allow it to pay more attractive professional salaries but also should make it more responsive to the needs of commercial agriculture. Brazil's agricultural research program already has the support of an AID loan but additional external financial and technical support is needed and appears to be welcome. In addition to reorientation, reorganization and more financing, the research program needs to be better linked to extension. Presently, the program counts on only 23 ABCAR technicians for the much more important job of translating research findings into meaningful extension recommendations.

Mechanization

141. On the technical side, the problems of Center-South agriculture are concentrated in the supply and cost of nutrients and in the lack of research and extension input. Agricultural machinery does not appear to constitute a problem. Domestic tractor production supplied the entire domestic market in 1970 and is expanding rapidly. Its efficiency was improved nearly to world standards in 1970 when the Government reduced sharply the extent to which tractor components were required to be of Brazilian origin. In the Center-South the density of tractor use almost doubled over the past decade, from one tractor per 30.6 farms in 1960 to one per 17.6 farms in 1970. In the latter year density of tractor use in the Northeast was less than one-twentieth of that in the Center-South, i.e., one tractor per 366.8 farms (see Table 7.10, Statistical Appendix).

Farm Size

142. The Center-South is not without minifundia. These are concentrated in the states of Minas Gerais, Espirito Santo (one of Brazil's poorest), Rio de Janeiro and Rio Grande do Sul. In fact many of the farmers being resettled in the "agro-vilas" along the Transamazon Road originate in Rio Grande do Sul and INCRA has declared certain parts of that state and of the state of Rio de Janeiro as agrarian reform areas. Nevertheless, in contrast to the Northeast, the pattern of farm size is not a major problem in the Center-South. Moreover, many of the Center-South farms in the under 10 hectare category produce truck crops for affluent urban markets so that their size is not necessarily an indication of farm family poverty.

Table 18: FARM SIZE DISTRIBUTION IN BRAZIL, 1967

Area	% of Farm Number			% of Farm Area		
(hectares)	Center-South/1	Northeast	Brazil	Center-South/1	Northeast	Brazil
Under 10	33.9	44.8	36.0	2.9	2.6	1.8
10-100	56.5	42.6	51.2	30.2	20.9	18.3
100-1000	9.0	11.7	11.2	40.3	43.8	34.0
Over 1000	0.6	0.9	1.2	26.6	32.5	46.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

/1 Excludes the states of Mato Grosso and Goias which, by virtue of extensive ranching on unimproved soils would distort the distribution.

Rural Labor

143. There is some evidence of a potential shortage of rural wage labor in the Center-South. In addition to complaints about this shortage by farm owners, data on daily rural wage rates in the state of Sao Paulo show a steady upward trend in real terms since the mid-1960's. Moreover, in the coffee areas, which demand large quantities of seasonal rural labor, daily wage rates have increased quite rapidly in real terms since 1968.

Table 19: REAL RURAL WAGE RATE TRENDS /1

(Index - 1968 = 100)

	State of Sao Paulo		Coffee Areas /4			
	Rural Wage /2	Rural Wage /3 divided by Legal Minimum Wage	Sao Paulo	Parana	Minas Gerais	Espirito Santo
1965	107.7	.837	n.a.	n.a.	n.a.	n.a.
1966	100.1	.821	n.a.	n.a.	n.a.	n.a.
1967	98.5	.827	n.a.	n.a.	n.a.	n.a.
1968	100.0	.844	100.0	100.0	100.0	100.0
1969	96.2	.836	96.7	111.3	103.4	136.1
1970	102.0	.900	118.2	109.1	137.5	134.2
1971	107.1	.938	131.8	150.0	126.1	136.8
1972			141.1	160.2	123.9	149.0

/1 Nominal values deflated by General Price Index.

/2 The source of these data is the Institute of Agricultural Economy of the Agricultural Secretariat, Government of the State of Sao Paulo. Wage data reportedly represent the average for the state as a whole.

/3 Compares the prevailing rural wage with the minimum legal monthly wage in the city of Sao Paulo.

/4 The source of these data is the Brazilian Coffee Institute (IBC). The data are not representative of the states as a whole but only of the coffee growing areas within the state. Also wage values are not annual averages but wage rates prevailing in the month of July, each year.

Internal Terms of Trade

144. Since the mid-1960's agricultural prices in general have risen faster than other prices in the economy. In fact, since 1968 they have been the main "cost push" element of overall Brazilian inflation. Reflecting this improvement in the terms of trade of agriculture, land prices in rural areas of the state of Sao Paulo increased in value by about 25 percent between 1969 and 1972. Although somewhat unreliable, Sao Paulo state data on the profitability of major crop production suggests steady, across-the-board increases in such profitability since the mid-1960's (see Table 7.5, Statistical Appendix).

Table 20: NOMINAL SECTORAL WHOLESALE PRICE TRENDS

(1965 = 100)

	General	Farm Products	Industrial Products
1960	9.4	9.9	8.9
1968	212.2	207.2	216.8
June 1972	438.1	481.2	412.2

Source: Getulio Vargas Foundation.

145. Since the mid-1960's Brazil has relied on a combination of price supports and agricultural credit to improve the internal terms of trade of the sector. Agricultural credit plays a double role in this respect. It enables the farmer to avoid mortgaging his crop to the middleman at a low price while the interest cost of the credit is subsidized. Relative improvement of internal agricultural prices notwithstanding, farmgate prices for most Brazilian agricultural commodities are well below world price levels. The major exception is wheat which presently sells at about 168 percent of the FOB wheat import price. Wheat production has been stimulated as an import substitute. Despite steadily rising domestic consumption, Brazil increased the domestic share of its total wheat supply from 23.5 percent in 1965 to 54.7 percent in 1971. Moreover, with improved wheat yields the Government has been able to reduce the support price for wheat by about 34 percent in real terms since 1965 (see Table 15, Volume VI).

Agricultural Credit

146. Volume VI (paras. 34-50 and 110-116) contains a detailed analysis of Brazil's agricultural credit system. It shows that, with the institutional reforms of recent years designed to direct private credit into agriculture and with the allocation of public savings to this sector through the banking system, the stock of outstanding agricultural credit increased from 21.9 percent of Gross Agricultural Product in 1967 to 37.5 percent in 1971. Credit has, indeed, been the Government's most important agricultural development tool.

147. However, there are a number of flaws in the agricultural credit mechanism which need correcting. Perhaps the most important has to do with the farm distribution of credit. As of 1970 only about one in every four farms nationwide was the recipient of agricultural credit. In addition, there was serious regional variation from this average; that is, credit coverage was highest at one credit for every 1.7 farms in the Southeast and lowest at one credit for every 16.7 farms in the Northeast. Also, there has been little improvement in credit distribution with the tremendous increase

in real credit value of recent years. Compared to a 100 percent increase in the real value of its operations over the 1964-71 period, the Rural Credit Department of the Bank of Brazil (which accounts for about 60 percent of total Brazilian agro-credit) increased the number of its operations by only 33 percent over the same period. Moreover, about three fourths of the latter was attributable to increases in agro-investment credit operations, indicating that the increase in the number of beneficiaries probably was considerably smaller than the increase in the total number of credits.

148. There is some bias in these statistics in that they do not cover the recipients of subloans made by agricultural cooperatives. However, credits made available to cooperatives for relending totalled only 5.4 percent of total new agro-credit by value in 1970 so that cooperative credit is unlikely to have had an appreciable impact on overall credit coverage. Moreover, 89 percent of these credits by value and 92 percent by number of contracts were destined for the Southeastern and Southern regions of the country so that they certainly did not alleviate the regional skewness of credit distribution.

149. Extension of credit to smallholders is work of an almost missionary nature which Brazil's principal credit institutions are not well prepared to perform. The Government has relied, to some extent, on the National Cooperative Credit Bank (BNCC) to deal with this problem. However, BNCC has been unable to capture deposit resources from its clients, has seen its capital eroded by negative borrowers' interest rates and by high default rates, has been afflicted by mismanagement and, finally, has not been strongly supported financially by the Government.

150. Since a specialized credit institution linked to cooperative development efforts may well be essential to solution to the smallholder credit problem, the Government perhaps should reconsider its position vis-a-vis the BNCC or some similar substitute. The problem of maintenance of value of BNCC funds could be handled by a Government commitment to reimburse the BNCC for the difference between its borrowers' interest rates and maintenance of real capital value plus interest costs and to offset a measure of default. This would have to be accompanied by a sizeable investment in human resources for promoting cooperative organization in the countryside. In addition, in view of the continuing difficulty which the BNCC can be expected to have in capturing deposit resources from its clientele, the Government should consider increasing very substantially its contribution to the capital of this or some substitute agency.

151. Brazil currently limits nominal interest rates on agricultural credit to 15 percent in the case of credits larger than 50 times the largest legal minimum wage (i.e., above US$2,350) and to 13 percent in the case of smaller loans. The real opportunity cost of capital in Brazil can be arbitrarily estimated at 10 percent (although, as indicated, the profits/capital ratio of Brazil's 500 largest firms in 1970 was 16 percent). With inflation running at 15 percent at the time these maxima were applied they, therefore, represented a subsidy equal to at least 10 percent of the value of the loan. Moreover, many Brazilian agro-credit lines bear lower nominal

interest rates. The "modern inputs" (fertilizer, lime, improved seed, pesticides, etc.) credit line bears 7 percent interest except in the Northeast where it bears zero interest and coffee tree planting credits bear 3 percent interest. Recognizing the deterrent to implementing these special credit lines imposed on the financial intermediary by their lower interest limits, the Central Bank of Brazil reimburses intermediaries for the difference between interest at the specified borrowers' rate and interest at the general 15 percent rate in these special cases. It ought to do the same in the case of the 13 percent interest rate for small agricultural loans and thereby eliminate the disincentive to making small agro-loans which the 13 percent rate imposes on the Bank of Brazil and the commercial banks.

152. Heavy subsidization of the "modern inputs" credit line makes especially urgent the need for improved research and extension coverage. Financial intermediaries exercize some supervision -- taking into account the volume of production and general guidelines as to fertilizer use, for example -- but better technical orientation is needed if resources are not to be misallocated.

153. Interest rate limits on the industrial production and commercial credit of the banking system range from 18 percent, for loans of 60-day term or less, to 21 percent for longer term loans. Moreover, the banks customarily impose compensatory deposit requirements on these loans which raise the range of true interest rates to something like 26 to 30 percent. Since the agro-credit mechanism forces the banking system to direct a minimum percentage of its deposit resources into agriculture, the Government does not believe that this militates, on the supply side, against the adequacy of agricultural credit coverage. It believes that the agro/non-agro interest rate differential -- and, in fact, the greater overall degree of agro-credit subsidization -- is warranted by other price disadvantages suffered by agriculture. The price of fertilizer is a good case in point, as is the far greater degree of external economies enjoyed by the industrial as opposed to the agricultural sector; the latter in turn stemming from the distribution of social and economic infrastructure. Moreover, the Government's strong fiscal position does leave it in a good position to finance agricultural credit subsidization. 1/

154. However, as domestic fertilizer production is expanded and its price reduced and as programs like that of the "export corridors" (described below) lead to a more equal distribution of externalities, agricultural interest rates generally should be brought into line with industrial and commercial rates, at least in the more affluent regions of the country. This is advisable from the point of view of agro-credit supply as well as from the point of view of efficient resource allocation. In the interim, the Government should consider wider application of its own principle of ex post monetary correction of loan principal in connection with its modern inputs and

---

1/ The Government finances subsidization of Bank of Brazil lending and Central Bank refinancing largely by foregoing interest earnings on the massive deposit resources which it holds in these official banks. See "Current Economic Position and Prospects of Brazil" WH-210a, IBRD, November 30, 1971, para. 152.

agricultural investment credit lines of more than one-year term. Such correction already is applied to Brazilian agro-credit lines funded by official external agencies. When combined with nominal interest rates lower than the real opportunity cost of capital, ex post monetary correction permits a degree of subsidization. The advantage lies in the fact that the degree of subsidization is fixed; that is, it is not left to vary with the behavior of the general price level. This makes possible calculation of the financial rate of return to the farmer on the investment being subsidized and forestalls windfall gains unduly inflating the demand for investment resources.

Export Corridor Program

155. In addition to its technical and credit elements, the Government's strategy for agriculture in the Center-South focuses on the production of large export surpluses of coarse grains, soybeans, beef and, of course, coffee. The Government has developed an "export corridors" program centering on the ports of Rio Grande (Rio Grande Do Sul), Paranagua (Parana), Santos (Sao Paulo) and Vitoria (Espirito Santo) which aims to make possible an increase over the medium-term of Brazil's exports of coarse grains, soybeans and meat from 1.2 million, 1.1 million and 150,000 (bone-in equivalent) tons, respectively in 1971 to about 5 million, 4 million and 500,000 tons. The total cost of this program -- excluding the agricultural credit, research and extension services needed at the primary producer level -- is estimated at US$810 million. About US$670 million of this amount is allocated to improvement of port and railway facilities. Despite competitive farmgate prices, high local transport costs leave the FOB prices of Brazil's bulk grain and soybean exports less than fully competitive with major world suppliers. Besides its US$670 million infrastructure component, the program also allocates US$140 million for improvement of meat and fruit (especially orange juice concentrate) processing and cold storage facilities. Brazil needs considerable external financing for this program from external lenders, both suppliers and development agencies.

156. Program goals conflict, to a certain extent, with prospects for internal beef, poultry and pig meat demand, both directly and in the sense that such demand will, of itself, require very large increases in corn production. Nevertheless, the analysis contained in Volume VI of this report indicates that in terms both of internal production potential and world market prospects Brazil could reach the above mentioned export goals by the late 1970's. This would add corn, soybeans and beef to the list of Brazil's major agricultural exports; coffee, sugar, cacao and cotton. It would alleviate significantly the foreign exchange constraint on Brazilian growth and make possible a more balanced distribution of the benefits of growth between the agricultural and industrial sectors.

157. This assumes, of course, that Brazil resolves some of its problems with respect to agricultural research, extension services and the supply of technical inputs. Although new land brought under cultivation can generate some of the additional coarse grain and soybean production required, productivity of presently planted lands will have to increase substantially. There is ample margin for productivity improvement. In 1971 Brazil's corn and

soybean productivity was at about 30 percent and 60 percent, respectively, of levels prevailing in North America and Western Europe (see Table 16, Volume VI). In the case of beef, the Brazilian take-off rate, at 12 percent, average slaughtering weight, 200 kg, and average slaughtering age, 4-5 years, all are very poor by world standards. Moreover, Brazil presently exports only about 10 percent of its beef. Thus even marginal improvement in the management of its 79 million head of cattle can yield significant differences in Brazil's beef output and large differences in its export surplus. Such improvement is being sought through various herd management-related credit programs. Also, internal consumers' beef prices currently appear to be at reasonable levels although maintaining them so does present problems in view of the weight of beef in the cost of living and of the rising trend in world beef prices.

158. The projected contribution of the export corridors program to export growth and to better sectoral balance of development will be realized fully only if gains in the export of coarse grains, soybeans and beef are not offset by losses in Brazil's traditional share of external markets for sugar, cacao, cotton and coffee. Volume IV on the Northeast Development Effort describes the Government's programs to improve the efficiency of cane and sugar production, primarily in the Northeast but also in the Center-South, and of cacao production in the state of Bahia. Prospects for the supply of cotton are less clear since corn and soybeans are alternatives to cotton production in many parts of the Center-South. On the other hand, the Northeast has great cotton production potential and, moreover, the Government has programs for improving the efficiency of Brazil's largely obsolete textile industry and for increasing value-added in the export of this commodity.

Coffee

159. There are major uncertainties with regard to the outlook for Brazilian coffee. Since 1918 Brazil has passed through two coffee cycles, going from underproduction to gross overproduction and back again. In the mid-1960's the Government increased its control over this very important subsector, especially as regards pricing. This greatly facilitated the coffee rationalization program of those years which reduced production capacity to its present level of about 21-22 million bags or to roughly 75 percent of internal demand and external market share. Brazil's stocks thus were reduced from their peak second cycle level of 70.6 million bags (2.5 years' supply) in 1966 with beneficial effects for Brazil as well as other producers on world prices and export earnings and on domestic savings. However, a severe freeze in 1969 reduced the following year's crop to half its normal level, reducing stocks more rapidly than anticipated and giving the Government less time that it thought was available for bringing about an upturn in production, i.e., for initiating the third coffee cycle since 1918. As of June 30, 1972, the end of Brazil's 1971-72 coffee year, stocks were slightly less than one year's supply.

160. In 1968 the Government began to increase coffee producers' prices faster than other agricultural prices. From the end of 1967 until the first quarter 1972 coffee producers' prices increased 4.4-fold in nominal terms

while agricultural producers' prices in general increased 2.8-fold (see Table 7.27, Statistical Appendix). Despite these strong price signals special credit facilities made available during the 1969-72 period for the planting of new coffee trees were not fully taken up. There are several constraints on coffee production which distinguish the outset of this third coffee cycle from previous cycles:

(i) the first and second cycles saw movement into new coffee producing areas in the interior of Sao Paulo and the state of Parana, respectively. The latter introduced to coffee production the freeze risk;

(ii) new areas appropriate for the production of arabica coffees now are limited and the productivity of already exploited lands is diminishing. Chemical fertilization now appears to be essential for achieving profitable productivity levels in most areas;

(iii) coffee leaf rust (Hemileia Vastatrix) appeared in Bahia in 1970 and by 1972, had spread throughout most coffee producing areas. The fungus can be controlled by proper spacing of coffee trees and the application of fungicide but this treatment adds substantially to the cost of coffee production; and,

(iv) coffee production necessarily is labor-intensive relative to alternative crops such as corn and soybeans since no mechanized technology has been developed for coffee. Contrary to previous periods when smallholder settlement accompanied the geographic shift of coffee production, providing the intensive seasonal labor needed for harvesting and processing, labor is now in limited supply. Moreover, the attraction of alternatives such as corn and soybeans is being increased by programs such as the "export corridors".

161. By the end of 1971, however, the profitability of coffee production in Sao Paulo and Parana was estimated at 7.6 percent (profits over capital) for a productivity level of 12.5 bags/hectare and much greater at higher productivity levels (see para. 156, Volume VI). In 1971, average Brazilian productivity was 9.9 bags/hectare. For those growers most responsive to price movements, however, productivity undoubtedly was a good deal higher. Then, in 1972, the Government introduced a new system of credit incentives which covers not only coffee tree planting but also the use of fertilizer, pesticides and labor for increasing the productivity of old trees. This new program, together with Government measures increasing the price of coffee relative to other agricultural prices apparently has convinced coffee growers that the long-term outlook for coffee is good. Compared to 40 million trees in 1969, 136 million in 1970 and 80 million in 1971, financing for the planting of 360 million new trees was contracted in 1972. As of end-1971 Brazil's stand of coffee trees totalled 2.3 billion of which 2.0 billion were mature

trees and 256 million recently planted ones. The new program calls for the planting of 600 million new trees over the three coffee years beginning with 1972-73. The program also aims to increase the average productivity of mature trees by about 15 percent above the 9.9 bag per hectare (i.e., per 1,000 trees) level.

162. The cost of this program can be expected to be financed entirely by the coffee sector itself out of the contribution quota on coffee exports (i.e., the coffee export tax). Even with the recent relative increase in Brazilian coffee producers' prices the rate of this tax remains high, 44 percent on average during the first quarter of 1972. Moreover, with the cessation in 1972 of the subsidization of domestic coffee consumption more of the proceeds of the coffee export tax are available for investment financing. Outlays covered by the tax now are limited to:

(i) the operating expenditures and direct investments of the Brazilian Coffee Institute;

(ii) the net expansion of coffee production credit; and,

(iii) the net expansion of credit for purposes of the tree planting and productivity improvement program.

Even though interest rate subsidization erodes fairly rapidly, the real value of export tax proceeds used for coffee credit operations the sector is unlikely to require substantial financing from the rest of the Brazilian economy over the next few years (see Table 6.5, Statistical Appendix). 1/

163. Although the tree planting program now appears to be proceeding successfully, a few years' growth is required before significant productivity levels are achieved and at least 6 years before full productivity is reached. There are various estimates of new tree productivity levels during the maturation process and subsequently, and the mean of these has been used in calculating the coffee production forecast of this report which shows an equilibrium production level being reached by 1977-78. However, until then Brazil is likely to have to draw down its stocks to a fraction of annual demand in maintaining its world market share. This is especially true in view of the fact that another, albeit milder, freeze was experienced in July 1972 which is expected to reduce the 1973-74 crop by about 5 million bags. Just as in the initial phase of the previous two coffee cycles, short stocks can be expected to exert upward pressure on world prices over the next several years.

1/ Note, the calculations in Table 6.5 assume that financing for new tree planting is limited to 200 million trees in 1972/73, the original target. The fact that financing for the planting of 360 million trees in this year has been contracted may yield some deficit from coffee operations.

Table 21: PROJECTED PRODUCTION AND DISPOSITION OF BRAZILIAN COFFEE

(In millions of 60 kg bags)

	Production	Internal Consumption	Exports	Year-End Stocks
1971-72	24.6	8.5	20.0	26.9
1972-73	21.5	8.1	18.5	21.8
1973-74	20.5	8.3	19.0	15.0
1974-75	24.8	8.5	19.3	12.0
1975-76	26.3	8.7	19.7	9.9
1976-77	23.5	8.9	20.1	4.4
1977-78	30.7	9.1	20.5	5.5
1978-79	32.1	9.3	20.9	7.4

Source: Tables 7.35 and 7.36, Statistical Appendix.

Forecast of Agricultural Growth

164. If the export targets for the export corridors program are met by the late 1970's and Brazil maintains its present share of the world coffee market, Brazil's agricultural exports should increase at an annual rate of about 7 percent in real terms over most of the 1970's. However, since exports in 1970 (latest data available) accounted for no more than about 23 percent of the total disposition of Brazilian agricultural output, and since there is little room for substitution of agricultural imports, the bulk of the growth of Brazilian agricultural output will continue to be dependent upon the internal market. This, in turn, is primarily a question of overall economic growth, population increase, income distribution and the income elasticity of demand for food. The latter has been estimated at 0.5 (see para. 167, Volume VI). Population growth at the rate of 2.8 percent annually can be expected. Significant improvement in the distribution of income is unlikely to be achieved over the next several years. Assuming, therefore, that overall economic growth proceeds at an 8 to 9 percent pace, on average, growth of internal demand for food on the order of 5 to 6 percent can be anticipated. This, together with a somewhat faster pace of internal demand increase in regard to non-food agricultural products, 1/ and with the outlook for exports, suggests that -- at least from the point of view of demand -- Brazilian agricultural output should grow by about 6 percent annually.

1/ Fibers, wood, etc.

Table 22: GROWTH AND CHANGE OF COMPOSITION OF THE AGRICULTURAL SECTOR

	Composition 1970 (percent)	Composition 1978 (percent)	Average Annual Increase 1970/78 (percent)
Exports	22.6	24.1	6.9
Internal Supply: Food	72.9	70.5	5.6
Internal Supply: Non-Food	4.5	5.4	8.5
TOTAL	100.0	100.0	6.0

Source: Staff estimates.

165. This is not necessarily inconsistent with the 7 to 8 percent pace of agricultural growth projected for 1972-74 by the Development Plan; both overall economic and agricultural growth were higher in 1972 than is projected, on average, for the 1972-74 period by the Plan. However, even a 6 percent pace of agro-growth sustained through 1978 would represent a 50 percent acceleration vis-a-vis the 1960's when such growth resulted predominantly from increased use of the land factor.

D. Manufacturing Industry

166. Industry presently accounts for about 34.6 percent of Brazil's GDP and provides employment for about 17.8 percent of its labor force. Industry has been the fastest growing sector of the Brazilian economy. From 1950 until 1971 it grew at an average annual rate of 7.9 percent while the economy as a whole grew at a rate of 6.6 percent. Over that entire period, it was only during the mid-1960's that industry grew less rapidly than the economy as a whole. Employment in industry has grown at an annual rate of about 4 percent over the last two decades as the share of the labor force employed by industry increased from 13.7 percent in 1950 to the above mentioned 17.8 percent in 1970.

167. Manufacturing industry accounted for about 43 percent of total industrial value added in 1971, about the same share as in 1950. Remaining industrial output is accounted for by the mining and construction industries. Although the growth of manufacturing value added has been roughly equal, at about 8 percent annually, to that of other industrial value added over the last two decades, employment in manufacturing has grown, at about 3 percent annually, only three-fourths as rapidly as has overall industrial employment. In 1970 manufacturing industry accounted for about 44 percent of total industrial employment and for about 8 percent of the total labor force. Most of the remainder of industrial employment is in the construction industry.

Composition of Manufacturing Growth

168. Table 23 summarizes the composition of the growth of manufacturing value added over the last two decades. It is somewhat misleading in the sense that the "electrical" and "transport" components of the capital goods subsector include, respectively, electrodomestics and passenger automobiles as well as capital equipment.

Table 23: GROSS VALUE ADDED IN MANUFACTURING INDUSTRIES

	% Distribution					Average Annual %		
	1949	1958	1967	1969	1971	1949-58	1958-67	1967-71
Traditional Consumer Goods	57.4	43.9	36.2	34.5	31.1	4.5	4.3	7.5
Textiles	20.2	12.9	9.8	10.1	9.0	2.4	3.4	9.2
Clothing and Footwear	4.5	3.9	3.1	2.8	2.5	5.9	4.1	5.7
Food	20.5	17.3	14.5	12.8	11.7	5.6	4.5	5.9
Other	12.2	9.8	8.8	8.8	7.9	5.1	5.2	8.6
Intermediate Goods	35.0	40.0	42.4	42.9	45.2	9.2	7.2	13.4
Non-Metallic Mineral	7.3	6.7	5.6	5.8	6.1	6.6	4.4	14.4
Metallurgical	9.7	11.5	10.5	11.4	10.4	9.6	5.4	11.5
Chemicals	9.3	12.9	18.4	17.7	20.5	11.7	10.8	14.7
Other	8.7	8.9	7.9	8.0	8.2	7.9	5.3	12.4
Capital Goods	5.7	13.5	19.6	20.9	22.0	18.5	11.0	14.9
Mechanical	2.1	2.9	5.1	6.0	5.5	11.3	13.4	13.8
Electrical	1.7	4.1	6.1	6.3	6.3	19.0	11.4	12.6
Transport	1.9	6.5	8.4	8.6	10.2	23.6	9.5	17.1
Other	1.9	2.6	1.8	1.7	1.7	11.4	2.8	9.2
TOTAL	100.0	100.0	100.0	100.0	100.0	7.6	6.5	11.6

Source: All of the data in this table through 1969 are based on the annual survey of manufacturing industry by the IBGE. Survey results are reported in the IBGE's publication "Producao Industrial". The survey covers about 90 percent of manufacturing output. The absolute values which the above percentage distribution represent, therefore, are the "Producao Industrial" data ajusted to represent 100 percent of manufacturing. As of September 1972 neither the survey for 1970 or for 1971 had yet been processed. Consequently, data for 1971 are estimated on the basis of the IBGE's monthly sample survey of gross output, employment and wages in manufacturing, industry reported in "Industrias de Transformacao" and processed by IPEA in its "Boletim Economico". The 1971 data assume that the relationship between output and gross value added has not changed since 1969.

169. Throughout the last two decades the capital equipment/consumer hard goods subsector has been the leader of manufacturing industry development. The initial impetus for this was the opportunity to supply hard goods to a domestic market well defined by the earlier pattern of Brazilian imports and made captive by high levels of protection for such production. In recent years, however, consumer hard goods production has expanded well beyond the limits demarcated by earlier demand for imports. From 161 thousand units in 1968, the first year of the recent recovery period, production of passenger automobiles increased to 396 thousand units in 1971 and to an estimated 500 thousand units in 1972. In 1970 Brazil produced about as many motor vehicles as did Japan in 1960. Moreover, as of 1970, the per capita density of registered motor vehicles in Brazil was more than twice as great as in Japan in 1960 despite the fact that average Brazilian per capita income in 1970 was not only about 20 percent lower than 1960 per capita Japanese income, but also distributed much less equitably. Clearly, Brazil's continental dimensions largely explain this contrast. Nevertheless Brazil's hard goods industry is beginning to develop a mass internal market.

170. Steady deepening of import substitution as Brazilian industry supplied an increasing percentage of the nation's total capital equipment requirements has also characterized the dynamics of manufacturing industry growth. It has been estimated that the share of domestically supplied capital equipment in the total equipment component of Brazilian fixed investment increased from 54 percent in 1950 to 75 percent in 1960 and to 78 percent in 1967. However, there was some decline of this share subsequent to 1967 as the expansion of the domestic capital goods industry did not keep pace with the investment boom which began in 1970. Over the 1968-71 period Brazilian capital equipment production increased at a 17 percent average annual pace in real terms. During the same period, the real value of capital equipment imports increased at a 26 percent pace. By 1971 the share of domestic production in total Brazilian equipment procurement apparently was approximately 72 percent (see Table 2.4, Statistical Appendix).

171. Intermediate goods have constituted the second most dynamic component of Brazilian manufacturing industry. Here, as well, recent rapid overall economic growth has reversed the import substitution process to a certain extent as demand has outstripped domestic supply in the case of ferrous and non-ferrous metals and chemicals. In some cases Brazil is only just now establishing domestic production capacity. This is true of petrochemicals, fertilizer and copper. In others, both flat and non-flat steel products in particular, demand growth is outstripping ongoing expansion programs for long established industries.

172. Throughout the industrialization process of the past two decades the traditional consumer goods industries, textiles, clothing and footwear and food products, have been by far the slowest growing industrial subsector. Some dynamism was achieved by this group in very recent years largely by virtue of its export performance. However, established well before 1950, these subsectors are characterized by high levels of tariff protection, by lack of specialization, by poorly organized access to raw materials which otherwise would impart considerable comparative advantage, by obsolescence

of equipment and, in general, by inefficiency. Unfortunately, the traditional subsector not only provides more employment than any other subsector in absolute terms but also is the most labor-intensive branch of manufacturing industry. Moreover, the impact of its relative stagnation and inefficiency on incomes is multiplied by the fact that it produces wage goods.

Table 24: DISTRIBUTION OF MANUFACTURING VALUE ADDED, EMPLOYMENT AND WAGES, 1969

(Millions of 1971 Cr$ unless otherwise specified)

	Value Added		Employment		Value	Wages Per
	Amount	% Distribution	Amount ('000 Workers)	% Distribution	Per Employee 1971 Cr$/Year	Employee 1971 Cr$/Year
Traditional	19,311.6	34.5	975	41.9	19,806.6	4,649.5
Textile	5,655.2	10.1	340	14.6	16,632.0	4,366.5
Food	7,197.7	12.8	285	12.3	25,255.4	4,192.0
Other	6,458.7	11.6	350	15.0	18,453.5	
Intermediate	24,037.5	42.9	881	37.9	27,284.3	6,317.5
Metals	6,408.3	11.4	270	11.6	23,734.5	6,920.6
Chemicals	9,896.1	17.7	217	9.3	45,604.6	8,578.9
Other	7,733.1	13.8	394	17.0	19,627.1	
Capital	11,717.2	20.9	421	18.1	27,831.1	8,685.5
Mechanical	3,362.2	6.0	124	5.3	27,114.0	8,157.2
Electrical	3,509.4	6.3	128	5.5	27,417.0	7,722.9
Other	4,845.6	8.6	169	7.3	28,670.5	9,802.4
Other Manufacturing	959.7	1.7	48	2.1	19,985.6	5,561.3
TOTAL	56,026.0	100.0	2,325	100.0	24,096.6	6,030.2

Source: Tables 8.3, 8.12, 8.15 and 8.16, Statistical Appendix.

Manufacturing Employment

173. During the post-1967 recovery period, the demand elasticity for labor has been highest, about 0.37, in the capital goods sector. In the food products subsector this elasticity has been about 0.36 and in the intermediate goods sector about 0.24, the latter reflecting the leading role of the highly capital intensive chemicals subsector. Employment in the textile industry appears to have declined in recent years despite the relatively sharp increase in the output of that subsector. Recent replacement of obsolete equipment by the textile subsector has been labor-saving. Moreover, recent bankruptcies closing many textile firms, including some

very large ones, have also contributed to the decline of textile subsector employment. Thus structural changes at least partially explain the lower income elasticity of demand for labor overall in manufacturing which distinguishes the recent recovery period from longer term trends in the sector (see para. 53).

Size of Manufacturing Firms

174. Table 25 represents the distribution of Brazilian manufacturing firms by number of employees and share of total value added in selected subsectors and for manufacturing as a whole. It shows that the bulk of Brazil's manufacturing is attributable to firms with 100 employees or more and that about 44 percent is attributable to firms with 500 employees or more. There is not a great deal of size differentiation betwen subsectors except for food products (smallness) and transport (bigness). However, even though the bulk of manufacturing value added and employment appears to be attributable to firms of substantial size there are still very large numbers of small firms. For example, there are some 2,000 textile firms of which more than half employ less than 50 workers and produce only about 15 percent value added in textiles. Similar situations prevail in other subsectors such as shoes.

Table 25: DISTRIBUTION OF MANUFACTURING FIRMS BY VOLUME OF EMPLOYMENT AND SHARE IN VALUE ADDED, 1969

(Percentages)

Number of Employees	Textiles		Food Products		Metals		Chemicals		Transport		Total	
	A	B	A	B	A	B	A	B	A	B	A	B
to 9	1.5	0.5	6.7	9.9	0.5	0.7	1.8	2.0	0.3	0.5	2.2	3.5
10 to 49	10.6	6.8	17.3	19.9	7.1	9.7	9.5	12.4	2.4	3.4	11.1	15.5
50 to 99	8.0	7.1	11.7	11.0	8.1	10.2	10.1	10.5	2.9	4.3	9.5	11.5
100 to 499	29.6	33.6	44.8	41.6	26.2	27.9	29.9	37.0	20.8	24.3	32.8	32.7
500 Plus	50.3	52.0	19.5	17.6	58.1	51.4	48.7	38.1	73.6	67.4	44.4	36.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

A = Share of value added.
B = Share of employment.

Source: IBGE, Producao Industrial, 1969.

Location of Manufacturing Industry

175. In 1969 about 58 percent of total manufacturing value added was produced in the state of Sao Paulo, 10 percent in the state of Guanabara, 7 percent in the state of Rio de Janeiro and 6 percent in the state of Minas Gerais which is also important for its mining. Only 19 percent of total manufacturing value added was produced outside the area of these four states.

Profitability

176. Both capacity utilization and profits in manufacturing industry appear to have risen sharply since 1967. In that year a sample survey (sondagem conjuntural) of the Getulio Vargas Foundation (FGV) estimated average capacity utilization at 70 percent. By 1970 it had risen to 86 percent. Over the longer term (i.e., since 1953; see Figure One, notes to Tables 2, 4, Statistical Appendix), capacity utilization in Brazilian manufacturing has averaged 77 percent. In another annual survey covering Brazil's 500 largest firms over all sectors of the economy, the FGV has, since 1967, produced data on after-tax profits. In manufacturing the ratio of such profit to invested capital has increased from 12.6 percent in 1967 to 16.5 percent in 1970. Although there is considerable subsectoral variation, profitability for large firms in all manufacturing subsectors was high in 1970. However, by virtue of excluding smaller firms this data is not representative of the overall situation in some subsectors such as textiles (see Table 8.18, Statistical Appendix).

Financing Manufacturing Investment

177. The Planning Ministry's Institute of Applied Economic Research (IPEA) recently made a study of investment in Brazil's manufacturing industry. 1/ Raw data for the study were obtained from investment projects presented to the Industrial Development Council (CDI) in soliciting its approval of various available investment incentives (i.e., exemption of imported equipment from import duties and domestic sales taxes; exemption of domestic equipment from domestic sales taxes and long-term financing from official Brazilian intermediaries) and/or to the National Economic Development Bank (BNDE) for financing. The study covers the 1966-70 period. Investment costs shown include working capital (about 13 percent of the total) and financial charges (about 5 percent of the total) as well as civil construction and equipment. During the first 3 years of the 1966-70 period the study probably covers no more than one-third of total investment in manufacturing industry. Owing to the increasing importance of investment incentives and to the recent reformation of the CDI improving its capability to monitor manufacturing investment, investments in 1969 and 1970 covered by the study probably approach half of total investment in manufacturing industry. Although its significance is limited by the fact that it covers only a portion, and a variable portion, of total manufacturing investment the study reveals some significant trends in investment financing.

1/ Wilson Suzigan, et al, op. cit.

178. Throughout the 1966-70 period the share of the firms' own resources -- capital reserves and retained earnings -- range tightly around an average 48 percent of total financing, with no evident change in trend. Thus, high profitability has perhaps been a natural corollary of the dearth of internal sources of long-term loan financing which, albeit to a lessening extent, still prevails in Brazil. Sources of finance external to the firm are shown to be divided about equally between domestic and foreign entities. The domestic borrowing shown is primarily from official intermediaries. This, of course, reflects the bias of the universe covered by the study, i.e., officially sanctioned investment projects. Foreign financing is predominantly in the form of financial credits (16 percent of total finance) and equipment suppliers' credits (8 percent of total finance). Direct foreign investment is insignificant (at about 1 percent of total finance). Were data to be available on overall manufacturing rather than only on officially sanctioned industrial investment, it would probably show a higher share of foreign financing, at least in recent years, in the form of financial credits and a lower share of official domestic financing. These external financial credits are made available to the Brazilian firm by foreign banks and parent firms. The hard currencies borrowed in this fashion are exchanged for cruzeiros and used to cover local currency expenditures. To a certain extent, financial credits are a disguised form of direct investment. This may explain the insignificant role shown for direct foreign investment by the study. Substitution of foreign loan for equity investment is prompted by Brazilian foreign capital legislation which discriminates in favor of loan and against equity investment. Financial credits are discussed in detail in Chapter V which covers capital market developments.

Table 26: INDUSTRIAL INVESTMENT PROJECTS: SOURCES AND USES OF FUNDS, 1966-70

(Percentage Distribution)

Uses and Sources	1966	1967	1968	1969	1970
1. INVESTMENTS	100.0	100.0	100.0	100.0	100.0
A. Fixed	90.2	84.6	85.5	87.1	88.6
a. Construction	27.6	20.4	23.5	29.4	32.4
b. Imported Equipment	42.8	35.1	39.7	28.5	35.1
c. Domestic Equipment	16.9	20.5	18.2	24.5	16.3
d. Financial Charges	2.9	8.6	4.1	4.7	4.7
e. Other	0.0	0.0	0.0	-	0.1
B. Working Capital	9.8	15.4	14.5	12.9	11.4
2. RESOURCES	100.0	100.0	100.0	100.0	100.0
A. Own	44.6	47.3	52.9	51.4	45.9
a. Capital & Reserves	24.1	12.8	17.9	20.4	23.1
b. Retained Earnings	18.1	31.3	27.0	27.6	18.2
c. Depreciation	0.0	0.1	0.1	0.0	-
d. Fiscal Incentives	0.6	3.0	7.7	2.7	4.5
e. Other	1.9	0.1	0.2	0.7	0.1
B. Internal Loans	16.2	38.2	24.6	28.6	25.1
a. BNDE	15.7	21.4	10.3	19.7	13.4
i. FRE	6.5	9.4	3.5	9.2	7.0
ii. FIPEME					
- With internal resources	3.8	5.0	3.7	4.5	1.3
- External resources	5.4	5.6	0.7	0.8	0.3
iii. Other	0.0	1.4	2.4	5.2	4.8
b. FINAME					
i. Direct	0.1	2.8	1.6	0.2	0.1
ii. Repass	0.0	0.0	0.0	0.0	0.0
c. Banco de Brasil	0.0	0.4	0.8	0.9	0.6
d. Regional Development Banks	0.0	1.0	3.2	1.5	1.9
e. Investment Banks	-	-	-	0.0	0.0
f. Commercial Banks	0.3	2.0	0.8	1.0	1.0
g. Internal Suppliers	0.0	0.4	0.9	0.6	2.1
h. Others	0.0	10.2	7.0	4.6	5.9
C. External Loans	39.2	14.5	22.5	20.0	29.0
a. Suppliers Credits	0.0	5.3	10.5	12.6	13.5
b. Financial Credits	39.2	9.2	10.7	5.6	15.3
c. Direct Investments	0.0	0.0	1.3	1.8	1.1
d. Other	0.0	0.0	0.0	0.0	0.0

Source: Table 8.10 Statistical Appendix.

FRE = Industrial Reequipment Fund of the BNDE.
FIPEME = Small and Medium Industry Development Fund of the BNDE.
FINAME = Domestically Produced Capital Goods Financing Fund of the BNDE.

Levels of Protection

179. The evolution of Brazil's industrial development strategy has been such that the longest established manufacturing subsectors, e.g., textiles enjoy very high rates of tariff protection while the newer ones, capital equipment, are protected only modestly. Recently the Brazilian Government has been concerned with the need for tariff reduction. In April 1967 it effected a thorough reform of the tariff structure which reduced both nominal and effective (i.e., protection on value added) levels of protection by about one-half on average. An interesting feature of this reform was the abolition of a special foreign exchange market for consumer durable and sumptuary goods imports which previously had operated in such a way as to double the nominal protection afforded by statutory tariff rates on these items. However, this reform proved to be too drastic for Brazilian industry. A 100 percent surcharge was reintroduced for certain consumer goods such as textiles, clothing and beverages. Other tariff rates were increased in lesser degree. Perhaps most importantly, systems of minimum valuation and reference pricing of imports were introduced. Under the minimum value system, ad valorem taxes are levied against an arbitrarily assessed value rather than the actual value of certain commodities (about 72 as of August 1972). The reference price system is applied to goods varying widely in price by source. For such goods (about 47 as of August 1972) the tax is not simply levied on the reference price but is made equal to the difference between this price times the tax rate and the actual price of the import. As of July 1970 it was estimated that nominal protection of manufacturing had been increased by about 40 percent vis-a-vis its April 1967 low point and that effective protection had been restored almost to the level prevailing before the tariff reform of that year.

Table 27: PROTECTION OF MANUFACTURING INDUSTRY, 1966-70

	Nominal Protection			Effective Protection (Cordon)		
	June 66	April 67	July 70	June 66	April 67	July 70
Food Products	91	33	48	247	131	205
Beverages and Tobacco	181	73	170	410	170	422
Other Consumer Soft Goods	148	57	113	256	104	246
Consumer Durables	157	78	126	416	213	374
Low-Level Intermediates	64	24	29	24	-15	23
High-Level Intermediates	101	53	64	178	128	176
Machinery	39	19	22	35	18	31
Transport Equipment	29	12	16	8	-1	16
All Manufacturing	96	43	61	174	90	161

Source: Joel Bergsman, "Foreign Trade Policy in Brazil", AID, February 1971.

180. The analysis whose results are given in Table 27, did not have actual input/output relationships upon which to base the calculation of effective protection. Instead it used standard relationships based on the results of UNIDO studies. As of May 1972 Brazil's Customs Policy Council (CPA) had collected data on input/output relationships and nominal levels of protection (including the effect of the minimum value and reference price system) for 137 intermediate goods. A simple arithmetic average of the results shows average nominal protection at 40 percent and effective protection at 61 percent which is not inconsistent with the weighted average levels of protection shown in Table 27 for low and high level intermediates.

181. Unlike consumer and intermediate goods, trade liberalization for capital goods has been continuous since 1967. Brazil's "Law of Similars" permits such imports to be exempt from taxation when there is no national similar; national similar being defined in terms of competitiveness with the price (including tariff), quality and delivery time of the import. In recent years this regulation has been administered in very liberal fashion by the CDI and CACEX, the foreign trade department of the Bank of Brazil. Almost any made-to-order capital equipment item has, in practice, been made eligible for tariff exemption. The result is that with the exception of certain lines of shelf-type equipment, such as heavy trucks, the level of protection afforded to Brazil's capital equipment sector may well be too low.

182. In some other sectors high tariff levels are redundant. The electrical appliance industry is an example of successful import substitution despite high tariff protection. Brazilian prices tend to be lower in many lines than in the United States. Keen competition among several producers in an expanding internal market helps explain this redundancy (see Table 8.19, Statistical Appendix). The Brazilian automobile industry is certainly competitive in the production of pick-up trucks and busses (where economies of scale are less important) and fairly efficient in the production of a low-priced passenger car (whose producer depends only marginally on parts producers) but grossly incompetitive in the production of higher priced passenger cars (see Table 8.20, Statistical Appendix).

183. Brazilian intermediate goods prices appear to be competitive in the case of flat steel products and certain basic chemicals. However, as indicated, there is great need for improved efficiency and tariff reduction in the case of fertilizer (see para. 135). The high levels of textile industry protection also need to be reduced. While it is true that marginal textile firms are in diffculty even with high protection, the efficient textile firms are very profitable at prevailing Brazilian price levels.

Ownership of Brazilian Manufacturing Industry

184. State and foreign ownership of industrial enterprises is one of the most notable characteristics of Brazil's industrial sector. State ownership takes the form of the "mixed enterprises", such enterprises being concentrated in the minerals, basic intermediates (steel and chemicals) and utility fields. Recently there has been a tendency to open -- through the stock market -- participation in mixed enterprises to the public. Foreign ownership usually

takes joint venture form but only rarely is equity in Brazil's international firms available to the public. In 1972 about one-third of all firms located in Brazil with capital of Cr$15 million (about US$2.5 million) or more were international firms. The origin of this foreign capital is widely dispersed but concentrated in the United States, Germany, Japan, France and the U.K. In terms of activity, international firms are concentrated in the chemical and petrochemical, automotive, electrodomestics, food products, textile, tobacco and pharmaceutical industries, i.e., for the most part in the technology intensive sectors. International firms account for almost half of Brazil's rapidly growing manufactured exports.

Table 28: OWNERSHIP DISTRIBUTION OF LARGE INDUSTRIAL FIRMS, 1972

Capital Category Cr$ Millions	% Participation of Brazilian Firms						% Participation of Int'l Firms		Total Firms	
	Public		Private		Total					
	By Number	By Value	By Number	By Value	By Number	By Value	By Number	By Value	By Number	Value (Cr$ Millions)
15 to 100	n.a.	n.a.	n.a.	n.a.	67.1	62.1	32.9	57.9	487	16,665.4
100 to 199	n.a.	4.4	n.a.	29.1	31.6	33.5	68.4	66.5	38	5,235.2
200 to 299	n.a.	12.8	n.a.	59.6	71.4	72.4	28.6	27.6	7	1,749.9
300 to 399	n.a.	18.2	n.a.	20.7	40.0	38.9	60.0	61.1	5	1,814.4
400 plus	n.a.	74.0	n.a.	11.1	70.0	85.1	30.0	14.9	10	11,406.6
TOTAL	n.a.	n.a.	n.a.	n.a.	64.5	64.5	35.5	35.5	547	36,871.5

Source: BANAS, No. 965, October 16, 1972, p. 19.

Manufacturing Development Strategy

185. The industrial development strategy of the Brazilian government emphasizes the following elements:

(i) promotion of manufactured exports in order both to diversify and expand total exports and to increase the scale and efficiency of domestic industry;

(ii) substitution of manufactured imports in both the intermediate and capital goods categories;

(iii) reorganization and reequipment of the traditional industrial subsectors so as to reduce their costs and maintain employment opportunities;

(iv) geographic dispersion of industrial establishments so as to achieve a more equitable interregional distribution of employment opportunities created directly and indirectly by industry; such dispersion to be organized around regional growth poles so as to make practical the provision of needed infrastructure; and,

(v) development of Brazilian industrial technology so as to reduce the foreign exchange cost of technology acquisition and to diminish Brazil's dependence on external technology sources.

Manufactured Exports

186. Brazil's manufactured exports increased at an average annual rate of 42 percent over the 1969-71 period. Even excluding processed agricultural products, manufactures accounted for 16 percent of Brazil's total 1971 export earnings compared to 9 percent in 1968. Partial data for 1972 indicate that this pace of increase continued in that year. Brazil now exports a wide variety of manfuactured products, e.g., clocks to Switzerland, refrigerators to the United States, furniture to Scandinavia, clothes to Italy, testing and measuring instruments to Germany and photoelectric cells to the Netherlands. 1/ Product diversity is also manifested by the highly aggregated figures of Table 29; the growth rate shown for each manufactured export category is high.

Table 29: MANUFACTURED EXPORTS, 1968-71

(FOB Values in US$ millions)

	1968	1969	1970	1971	Annual Growth Rate 1968-71
Chemicals	30	39	46	60	26
Machinery	37	53	82	106	42
Transport Equipment	4	7	15	27	90
Wood Products	8	17	17	19	33
Shoes	-	2	8	29	-
Steel Products	10	16	41	28	41
Other	77	104	148	211	40
TOTAL	166	238	357	480	42

1/ See "Anuario Estatistico de Exportacao, Porto de Santos, 1970".

187. The manufactured export growth has been the result of government promotional policies which began with the introduction of the flexible (crawling peg) exchange rate policy in August 1968. As indicated above, this replaced the large annual exchange rate adjustments of the 1964-67 period. By maintaining internal/external price parity through small frequent adjustments rather than large annual ones, the Government provided the producer of manufactured exports with a firm local cost/external price relationship the lack of which previously had discouraged such exports.

188. The adoption of the flexible exchange rate was followed by a series of additional incentives having the effect of reducing very substantially below the domestic sales price the price at which the Brazilian exporter can offer his product on the world market at the same level of unit profit. These incentives and the development of Brazilian manufactured exports in general were analyzed thoroughly by the IBRD midway in 1971. 1/ Briefly, the incentives having a price reducing effect are the following, in descending order of importance:

(i) exemption of exported manufactures from all domestic indirect taxation, including drawback of tariffs on imported inputs used in export production;

(ii) Concession of tax credits calculated as fixed percentage of the FOB or CIF value of the goods exported depending upon whether they are shipped and/or insured by Brazilian entities. Generally these credits are conceded at rates equal to twice the federal sales tax rate incident on the product, up to a maximum of 30 percent. Credits at even higher rates can be conceded when so determined -- ex ante and for all exporters -- by the Minister of Finance. Since federal sales tax rates range from a low of 3 percent the rates at which credits are conceded also range widely;

(iii) exemption of profits on export sales from income taxation; and,

(iv) concession of credit at subsidized interest rates to finance the working capital needed for export production.

189. Table 30 shows that over a range of 43 categories of export manufactures the weighted average effect of the incentives is to permit Brazilian producers to price their exports at 64 percent of the domestic price without loss of unit profit. Of this 36 percent difference, about two-thirds is attributable to exemption from indirect taxation and the remainder to the tax credits, direct tax exemptions and other incentives listed above. Questions have been raised as to whether these incentives subsidize manufactured exports, imparting to their producers an unfair advantage. Clearly, exemption

---

1/ See Volume III of "Current Economic Position and Prospects of Brazil" WH-210a, November 30, 1971.

Table 30: THE EFFECTS OF THE INCENTIVES TO EXPORTERS OF MANUFACTURED PRODUCTS, MAY 1971

No.	Sector	Value IPI-ICM Subsidies as % of Factory Prices	Income Tax Subsidy as % of Factory Price	(% of Domestic Sales Price at Which Exports can be Sold Without Reducing Unit Profits) Indirect Tax Exemptions Only: IPI-ICM Subsidies on final product only	Same as (3) plus rebate of IPI on inputs	Same as (3) plus rebates of IPI-ICM on inputs	All Exemptions and Subsidies
		(1)	(2)	(3)	(4)	(5)	(6)
1	Canned and Preserved Food	12.2	0.024	0.89	0.89	0.79	0.68
2	Sugar	10.0	0.022	0.91	0.90	0.80	0.70
3	Confectionary Products	10.0	0.051	0.91	0.89	0.80	0.68
4	Meat Daily Cereal Other Foods	3.8	0.039	0.96	0.93	0.82	0.75
5	Beverages	29.8	0.038	0.77	0.62	0.58	0.42
6	Fats and Oils	8.8	0.280	0.92	0.91	0.80	0.71
7	Tobacco Products	30.0	0.011	0.77	0.24	0.22	0.16
8	Thread and Yarn	9.8	0.019	0.91	0.85	0.77	0.68
9	Textiles	24.0	0.018	0.81	0.84	0.75	0.59
10	Knitwear	24.0	0.020	0.81	0.83	0.75	0.59
11	Clothing	20.0	0.036	0.83	0.85	0.77	0.61
12	Slacks, bags and linen goods	10.0	0.022	0.91	0.89	0.80	0.71
13	Shoes	24.0	0.055	0.81	0.82	0.76	0.57
14	Lumber	6.0	0.035	0.94	0.90	0.82	0.74
15	Wood Products and Furniture	29.4	0.049	0.77	0.80	0.74	0.53
16	Wood Pulp	8.0	0.041	0.93	0.88	0.81	0.71
17	Paper and Products	26.2	0.032	0.79	0.81	0.75	0.57
18	Printing and Publishing	20.0	0.045	0.83	0.83	0.77	0.61
19	Leather	10.2	0.040	0.91	0.88	0.79	0.68
20	Leather Goods (Except Shoes)	30.0	0.029	0.77	0.81	0.73	0.55
21	Rubber Products	30.0	0.017	0.77	0.81	0.73	0.55
22	Plastics	30.0	0.029	0.77	0.81	0.73	0.54
23	Synthetics	15.0	0.029	0.87	0.85	0.78	0.65
24	Chemicals	8.8	0.032	0.92	0.85	0.81	0.71
25	Chemical Products	25.4	0.026	0.80	0.75	0.71	0.55
26	Petroleum Products	0.4	0.045	0.99	0.93	0.85	0.80
27	Non-Metallic Mineral Products	16.0	0.051	0.86	0.84	0.79	0.63
28	Class and Products	16.0	0.038	0.86	0.83	0.79	0.65
29	Iron and Steel	20.0	0.046	0.83	0.86	0.81	0.64
30	Non-Ferrous Metals	9.8	0.008	0.91	0.86	0.80	0.72
31	Metal Castings	10.0	0.024	0.91	0.86	0.80	0.71
32	Metal Products	18.0	0.018	0.85	0.85	0.77	0.64
33	Agricultural Machinery	10.0	0.047	0.91	0.87	0.80	0.69
34	Non-Electrical Machinery	16.8	0.031	0.86	0.84	0.78	0.64
35	Electrical Machinery	13.8	0.033	0.88	0.84	0.79	0.67
36	Domestic Appliances	22.8	0.027	0.81	0.81	0.76	0.59
37	Shipbuilding	17.8	0.020	0.85	0.85	0.77	0.64
38	Railroad Vehicles	9.2	0.021	0.92	0.87	0.81	0.72
39	Automobiles	26.4	0.024	0.79	0.79	0.71	0.54
40	Bicycles and Motorcycles	30.0	0.024	0.77	0.80	0.72	0.54
41	Airplanes	10.0	0.031	0.91	0.85	0.81	0.71
42	Precision Instruments	28.0	0.026	0.78	0.78	0.73	0.55
43	Miscellaneous	29.4	0.052	0.77	0.78	0.73	0.52
	Average	14.7	0.033	0.87	0.84	0.76	0.64

Source. Mission calculations.

of manufactured exports from indirect taxation does not constitute subsidization since it does not price factors below their cost to the economy. Neither can indirect tax incentives be said to permit the Brazilian producer to be inefficient relative to the world market since indirect tax exemptions are conceded to their exporters by most exporting countries. Even the tax credit, income tax exemption, and subsidized credit elements of the incentive system may not permit the export producer to be inefficient by international standards owing to several offsetting factors, such as:

(i) indications that Brazil's exchange rate may be overvalued to a certain extent even though any additional overvaluation may have been forestalled since 1968 by the adoption in that year of a flexible exchange rate policy; and,

(ii) the existence in Brazil of an unusually high level of payroll taxation destined to finance the social security system and various other social programs; exemption from such taxation not being included among the export incentives.

190. A review in 1972 of the elements of the incentive system indicates that there was one significant change subsequent to the preparation of the foregoing analysis. Decree-Law 1219 of May 12, 1972, concedes drawback of tariff incident on imported inputs used by firms in production for the domestic market on condition that such firms expand their exports. In these cases, imported inputs equal in value to as much as 30 percent of the firm's exports become eligible for drawbacks. It is difficult to quantify the impact of this additional export incentive: first, because exemption from tariffs on imported intermediate goods is conceded liberally in Brazil, independently of export performance; and, second, because increasing internal competition is likely to require the producer to shift the benefit of such drawback forward to the domestic consumer. Assuming an average tariff rate of 25 percent on the imported inputs concerned and that these imports do, in fact, equal 30 percent of the firm's exports, and complete retention of these benefits by the producer, this new incentive would reduce from 64 to about 56 percent the percentage of domestic market prices at which exports could be sold without sacrificing unit profits.

191. Setting aside the problems of possible exchange rate overvaluation high payroll taxes and other differential burdens borne by the Brazilian supplier, the incentive system probably accorded an average preference to Brazilian suppliers on the order of 17 percent of production costs including profit in 1971. This figure is derived by comparing the value of the subsidy elements of the system to before-tax ex-factory prices rather than to domestic sales prices. The additional drawback benefit conceded in 1972 could increase this margin by several percentage points in certain instances.

192. There are other new policy developments which should add to the impetus for manufactured exports. As of August 1972 the Government authorized the duty-free transfer to Brazil of complete used industrial establishments on the condition that the output is directed mainly to the export market.

Duty exemptions will be granted regardless of the law of national similars. This is an abrupt departure from past policy, which forbade the importation of used equipment. It is designed to exploit Brazil's comparative advantage in the form of cheap labor of which labor-scarce countries are becoming increasingly conscious. A Canadian firm dealing with sisal processing and textile concerns from Japan and Taiwan have already expressed their interest in transferring their plants to Northeast Brazil. More importantly, it appears that leading car manufacturers will move production units -- such as motor plants -- to Brazil to supply components to home markets.

193. Finally, in October 1972 the Government promulgated legislation enabling the formation of private trading companies. In some subsectors, especially shoes and textiles, continuation of recent goods export performance had been impeded by the structure of industry, i.e., many small producers. The small Brazilian firm tends to have neither the experience nor the manpower needed to maintain contact with the external market and, moreover, does not produce in sufficient volume to permit it to respond to the needs of large-scale foreign importers. Trading companies will provide needed marketing expertise and also will be able to agglomerate and standardize the output of a number of small producers.

194. About half of Brazil's manufactured exports (excluding processed agricultural commodities) have been directed to its LAFTA trading partners but even in LAFTA such Brazilian exports cover no more than about one percent of total demand for manufactured imports. Most of the remainder of Brazil's manufactured exports are directed to the United States and to the EEC countries. The important role of the international firm in Brazil's manufacturing exports and the market sharing arrangements characteristic of such firms probably explains, at least to some extent, Brazil's concentration on the LAFTA market. This concentration is likely to be alleviated by the growing tendency on the part of some of the industrialized nations to engage in an international division of labor with Brazil. This tendency is manifested not only by the above mentioned decree permitting transfer of industrial facilities to Brazil but also by a number of other developments such as Japanese interest in establishing new pulp plants in Brazil for supplying its home market. Both the product diversity of Brazil's manufactured exports and this trend toward increasing market diversity contribute greatly to the generally favorable prospects for Brazilian manufacturing export growth.

Additional Import Substitution

195. It is frequently alleged that Brazil has exploited the import substitution process to the limit and that it is for this reason that the exportation of manufactures now is being emphasized. Even including processed agricultural products (sugar, soluble coffee, canned beef, etc.) manufactured exports accounted for no more than 6 percent of gross Brazilian manufacturing output in 1971. The rapid increase of nonagricultural manufactured exports focused on by Table 29 above, accounted for only about 5 percent of the increment of Brazilian manufacturing output between 1970 and 1971. Manufactured imports, on the other hand, covered about 9 percent

of Brazil's total demand for manufactures in 1971, being concentrated in the capital equipment, ferrous and nonferrous metals and chemicals and petrochemicals categories. From this situation several implications can be drawn:

(i) growth of Brazilian manufacturing remains primarily dependent upon internal market expansion;

(ii) the emphasis on manufactured exports is most important as one of the components of the drive to alleviate the foreign exchange constraint on economic growth;

(iii) there remains considerable opportunity and need for import substitution.

196. The Government has a number of programs designed to achieve additional import substitution in economic fashion. One is the IBRD/IDB financed project for increasing the production capacity of Brazil's three major flat products steel mills from 5.4 million tons per year as of 1970 to 11.2 million tons per year in 1974. In 1972 the Government was developing a companion program for much needed expansion of the non-flat segment of the steel sector. Brazil has an important natural advantage in the production of steel, namely its enormous reserves of high grade hematite. Lack of high quality coal and limited reserves of natural gas offset this advantage to some extent but certainly not sufficiently to warrant Brazil's foregoing the development of its steel industry which already is very substantial in size but which has not kept pace in capacity terms with the recent very rapid growth of the economy.

197. The fertilizer industry and plans for its expansion are discussed in great detail in Volume VII of this report. An associated development is that of the petrochemicals industry. An integrated petrochemicals industry based in the state of Sao Paulo is well on its way to being established. In terms of basic feedstocks -- ethylene, propylene, benzene, butadiene, toluene, the xylenes and the C-series aromatics -- the output of this industry will amount to about 600,000 tons per year in 1972 and, in accordance with an expansion program now underway, will rise to about 1,100,000 tons per year by 1976. The bulk of this feedstock production, based on naphtha, comes from one enterprise, Petroquimica Uniao, S.A. Some additional feedstock production (ethylene and benzene) is forthcoming from Petrobras and Union Carbide.

198. Installation of downstream plants is proceeding rapidly, primarily in Sao Paulo but also in Bahia. In accordance with investments already made and/or approved by the Brazilian Petroleum Institute, Petroquimica Uniao calculates that later generation enterprises with feedstock needs totalling 150 percent of its 1976 output capacity will have been installed by that year. Total investment in this complex amounts to about US$600 million. The complex will have a major import substitution effect; some US$300 million (750,000 tons) of petrochemical products were imported by Brazil in 1971.

Table 31: SAO PAULO PETROCHEMICAL POLE PRODUCTION OF BASIC FEEDSTOCKS

	1972	1977
Ethylene	197,000	450,000
Petroquimica Uniao	167,000	300,000
Union Carbide	-	120,000
Petrobras	30,000	30,000
Propylene	93,000	168,000
Petroquimica Uniao	93,000	168,000
Benzene	158,000	158,000
Petroquimica Uniao	110,000	110,000
Uniao Carbide	18,000	18,000
Petrobras	30,000	30,000
Butadiene	50,000	50,000
Petroquimica Uniao	50,000	50,000
Xylenes	30,000	65,000
Petroquimica Uniao	30,000	65,000
C-Series	38,000	155,000
Petroquimica Uniao	38,000	155,000
Others	43,000	67,000
Petroquimica Uniao	43,000	67,000
TOTAL	609,000	1,113,000

Source: Petroquimica Uniao.

199. In addition to the so-called "Sao Paulo Petrochemical Pole", the Government now contemplates the installation of a second complex of almost equal capacity and cost in Bahia. Initially the Government had determined to limit the Bahia petrochemical development to downstream plants using aromatic feedstocks (benzene, toluene, xylenes, etc.), restricting feedstock productions and olefines-using plants (ethylene and propylene) to Sao Paulo because of the concentration of demand in the Center-South. Now, however,

the Government plans to mount a feedstock facility similar in dimension to Petroquimica Uniao and a full range of downstream plants in Bahia by 1977. Initially, at least, the bulk of the output of this complex would have to be marketed in the Center-South.

200. Development of the Bahia petrochemical pole has been the subject of feasibility studies by Japanese and French (French Petroleum Institute) consulting firms. The studies are complete but are held in confidence by the Government. Aside from the regional development impact, a principal justification cited by the Government for creation of the Bahia pole is its access to natural gas reserves located in that state. Here a problem has arisen, however, in that the same reserves will also be tapped by a new Petroquisa 1,000 tons per day ammonia facility; natural gas and naphtha being alternative raw materials for the production both of ammonia (for fertilizer) and petrochemical feedstocks. Thus the Government now contemplates feeding the Bahia facility with a mixture of natural gas (one-third) and naphtha (two-thirds). Such a mixture would give the Bahia facility an important advantage vis-a-vis Petroquimica Uniao, which is entirely naphtha-fed. It would yield a relatively lower propylene and relatively higher ethylene content of basic feedstock output. This is important because of the readier usability of ethylene (polyester fibers, household plastic goods, construction materials) than of propylene (detergents, acrylic glass and fibers).

201. The Bahia reserve is estimated to contain 27 billion cubic meters of natural gas. Although some of this gas presently is being reinjected, even more, 412.2 million cubic meters in 1970, is being lost in connection with the extraction of crude petroleum. Petrobras has assumed responsibility to provide 665.5 million cubic meters annually for the ammonia operation (300 million m^3), for 5 downstream petrochemical plants (220.5 million m^3) and for the USIBA direct reduction steel mill (115.0 million m^3). If the Bahia feedstock facility were to be entirely gas fed, annual gas consumption would rise to about 1,665 million cubic meters and the reserves entirely depleted in 15 years, too brief a period to justify the investment involved. With gas covering only one-third of the feedstock plant's requirements, on the other hand, total gas use will approximate one billion cubic meters annually, so that reserves would be depleted only in 27 years. An additional factor to be taken into account is the prospect of bringing into production natural gas reserves located on the continental shelf off the coast of the neighboring state of Sergipe.

202. Nominal tariff rates on petrochemicals products presently produced in Brazil range from 15 to 46 percent with most of these tariffs concentrated in the 30-40 percent bracket. With the increase of scale implicit in the ongoing Sao Paulo expansion program as well as the large initial scale of the Bahia operation, the efficiency of overall petrochemicals output should improve. Additional transport costs imposed by the geographic division of petrochemical operations will tend to be offset, at least to a certain extent, by the location of the Bahia pole at the source of its natural gas input.

203. In the non-ferrous metals sector, the main opportunity for additional import substitution concerns copper. Substantial reserves of copper exist in the state of Bahia but have not been exploited in significant scale. The Government is formulating a project costing upwards of US$100 million which would include both mining facilities and an electrolytic processing plant and would have the capacity to substitute all of Brazil's copper imports at 1971 levels.

204. Perhaps the most pressing of the needs for additional import substitution, however, has to do with the capital equipment subsector, expansion of which, as indicated above, has fallen behind that of total domestic equipment demand. The principal tool being used by the Government for promoting the development of this sector is FINAME, the capital goods financing fund. FINAME is a response to the attractive credit terms upon which foreign equipment is made available to Brazilian purchasers. In 1971 terms on FINAME loans were extended to 8 years plus two-years' grace in an effort to overcome the gap between external and internal capital equipment suppliers' credit terms. However, FINAME resources have been more expensive (at full monetary correction plus 8 percent interest) than external suppliers' credits, have been limited in magnitude, and, moreover, have been made available primarily for shelf-type items such as large trucks rather than for made-to-order items. Brazilian suppliers of the latter have fared very well in supplying equipment for public investment projects financed by international financial agencies under competitive bidding where the credit constraint is eliminated. Late in 1972, therefore, the Government established a new line of FINAME credit for made-to-order equipment. This new line bears terms of up to 15 years and interest of 3 to 6 percent plus monetary correction. The Government may also find it advisable to reexamine its implementation of the "Law of Similars" with regard to capital goods imports. Called for, perhaps, is abolition of this legislation and its replacement by lower statutory tariff rates, at least in the case of capital equipment.

Table 32: FINAME OPERATIONS

(In millions current Cr$)

	1965	1966	1967	1968	1969	1970	1971
Total Domestic Equipment Procurement	2,282.3	3,794.8	4,450.2	6,871.0	9,242.0	12,763.0	17,872.0
Finame Loans*	42.1	71.2	103.2	205.9	218.1	321.8	682.7
For Heavy Trucks	10.8	13.5	11.3	30.4	34.1	67.4	227.9
For Road Paving Equipment	3.2	6.1	19.6	32.8	39.8	49.3	89.4
To Food Products Industry	5.5	7.6	11.2	17.5	22.1	42.3	62.7
To Textile Industry	2.7	5.6	7.9	22.4	26.1	25.6	40.7
Other	19.9	38.4	53.2	102.8	96.0	137.2	262.0
FINAME Loans as Percent of Total Domestic Procurement	1.8	1.9	2.3	3.0	2.4	2.5	3.8

* Excludes loans for construction materials.

Sources: FINAME, FGV, staff estimates.

Geographic Dispersion

205. The geographic dispersion element of the Goverment's manufacturing development strategy is being served by its decision to locate a second petrochemical pole in Bahia as part of the overall Northeast industrialization scheme discussed above (para. 116).

Modernization of Traditional Industry

206. Volume VII of this report contains a detailed analysis of Brazil's textile and leather goods industries which, together with food processing, are the principal constituents of the traditional subsector of manufacturing industry. The Government has established a fund for the modernization and reorganization of traditional industry (FMRI) in the National Economic Development Bank (BNDE). This fund, along with the food processing components of the export corridors and Northeast development programs and the sugar industry reoorganization program are the principal means being used by the Government to improve the efficiency of the traditional subsector. FMRI and the sugar program are unique in that they make merger, administrative reorganization, etc., a condition for financial support. FMRI is viewed with some hostility by entrepreneurs, especially in the textile sector, who fear loss of control over family-owned and administered enterprises. However, FMRI's leverage is great, owing to the severe financial difficulties faced by many firms, including widespread indebtedness to the Government on account of arrears in payment of taxes. There is a school of thought in Brazil which

holds that the law of survival rather than conditioned financial assistance ought to be relied upon by the Government to improve efficiency. Such a natural modernization process runs the risk of unnecessary abandonment of older equipment and excessive restriction of employment. It may in any case not be feasible since the Government will be under considerable pressure to continue to forego collecting its tax debts and to provide "bail out" finance rather than permit firms with thousands of workers to go under. Even under the best of circumstances, however, the traditional subsector is unlikely to provide much additional employment for some time to come.

Technology

207. In Brazil technology has been less of a bottleneck to industrial than to agricultural development. The appropriate technology for any given industrial activity probably is less dependent upon local conditions than is agricultural technology. Brazil has been able to import production processes from the industrial countries rather freely. However, this has contributed to the degree of foreign ownership of production capacity which presently exists and, additionally, has imposed a substantial foreign exchange burden on the economy in the form of royalty and technical assistance remittances. For some time the Government has maintained in the Planning Ministry a fund for the financing of industrial research (FINEP). Recently it created the National Institute of Industrial Property (INPI) in the Ministry of Industry and Commerce which has as its principal function the monitoring of all foreign technical assistance contracts and royalty agreements. In 1972 a second fund for industrial technology was created by the Government of the state of Sao Paulo. The emphasis of these measures is on the organization, exploitation and development of Brazil's considerable human engineering resources in the sense of identifying and financing the domestic market for their services and forestalling unnecessary resource to foreign technology. These agencies should focus as well on the identification of production processes taking advantage of Brazil's bountiful supply of labor; not as alternatives to existing processes but as guidelines for new lines of industrial activity to which Brazil's rapidly growing manufacturing sector can be directed.

Prospects for Manufacturing Growth

208. Within the context of an overall 8 to 10 percent growth target, the Government expects that manufacturing would grow at a 10 to 12 percent pace. This report concludes that overall growth in the lower half of the range targeted by the Government may be feasible and in so doing projects the savings and investment behavior consistent with such a growth path. At 8.5 percent overall growth the domestic market for manufactures could be expected to grow at a 10 percent pace. In the case of traditional consumer goods this assumes that the elasticity of demand for such goods continues the recent trend, i.e., increasing about three-fourths as rapidly as total consumption. Conversely, demand for consumer hard goods, also in line with recent trends, is assumed to grow about two-thirds more rapidly than total consumption. In terms of the elasticity of demand to changes in per capita income, demand for traditional and for dynamic consumer durables would grow 0.64 and 1.86 times as fast as per capita income, respectively.

209. Demand for intermediate goods is difficult to project because it is determined primarily by the level of activity in manufacturing. If the recent historical trend prevails, demand for intermediate goods will grow 1.29 times as fast as GDP. Demand for capital goods is projected to grow 1.14 times more rapidly than total investment in fixed capital as equipment continues to increase as a percentage of total capital formation, reflecting present government policies which concentrate on investment in the manufacturing sector, on agricultural mechanization, etc.

Table 33: GROWTH OF MARKET FOR MANUFACTURED GOODS; 1971-78

(Monetary values in millions 1971 Cr$)

	1971				Demand Elasticity	Annual Market Growth (%) 1971-78	1978
	Production	Imports	Exports	Market			Market
Traditional Consumer Goods	51,171.5	729.9	4,973.2	46,928.2	0.78	6.4	73,406.0
Dynamic Consumer Durables	11,751.7	268.5	-	12,020.2	1.64	13.4	28,987.0
Intermediate Goods	61,875.1	5,499.0	1,580.2	65,793.9	1.29	11.0	136,598.0
Capital Goods	18,575.0	6,892.0	719.3	24,837.7	1.14	11.3	52,550.4
Other Goods	1,825.3	6.3	18.5	1,813.1	1.00	8.2	3,147.8
TOTAL	145,198.6	13,485.7	7,291.2	151,393.1		10.0	294,689.2

210. Clearly this is only a very rough estimate as to Brazilian market prospects. In any case, however, Brazilian manufacturing should be permitted to expand somewhat more rapidly than the domestic market by the substitution of imported intermediate goods implicit in its steel, fertilizer, petrochemical and copper investment programs and by continued rapid expansion of manufactured exports. It may well also be that the domestic capital goods industry will resume the long-term growth in its share of total Brazilian equipment procurement which was reversed slightly during the last few years. Such restoration of the earlier trend would have a very beneficial impact on the balance of payments which has been heavily burdened by the growth of capital goods imports in recent years. On balance, therefore, manufacturing growth somewhat in excess of 10 percent annually can be expected at an overall 8.5 percent rate of economic growth.

IV. PUBLIC INVESTMENT AND ITS FINANCING

211. The purpose of this chapter is to display the enormous savings capacity of Brazil's public sector, to show how these resources are being allocated and to comment on the implications of public savings and investment for future economic growth and social welfare. In this chapter the broadest possible definition of public savings is employed. Two good examples of the broadness of this definition are the new Social Integration Fund (see para. 79) and the Coffee Account (see para. 161). The "float" of deposits minus withdrawals accumulated in the Integration Fund should be classified as private (workers') savings for national accounts purposes. Contributions to the Fund, however, are mandatory and their application is controlled by the public sector. Consequently, these forced savings are attributed by this report in the public sector.

212. The outcome of the financial operations of the coffee sector, i.e., the balance of the coffee account, is largely the result of government pricing policy which determines, inter alia, the incidence of the coffee export tax and the volume of coffee financing. Moreover, the accounts of the sector are held by the monetary authorities. If the annual change in the balance of the coffee account is positive -- that is, if coffee export tax revenues and receipts from the sale of coffee out of publicly owned supplies exceed Coffee Institute expenditures and whatever change may have taken place in the stock of coffee production and investment loans -- then the public sector has extracted current revenues from the sector. If, on the other hand, the result is negative, then the public sector has caused resources to be transferred to the coffee sector. Thus this report treats positive changes in the coffee account as current public revenues and negative changes as current public sector transfers to the private sector. Coffee investments, consequently, are financed by private rather than public savings.

213. In conformity with this broad definition, public sector savings accounted for 60 percent of total Brazilian domestic savings, on average, during the 1969-71 period. The rate of public savings increase will, therefore, be absolutely crucial to attainment of the rates of domestic savings required to support the Government's ambitious overall growth targets. Moreover, so great a degree of control over domestic savings gives the Government tremendous power in the overall allocation of Brazilian investment resources.

A. The Central Government

214. Chapter II of this report noted that reduction of the cash deficit of the Central Government had played a vital role in containing aggregate demand and reducing the rate of inflation from 90.5 percent in 1963-64 to 24.2 percent in 1967-68. Subsequently, near elimination of the cash deficit has contributed greatly to an enormous increase in the real value of the stock of bank credit made available to the commodity producing sectors (see para. 251).

Table 34: SUMMARY DATA: CENTRAL GOVERNMENT CASH BUDGET AS PERCENT OF GDP

	Revenues	Expenditures	Deficit
1963	9.0	13.3	4.3
1964	9.3	12.4	3.1
1965	10.6	12.2	1.6
1966	11.0	13.2	1.2
1967	9.5	11.4	1.9
1968	10.4	11.6	1.2
1969	10.9	11.5	0.6
1970	11.4	11.9	0.4
1971	12.0	12.3	0.3

Source: Ministry of Finance.

Expenditures

215. Cash deficit reduction has been attributable primarily to improved tax performance which is discussed below. Performance on the expenditure side has also been good. One of its most notable aspects is the extent to which the Federal Government has increased its revenue sharing with state and municipal governments. The tax reform of 1967 increased such sharing very substantially by allocating 20 percent of federal income and value added tax revenues to the states, largely on a need basis. This was cut back to 12 percent in 1969 because of the strain the higher share had imposed on the federal budget. However, with federal revenues being very buoyant relative to nominal changes in GDP, the volume of shared revenues moved rapidly back toward the peak level they had attained as a percentage of GDP in 1968. Personnel expenditures have experienced two conflicting trends: surplus civil service employment has been reduced to a certain extent by retiring personnel and thereby increasing the Government's pension bill; on the other hand, the salaries of key civilian personnel, especially in technical fields, and of military personnel have been increased substantially in real terms. Finally, although those discretionary transfers subsidizing the operating deficits of transport agencies such as the airlines, shipping companies and railway network were sharply reduced. The railway network continues to require subsidization; current transfers to it in 1971 amounting to some 0.3 percent of GDP or to approximately as much as the federal cash deficit in that year.

Table 35: DETAILED BREAKDOWN: CENTRAL GOVERNMENT BUDGET AS PERCENT OF GDP

	1965	1966	1967	1968	1969	1970	1971	(Est.) 1972
Revenues	9.4	9.9	8.1	8.2	9.2	9.6	10.2	10.2
Total	10.6	11.0	9.5	10.4	10.9	11.4	12.0	12.2
Minus Tax Sharing	1.2	1.1	1.4	2.2	1.7	1.8	1.8	2.0
Current Expenditures	7.9	7.8	8.3	6.7	7.0	7.2	7.4	7.1
Direct	3.4	4.0	3.4	3.1	3.2	3.0	2.8	2.7
Civilian Personnel	(1.4)	(1.6)	(1.5)	(1.2)	(1.2)	(0.9)	(0.8)	(0.7)
Military Personnel	(1.2)	(1.5)	(1.3)	(1.1)	(1.3)	(1.5)	(1.4)	(1.4)
Other	(0.8)	(0.8)	(0.6)	(0.8)	(0.7)	(0.6)	(0.6)	(0.6)
Transfers, Personnel	3.0	2.5	3.1	2.8	2.2	2.4	2.3	2.2
Family Bonds	(0.2)	(0.1)	(0.3)	(0.2)	(0.2)	(0.2)	(0.1)	(0.1)
Pensions	(1.0)	(0.9)	(1.1)	(1.2)	(1.2)	(1.4)	(1.3)	(1.3)
To Decentralized Administration	(1.8)	(1.5)	(1.7)	(1.4)	(0.8)	(0.8)	(0.9)	(0.8)
Interest	(	(	0.1	0.3	0.2	0.5	0.4	0.3
Discretionary Transfers	(1.5	(1.3	1.7	0.5	1.4	1.3	1.9	1.8
Current Account Surplus	1.5	2.1	-0.2	1.5	2.2	2.4	2.8	3.1
Capital Expenditures	3.1	3.3	1.7	2.7	2.8	2.8	3.1	3.2
Cash Deficit and Financing	1.6	1.2	1.9	1.2	0.6	0.4	0.3	0.1
Treasury Bonds and Bills	0.9	1.2	1.0	-0.1	1.2	0.8	1.7	
Other Borrowing	-	-	-	0.2	0.2	0.1	0.1	
Monetary Authorities	0.7	-	0.9	1.1	-0.8	-0.5	-1.5	

Source: Table 5.2, Statistical Appendix.

Deficit Finance

216. The Government's internal borrowing through the sale of treasury bonds and bills merits some emphasis. In 1964 the Government instituted its adjustable Treasury Bond (ORTN) subject to ex post monetary correction and created various mechanisms of compulsory ORTN purchase. ORTN became very quickly, however, an attractive instrument in which institutions like the National Housing Bank (BNH) could hold their liquidity, ORTN maturities ranging from one to five years. The process of creating a market for treasury paper culminated in 1970-72 with the introduction of short-term (92, 182 days) treasury bills sold at discount through auction rather than subject to monetary correction. By 1972 a system of dealers for this paper had been developed enabling banks, non-bank financial institutions and industrial and commercial firms to hold short term liquidity in this paper and to exchange it among themselves. Thus, treasury borrowing evolved from what originally

was purely a system of deficit financing into a sophisticated monetary management tool.

Table 36: BOND AND BILL SALES, SELECTED YEARS, AS PERCENT OF GDP

	1965	1967	1969	1971	Stock as of 12/31/71
Treasury Bonds (Gross)	0.9	1.8	3.9	3.2	6.9
Voluntary 1/	0.5	1.7	3.7	3.1	
One Year	(0.2)	(0.8)	(3.1)	(2.1)	
Two Years	(0.3)	(0.4)	(0.5)	(0.7)	
Five Years	(-)	(0.5)	(0.1)	(0.3)	
Alternative to Taxes	0.2	0.1	-	-	
Capital Revaluation	(0.2)	(0.1)	(-)	(-)	
Other	(-)	(-)	(-)	(-)	
Compulsory	0.2	-	0.1	0.1	
Indemnification Fund	(0.2)	(-)	(-)	(-)	
Insurance Co. Reserves	(-)	(-)	(-)	(0.1)	
Other	(-)	(-)	(0.1)	(-)	
Treasury Bills (Net)	-	-	-	1.4	1.7

1/ Includes bond holdings as alternative to compulsory bank reserves, presently some 55 percent of total bank reserves.

Source: Central Bank of Brazil; Department of Public Debt.

Tax Structure

217. Sweeping tax reforms were made by the Government during the 1964-67 period. At the outset of that period the Government imposed monetary correction and stiff penalties on tax arrears and instituted source withholding of taxes on wages, salaries and capital income. It also initiated a program of improvement of tax administration with the help of foreign technicians which is still in process. As of January 1, 1967 a new definition of the tax structure was incorporated in the national constitution. The major change wrought by this incorporation was the transformation of federal and state sales taxes from cascade type to value-added imposts. The cascade tax had the effect of distorting the structure of industry by encouraging the vertical integration of the firm and discouraging specialization and economies of scale aalong horizontal lines. The January 1, 1967 reform also introduced the greater degree of tax sharing noted above (para. 214) not only as between the Central Government on the one hand and local governments on the other but also between states and municpalities; the latter receiving a portion of the state value-added tax collected within their boundaries. Finally, the reform

eliminated an old stamp tax which previously had generated about 10 percent of central government revenues. Since 1967, the major changes in central government tax structure have been: (i) the institution in 1969 of the education payroll tax, half of which accrues to the Central Government (see para. 70); (ii) the preemption in 1971 of half of the Article 34/18 investment tax credit resources for application by the Central Government in the North and Northeast regional development programs (see para. 100); (iii) the transfer, in 1971, of accruals from the tax on financial operations from the Central Bank to the Central Government; and (iv) the initiation, in 1971, of the reduction of effective central government value-added and corporate income tax rates as the counterpart to mandatory contributions by employers to the Social Integration Fund (see para. 79). All of these most recent measures save the first one merely transfer revenues from one segment of the Government to another. Thus some of the sharp increase in central government revenues which has taken place over the last few years does not represent an increase in overall tax burden.

Fiscal Incentives

218. Nevertheless, federal revenues have been very elastic to changes in national income, especially during the rapid growth years 1968 through 1972. Excluding the effect of the article 34/18 preemption and the incorporation of the financial operations tax, they have increased at a 13.8 percent pace in real terms over these years compared to the 9.9 percent pace of economic growth; i.e., they have demonstrated an elasticity to national income growth of about 1.4. This is all the more remarkable in view of the extent to which the government has used the tax structure to provide incentives for economic activity. For example, terms for remittance by the firm of the value added taxes it collects on behalf of the government gradually have been lengthened until they conform with standard credit terms for the product concerned, e.g., the 90 day period for remittance of the value added tax on intermediate chemicals conforms to the payment terms customarily conceded by suppliers. However, the lengthening of remittance terms has had only a one time impact on tax elasticity; more important are the various fiscal incentives for investment and for manufactured exports which have been made available by the government. Besides the 34/18 scheme and the wholesale exemption of capital goods from import duties and value added taxes, the investment incentives include a number of tax credits and deductions from taxable income for investment by physical persons in certain financial instruments, such as:

(i) the Decree-Law 157 scheme whereby individuals are credited in amounts ranging from 12 to 24 percent of their income tax liability -- the range being inversely related to income bracket -- for corresponding investment in mutual funds which, in turn, must invest at least 70 percent of these resources in newly emitted corporate shares;

(ii) deduction from taxable income of 30 percent of amounts invested in new share issues of "open capital" corporation, 1/ Adjustable Treasury Bonds (ORTN), and, mortagage bonds (letras imobiliarias);

(iii) deduction from taxable income of 15 percent of amount invested in mutual funds; and

(iv) exemption from personal income tax of the first US$450 in dividends earned by the identified holders of shares in "open" corporations.

Tax Equity

219. As is demonstrated by Table 37, source withheld income taxes are approximately equal in magnitude to corporate income taxes and post-withholding residual personal income tax liabilities combined. There is no withholding of taxes on corporate incomes. As of 1972 such taxes were collected in 12, nominally equal, consecutive monthly payments commencing in February following the year in which the income was earned. Not only the interest cost of this delay but the fact that these payments are not subject to monetary correction substantially reduces the effective corporate income tax rate below its nominal level. About half of withheld tax revenues orginate from the taxation of earned incomes. The remainder comes from withheld taxation of capital income. About half of this remainder, or one-fourth of the total, originates from income remitted abroad to both physcial and juridical persons which is taxed at a rate of 25 percent. The remaining one-fourth comes primarily from the withheld taxation of domestic dividend and interest payments (excluding interest payments to financial institutions). Capital gains are not taxed. The progressive rate schedule of the withheld tax on earned incomes ranges from 3 to 15 percent while that on overall personal incomes (i.e., on the taxable income shown by annual income declarations) ranges from 3 to 50 percent. For personal incomes declared in 1971, only 44 percent of total liability was collected at source; the remainder being collected during the year following that in which the income was earned. Thus, just as in the case of corporate incomes, the limited extent of withholding on personal incomes discriminates in favor of persons in the higher income tax brackets and against those in the lower ones. However, this discrimination occurs in the highest deciles of income distribution only; incomes falling in the lower deciles being entirely exempt from taxation.

220. Formerly, the benefit to the firm from the exemption of its delayed income tax payments from interest and/or monetary correction was offset by taxation of false profits. The process of eliminating false profits taxation,

1/ "Open capital" status is conceded when the corporation distributes at least 20 percent of its voting shares to the public and is contingent upon the firm's increasing this "openness" by at least 10 percentage points every two years until 49 percent of voting stock has been distributed. Incentives for going public include a favorable corporate income tax rate -- 30 percent as opposed to 35 percent -- and reduction of the withheld income tax on distributed profits from 25 to 15 percent.

however, was completed in December 1968 by legislation permitting the firm to deduct from its taxable income an amount equal to the monetary correction of both fixed and working (inventories) capital. The Government has been reluctant to carry this process to its logical conclusion, i.e., to subject corporate incomes to "a pay-as-you-go" system because of the double tax burden this would impose during its first year of operation. The double taxation effect could be mitigated by offering the firm the alternative of paying interest and monetary correction on its delayed tax payments. The additional resources which could be generated by such application of "pay-as-you-go" would almost equal the current rate of net accruals to the Tenure Guarantee Fund. Assuming monetary correction of 16 percent (equal to the 1971-72 rate of price increase) and interest at 8 percent, application of pay as you go to 1971 corporate incomes would have increased total tax yield (including 34/18 deposits) by about Cr$1.5 billion or 0.5 percent of GDP. Net accruals to the Tenure Guarantee Fund in 1972 are estimated at the equivalent of 0.6 percent of GDP (see Table 6.7, Statistical Appendix).

Administrative Reform

221. The reform of both tax and expenditure administration which has been accomplished over the past several years joins with the reform of the tax structure in boding well for continuation of strong fiscal performance in Brazil. The impact of improved tax administration is difficult to quantify; the best statistical indicator is the fact that the number of personal income tax declarations was increased from 468,730 in 1967 to an estimated 8.3 million in 1971, i.e., to a number about half as large as the entire urban labor force and about 80 percent as large as that portion of the urban labor force required to file income declarations (those earning no more than the highest legal minimum wage are not required to file). Certainly anyone witnessing the events of the last several years would agree that the Government has succeeded in establishing a national consensus as to the obligation to pay taxes.

222. On the expenditure side, lack of controls over the obligation of government resources, excessive earmarking of government revenues for specific expenditure programs and poor budget formulation had forced the Finance Ministry, until 1969, to resort to a variety of ad hoc devices to keep expenditures under control. Annual decrees would simply set aside various expenditure appropriations under the title "expenditure containment", while additional appropriations of a more essential nature would be allocated to "reserve funds" to be liquidated during the year only in the event that revenue collections permitted. At the end of each year the Ministry would carry over into the subsequent fiscal period only those appropriations which it could not avoid liquidating in the short-term. However, post audit procedures exercised by the accounting tribunal of the Government's legislative branch would establish all appropriations not actually utilized during the year as debts (restos a pagar) of the Federal Government, regardless of whether expenditures under such appropriations had actually been obligated. But with rationalization of revenue earmarking by the 1967 tax reform, other improvements in budget formulation and expenditure control and rapidly increasing revenues, the Government, by 1969, was not only able to reduce the extent to which each new set of annual appropriations had to be set aside but was also

able to confront the problem of sorting out and canceling those unutilized appropriations (restos) of previous years which did not represent real debt. To this end Decree Law No. 836 of September 8, 1969 established criteria for the definition of an unutilized appropriation as a debt and canceled all appropriations outstanding from years prior to 1967 except for those which could be shown by interested parties to represent tangible obligations. By the time of the formulation of the 1972 cash program it was estimated that almost all of these old debts had been liquidated.

Progressivity and Revenue Sharing

223. Although the federal income tax is progressive, primarily by virtue of exempting lower income class wage earners from its incidence, it accounts for only about one-fourth of total central government revenues. The biggest federal revenue earner, the value-added tax, does contain an element of progressivity in that it exempts basic food products and features a wide range of rates -- 3 to 50 percent -- of which the lowest rates are on wage and intermediate goods and the highest on luxury items such as whiskey, cosmetics, jewelry, etc. 1/ The predominant element of progressivity in the fiscal system of the Central Government is an interregional one which flows from the system of tax sharing. This report focuses on tax sharing with the Northeast, Brazil's poorest region, at about half the national average per capita income level. Table 38 shows allocations to the Northeast from the Federal Participation and Special Funds and from those portions of the petroleum products and energy taxes earmarked for the states. It also shows the 34/18 deposits in the Northeast since these, in fact, represent additional sharing of federal income taxes with that region. On the negative side are the contributions of the Northeast to the Participation and Special Funds and to the state pool of petroleum and energy tax revenues. The net result is a transfer of federal revenues to the states which, in the 1968-70 period averaged some 7 percent of total federal revenues and 1 percent of GDP. The preemption of half of the 34/18 accruals by the PROTERRA and PIN regional development schemes will change the pattern of expenditure of these transfers without reducing their volume. In 1972 gross transfers to the Northeast, including those under PIN and PROTERRA are estimated to be 30 percent greater in real terms than in 1970. Moreover, if one takes into account other expenditures by federal agencies in the Northeast as well as total federal revenue collections in the Northeast, the overall revenue transfer is seen to be even greater than that accomplished via the tax sharing mechanisms (see Table 31, Volume IV).

1/ Actually cigarettes, which are under a special tax regime featuring rates of 200 percent and more, are the largest single commodity source of value-added tax revenue. This is regressive to the extent that cigarettes may be regarded as a wage good.

Table 37: FEDERAL REVENUE SHARING WITH THE NORTHEAST

(In millions 1971 Cr$)

	1968			1969			1970		
	To NE	From NE	Net to NE	To NE	From NE	Net to NE	To NE	From NE	Net to NE
Participation and Special Funds /1	1,033	96	937	700	116	584	743	125	618
Income Taxes	(517)	(28)		(350)	(43)		(372)	(43)	
Value Added Tax	(516)	(68)		(350)	(73)		(371)	(82)	
Sole Taxes	266 /2	146 /3	120	326 /2	170 /3	156	364 /2	229 /3	135
Petroleum Products	(229)	(132)		(284)	(152)		(304)	(200)	
Electric Energy	(37)	(14)		(42)	(18)		(60)	(28)	
Education Tax	30	-	30	40	-	40	49	-	49
34/18 Deposits	796	-	796	982	-	982	1,035	-	1,035
TOTAL	2,125	242	1,883	2,048	286	1,762	2,191	354	1,837
% of Federal Revenues			10.5			8.8			8.0
% of GDP			1.1			1.0			0.9

/1 Includes 12 percent of total federal income and value-added tax collections nationwide and in Northeast, respectively.

/2 Includes revenues allocated to the Northeast from that portion of these taxes earmarked for state governments.

/3 Includes that portion of these taxes collected in the Northeast earmarked for state governments.

Source: Ministry of Finance.

Outlook for Central Government Savings

224. It can be expected that central government revenues will continue to be as elastic to changes in GDP as they have been since 1965. On the current expenditure side, the Government has a firm policy of avoiding any increase above present levels in central government employment. Even assuming substantial real increases in real salary rates, therefore, it is unlikely that overall current expenditures will increase more rapidly than they have in the past. The buoyancy of the tax structure, together with policies designed to restrain current expenditure increase, mean that at high rates of economic growth central government savings will increase very rapidly.

Assuming that the economy grows at an 8.5 percent pace, central government savings could be expected to increase by about 19 percent annually.

Table 38: OUTLOOK FOR CENTRAL GOVERNMENT SAVINGS

(In millions 1971 Cr$)

	Average Absolute Values			Average Annual %	
	1969-71	1972-74	1975-77	1971/65	1978/71
Revenues	19,773	28,707	38,861	9.4	10.9
Total	23,407	34,172	46,242	10.3	11.1
Minus: Revenue Sharing	3,634	5,465	7,381	16.4	12.2
Current Expenditure	14,741	19,452	23,268	6.9	6.6
Direct Personnel	4,733	5,714	7,197	5.0	8.0
Personnel Trasfers	4,759	6,200	7,436	3.8	6.8
Other	5,249	7,538	8,635	11.9	5.4
Current Account Savings	5,032	9,255	15,593	19.2	19.2

Source: Tables 5.4 and 5.8, Statistical Appendix.

B. Local Government Finances

225. State and municipal government tax revenues are about three-fourths as large as central government tax revenues but both the current and capital outlays of local governments exceed those of the Central Government. Since 1968 most of the resulting gap has been made up by federal revenue sharing. Nevertheless, a substantial amount of borrowing has been done by local governments, primarily from internal sources, but in substantial degree from external sources as well (much of the latter in the form of financial credits). After a large jump in real terms following the tax reform of 1967, local tax revenues increased only about two-thirds as rapidly as has real GDP since 1968. Performance varies widely by state. The Northeast has contributed significantly to overall inelasticity by distributing very liberally exemptions from the state value-added tax (ICM) in order to attract industry to that region. Municipal property taxes also have performed rather poorly.

226. As indicated above (para. 124), an issue has arisen concerning the distribution of ICM revenues between states. The Northeast states are pressing for a more even distribution between state of origin and state of destination of revenues generated by the incidence of the ICM on interstate trade. However, the bulk of the impact of such a measure would fall outside the Northeast. Moreover, the exporting states are by no means flush with resources; urbanization and other needs already are straining their fiscal capabilities.

Rather it is the Central Government with its superior fiscal machinery and the ability to be selective between states in its allocation of resources which must address this problem.

227. The most pressing of the local expenditure needs are for education, water supply and sewerage, roads and electricity. These needs burden both the current and investment budgets of the local governments. The projection given in Table 39 of state current and investment expenditures takes into account the goals of the national education program, the national water and sewerage program, the national road program and the national energy program and the contributions which will be expected of the states to the financing of these programs. Regardless of the rate of overall economic growth, the current and investment outlays of the local governments would have to increase at average annual rates of 8.5 and 12.2 percent, respectively, over the 1972-78 period in order to meet these goals.

Table 39: LOCAL GOVERNMENT FINANCES

(In millions 1971 Cr$)

	1969/71 Value	1969/71 % GDP	1972-74 Average Value	1975-77 Average Value	Average Annual % 1968-71	Average Annual % 1971-78
Current Revenues	23,449	11.5	29,666	38,438	5.5	9.4
Indirect Taxes	18,552	9.1	22,740	29,365	6.2	9.0
ICM	(16,959)	(8.3)	(20,517)	(26,479)	(5.1)	(9.0)
Other	(1,593)	(0.8)	(2,223)	(2,886)	(19.8) /1	(9.0)
Direct Taxes	1,263	0.6	1,461	1,692	5.0	5.0
Revenue Sharing	3,634	1.8	5,465	7,381	2.4 /2	12.2
Current Expenditures	18,405	9.0	21,717	28,155	6.1	8.5
Consumption	13,933	6.8	16,512	21,520	9.4	8.6
Subsidies	502	0.2	50	50	-5.1	-0-
Transfers to Private Sector	3,970	2.0	4,705	6,135	-1.2	8.6
Current Account Surplus	5,044	2.5	7,949	10,283	3.2	12.2
Capital Expenditures	7,585	3.7	9,313	11,657	12.7	9.4
Direct Investment /4	6,044	3.0	6,713	8,907	13.3	9.5
Transfers to Federal Enterprises /5	1,541	0.7	2,600	2,750	10.6	9.1
Deficit and Financing	2,541	1.2	1,364	1,374	/3	-9.0

/1 Reflects institution of uniform road tax in 1969.
/2 Reflects reduction of Participation and Special Funds from 20 to 12 percent of federal income and value-added tax revenues in 1969.
/3 The local government budget balanced in 1968.
/4 Primarily for investments in education, road construction and water and sewerage administered by autonomous state agencies.
/5 Contributions to federal autonomous agencies and mixed entities in support of investments in electricity, steel production facilities and water and sewerage.

228. The local government revenue projection given in Table 39 takes into account the federal revenues likely to be available under current sharing arrangements if the economy grows at an overall 8.5 percent pace. It also assumes that efforts presently underway with the leadership of the Central

Government to increase the elasticity of state ICM tax yields will be successful. Under these circumstances it appears that local governments could meet their obligations, since their deficits would be reduced to very manageable proportions by 1978. However, this assumption, together with the greater than unitary elasticity of central government taxes, implies some increase in the overall tax burden on the economy, which already is very high. This, together with the strong financial position of the Central Government, supports the suggestion that the latter transfer an increased percentage of its revenues to local governments on a selective basis; that is, contingent upon demonstration by recepient states of adequate tax effort and of capacity to absorb additional shared resources.

C. The Overall Tax Burden and Public Sector Savings

229. Taking into account not only taxes levied by the central and local governments but also the principal payroll taxes (social security and Tenure Guarantee Fund), the coffee export tax, the Social Integration Fund and various other imposts, Brazil's total tax burden increased from about 24 percent of GDP in 1965 to 28.5 percent in 1968. This increase was attributable to the tax reform of 1967 which sharply increased local government revenues and to the introduction late in 1966 of the Tenure Guarantee Fund. If the 34/18 deposits also are included, the total tax burden in 1968 was 29.3 percent of GDP. From 1968 until 1971 the tax burden declined slightly owing to the inelasticity of local tax revenues and to the relative increase in coffee producers' prices financed primarily by reduction in the rate of the coffee export tax. For the future divergent forces are at work. The most important negative factor is the expected decline in both absolute and relative terms of the Tenure Guarantee Fund as increasing worker withdrawals reduce annual increases in the "float" of this fund from 0.9 percent of GDP in 1971 to a "normal" level of 0.2 percent of GDP by 1974. On the positive side, there is the elasticity of the federal revenue structure, based as it is primarily on the growth leading industrial sector. The principal uncertainty has to do with local government taxes; if their elasticity can be improved the total tax burden is likely to increase significantly after 1974 when the Social Integration Fund associated tax rate adjustment has been completed.

Table 40: THE OVERALL TAX BURDEN

(Billions 1971 Cr$; % GDP)

	1968		1971		1974		1978	
	Amount	% GDP	Amount	% GDP	Amount	% GDP	Amount	% GDP
Federal Government	17.9	10.6	27.0	12.0	37.5	12.9	51.0	13.7
Local Governments	17.2	10.1	20.5	9.1	25.9	8.9	33.9	9.1
Autonomous Entities								
Social Security Agencies	7.1	4.2	10.7	4.7	14.0	4.9	18.5	5.0
Coffee Contribution Quota	2.7	1.6	1.5	0.7	1.9	0.7	1.6	0.4
Tenure Guarantee Fund (net)	2.0	1.2	2.0	0.9	0.9	0.3	0.8	0.2
Social Integration Fund (net)	-	-	0.3	0.1	2.0	0.7	2.6	0.7
Other /1	1.4	0.8	1.1	0.5	0.1	-	0.2	0.1
Total Taxes	48.3	28.5	63.1	28.0	82.1	28.1	108.6	29.2
Article 34/18 Investment Credits	1.3	0.8	1.8	0.8	1.6	0.6	2.2	0.6
Overall Tax Burden	49.6	29.3	64.9	28.8	83.7	28.8	110.8	29.8
GDP	169.6	100.0	225.3	100.0	291.7	100.0	372.5	100.0

/1 Includes: Financial operations tax, education tax, various special taxes collected by agencies such as the National Ports and Navigable Waterways Department, the Merchant Marine Superintendency, the Agrarian Reform and Colonization Institute and the Sugar and Alcohol Institute (IAA). All of these, save the IAA's tax on sugar exports, had been incorporated in the Central Government budget by 1972.

Sources: Historical data on the Federal Government and autonomous agencies provided by the Finance Ministry and respective agencies. Data on local government revenues through 1968 are provided by the Getulio Vargas Foundation and IPEA. All other data represent staff estimates.

230. Overall, public sector savings increased at an 11.4 percent average annual rate between 1968 and 1971 as they rose from 9.7 to 10.1 percent of GDP. This increase was attributable mostly to the Central Government and to the mixed enterprises in the energy, steel and mining sectors as they expanded their operations and, in some cases, increased their prices relative to others in the economy. The coffee account was transformed from a substantial saver

to a substantial dissaver owing to the above-mentioned decline in the coffee export tax and to the expansion of the value of coffee production financing related to increased producers' prices.

231. Ongoing expansion programs, prevailing rates of demand increase and public pricing policies indicate that the savings of the public enterprises will continue to increase very rapidly. The coffee account, over the next several years, is likely to be a net saver; while its operations cannot be expected to generate very large surpluses, the coffee tax is likely to generate all of the resources needed to finance the expansion of production credit and of the recently instituted lines of tree planting and technical input credit. The favorable response of coffee producers to the tree planting program indicates that producers' prices were at adequate levels as of the end of 1972 and probably will not have to be increased significantly in relative terms over the next few years. Low stocks and below equilibrium production capacity have two favorable effects: on the one hand, they tend to sustain both prevailing world prices and the rate of the coffee export tax; on the other, they make unlikely any expenditure for stock accumulation until such time as new plantings raise production above the equilibrium level. Finally, in 1972 the subsidization of domestic coffee consumption by Brazil's Coffee Institute (IBC) was terminated, eliminating a significant drain on coffee sector resources. Although less so with the enormous export diversification of recent years, coffee remains a crucially important sector, one with considerable political power. The sector has pressed for abolition of the coffee export tax. If the Government were forced to give in to this pressure it should, as an offsetting measure, raise interest rates on coffee production and tree planting credits from their present levels of 4 and 3 percent, respectively, at least to parity with the highest agricultural credit interest rate, i.e., 15 percent. 1/

232. Especially if local tax elasticity is improved and in view of the buoyancy of central government revenues, high rates of economic growth will generate more than proportionate increases in central and local government savings. Despite the progress it has made, the Central Government still has surplus personnel. Elimination of these by attrition is likely to offset, at least in part, the need for additional education personnel at the local level. This report anticipates that real government salary rate increases will exceed slightly increase in per capita income because of the need to raise the salaries of some personnel, especially in education, relative to others in the economy. The combination of these two trends would hold the rate of current expenditure increase in both central and local governments to something on the order of 7 percent along an overall 8.5 percent economic growth path. Thus the overall current account surplus of central

---

1/ If the tax were to be abolished it would have far reaching adverse effects on the world coffee economy by stimulating excessive planting in Brazil and leading to reduction and/or abolition of coffee export taxes elsewhere in the world.

and local governments is projected to increase from 5 percent of GDP in 1971 to about 8 percent in 1977. Together with savings prospects for the remainder of the public sector, this should permit overall public savings to increase at a 14 percent annual pace if overall economic growth averages 8.5 percent. It should be stressed that this projection assumes considerable improvement in local revenue performance. Moreover, so high a rate of savings growth may be unnecessary and even undesirable in view of the increase in tax burden which it implies. Some shortfall in local revenue performance may not be inconsistent with meeting investment needs if the Central Government is willing to increase the extent of its revenue sharing.

Table 41: PUBLIC SECTOR SAVINGS

(In billions 1971 Cr$ and % GDP)

	1968		1971		1974		1977	
	Amount	% GDP	Amount	%GDP	Amount	% GDP	Amount	% GDP
Central Government (Excluding Shared Revenues)	3.8	2.2	6.2	2.8	10.9	3.7	18.1	4.9
Local Governments (Including Shared Revenues)	4.0	2.4	5.5	2.4	8.4	2.9	11.3	3.0
Social Security Agencies	0.3	0.1	0.5	0.2	1.0	0.3	1.7	0.5
Federal Autarkies 1/	0.4	0.3	0.4	0.2	0.3	0.1	0.1	-
Coffee Account	1.0	0.6	-0.5	-0.2	0.7	0.2	0.5	0.1
Official Credit Agencies 2/	4.2	2.5	5.3	2.4	5.4	1.9	6.7	1.8
Tenure Guarantee Fund (Net)	(2.0)	(1.2)	(2.0)	(0.9)	(0.9)	(0.3)	(0.8)	(0.2)
Financial Transactions Tax	(0.7)	(0.4)	(0.6)	(0.3)	(-)	(-)	(-)	(-)
Social Integration Fund (Net)	(-)	(-)	(0.3)	(0.1)	(2.0)	(0.7)	(2.6)	(0.7)
Investment Tax Credit Resources	(1.3)	(0.8)	(1.8)	(0.8)	(1.6)	(0.6)	(2.2)	(0.6)
BNDE-BNH Operating Profits	(0.2)	(0.1)	(0.6)	(0.3)	(0.9)	(0.3)	(1.1)	(0.3)
Mixed Enterprises 3/	2.7	1.6	5.2	2.3	8.4	2.9	11.5	3.1
TOTAL	16.4	9.7	22.7	10.1	35.1	12.0	49.9	13.4

1/ Federal Autarkies include agencies such as the National Highways Department (DNER), Railways Department (DNEF), Ports Department (DNPVN), Merchant Marine Superintendency (SUNAMAN), Civil Aviation Authority (DAC), Federal Universities, regional development agencies, (SUDENE, SUDAM, SUDESUL, SUDESF, SUDECO), Water and Sewerage Department (DNOS), Agrarian Reform Agency (INCRA), Forestry Institute (IBDF), Fishing Superintendency (SUDEPE) and Supply Superintendency (SUNAB). Although these agencies have some independent revenue sources the bulk of their funds come from the central government.

2/ The official credit agencies include, inter alia: the Housing Bank (BNH) which allocates the Tenure Guarantee Fund; the Federal Savings Bank (CEF) which allocates the Social Integration Fund; the National Economic Development Bank (BNDE) which allocates some of the financial operations tax resources and the Banks of the Northeast (BNB) and of the Amazon (BASA) which allocate most of the investment tax credit resources. Note that the coffee account is administered by the monetary authorities.

3/ Includes the three mixed enterprises making up most of the flat steel products sector (CSN, COSIPA and USIMINAS), the major iron ore mining company (CVRD), the state petroleum company (PETROBRAS), the state electric power network (ELETROBRAS, and associated companies) and various telecommunications enterprises (EMBRATEL, ECT and CTB).

Source: Table 5.13, Statistical Appendix.

D. Public Sector Investment

233. This report takes as the point of departure for its analysis of public sector investment the 1972-74 public investment program. In addition, the analysis covers investment by mixed enterprises in the energy, mining, steel and telecommunications sectors. It also covers investment not made directly by the public sector but financed by public sector resources channelled through official intermediaries. Finally, it projects investment during the 1975-77 period, the next investment program period, on the basis of the investment plans of some of the more important public entities of the resources likely to accrue to the official financial intermediaries.

234. The scope of the analysis is demonstrated by the fact that, over the 1969-71 period, investments financed by the public sector as defined here amounted to approximately 70 percent of total fixed investment in the Brazilian economy or to 12.5 percent of Brazilian GDP. Including both direct and financial public investment, about 38 percent was made for economic infrastructure, about 19 percent for social infrastructure (including housing), about 9 percent for regional development (including Northeast industrialization) and agriculture, and about 16 percent for industry. The remaining 18 percent is unidentified central and local government investment. Over the 1972-74 and 1975-77 periods these shares are unlikely to change significantly.

235. The goals of the Government's education, regional, agricultural and manufacturing industry development and investment program have already been discussed. In the petroleum field, the Government plans to increase refining capacity by 50 percent over the 1972-74 period, thereby avoiding any need to import refined products, and to push ahead with both inshore and offshore petroleum exploration with the general goal of maintaining the domestic supply of crude at one-third of Brazil's total requirements. One of the most interesting features of the petroleum development program is the installation of a pilot project for the extraction and processing of shale oil; Brazil having large reserves of such oil and the chance to increase domestic supply as a share of total requirements if they can be exploited on a large scale.

236. Brazil's plans for expansion of electricity generation and distribution assume an average annual demand growth of 12 percent. By 1967 it plans to have installed some 22,600 MW of generating capacity compared to 12,650 MW in 1971. For some time to come Brazil will be able to rely on hydraulic resources for its needed expansion of generating capacity. However, after the enormous Sete Quedas facility is installed on the Parana River (Brazil-Paraquay border) in the late 1970's, it will have to turn to alternative sources. Looking toward the future, Brazil already has installed a nuclear generating facility near Rio de Janeiro. Another interesting facet of thy electricity investment program is the undertaking of rural electrification in certain areas of the country. (See Volume VIII of this report for a survey of Brazil's power sector.)

237. Most of Brazil's transport sector investments will continue to be for highway. Some 14,000 km, are to be paved over the 1971-74 period compared to total paved roads of 23,674 km, in 1970. A much needed program of local feeder road construction also is underway. Very substantial investments are to be made in shipping, however, as Brazil increases its total fleet from 4.2 million tons in 1970 to 6.5 million tons in 1974. Much of this expansion will be in very large bulk carriers (up to 130,000 tons, some of which to be built in Brazilian yards) designed to carry iron ore outbound and crude petroleum inbound. There is also to be considerable expenditure on ports and railways, primarily in the context of the export corridors program.

238. Public investment in mining presently is concentrated in the expansion of the extraction, refining, inland transport and port capacity of the Companhia Vale do Rio Doce's (CVRD) facilities in the states of Minas Gerais and Espirito Santo. This should permit Brazilian iron ore exports to be doubled (from 31 to 61 million tons) over the 1971-75 period. Some additional expansion of these facilities will be effected subsequently but the main emphasis of future iron ore expansion will be on joint Brazil-US exploitation of the enormous iron ore deposits of the Carajas range in the state of Para.

239. Telecommunications investments will expand Brazil's long distance and international facilities, including installations of long distance direct dialing, but they will focus mainly on alleviation of the tremendous shortage of telephone terminals in its main urban centers.

240. Housing will decline as a percentage of total investment. Curtailment of BNH Tenure Guarantee Fund resources and the increasing concentration of these resources on water and sewerage are part of the reason for this. On the other hand, Brazil's housing deficit has been substantially alleviated by the massive housing investments of the recent past. However, housing investment will continue to be significant, totalling some 7 percent of total public sector investment during 1972-74. Hopefully, it can be concentrated in the pockets of urban poverty where housing conditions, especially in the Northeast, still are very poor. In such areas, housing investment increasingly is taking the form of provision of sites and services together with financing of construction materials.

241. Brazil's water and sewerage program spans the 1970-80 period and aims to increase the percentage of Brazil's urban population supplied with these necessities from 59 and 20 percent respectively in 1970 to 80 and, perhaps 50 percent in 1980. State governments are to finance half of the cost, the BNH and foreign lenders the remainder.

242. All told, public sector direct and financial investment would increase at a 10.6 percent annual pace in real terms over the 1971-77 period. This report calculates that total Brazilian fixed investment would have to increase at a 10 percent annual pace if an 8.5 percent economic growth path is achieved. No data are available relating external finance specifically to the public sector investment program as defined here. However, during 1972-74, the financing gap shown by Table 24 would suggest that net foreign

capital inflows would finance approximately the same share of public investment as during the 1969-71 period. During the 1975-77 period, public savings would be so large as to leave no financing gap. This does not suggest that the public sector would or should decrease its external borrowing, rather it implies a buildup of public sector deposits in Brazil's banking system.

243. One of the line items of Table 42 is "other direct federal investment". For 1969-71, this is simply the difference between total public sector investments and those this report has succeeded in identifying. For the 1972-74 period, it is the difference between identified central government investments on the one hand, and the sum of the central government current account surplus and the small treasury cash deficit projected by the Government, on the other. For the 1975-77 period, it is the difference between identified investments and the current account surplus.

244. The fact that these unidentified central government investments increase steadily and in massive fashion after 1971 indicates that the Central Government has substantially underestimated its revenues; something it has done systematically in recent years in order to forestall pressure for unnecessary expenditures. The significance of this is, however, that the Central Government should be ready either to share more of its revenues with local governments in the event that their revenues continue to increase less rapidly than GDP or to transfer additional resources to the commodity producing sectors either by reducing taxes or through some other device.

Table 42: PUBLIC SECTOR INVESTMENT AND ITS FINANCING

(Billions 1971 Cr$, % Total, % GDP)

	1969-71			1972-74			1975-77		
	Average Amount	% Total	% GDP	Average Amount	% Total	% GDP	Average Amount	% Total	% GDP
Fixed Investment	20.0	78.4	9.8	29.8	80.1	11.1	37.5	78.1	10.9
Transportation	4.9	19.2	2.4	6.5	17.5	2.4	7.5	15.6	2.1
Highways	(3.4)			(4.3)			(5.2)		
Railways	(0.5)			(0.9)			(1.1)		
Other	(1.0)			(1.3)			(1.2)		
Electric Power	4.1	16.1	2.0	5.8	15.6	2.2	7.1	1.5	2.1
Telecommunications	0.6	2.4	0.3	0.9	2.4	0.3	0.9	1.9	0.3
Education	1.2	4.7	0.6	1.2	3.2	0.4	1.5	3.1	0.4
Water Supply and Sewerage	0.9	3.5	0.4	1.3	3.5	0.5	1.7	3.5	0.5
Health and Social Welfare	0.2	0.8	0.1	0.5	1.3	0.2	1.0	2.1	0.3
Regional Development	0.5	2.0	0.2	1.7	4.6	0.6	1.7	3.5	0.5
Agriculture	0.1	0.4	0.1	0.2	0.5	0.1	0.3	0.6	0.1
Industry	2.9	11.4	1.4	4.6	12.4	1.7	5.1	10.6	1.5
Other Direct Investment	4.6	18.0	2.3	7.1	19.1	2.6	10.7	22.3	3.3
Federal	(1.7)			(4.5)			(7.0)		
Local	(2.9)			(2.6)			(3.7)		
Financial Investment	5.5	21.6	2.7	7.4	19.9	2.7	10.5	21.9	3.0
Housing	2.6	10.2	1.3	2.6	7.0	1.0	3.1	6.5	0.9
Industry	1.2	4.7	0.6	3.2	8.6	1.1	5.0	10.4	1.4
Regional Development	1.7	6.7	0.8	1.6	4.3	0.6	2.4	5.0	0.7
Total Investment and Financing	25.5	100.0	12.5	37.2	100.0	13.8	48.0	100.0	14.1
Public Savings	21.2	83.1	10.4	31.3	84.1	11.6	44.6	92.9	13.0
Repayment Official Loans	1.2	4.7	0.6	2.5	6.7	0.9	3.9	8.1	1.1
Financing Gap	3.1	12.2	1.5	3.4	9.2	1.3	-0.5	-1.0	-

Note: See notes to Table 41 for identification of the entities covered by the data given in this Table.

Source: Table 5.14, Statistical Appendix.

E. External Financing

245. Brazil's capacity to absorb external resources in support of its investments is demonstrated by Volume III of this report which describes 202 investment projects regarded as being suitable for external financing. By and large, external financing for these projects is desired by the Government to be committed during the 1972-74 period. Some commitments, therefore, will already have been made as of the date of publication of this report. Accordingly, projects are differentiated into three categories: (a) those for which external financing already was under negotiation at the time of report preparation; (b) projects at an advanced stage of preparation such that presentation for external assistance can be expected in 1973; and (c) other projects.

246. Many, but by no means all, of these projects are included in the public sector investment program whose dimensions are given in Table 42. The total cost of all of the projects is US$20 billion. Requested external financing amounts to US$8 billion, 40 percent of the total. Total project outlays during 1972-77 would average Cr$15.8 billion annually, or about one-third as much as the outlays of the public investment program. Gross foreign exchange disbursements would average Cr$6.3 billion (about US$1.2 billion) annually during this period, or about 17 percent as much as public sector savings. With some exceptions the projects would be almost entirely implemented by 1978.

247. Although external financing would average about 40 percent of the total cost of these projects, the direct foreign exchange component averages only about 16 percent. The reasons for this substantial external coverage of local costs are the following:

(i) Brazil's overall need for foreign resources is such that, in order to transfer the needed amount, some local cost financing by external lenders is required. Brazil's resource transfer needs are discussed below in Chapter VII of this volume, which shows that some US$1.8 billion annually in gross medium and long term loan capital inflows are likely to be needed by Brazil over the 1972-78 period at 8.5 percent growth;

(ii) projects suitable for external finance have been identified in eight different sectors of the economy. In some of these sectors, education and agriculture in particular, the foreign exchange component of needed investments is extremely low. Thus, in connection with these projects, external lenders must accept a high degree of local cost financing if they wish to make a meaningful contribution to the project; and

(iii) it is only the direct foreign exchange component which averages 16 percent of the total cost of these projects; there is also a substantial indirect foreign exchange component.

Table 43: INVESTMENT PROJECTS SUITABLE FOR EXTERNAL FINANCING

(In millions US$)

	Number of Projects	Total Cost	Foreign Exchange Component	External Financing According to Anticipated Disbursement							External Financing As % of Total Cost
				Total	1972	1973	1974	1975	1976	After 1976	
1. Education	13	539.2	70.0	252.7	-	46.5	70.7	72.4	40.6	22.5	46.9
2. Energy	17	5,155.0	894.0	1,931.0	52.0	88.0	212.0	250.0	288.0	1,041.0	37.5
3. Transport	34	4,416.0	795.0	1,749.0	297.0	351.0	484.0	297.0	238.0	82.0	39.6
4. Telecommunications	13	2,524.0	435.8	1,093.3	-	69.2	203.6	219.9	204.7	395.9	43.3
5. Water Supply and Sewage	7	549.1	76.3	138.3	-	35.2	41.4	48.2	8.5	5.0	25.2
6. Agriculture	19	2,126.4	96.7	950.2	-	137.1	187.1	194.1	195.6	236.3	44.7
7. Export Corridors	36	809.7	n.a.	486.7	30.0	180.0	126.8	59.5	70.0	20.4	60.1
8. Industry	57	3,699.6	720.2	1,395.2	-	159.4	317.2	306.4	234.2	378.0	37.7
9. Miscellaneous	6	153.0	35.5	39.9	-	14.5	14.5	10.9	-	-	26.1
TOTAL	202	19,972.0		8,036.3	279.0	1,080.9	1,657.3	1,458.4	1,279.6	2,181.1	40.2

248. Reasons (i) and (iii) above actually are two ways of saying much the same thing. The separation of the two arguments largely is attributable to the difficulty of quantifying the indirect foreign exchange component. For Brazilian fixed investment overall, equipment presently constitutes about 60 percent of the total and civil construction the remainder. Also, overall, Brazilian producers presently supply about 72 percent of total Brazilian equipment procurement. On the other hand, about 40 percent by value of the components of Brazilian equipment are imported (see Table 3.14, Statistical Appendix). Thus, for a Brazilian investment project picked at random, the expected value of the indirect foreign exchange component of equipment procurement alone would be about 17 percent of total project cost. 1/ In addition the civil construction called for by the project would contain a significant indirect import component attributable to the importance of crude petroleum imports to total supplies of petroleum products and to other factors.

249. On the other hand, Brazilian equipment suppliers have not supplied as large a share of total equipment procured in Brazil under international competitive bidding as they have in Brazil as a whole. Under such arrangements the Brazilian suppliers' share has been about 50 percent. This means that for multilateral lending agencies the indirect foreign exchange component of the equipment procurement included in any project they may finance can be expected to be 12 percent of total project costs.

1/ 60 percent (equipment as percent total project cost) times
72 percent (domestic as percent total equipment) times
40 percent (import component of domestic equipment) equals 17.3 percent; the likely equipment-associated indirect foreign exchange component of any given investment project.

Table 44: PURCHASE OF INVESTMENT GOODS UNDER INTERNATIONAL BIDDING BY ECONOMIC SECTORS AND THE SHARE SUPPLIED BY DOMESTIC PRODUCERS

	Value of the Contracts (in million US$)					Share of Domestic Supplies (in percent)				
	1968	1969	1970	1971	Jan-May 1972	1968	1969	1970	1971	Jan-May 1972
Electricity		242.8	49.5	63.7	10.0	--	46.0	40.2	65.9	78.6
Steel and Metallurgy		54.9	125.0	47.7	39.6	--	29.6	32.7	48.6	51.6
Petroleum and Petrochemical	28.5	104.7	53.3	90.1	4.0	55.0	47.6	46.8	53.2	54.4
Chemicals and food	26.3	7.9	39.5	72.2	15.6	47.5	69.2	44.6	49.5	55.1
Pulp and paper	--	26.2	39.5	23.3	--	--	50.9	47.4	48.6	
Mining	--	--	4.1	--	--	--	--	40.0	--	
Transportation	--	--	--	--	36.6	--	--	--	--	35.9
Total	54.8	436.5	310.8	297.0	105.8	50.4	45.0	39.8	54.8	49.3
Number of contracts	2	17	26	29	20					

Source: Associaçao Brasileira para o Desenvolvimento da Industria de Base (ABDIB)

V. PRIVATE SAVINGS: MONETARY MANAGEMENT AND THE CAPITAL MARKET

A. Monetary Management

250. The development of the institutional structure of Brazil's banking system is dealt with in some detail by Chapter III of Volume VI, which analyzes the supply and distribution of agricultural credit. Among other things, the analysis of Volume VI focuses on Brazil's monetary institutions and on the mechanisms which the Government has evolved for directing bank credit to the commodity producing sectors. 1/

251. With the exception of an abrupt decline in 1966 associated with the severe monetary restraint effected by the Government in that year as part of its stabilization program, the stock of private monetary assets held in Brazil's banking system has remained roughly constant as a percentage of GDP since 1964, i.e., the private sector has expanded about proportionately with GDP those of its savings held with the banking system in the form of monetary assets. The stock of private sector bank credit, however, has increased much more than proportionately with GDP; from an end-1966 low point equivalent to 13 percent of GDP the stock of bank credit to the private sector (excluding coffee) increased to 22 percent of GDP as of end-1971. Moreover, this enormous increase in the stock of private credit occurred despite a huge investment in the accumulation of foreign reserves over the same period.

252. Making possible this private sector credit expansion relative to GDP, therefore, has been the turn-around of the public sector from a net claimant on banking system credit to a net supplier of monetary resources. Net of its deposits in the banking system, the stock of public borrowings from the banking system stood at about 6 percent of GDP as of end-1964. By end-1971 public sector deposits in the banking system exceeded bank loans to the public sector by an amount equivalent to about one percent of GDP. Not only has the cash deficit of the Central Government been brought nearly into balance but, since 1968, public agencies have begun to transfer resources to the commodity producing sectors on a large scale through the banking system. Also important has been the reduction of net coffee sector demand for banking system resources associated with the drawdown of coffee stocks and the gradual elimination of subsidization of domestic coffee consumption (see Table 6.4 and 6.5, Statistical Appendix).

253. Looking at the behavior of the banking system from the point of view of inflation, aggregate demand and monetary management, it should be noted that since 1967 the Government has followed a policy of allowing private credit

---

1/ See also "Current Economic Position and Prospects of Brazil", WH210a, IBRD, November 30, 1971, paragraph 144, for details on the structure and regulation of the Brazilian banking system.

to expand more or less in response to demand, at least in the case of credit to industry and commerce. Because of its high degree of subsidization, and of the fact that most of it is made available by the official Bank of Brazil, agricultural credit has been subjected by the monetary authorities to some degree of rationing, related to the estimated volume and value of agricultural commodity output. Along with its liberal credit policy, however, the Government has evolved a sophisticated set of liquidity controls. Besides its control over currency emission, the rediscount operations of the monetary authorities and the compulsory reserve requirements it imposes on the commercial banks, the Government, as indicated (see paragraph 215), has developed a treasury bond and bill market which permits it to tune very finely the liquidity and lending capacity of the commercial banks. As of 1972 its clearly manifested policy was to supply an adequate amount of credit to the commodity producing sectors but to avoid increasing liquidity to the point of triggering demand inflation.

Efforts to Reduce the Cost of Bank Credit

254. Another of the principal goals of Brazilian monetary management has been to reduce the high cost of commercial bank lending and its cost push pressure on the price level. Costs have been high despite the fact that the banks pay no interest on the bulk of their deposit liabilities. There are several reasons for this. One is a considerable amount of surplus employment in the banking system. Another is the fairly low average amount of deposits and lending operations per bank branch resulting from the huge geographic expansion and modest per capita income of the country. A third has been that until the institution of treasury bills and open market operations the banks had to maintain large amounts of non-interest bearing free reserves. Fourth, while they have paid no overt interest on their deposit liabilities, the banks have provided expensive services free of charge to their clients in order to attract deposits.

255. Since 1964, the authorities have permitted banks to hold an increasing part of their compulsory reserves in Adjustable Treasury Bonds (ORTN); presently some 55 percent of total requirements can be discharged in this fashion. The introduction of short term treasury bills provided the banks with opportunity to earn interest on free reserves as well. Short term treasury paper was floated for the first time in 1970. By June 1972 the authorities had developed a system of "dealers" for this paper. Newly emitted 92- and 182-day treasury bills were being sold at auction through these dealers at discount rates (annual basis) on the order of 15-16 percent. Since these dealers also constitute a secondary market for treasury paper, the banks can invest their free reserves in such paper without liquidity risk. However, this development has had an offsetting negative effect on those banks which had specialized in corporate or wholesale banking as opposed to retail banking. With no other short-term outlet for their working capital, industrial and commercial firms had maintained large interest-free working balances in the banks. Since such firms now also have access to treasury paper, the deposits and profits of those banks specializing in corporate banking have declined. The result has been a tendency for banks to diversify their operations along full service lines.

Table 45: CONSOLIDATED BANKING SYSTEM ANNUAL EXPANSION AS PERCENT YEAR-IN MONEY SUPPLY YEAR-END STOCKS AS PERCENT OF GDP

	1964	1965		1966		1967		1968		1969		1970		1971		May 1972
	Stock	Exp.	Stock	Exp.	Stock	Exp.	Stock	Exp.	Stock	Exp.	Stock	Exp.	Stock	Exp.	Stock	Exp.
Net Foreign Reserves 1/	-5.0	8.6	-2.1	3.3	-0.9	-6.1	-1.5	-3.0	-1.5	10.8	0.5	8.2	1.7	8.6	2.6	8.7
Net Domestic Credit 2/	24.3	72.0	24.0	15.2	18.7	53.2	20.9	47.0	22.3	21.3	20.3	20.6	18.8	25.1	17.8	3.0
Treasury Account	7.6	6.0	5.5	-2.3	3.4	7.3	3.5	7.7	3.7	-5.1	2.0	-3.1	1.0	-9.8	-0.7	-6.4
Treasury Bonds and Bills	0.1	1.4	0.2	6.2	1.1	4.6	1.4	2.0	1.3	5.7	1.9	4.7	2.2	4.8	2.4	2.1
Other Government Accounts (net) 3/	-1.9	-1.2	-1.3	-2.5	-1.3	-1.4	-1.1	-8.6	-2.0	-5.0	-2.4	-2.6	-2.2	-5.5	-2.5	-3.2
Coffee Account (net)	-0.6	4.1	0.1	-3.8	-0.5	0.7	-0.3	-4.4	-0.8	-3.5	-1.2	-4.5	-1.6	-0.5	-1.3	-1.1
Private Sector Credit	14.0	43.8	14.1	22.1	13.0	41.6	15.1	46.1	17.9	37.6	19.5	33.9	20.3	45.5	22.1	14.9
Miscelaneous (net) 2/	5.1	17.9	5.4	4.5	3.0	0.4	2.3	4.2	2.2	-8.4	0.5	-7.8	-0.9	-9.4	-2.2	-9.3
Monetary Liabilities	19.3	80.6	21.9	18.5	17.8	47.1	19.4	44.0	20.8	31.9	20.8	28.8	20.5	33.7	20.4	5.7
Currency	5.0	12.9	4.7	7.6	4.4	6.3	4.1	8.1	4.2	6.5	4.2	5.0	4.0	5.3	3.8	-0.4
Demand Deposits	13.7	64.4	16.4	5.1	12.0	35.1	13.5	27.3	14.2	22.4	14.3	19.1	13.9	21.5	13.7	4.3
Time Deposits	0.6	3.3	0.8	5.8	1.4	5.7	1.8	7.6	2.4	3.0	2.3	4.7	2.6	6.9	2.9	1.8

1/ IMF definition which inter alia includes the external financial credits repassed by the banks as external liabilities of the banks.
2/ Includes inter-bank float.
3/ Includes agricultural price support financing and purchase and sale of agricultural commodities, especially wheat.

Source: Table 6.3, Statistical Appendix.

256. In addition to maximum interest rates on agricultural credit, the authorities also impose limits on the interest charged industrial and commercial borrowers and even for personal loans (the latter applied for the first time in 1972). As of February 1972 these limits stood at 21 percent in the case of industrial and commercial loans of more than 60-day term and at 18 percent for loans of lesser term. Considering, however, that the banks customarily impose compensatory deposit balance requirements on such credit, true interest costs for industrial and commercial lending were on the order of 26 to 30 percent exclusive of commission charges and the one percent financial operations tax. With inflation running at an annual rate of 15 percent in 1972, these charges indeed are high.

Table 46 : COMMERCIAL BANK INTEREST CEILINGS

Agricultural Loans	
50 Minimum Wages or Less	15 %
Larger Loans	13 %
Industrial and Commercial Loans	
60 Days or Less	18 %
More Than 60 Days	21 %
Personal Loans	34.5 %

Source: Central Bank.

257. Finally, the monetary authorities have been very active in encouraging the merger of commercial banks and in controlling the establishment of branches. Thus the number of commercial banks declined from 335 in 1964 to 168 in 1971. Although the number of bank branches has increased, this increase has been much less than proportionate to the rise in banking business; average deposits per branch having increased by about 50 percent in real terms since 1964.

Table 47: COMMERCIAL BANKS AND BRANCHES: DEPOSITS AND CASH RESERVES

(Year-end position, monetary values in 1971 Cr$)

	1964	1968	1971	May 1972
Banks (number)	335	230	168	n.a.
Branches (number)	6,247	7,429	7,302	n.a.
Deposits (millions Cr$)	17,405	24,076	31,419	31,318
Cash Reserves (millions Cr$)				
Compulsory	2,729	3,423	2,442	2,500
Voluntary	2,320	1,801	2,335	1,822
Deposits/Branch (Thousand Cr$)	2,786	3,241	4,303	n.a.
Compulsory Reserves/Deposits (%)	15.7	14.2	7.8	8.0
Voluntary Reserves/Deposits (%)	13.3	7.5	7.4	5.8

Source: Central Bank.

B. The Increasing Importance of Non-Bank Credit

258. Although very substantial, the expansion of bank credit to the commodity producing sectors in recent years has been less impressive than the expansion of credit by Brazil's non-bank financial intermediaries. It is difficult to define very exactly the operations of these agencies, but an attempt is made to do so in Table 48. This Table shows that total outstanding credit to the productive sectors increased from 24.3 percent of GDP in 1967 to 49.2 percent in 1971. Non-bank institutions, which had accounted for about one-third of such credit in 1967, accounted for more than half of it in 1971. The increase in the operations of the non-bank financial institutions has been financed to a certain extent by the Government's compulsory savings mechanisms (predominantly the Tenure Guarantee Fund). Much more important, however, have been the tremendous growth of savings held by the public in fixed income securities and the inflow of external financial credits, about one-third of which are relent to Brazilian borrowers by domestic financial institutions while the remainder are made available directly.

Table 48: CREDIT TO BRAZIL'S PRODUCTIVE SECTORS AND ITS FINANCING

	% GDP			Borrowers' Interest Rates		Borrowers' Interest Rates 1972
	1967	1969	1971			
I. Applications	24.3	38.5	49.2			
A. Banking System 1/	16.6	20.9	23.5	Ag.	0-15	60 days to 2 years
				Non-Ag.	26-48	
B. Financial Intermediaries	6.2	13.6	20.2			
Economic Development Bank (BNDE) and FINAME	(0.9)	(1.8)	(2.6)		17-24	3 to 15 years
State Development Banks	(0.2)	(0.3)	(0.3)		17-24	n.a.
Private Investment Banks	(1.1)	(2.5)	(4.0)		24-26	n.a.
National Housing Bank (BNH)	(0.6)	(2.8)	(3.2)		23-26	15 years
Building and Loan Agencies	(-)	(0.9)	(1.5)		23-26	15 years
Federal and State Savings Banks	(1.3)	(1.8)	(2.9)		n.a.	n.a.
Social Integration Fund	(-)	(-)	(0.1)		n.a.	n.a.
Finance Companies	(2.1)	(3.5)	(5.6)		48	6 months
C. External Financial Credits 2/	1.5	4.0	5.5		20-22	1 to 10 years
				Savers' Interest Rates		
II. Liabilities to Public	-29.5	-39.9	-46.7			
A. Monetary Liabilities 1/	22.0	23.9	23.3		- o -	
B. Compulsory Savings	0.8	2.2	2.9			
Social Integration Fund	(-)	(-)	(0.1)		18	
Tenure Guarantee Fund	(0.8)	(2.2)	(2.8)		18	
C. Fixed Income Instruments	4.2	8.4	-12.5			
Time Deposits	(1.1)	(1.6)	(3.5)	CD's	23	
Bills of Exchange	(2.9)	(4.8)	(6.7)		30	
Housing Bills	(0.2)	(0.7)	(1.1)		30	
Treasury Bonds and Bills Outside Banking System	(-)	(1.3)	(1.2)	Bonds	25	
				Bills	16	
D. External Financial Credits 3/	2.5	5.4	7.9		16-20	
III. Miscellaneous Accounts 4/	5.2	1.4	-2.5			

1/ Definitions are those of the Central Bank which differ slightly from those employed in Table 45 (IMF definitions); loans to the coffee sector, for example, are included in this definition.

2/ Includes only those external financial credits not repassed by domestic financial intermediaries.

3/ Includes all external financial credits.

4/ This miscellaneous item is broadly representative of the extent to which private savings captured by Brazil's credit institutions are used to finance the public sector and foreign reserve accumulation.

Source: Table 6.11, Statistical Appendix.

259. The principal components making up Brazil's system of non-bank financial intermediaries include:

(i) the National Housing Bank (BNH) and the 79 housing credit corporations and savings and loan associations making up Brazil's system of housing and urbanization finance, utilizing resources flowing from the Tenure Guarantee Fund, from the sale to the public of Housing Bills, from home-owners' deposits and mortgage payments and from external sources;

(ii) the National Economic Development Bank (BNDE), its specialized subsidiary FINAME and the nine State Development Banks which have concentrated on the financing of economic infrastructure, expansion of industrial capacity and the sale of Brazilian-made capital goods;

(iii) the Federal (CEF) and five State Savings Banks which participate in the system of housing finance and make personal loans, especially to government workers. Since 1971, the CEF also has administered the Social Integration Fund some of which it has transferred the BNDE. It has used most of the remainder to finance the underwriting of new share issues and for direct lending to industrial and commercial firms;

(iv) some 168 finance companies which formerly constituted a major source of industrial working capital finance but which presently concentrate on consumer finance, capturing resources through the sale of bills of acceptance (letras de cambio) to the public; and,

(v) forty private investment banks which specialize in industrial working capital financing, new share issue underwriting and the management of mutual funds using resources captured by: (a) borrowing abroad on behalf of local clients; (b) accepting fixed term deposits subject to monetary correction; (c) selling bills of acceptance; (d) selling shares in mutual funds; and (e) constituting funds serving as repositories of federal tax credits for share investment (the Decree Law 157 fiscal funds, see para. 218).

260. Table 48 covers only the lending operations of these intermediaries and not their equity investment. The main beneficiaries of the abrupt increase of non-bank credit have been home purchasers, purchasers of consumer durables and the industrial sector. The range of borrowers' interest rates charged by the non-bank intermediaries is very wide; the most expensive being the 48 percent rate incident as of July 1972, on bill of acceptance financing of consumer durables. With inflation running at 15 percent in 1972, this represents a real interest cost on the order of 29 percent. Interest rates on industrial lending by the official development banks range from a low of 17 percent (that is, ex ante, monetary correction at 10 percent and interest at 7 percent) to a high of 24 percent (ex post correction at 15 percent plus

interest at 9 percent). Government policy calls for monetary correction to be applied ex post to any loan of more than one year term. The spread between borrowers and savers' rates varies widely, being attributable to diverse rates of taxation of interest payments as well as to the operating costs of the intermediaries.

C. External Financing of Cruzeiro Credit

261. External financial credits are notable for their relatively low interest cost as well as for their magnitude; the two, of course, being interrelated. Brazilian exchange rate policy calls for the exchange rate to be adjusted proportionately with internal inflation minus inflation in the United States, Brazil's principal trading partner. Assuming that the two rates of inflation are 15 and 5 percent, respectively, annual exchange rate adjustment would be 10 percent, as it in fact was in 1970. In 1972, financial credits were being made available to Brazil at dollar interest rates one to two points above the London inter-bank rate, i.e., at 7 to 8 percent. To the interest remittance is applied a withheld income tax at 25 percent. Thus, the total cost to the borrower (exclusive of commission fee and financial operations tax which are charged when the credit is repassed by a local financial intermediary) is on the order of 20 to 22 percent.

262. However, it is not simply the low interest cost which motivates Brazilian borrowers to seek external financial credits. Only very recently have Brazil's private investment banks achieved the institutional capability and attracted sufficient savings to finance significant amounts of medium term capital to the industrial sector. Thus, the sector had become accustomed to going abroad for its financing before the investment banks were in a position to serve as an alternative source. Moreover, the investment banks themselves continue to promote the use of external credit through their own intermediation, since these resources are cheaper that those raised by the investment banks locally through the sale of CD's and bills of exchange owing to the difference between exchange rate and full monetary correction.

263. Also, it is estimated by the Finance Ministry that approximately one-third of the external financial credits are a disguised form of direct foreign investment. This is attributable to Brazilian legislation and policy discriminating in favor of foreign loan, as opposed to foreign equity, investment as follows:

(i) Brazilian legislation and policy encourages foreign investment to take the form of minority participation in joint ventures. This can cause two kinds of problems. Needed capital expansion can be frustrated by the lack of capital of the Brazilian partner(s) and/or by reluctance of the firm to go public. The solution then is to finance expansion with external loan rather than equity capital. Secondly,

the foreign minority partner may be unwilling to accept control by the majority Brazilian partner(s), in which case, the solution is to negotiate retention of foreign control on condition that the foreign partner guarantee to supply a certain amount of loan financing;

(ii) Brazilian legislation effectively limits gross profits remittances to 10 percent per year of invested capital and taxes these remittances at 25 percent of the total (or 33 percent of the actual remittance). Net profits remittances therefore are limited to less than 7 percent of invested capital. Net interest remittances, on the other hand, are limited only to those rates prevailing in the country of origin for similar types of credit;

(iii) Finally, Brazilian legislation limits repatriation of directly invested foreign capital to 20 percent of the total per year. This disadvantage vis-a-vis loan financing, however, is rapidly diminishing as stringent controls imposed by the government on financial credits late in 1971 pushed the average term of new credits contracted in 1972 out to more than 4 years.

264. Perhaps the most important motive, however, for the large scale recourse to foreign loan financing of cruzeiro capital requirements which has characterized Brazil in recent years has been the anxiousness of the international financial community to employ resources in Brazil. This has resulted from the confidence generated by sound Brazilian economic management as well as by a dearth of alternative investment opportunities. It is manifested very clearly by the fact that, despite the above-mentioned term controls, more than US$3 billion in gross new financial credits were contracted by Brazil in 1972.

265. One of the negative implications of such massive financial credit inflow is its discouragement of reliance by Brazilian enterprises on Brazilian sources of savings and investment finance. Another is that it threatens the economy with demand inflation owing to the excess of internal and external savings resources over productive investment opportunities in the economy. The statistical manifestation of this is the monetary expansion associated with the enormous reserve increase resulting from the financial credit inflows of 1972. Through May 1972, the authorities were able to tolerate very rapid reserve buildup owing to the cash surplus generated by the Treaury during the first five months of the year (see Table 45). Subsequently, however, as this surplus diminished and financial credit inflows and reserve buildup accelerated the authorities were forced to consider more direct measures to control the money supply.

266. In October 1972, therefore, the authorities imposed a 25 percent marginal reserve requirement on the cruzeiro counterpart of the financial credits. By marginal it is meant that renewals of existing financial credits are exempt from the reserve requirement. This requirement has the effect of sterilizing 25 percent of the monetary expansion associated with sale to the

authorities of financed credit dollars. More importantly, however, the requirement has the effect of raising the interest cost to the borrower of financial credits. It should be noted, however, that this is an impediment to the borrower and not to the lender so that whether the new reserve requirement will slow the pace of financial credit accumulation to acceptable dimensions remains to be seen.

267. The implications of the financial credits for the balance of payments and external liquidity are discussed in the following chapters. It should be noted here, however, that reconciliation of the role of external financial credits with the development of Brazil's capital market and with sound monetary management is one of the major issues presently confronting Brazil's economic managers. Even if the imposition of the above described reserve requirement does solve the monetary management problem created in 1972 by financial credit inflows, imparting a better balance between locally and foreign financed credit in the process, it will not resolve the issue of excessive domestic credit cost. In the long run only continued improvement in the efficiency of Brazil's financial institutions can eliminate the barrier presently imposed by the high cost of intermediation between the Brazilian saver and the effective agglomeration and application of his resources.

D. The Stock Market

268. The financing of fixed capital formation by private firms in Brazil presently is characterized by dependence on retained earnings and, consequently, on high rates of profit, and on external sources of capital. This exposes the economy to two dangers: inequitable distribution of income and an excessive degree of external control.

269. Measures taken by the Government to promote the establishment of private investment banks and to provide attractive returns to savers through the use of fixed income savings instruments clearly have had a significant beneficial effect in terms of mobilizing private savings, even if substantial improvement still needs to be made in the efficiency of the system. The Government also has moved to develop the market for equity capital. On the demand side, it has created a number of fiscal incentives for the firm to go public (see para. 217). On the supply side, fiscal incentives for share investment have been accompanied by a policy of dispersing ownership in mixed enterprises and of distributing the profits of these enterprises to shareholders through stock splits and preferential subscription rights.

270. Mixed enterprises led a fantastic boom in the Brazilian stock market which began in 1966 and culminated in June 1971. In that month the average real capital gain on shares acquired 12 months previously amounted to 427 percent. From 1965 until 1971 the average number of shares traded daily on the Rio exchange increased from 532,000 to 11.1 million. The number of companies with shares traded on the exchange also increased sharply, from 93 in Rio and

Sao Paulo in 1968 to 400 in 1971, as the annual value of capital raised in the market more than doubled in real terms from (1971) Cr$4.3 billion in 1965 (3 percent of GDP) to about Cr$10 billion (4 percent of GDP) in 1971. 1/ However, this increase in the number of "open" companies and in the volume of capital raised by them was far outstripped by the increase in trading volume and value. By 1971 the demand for shares grossly exceeded the supply.

Table 49: NOMINAL RATES OF RETURN ON SELECTED FINANCIAL INSTRUMENTS ACQUIRED 12 MONTHS PREVIOUSLY
(Percent)

	Treasury Bonds	Housing Bills	Bills of Exchange	Shares (Rio Exchange)	General Price Index
1967 December	29.9	36.5	33.2	72.9	25.0
1968 December	43.3	33.4	31.8	64.8	25.5
1969 December	22.8	27.1	30.3	276.6	20.1
1970 December	24.0	28.7	30.5	104.2	19.3
1971 March	22.3	28.7	31.2	171.9	20.2
1971 June	23.1	27.2	30.8	520.6	22.0
1971 September	26.3	28.6	30.7	234.0	19.4
1971 December	27.1	32.7	30.3	225.1	19.5
1972 March	25.4	31.3	30.1	32.5	19.3
1972 June	26.2	30.1	29.9	-46.4	16.3

Source: Central Bank of Brazil.

271. As the result of this imbalance in the market the average relationship of share prices to corporate earnings per share (i.e., the price/earnings ratio) climbed steadily from about 9 early in May 1970, to a peak level of about 34 midway in June 1971. 2/ In part this behavior was attributable to manipulation by underwriters and brokerage firms, the most blatant form of which was speculative warehousing of new issues. In an imbalanced market where new issues were being pounced upon by the investing public, underwriters were in a position to reap huge profits by dribbling out small portions of new issues to the public and holding the balance in portfolio until the price had been driven to two or three times its original level, an opportunity of which full advantage in fact was taken. Moreover, owners of closed firms were attracted to the idea of going public by the capital gains which would accrue to equity retained by them from this type of manipulation. Thus the number of underwritten new issues increased to 174 in the second semester of 1971 compared to 59 in the first semester and 85 during 1970 as a whole.

1/ Banco de Investimento do Brasil "Bi-Monthly Review", Vol. 2, Number 4, January 1972.

2/ Instituto Brasileiro de Mercado de Capitais.

272. This sudden upsurge in new share issues coincided with the first of a number of measures taken by the Government since June 1971 to discipline the market. A steady downturn, therefore, commenced midway in 1971 which brought the index of share values traded on the Rio exchange from a peak level of 4,908 in June 1971 to 1,641 as of the second week of August, 1972. Over the August-October period renewed confidence in the market raised this index to about 2,700. As of the end of October the average price/earnings ratio in the Rio exchange was 11.

273. Among the disciplinary measures taken by the Government was modification of margin requirements. These were reversed in June 1971 from 20 percent in cash and 40 percent in securities (valued at 80 percent of current quotation) to 40 percent in cash and 20 percent in securities. In November after 5 months of steady market decline, the authorities relaxed margin requirements, making them 15 percent in cash and 45 percent in securities. By March 1972, the Government felt it necessary to relax margin requirements still further and made the entire 60 percent payable in securities. In the meantime, however, the Government tightened its scrutiny of new issues and promulgated regulations covering the warehousing of new issues by underwriters and calling for fuller disclosure of information by issuing firms as well as for independent auditing of these firms.

274. Significantly, the level of economic activity in all sectors of the economy accelerated throughout the period of stock market decline, overall growth amounting to 11.3 percent in 1971 and, apparently, to at least 10 percent in 1972 compared to 9.5 percent in 1970. Nevertheless, the decline of the market had important implications for the economy, disturbing the confidence of some groups in economic management and threatening the future development of the market as a mechanism for mobilizing and allocating savings. Thus the Government felt compelled to take some pump priming measures, such as the allocation of some Social Integration Fund resources for investment in mutual funds and the change of Bank of Brazil shares -- traditional market leader -- from nominative to bearer, thereby facilitating their trading. Although the upturn since August has not been spectacular, it does suggest that the market has survived a major adjustment period and that in the future it will play an important and increasingly efficient role in the Brazil economy.

E. Conclusions

275. The Government has succeeded, therefore, in improving massively the extent to which private savings are mobilized by Brazil's financial institutions. This is attributable largely to the application of monetary correction to fixed income instruments and to the alleviation of distortions in other price relationships Brazilian savers no longer are motivated to engage in capital flight or to hedge against inflation by investing in luxury housing or imported automobiles. The efficiency of savings allocation, although much improved (viz., the distribution of bank credit), still presents problems principally as regards the cost of financial intermediation. Finally,

the Government confronts a delicate problem in reconciling the role of external financial credits with the continued development of domestic capital market institutions and with appropriate management of aggregate demand.

VI. THE BALANCE OF PAYMENTS AND EXTERNAL DEBT

A. Recent Overall Trends

276. Despite impressive performance in expanding and diversifying exports, Brazil's balance of external trade in goods and non-factor services deteriorated steadily from a positive US$503 million in 1965 to a negative US$854 million in 1971. This transformation has mirrored the shift of Brazilian posture from one of stabilization and balance of payments retrenchment to one of rapid economic growth. Since 1968, the country has, in effect, had recourse to external savings to help finance the investment needs of rapid growth; whereas Brazil transferred about 11 percent of its domestic savings abroad in 1965 as it liquidated commercial arrears and other debt, it financed about 10 percent of its investment in 1971 via the US$854 million external resource gap of that year. From 1967 until 1971 Brazil's exports increased at an average annual rate of 15 percent in dollar terms or 10 percent in real terms. Imports, on the other hand, increased at a 22 percent pace in dollar terms or 16 percent in real terms. Economic growth averaged 9.6 percent annually during this period; thus Brazil's income demand elasticity for imports recently has been about 1.7.

Table 50: BRAZIL'S USE OF EXTERNAL SAVINGS

(PERCENT of GDP)

	1950	1960	1965	1967	1968	1969	1970	1971
External Gap	-3.4	1.7	-2.2	0.1	0.9	-	0.5	1.9
Imports	16.4	10.4	5.6	7.4	8.5	8.3	9.1	9.3
Minus: Exports	19.8	8.7	7.8	7.3	7.5	8.3	8.6	7.4
Investment	14.5	18.4	18.4	15.2	17.4	17.5	18.1	18.5
Domestic Savings	17.9	16.7	20.6	15.1	16.4	17.5	17.6	16.6
External Savings	-3.4	1.7	-2.2	0.1	0.9	-	0.5	1.9

Source: Table 2.3, Statistical Appendix.

277. Brazil bears a heavy burden of capital income payments in the form of interest, profit, royalty, technical assistance and other remittances. These have added to the financing required by negative trade balances. Thus,

the US$368 million current account surplus generated by Brazil in 1965 had already become a US$237 million deficit by 1967. In 1971 the current account deficit amounted to US$1,308 million. New (excluding retained earnings) direct foreign investment has not played a very significant role in Brazil's balance of payments so that the bulk of these current account deficits have been financed with loan capital. From 1968 until 1971 Brazil increased its external debt by about US$3.6 billion; as of the end of the latter year the debt totalled US$6.6 billion. This level of borrowing, however, was much more than sufficient to meet Brazil's foreign exchange requirements. Thus, from 1968 until 1971 Brazil increased its reserves by US$1.7 billion, bringing them to a US$2.1 billion level as of the end of 1971. Of the US$3.6 billion increase in foreign debt over this period, some US$2.8 billion was in the form of external financial credits which, as indicated in the preceeding chapter, are not linked directly to imports. Some 60 percent of this debt was offset by the accumulation of reserves.

Table 51: THE BALANCE OF PAYMENTS, 1968-72

(In US$ millions)

	1968	1969	1970	1971	1972
Resource Balance	-257	-	-179	-854	-1,092
Exports of Goods and NFS	(2,035)	(2,522)	(2,993)	(3,174)	(4,033)
Imports of Goods and NFS	(2,292)	(2,528)	(3,172)	(4,028)	(5,125)
Factor Income and Transfers	-251	-275	-383	-454	-435
Current Account Balance	-508	-281	-562	-1,308	-1,527
Direct Investment	61	124	108	124	150
Miscellaneous Transactions	-62	147	24	210	251
Borrowing Requirements	509	10	430	974	1,126
Actual Borrowing (Net)	499	623	948	1,558	2,868
Medium and Long Term Credit	(87)	(101)	(268)	(394)	(691)
Financial Credit	(412)	(522)	(680)	(1,164)	(2,177)
Change in Reserves	-10	613	518	584	1,742
Year-end Reserve Level	342	955	1,473	2,057	3,799

Source: Table 3.1 and 3.6, Statistical Appendix.

278. A sharp fall in coffee and cacao prices in 1971, together with a climate-related decline in Brazil's exportable surplus of cotton, had restrained export growth in that year to only 6 percent in dollar terms, well below the recent trend. With rising agricultural commodity prices and continued expansion of manufactured exports, it was thought originally that the external gap might be narrowed in 1972. Exports, in fact, did increase at a 21 percent pace during the first half of 1972 but, with overall economic growth continuing at the very rapid pace achieved in 1971, imports also increased by about 27 percent during the first semester. Thus, the external gap has not narrowed, probably amounting to about US$ one billion in 1972.

279. It had also been expected that the term controls imposed on financial credits late in 1971 would slow the accumulation of this type of debt. Instead, as indicated in the preceeding chapter, the accumulation of financial debt continued to accelerate in 1972, the net increase probably amounting to about US$2.2 billion during the year as compared to US$1.2 billion in 1971. Despite the widening resource gap, therefore, foreign reserves probably will have increased by about US$1.7 billion during 1972. By the end of the year Brazil's total external debt will approximate US$9.4 billion of which financial debt will constitute some US$5.4 billion. Year-end foreign reserves should total US$3.3 billion or about 61 percent of outstanding financial debt.

B. Exports

280. Just as important as the recent overall growth of exports has been their diversification. The share of coffee in Brazil's overall export earnings declined from 60 percent in 1960 and 44 percent in 1967, to 28 percent in 1971. Even in 1972, with coffee exports benefitting from high world prices, they should account for no more than 27 percent of the total. Diversification has been accomplished primarily through the expansion of manufactured exports which increased from 9.8 percent of total exports in 1967 to 16.5 percent in 1971 and to an estimated 18.9 percent in 1972, as they continued the rapid pace of expansion achieved during the immediately preceding three years.

Table 52: MERCHANDISE EXPORTS (FOB), 1967-71

(In US$ millions)

	1967	1968	1969	1970	1971	1972	Growth Rate 1967-71	Percentage Composition 1967	Percentage Composition 1971
Coffee	733	797	846	982	822	998	2.9	44.3	28.3
Other Agricultural Products	421	544	730	762	850	1,204	19.2	25.4	29.3
Main Minerals	117	128	164	241	265	273	22.5	7.1	9.1
Manufactures	162	166	238	357	480	700	31.2	9.8	16.5
Other Exports	221	246	333	397	487	561	21.8	13.4	16.8
TOTAL	1,654	1,881	2,311	2,739	2,904	3,700	15.1	13.4	16.8
(Excluding Coffee)	(921)	(1,084)	(1,465)	(1,757)	(2,082)	(2,702)	(19.3)		

Source: Statistical Appendix, Table 3.2.

281. As explained above, the Government has been promoting export diversification with a variety of fiscal and credit incentives made available for manufactured exports. In 1972, the Government introduced its export corridors program designed to promote the export of non-traditional agricultural products. One of its most important promotional measures, however, was the institution in August 1968 of the flexible, or "crawling peg", exchange rate policy. Since that time, small, frequent adjustments, approximately proportionate to the difference between internal and United States inflation, appear to have forestalled the fluctuations in profitability of export sales which characterized the 1964-67 period when the exchange rate was adjusted annually.

Table 53: REAL EXCHANGE RATE TRENDS

Quarter		Average Exchange Rate		Price Indexes		
		Cr$/US$1.00	Index	Diferential Prices =	Brazilian Prices ÷	U.S. Prices
1968	4	3,739	1,000	1,000	1,000	1,000
1969	1	3,901	1,043	1,021	1,035	1,014
	2	4,026	1,077	1,053	1,076	1,021
	3	4,115	1,101	1,111	1,140	1,026
	4	4,259	1,139	1,159	1,203	1,038
1970	1	4,391	1,174	1,185	1,244	1,050
	2	4,526	1,210	1,223	1,297	1,060
	3	4,646	1,243	1,287	1,372	1,066
	4	4,813	1,287	1,328	1,430	1,077
1971	1	5,005	1,339	1,371	1,494	1,090
	2	5,182	1,386	1,429	1,576	1,103
	3	5,380	1,439	1,485	1,651	1,112
	4	5,579	1,492	1,536	1,709	1,113
1972	1	5,765	1,542	1,575	1,785	1,134
	2	5,888	1,575	1,619	1,855	1,146

Source: Table 3.10, Statistical Appendix.

Coffee

282. The rise in world coffee prices which occurred after the 1969 frost in Brazil reached a peak in September 1970 but, with the world supply position at the commencement of the 1970-71 coffee year (October 1970/September 1971) better than had been anticipated, prices commenced to fall. Faced with increasing competition from other suppliers, the Brazilian Coffee Institute in February 1971 announced a reversal of its price support policies and reduced minimum export registration prices and the rate of the coffee export tax. World prices continued to decline over much of 1971. As a result, total Brazilian exports of coffee, including soluble coffee, dropped from US$982 million in 1970 to US$822 million in 1971, despite an increase in the volume exported from 17.1 million bags to 18.4 million bags. The 1971 price decline notwithstanding, average proceeds per bag during that year were still 2 percent greater than they were on average during the period 1965-69. Moreover, following an agreement early in 1972 by producer countries to withhold supplies from the market, world coffee prices began once more to rise. This was reinforced by the July 1972 frost in Parana which brought New York prices for Santos 4 coffee to a record high of US$0.64/lb. Late in 1972 the New York price stabilized at US$0.55/lb, or at about the 1970 level. Thus, Brazilian coffee export earnings in 1972 are expected to have returned to their high 1970 level.

Table 54: COFFEE EXPORTS, 1967-71

	1967	1968	1969	1970	1971	1972
Coffee Beans (US$ millions)	705	775	813	838	772	946
Volume (million bags)	16.7	18.5	18.7	16.0	17.2	17.2
Price (US$ per bag)	42.1	42.0	43.4	58.5	44.81	55.0
Soluble Coffee (US$ millions)	28	23	33	42	50	52
Volume ('000 bags)	0.6	0.6	0.9	1.0	1.2	1.2
Price (US$ per bag)	47.8	39.5	35.5	40.9	42.8	43.0

Source: Table 3.3, Statistical Appendix.

Other Agricultural Exports

283. Exports of agricultural products (other than coffee) increased at an average annual rate of 20 percent during 1967-71. Not only was the performance of traditional exports (especially sugar, tobacco and cotton) satisfactory, but considerable agricultural export diversification was achieved. One of the most impressive accomplishments of Brazilian agriculture has been the speed at which new products have been added to the export flow. Corn, beef, soybean, castor oil are examples of products exported in negligible quantities in the early 1960's which now provide an important share of foreign exchange earnings. It should be also noted that this agricultural export diversification was achieved without the fiscal and financial incentives made available for manufactured exports. In 1972 expansion of agricultural exports continued, led by cotton (recovering from the 1971 drop, caused by Northeast drought) and, more importantly, by sugar. As a result of large crops and very favorable world markets, 1972 sugar exports are estimated to reach US$360 million, two and a half times the level recorded in 1971.

Table 55: AGRICULTURAL EXPORTS (EXCLUDING COFFEE), 1967-71
(In US$ millions)

	1967	1968	1969	1970	1971	(Est.) 1972	Annual Growth Rate 1967-71
Traditional Products	326	395	546	486	479	704	10.1
Cotton	91	131	196	154	137	202	10.8
Cocoa (and products)	84	72	136	106	86	92	0.6
Sugar	80	102	115	127	147	360	16.4
Pine (sawnwood)	51	71	72	68	72	68	9.0
Tobacco	20	19	27	31	37	42	16.7

	1967	1968	1969	1970	1971	(Est.) 1972	Annual Growth Rate 1967-71
Non-Traditional	318	397	528	671	858	965	28.1
Beef Frozen and Chilled	7	20	42	69	99	105	94.0
Corn	22	57	33	80	75	11	35.8
Soybean (and products)	39	25	62	71	106	218	28.4
Castor Oil	23	36	45	38	40	45	14.8
Others /1	226	259	346	416	538	586	24.2
TOTAL	644	792	1,074	1,157	1,337	1,672	20.0

/1 This category includes some minor mineral exports.

Source: Statistical Appendix, Table 3.2.

Mineral Exports

284. Brazil is very well endowed with mineral resources, but has not exploited these with consistency. Between 1965 and 1967 earnings from the two principal minerals, iron ore and manganese ore, declined. Since 1967, however, export earnings have more than doubled, largely due to the expansion of CVRD's operations in Minas Gerais.

Table 56: PRINCIPAL MINERAL EXPORTS, 1967-71

	1967	1968	1969	1970	1971	1972
Iron Ore (US$ million)	103	105	147	210	237	244
Volume (million tons)	14.3	15.1	21.7	28.1	31.0	31.7
Price (US$ per ton)	7.2	6.9	6.9	7.5	7.6	7.7
Manganese (US$ million)	14	24	17	31	38	29
Volume ('000 tons)	0.5	1.1	0.9	1.6	1.8	1.3
Price (US$ per ton)	25.2	21.5	19.8	19.0	21.0	22.0

Source: Statistical Appendix, Table 3.3.

C. Export Prospects

285. Export growth is expected to keep its momentum in the next few years. Mission projections of export earnings to 1978 suggest that merchandise exports are likely to increase at an average annual rate of 12 to 16 percent in current terms (9 to 13 percent in real terms). As in the recent past, the leading categories would be manufactures, minerals and non-traditional agriculture. By the end of the decade, manufactures may constitute the most important single category in Brazil's export flow.

Table 57: MERCHANDISE EXPORTS (FOB) 1971-78

(In US$ millions)

	Actual	Estimate	Optimistic Projection		Moderate Projection	
	1971	1972	1978	Growth Rate 1971-78 (%)	1978	Growth Rate 1971-78 (%)
Coffee	822	998	1,331	7.1	1,212	5.7
Main Agricultural Products	850	1,204	2,092	13.7	1,484	8.3
Main Minerals	275	273	804	16.6	600	11.8
Manufactures	480	700	2,733	28.2	2,044	23.0
Others	477	525	1,348	29.0	1,034	11.7
TOTAL	2,904	3,700	8,308	16.2	6,374	11.9

Source: Statistical Appexdix, Table 3.11.

Agricultural Products

286. Supply prospects for main agricultural exports are explored in detail in Volumes IV and VI, as is the demand situation in the cases of corn and soybeans. This section summarizes the outlook for Brazil's agricultural exports.

Coffee

287. Brazilian coffee stocks promise to be abnormally thin during the next few years, even if no unusual losses from freeze or other unfavorable climatic conditions are experienced. The impact of the expected Brazilian coffee supply situation on prices will be such that the New York price for

Santos 4 is likely to increase from an average US$0.52 per pound during 1972 to somewhere between US$0.53 and US$0.58 by 1978. Dollar returns to the country are expected to increase further, as a result of a likely reduction of the spread between the New York price and the average proceeds to Brazilian exporters from US$0.10 to US$0.08 per pound, as discounts and rebates will not be as important as in the past.

Table 58: COFFEE EXPORTS, 1971-78

	Actual 1971	Estimate 1972	Projection for 1978 Optimistic	Moderate
Coffee Beans (US$ million)	772	946	1,248	1,134
Volume ('000 bags)	17,238	17,200	19,000	19,000
Price (US$/bags)	44.8	55.0	65.7	59.7
Soluble Coffee	50	52	83	78
Volume ('000 bags)	1,161	1,200	1,700	1,700
Price (US$/bags)	42.8	43.0	49.0	46.0

Source: Statistical Appendix, Table 3.11.

Other Agricultural Exports

288. Export prospects are not the same for all commodities. Export of some traditional crops such as cotton and cocoa are likely to grow only slowly, mainly because of both supply and demand constraints. Sugar exports, however, are likely to expand rapidly. The exceptional 1972 performance (which partly depended on stock depletion) will probably not be repeated, but Brazil is one of the few countries in the world that can expand sugar production very rapidly (without additional investment) and thus exploit the prospective world supply shortage. This reflects the fact that about 20 percent of the cane crop which is now used for alternative purposes, such as the manufacture of alcoholic beverages, could be expected to shift into sugar for export if the world market permits. With world market prices likely to remain above 7¢ per pound Brazilian sugar exports will be very competitive.

289. The outlook for non-traditional products is very good. In accordance with the emphasis of the export corridors program, soybean, beef and corn are expected to be the leading products. Demand for these products is very income elastic and Brazil appears to have a strong competitive position in most cases,

which will improve with the installation of the transport and processing facilities envisaged by the corridors program. Soybean prices, however, are expected to decline from the exceptionally high levels of 1971-72, as the world oils and fats situation by the mid-1970's and on to 1980 is likely to be characterized by plentiful supplies. On the other hand, beef and corn prices may stay at the high levels prevailing in 1971-72, as their respective world demand will increase very rapidly, probably as rapidly as world supply. Beef and soybeans are likely to become the major Brazilian agricultural exports (excluding coffee) by the late 1970's.

Table 59: AGRICULTURAL EXPORTS (EXCLUDING COFFEE), 1971-78

(In US$ millions)

	Actual 1971	Estimate 1972	Projection for 1978 Optimistic	Moderate
Traditional Products	479	764	768	610
Cotton	137	202	214	135
Cocoa	86	92	142	132
Sugar	147	360	295	241
Pine	72	68	70	60
Tobacco	37	42	47	42
Non-Traditional Products	858	950	2,589	1,845
Beef	99	105	434	250
Corn	75	11	228	150
Soybeans	106	203	438	288
Castor Oil	40	45	57	42
Others	538	586	1,432	1,105
TOTAL	1,337	1,714	3,357	2,445

Source: Statistical Appendix, Table 3.11.

Mineral Exports

290. Brazil has as yet barely scratched its full mineral resource potential. This sector of the country's economy will grow in importance in the future as ongoing expansion programs are carried out. Brazil's potential is considerable not only in iron ore, but also in manganese, copper, tin, chrome,

and nickel. Iron ore dominates the present pattern of mineral exports and will probably continue to do so. Companhia Vale do Rio Doce (CVRD), the main producer of iron ore, is expanding its facilities in Minas Gerais and Espirito Santo to raise its exports from this source from the 1971 level of 25 million tons to 50 million by the middle of the decade. The same company, in partnership with U.S. Steel, has established a subsidiary to mine iron ore in the State of Para where very large reserves have been found. Output from the new mines is expected to reach about 15 million tons in 1977-78. Another Brazilian company, Mineracoes Brasileiras Reunidas (MBR), will start exporting in 1973-74 and should also achieve 15 million tons per year by 1978.

291. World prices for iron ore are not likely to improve (in real terms) during the 1970's. Unit prices for Brazil's ores should improve, however, as CVRD increases value added in Brazil by improving processing facilities at Tubarao, Espirito Santo, and changing its export mix towards higher quality fines and pellets.

292. Industria Comercio Minerios, S.A. (ICOMI), a subsidiary of Bethlehem Steel, is Brazil's chief exporter of manganese ore. The company's facilities are being expanded and capacity should increase by 200,000 tons in 1973-74. ICOMI also intends to start pelletizing its ore by the mid-1970's.

293. **Exports of other minerals, such as bauxite, nickel and tin are likely to become important only in the 1980's.**

Table 60: PRINCIPAL MINERAL EXPORTS, 1971-78

	Actual 1971	Estimate 1972	Projection for 1978 Optimistic	Moderate
Iron Ore (US$ million)	237	244	752	561
Volume (000 tons)	31,025	31,650	43,000	68,000
Price (US$/tons)	7.64	7.71	8.09	8.25
Manganese (US$ million)	38	29	52	39
Volume ('000 tons)	1,797	1,300	2,100	1,700
Price (US$/tons)	21	22	25	25

Source: Statistical Appendix, Table 3.11.

Manufactured Exports

294. Volume III of the Bank's 1971 report on the Brazilian economy concluded that continued rapid expansion of Brazil's manufactured exports should not encounter serious market constraints owing to the diversity both of the countries to which they are being directed and of the products involved, and to the fact that Brazil's share in total imports of respective products and countries is minuscule in all cases. The report also analyzed constraints on the supply side. Shortages of skilled labor and entrepreneurship, heavy concentration of international firms in the manufactured export field and the need to improve the structure of incentives so as to relate them positively with factor shortages, which respective industries will have to overcome, thus, were disclosed as problems which would have to be contended with, but which will be unlikely to prevent a very high export growth rate from being realized. More recently, as described in paragraph 192 above, the Government has started "sectoralizing" its export incentive policy, permitting the import to Brazil of entire used textile and automotive production facilities on the condition the bulk of respective output be exported. This new development should contribute substantially to the growth of manufactured exports which is likely to range between 23 and 28 percent in current terms (or 20 to 25 percent in real terms) in the next few years. As a result of the recent incentives, transport equipment is expected to be the leading subsector. Exports of wood products and steel are also likely to grow very fast, the latter being related to the steel expansion program.

295. Even the "moderate" projection envisages Brazil becoming a major exporter of manufactured goods -- about US$2 billion per year -- by the late 1970's. This is a crucial element in the overall export projections.

Table 61: MANUFACTURED EXPORTS, 1971-78

(In US$ million)

	Actual 1971	Estimate 1972	Projection for 1978 Optimistic	Projection for 1978 Moderate
Manufactures	480	700	2,733	2,044
Chemicals	60	70	146	146
Machinery	106	160	554	450
Transport Equipment	27	65	280	220
Wood Products	19	25	139	105
Shoes	29	35	203	175
Steel Products	28	45	160	120
Others	211	300	1,251	898

Source: Statistical Appendix, Table 3.11.

D. Imports

296. Brazil's imports are predominantly of capital equipment and intermediate goods. In recent years consumer goods have accounted for only 15 to 20 percent of Brazil's imports and much of this has been wheat. The most important of the intermediate goods imports are chemicals, ferrous and non-ferrous metals and petroleum. As indicated, there is likely to be some additional import substitution in these categories, as Brazil expands its fertilizer, petrochemical and steel industries and exploits its reserves of non-ferrous metals. However, such substitution will be very gradual owing not only to the time required to implement respective investment projects but also to the rapid growth of internal demand. Capital equipment constituted 38 percent of total imports in 1971, compared to 30 percent in 1967. As indicated, the domestic capital goods industry, despite rapid growth, has lost some of its share (about 3 percent) of the internal market since 1967. **Expansion of FINAME operations,** the major domestic source of capital equipment supplier and buyer credit, should help to halt or even reverse this trend. External financing of projects in which local equipment suppliers can compete under international competitive bidding can also help to equalize the credit advantages available to such local suppliers vis-a-vis their foreign competitors. Finally, however, there appears to be a need for the Government to review its policies regarding the wholesale exemption of capital equipment from import duties. The Government is studying the feasibility of replacing the existing mix of tariff rates and exemptions therefrom with lower tariffs and fewer or even no exemptions.

Table 62: MERCHANDISE IMPORTS (FOB), 1967-71
(In US$ millions)

	1967	1968	1969	1970	1971
Consumer Goods	361	420	385	452	531
Wheat	153	154	135	104	108
Other	208	266	250	348	423
Intermediate Goods	631	827	889	1,133	1,446
Petroleum	111	138	147	174	251
Chemicals	225	312	312	430	528
Metal Products	174	202	258	330	429
Other	121	175	172	199	243
Capital Goods	438	604	712	908	1,237
Other Imports	11	4	7	14	31
TOTAL	1,441	1,855	1,993	2,507	3,245

Source: Table 3.4, Statistical Appendix.

E. Invisibles

297. Not only interest and other factor income payments, but also the imbalance in transport and insurance payments impose a heavy burden on Brazil's balance of payments. The Government is attempting to alleviate this burden in various ways. One is its program of investment in the shipping industry which is designed to increase Brazil's naval construction capacity and to expand its fleet, especially in the bulk carrier category, through both local and foreign procurement. The Government also has made considerable effort to negotiate with various freight conferences increasing participation of Brazilian bottoms in the carriage both of its export and of its import trade. Internal institutional reforms which transformed the state shipping company, Lloyd Brasileiro, into a mixed enterprise and encouraged the growth of private companies also has improved Brazil's ocean transport capability. Finally, the Government's fiscal incentives for manufactured exports are designed to encourage exporters to use Brazilian bottoms and to insure their exports with Brazilian rather than foreign insurance companies.

Table 63: BALANCE OF PAYMENTS INVISIBLES, 1967-71
(In US$ millions)

		1967	1968	1969	1970	1971
1.	Commodity Balance	213	26	318	232	-364
2.	Non-Factor Payments	-363	-437	-535	-665	-783
	Travel and Freight	-172	-293	-378	-504	-584
	Insurance	-12	-16	-19	-23	-27
	Other	-179	-128	-138	-138	-172
3.	Non-Factor Receipts	135	154	211	254	293
	Travel and Transport	84	109	154	189	194
	Insurance	8	7	8	10	34
	Other	43	38	49	55	65
4.	Resource Balance (1+2+3)	-15	-257	-6	-179	-854
5.	Factor Payments	-349	-324	-385	-528	-618
	Interest	-202	-154	-202	-283	-344
	Other					
6.	Factor Income	50	51	79	124	150

Table 63: (Contd.)

	1967	1968	1969	1970	1971
Interest	18	9	22	49	42
Other	32	42	57	75	108
7. Net Transfers	77	22	31	21	14
8. Current Account Balance	-237	-508	-281	-562	-1,308

Source: Table 3.5, Statistical Appendix.

F. External Debt

298. Although 60 percent of the financial credit accumulation of recent years has been offset by foreign reserve increase, the residual has nevertheless been large enough to cover about half of Brazil's needs for net inflows of external loan capital. Brazil still has very substantial obligations for amortizing the compensatory debt incurred in 1964. While the pipeline of undisbursed credits still is large, new commitments of USAID program and sector lending have been reduced sharply since 1968 and now are almost insignificant. PL-480 commodity credits also have diminished owing to Brazil's increasing self-sufficiency in wheat and to its longstanding arrangements with Argentine suppliers of this commodity. Only in very recent years have the multilateral lending agencies given large scale support to Brazil. Moreover, their lending is for projects with long lead times. Thus, while both the commitment and actual disbursement of multilateral resources have increased sharply, the latter, at US$186 million in 1971, have yet to play a major role in financing Brazil's external capital requirements. However, that they can be counted upon to do so in the future seems certain; multilateral agency loan commitments in 1971 were more than twice as large as disbursements by these agencies in that year. Suppliers' credits do play a major role in meeting Brazil's requirements for external loan capital: disbursements from such loans financed a third of the cost of Brazil's capital goods imports on average in 1970 and 1971. If official suppliers' credit agencies, such as the US Eximbank, are taken into account then suppliers credit is seen to have financed about 40 percent, on average, of Brazil's capital goods imports in 1970 and 1971.

Table 64: EXTERNAL DEBT, 1969-71[1/]

(In US$ millions)

	Annual Borrowing		Total Debt at Year-End Excluding Undisbursed	
	1970	1971	1969	1971
Medium and Long Term	212	397	2,799	3,408
Disbursements	659	688		
Amortization	-447	-291		
1. Compensatory Finance	-167	-81	549	301
Disbursements	-o-	-o-		
Amortization	-167	-81		
2. Internal Agencies 2/	92	120	364	576
Disbursements	125	152		
Amortization	-33	-32		
3. Official Bilateral Agencies	137	136	1,110	1,383
Disbursements	181	186		
Amortization	-44	-50		
4. Suppliers Credits	161	234	450	845
Disbursements	353	350		
Amortization	-192	-116		
5. Other	-11	-12	327	304
Disbursements	-o-	-o-		
Amortization	-11	-12		
Financial Credits	680	908[3/]	1,605	3,193
Disbursements	1,490	1,850		
Amortization	-810	-942		
Total Debt	892	1,305	4,404	6,601
Disbursements				
Amortization				

1/ Based on official statements of external debt rather than exchange data used in 1971 to estimate capital account movements.

2/ Excludes disbursements and amortizations related to dollar loans repayable in cruzeiros.

3/ Exchange data for 1971 indicate an accumulation of financial credits US$256 million larger than this figure.

Source: Table 4.1, Statistical Appendix.

299. Brazil's external debt is large in terms not only of magnitude but also of complexity. Only in 1970, was the Government able to institute a comprehensive system for the recording of external debt. With this measure, however, Brazilian debt statistics appear to be more inclusive than those of most countries. This measure was only one of many which the Government has taken to control external debt. The debt recording system is based on the statutory requirement that all external debt of more than 180-day term be registered with the Central Bank; without such registration exchange cover for debt service is not legally available. Another important step was the subjection of the external borrowing of local governments and of autonomous federal agencies to control by the Central Government.

300. Perhaps the most important step which the Government has taken in this regard, however, was the subjection in November 1971 of financial credits to term controls. These controls were based on a 12-month program of financial debt accumulation which commenced as of December 1, 1971. Limits on new financial credit registrations were set by term category, beginning with short term credits (180 days to one year) and running on up through consecutive annual brackets until credits of ten-year term or greater which are not limited. As the limit on new financial credit registrations in each term bracket was exhausted, the minimum term for any new financial credit registration became that of the next bracket. By September 1972, the minimum term of any new financial credit registered before December 1, 1972, had become six years. The schedule of term bracket limits was a progressive one; that is, the amount of new financial credits which could be registered increased with the term of the credits. When the lower term limits were exhausted early in the year, the authorities expected that the volume of new financial credit registrations would diminish. However, since lenders were far more willing than the authorities had anticipated to make financial credit available on terms of 5 to 6 years or more, overall financial credit accumulation in 1972 far exceeded expectations. Nevertheless, the application of the term controls meant that the term structure of these credits was far superior to those contracted in 1971: the average term of the 1972 credits probably is on the order of 4 to 5 years compared to about 2 years in 1971.

301. With a new 12-month program of term controls to be instituted as of December 1, 1972, one of the major issues confronting the Government was the extent to which shorter term financial credits ought once again to be accepted. With 5 and 6 year credits so abundantly available there seemed to be little need from a balance of payments point of view to accept shorter term credit. The Government has decided that credits of 180 days to one year term will be allowed to roll over. Such credits account for about US$1.1 billion of the total outstanding and consist mostly of credit lines of long standing so that despite their short term, they are not very volatile. Credits of more than one year term are of more recent vintage. For these, the Government must take into account not only the supply but also the demand side: many borrowers seeking external credit to finance working capital are not interested in money on 5- to 6-year terms. Thus the Government, in 1972, issued regulations permitting the external financial creditor to turn over

the cruzeiro counterpart of his credit one or more times before maturity. This is done through local intermediaries, either the monetary authorities or private banks, which hold both the dollar and counterpart cruzeiro accounts associated with the loan. Thus the Government has made it possible to improve the term structure of new financial credits even further in 1973 and subsequent years.

302. The imposition, late in 1972, of a marginal 25 percent reserve requirement on financial credits -- that is, on all new credits save rollovers -- has been discussed in the preceding chapter. This measure may well shift new credit demand from external to internal sources and thus slow the accumulation of financial debt. A more powerful factor may be operating in this respect, however. The international financial climate was exceptionally favorable for Brazil in 1972. It is unlikely that the international financial community will continue to be willing to increase its assets in Brazil at a US$2 billion annual pace.

G. External Liquidity

303. It is difficult to measure the impact on Brazil's external liquidity of the rapidly increasing indebtedness of recent years. The stock of debt has increased in relation to GDP, especially in 1972. Through that year there was a deterioration in debt structure (debt service/debt) with the increase in financial credits as a percent of total debt; the improvement in the structure of financial debt achieved during 1972 only being measurable in this respect in 1973. The overall debt service ratio also has increased from 43.4 percent in 1968 to 53.6 percent in 1972. 1/

304. On the other hand, the accumulation of foreign reserves by Brazil is a factor which must be taken into account in evaluating Brazil's external liquidity. Reserves increased from the equivalent of 1.8 months' imports in 1968 to 4.8 months' imports in 1972 (year-in reserves compared with imports during the year). As of the end of 1972, they will probably equal about 30 percent of total debt outstanding as compared to 9 percent at the end of 1968.

1/ Since this ratio takes into account service of private debt, it is not comparable with the debt service statistics of most other countries which generally report service on public and publicly guaranteed debt only. Only a small portion of Brazil's financial debt is public or publicly guaranteed. Conversely, the major portion -- but not all -- of the medium- and long-term debt is public or publicly guaranteed. For purposes of international comparison the debt service ratio associated with Brazil's medium- and long-term debt probably is more appropriate. This amounted to about 22.9 percent in 1971.

305. Any single measure of Brazil's external liquidity, therefore, must take into account reserves as well as debt service and exports. Such a measure is included in Table 65 (item 4c). From total debt service it subtracts interest earned on reserves and that portion of reserves which may be regarded as "free". By "free reserves" is meant that part of total reserves not needed to cushion the impact of unexpected fluctuations in exports and imports. Free reserves thus are taken by this report as that portion of the total in excess of the equivalent of three months' imports. Adjusted in this fashion --i.e., reduced by an amount equal to interest earned on reserves and the free portion of total reserves -- debt service is divided by export earnings. This liquidity measure has improved very substantially since 1968. From 53.8 percent in that year it declined to 31.7 percent in 1972, showing that, despite the intervening accumulation of an enormous amount of debt, Brazil was in a more liquid position in the latter year than it had been at the outset of its recent rapid growth period. Nevertheless, the debt and debt service burden are very high, however measured.

Table 6: LIQUIDITY AND DEBT SERVICE CAPACITY

	1968	1969	1970	1971	1972
1. Debt Structure (%)					
a. Financial Credits/Total Debt	28.7	36.5	43.2	48.4	57.2
b. Debt Service (t+1)/Debt (t)	26.9	28.9	35.0	32.5	32.7
Interest	4.7	5.3	5.4	6.5	7.1
Amortization	22.2	23.6	29.6	25.8	25.9
2. Debt Burden Indicators (%)					
a. Debt (t)/GDP (t)	14.0	14.4	15.2	15.5	16.1
b. Debt (t)/Exports (t+1)	1.3	1.5	1.5	1.7	1.7
3. Debt Service Ratios (%)					
a. Total	43.4	43.3	51.5	53.9	54.6
b. Excluding Amortization and Financial Credits	25.6	28.7	34.4	34.2	38.8
c. Excluding Financial Credits and Including Interest Earned on Reserves	25.3	27.8	26.8	28.9	27.1
4. Liquidity Measures					
a. Reserves (t) as Months Imports (t+1)	1.6	1.6	3.6	4.4	4.6
b. Reserves/Total Debt (%)	9.1	21.7	27.8	31.2	30.1
c. DS-(NFR-.25M)/* (%)	53.6	53.9	44.4	37.9	31.7

Source: Central Bank.

VII. DEVELOPMENT PROSPECTS

306. It is the Government's objective to sustain the highest possible rate of economic growth consistent with balance of payments viability. Its nominal targets involve sustaining growth of 8 to 10 percent at least until 1974. This report explores growth prospects over a longer period, until 1978. The Government takes the position that only at high rates of growth can employment be created rapidly enough to reduce underemployment to a meaningful extent. In fact, with the labor force likely to grow at a 2.5 percent annual pace, high rates of economic growth probably would be required simply to keep underemployment from increasing. The Government also takes the position that only at high rates of growth can sufficient public savings be generated to resolve Brazil's problems of regional underdevelopment and sparsity of social infrastructure. The analysis given in earlier chapters of this report demonstrates the elasticity of public savings to the rate of economic growth and shows that the Government has in fact allocated a substantial portion of its savings for programs of regional and social infrastructure development.

307. The rapid growth of the past two decades, its material resource endowment and the plenitude of investment opportunities presently available in the economy certainly indicate that in physical terms, at least, Brazil is capable of sustaining rapid growth. Brazil's domestic savings capacity — which is benefitting from continuing improvement of fiscal, monetary and capital market institutions -- also supports the feasibility of rapid growth, as does the present high quality of the country's overall economic management. Although improvement of educational attainments and other qualifications is needed, Brazil's human resources are commensurate with rapid growth, particularly as regards entrepreneurial talent. Moreover, there appears to be a consensus in Brazil which supports the Government's rapid growth policies.

308. Limits on Brazil's access to external resources may well be the dominant constraint on Brazilian growth at the present time. Brazil needs to import substantial amounts of intermediate and capital goods. Some additional import substitution is feasible but this will not alter in basic fashion the structure of Brazil's import requirements for some time to come. Continuing export growth and diversification can be expected to increase Brazil's command over external resources rapidly. However, the import requirements associated with overall economic growth of 8 to 10 percent are such that the present external resources gap is unlikely to be narrowed over the next several years if growth at this pace is sustained.

309. Thus, this report tests the feasibility of alternative growth paths in terms of the balance of payments constraint. An 8.5 percent growth path has been selected as the basic hypothesis; one which assumes export performance along the lines of the optimistic forecast given in Chapter VI and rapid

development of Brazil's capital goods sector with consequent dampening of import elasticity. The implications of less favorable developments in these key respects are explored in the sense of identifying growth paths which would be consistent with less rapid export expansion, and slower development of the capital goods industry. In all cases, Brazil is assumed to receive strong support from official external lenders and suppliers.

Investment

310. The very low -- 1.86 -- incremental capital output ratio of recent years is related to the absorption of excess capacity which took place in 1968 and 1969. Over the 1972-78 period, the ICOR can be expected to be higher; at 8.5 percent growth it is likely to be about as large as it was in the 1950's rapid industrialization period. This means that investment will have to increase more rapidly than GDP during 1972-78. At 8.5 percent growth, investment is likely to have to increase by slightly more than 10 percent as the investment coefficient rises from 18.5 percent of GDP in 1971 to 20.3 percent in 1978.

311. The investment opportunities available in the economy certainly are sufficient to permit investment to grow at this pace. As indicated in Chapter IV, investment financed by the public sector may grow by as much as 10.6 percent annually through 1977. Private agricultural investment is being stimulated by measures such as the export corridors and sugar industry reorganization programs, and facilitated by supporting lines of investment credit. Private industrial investment is booming, stimulated not only by rapidly increasing internal demand, as in the case of the automobile industry, but also by incentives for manufactured exports and by opportunities for additional import substitution. Finally, the infrastructural components of the public investment program are such that infrastructural bottlenecks impeding a fast pace of overall investment and economic growth are unlikely to emerge.

Table 66: ECONOMIC MAGNITUDES ASSOCIATED WITH ALTERNATIVE GROWTH PATHS FOR 1972-78

Real Growth Rates (% per annum)	Historical Data 1951-60	1961-70	1968-71	Projections for 1972-78 A (8.5% Growth)	B (7.5% Growth)	C (5% Growth)
Gross Domestic Product	6.8	5.9	9.6	8.7	7.9	6.1
Agriculture	4.4	4.4	6.1	6.6	5.7	4.3
Industry	8.9	6.7	11.5	11.1	9.9	7.7
Services	6.9	6.1	9.8	7.6	7.1	5.5
Labor Force	2.8	2.7		2.5	2.5	2.5
Rural	(1.7)	(0.7)		(1.5)	(1.5)	(1.5)
Urban	(4.3)	(4.6)		(3.2)	(3.2)	(3.2)
Urban Employment						
Manufacturing	(3.2)	(3.2) 1/		(7.5)	(6.2)	(4.1)
Mining				(3.7)	(2.4)	(-o-)
"Other"				(2.5)	(2.7)	(3.1)
Average Productivity "Other" Urban Employment				5.3	4.4	2.1
Domestic Consumption	6.9	5.8	9.1	8.2	7.3	6.0
Domestic Savings	6.2	6.5	12.1	11.1	10.4	6.2
Domestic Investment	9.4	5.7	15.1	10.2	8.8	5.3
Imports and NFS						
Constant US$	2.1	4.5	16.1	11.7	10.2	7.3
Current US$			22.2	13.9	12.3	9.2
Exports and NFS						
Constant US$	-1.5	5.8	10.0	13.6	13.6	9.4
Current US$			15.4	16.2	16.2	11.9
Other Measures						
Marginal Savings Rate	15.5	18.8	19.9	22.6	23.8	16.9
ICOR For Period	2.30	2.68	1.86	2.29	2.47	2.99
Import Elasticity	0.31	0.76	1.68	1.47	1.39	1.25
Growth Capital Goods Output	14.4	7.7	16.9	11.0	9.5	6.5
Average Resource Gap (Millions current US$)			324	1,268 2/	869	794
Average Gross M & LT Inflow (Millions current US$)			590	1,940 3/	1,940	1,701
Average Gross Financial Credit Inflow (Millions current US$)			1,378	3,888 4/	3,157	2,781

A = Basic alternative: optimistic export growth, increased support from official lenders, financial credits accumulated at US$1 billion annually after 1972, rapid development of capital goods industry, 10.0 percent growth in 1972, 8.5 percent thereafter.

B = Moderate growth alternative: optimistic export growth, increased support from official lenders, rapidly declining accumulation of financial credits, moderate development of capital goods industry, 10.0 percent growth in 1972, 7.5 percent thereafter.

C = Slow growth alternative: moderate export growth, increased support from official lenders, no further accumulation of financial credits, slow growth of capital goods industry, 10.0 percent growth in 1972, 7.5 percent in 1973, 5.0 percent thereafter.

1/ Average growth over the 1950-70 period.
2/ For 1972, the resource gap is estimated at US$1,092 million.
3/ For 1972 gross M & LT loan disbursements are estimated at US$1,147 million.
4/ For 1972 gross financial credit disbursements are estimated at US$3,500 million.

Source: Table 2.6 Statistical Appendix and annexed methodological notes explaining the projection of macro-economic magnitudes, employment and external debt.

Domestic Savings

312. Limitations on Brazil's ability to finance its external resource gaps mean that external savings should not be counted upon to cover more than about 10 percent of total investment requirements on average over the medium term. In 1972, however, external savings appear to have amounted to about 14 percent of total investment. Thus, because of external liquidity considerations, domestic savings are likely to have to increase more rapidly than domestic investment. Data on domestic savings indicate that, although increasing, they have not kept pace with rapidly expanding investment opportunities or with the corresponding rapid increase in outlays for both public and private investment which have been taking place. Even sustaining a growth rate in the lower range of the Government's targets, or 8 to 9 percent annually without producing excessive strain on the external sector, will require a considerable expansion of domestic saving. Along an 8.5 percent growth path it is estimated that domestic savings are likely to have to increase at an 11 percent pace, rising from 16.6 percent of GDP in 1971 to 19.2 percent by 1978. This would represent a marginal savings rate of 22.6 percent in 1972-78 compared to 19.9 percent in 1968-71.

313. It is shown in Chapter IV that public savings are likely to increase by 14 percent annually if the elasticity of local government revenues to economic growth is improved to unity. Even with a quite possible shortfall in local revenue performance, however, public savings -- which have constituted about 60 percent of total domestic savings -- are likely to increase faster than 11 percent. Private savings are likely to increase rapidly, encouraged by the institutional developments in the capital market described in Chapter V and because of the Government's policy favoring high profits. However, while there would be little doubt that Brazil's saving capacity is commensurate with an 8.5 percent rate of growth, more rapid rates of growth would severely test the economy's saving capacity. The Government does not seem to have fully considered the implications of its growth strategy for domestic saving.

Table 67: DOMESTIC INVESTMENT AND SAVINGS IN 1971-78

(In billions 1971 Cr$)

	1971	1972	1973	1974	1975	1976	1977	1978	Annual Average %
3.5% Growth									
Investment	41.6	50.9	54.9	59.5	64.5	70.2	76.2	82.3	10.2
Resource Gap	4.3	7.2	7.6	7.4	6.7	6.4	5.7	4.5	
Domestic Savings	37.3	43.7	47.3	52.1	57.8	63.8	70.5	77.8	11.1
7.5% Growth									
Investment	41.6	49.1	52.3	56.2	60.4	65.3	70.2	75.2	8.8
Resource Gap	4.3	6.8	7.2	6.4	5.0	4.0	2.5	0.5	
Domestic Savings	37.3	42.3	44.9	49.3	54.5	59.9	65.8	72.2	10.4
5.0% Growth									
Investment	41.6	49.1	46.8	48.8	51.3	54.2	57.0	59.7	5.3
Resource Gap	4.3	6.8	5.3	4.6	3.6	3.3	3.1	3.0	
Domestic Savings	37.3	42.2	41.5	44.2	47.7	50.9	53.9	56.7	6.0

Source: Staff estimates.

Imports

314. The import requirements of alternative growth paths are the major determinant of the external resource gap. This is because export performance is a rather independent factor, related to the overall rate of growth more as a cause than as an effect. As shown in Chapter III, the direct contribution of exports to sectoral output growth, while significant, is not very large in magnitude. The major contribution to overall growth of exports may be seen as alleviation of the foreign exchange constraint. Yet, this contribution tends not to vary along alternative growth paths; even if the economy were to continue to grow at the 11 percent pace achieved in 1971, it seems unlikely that exports would exceed the absolute levels of the optimistic forecast given in Chapter VI, which shows them growing at 16.2 percent annually in dollar terms and at 13.6 percent in real terms.

315. Imports, on the other hand, do vary directly with growth and with the sectoral composition thereof. Import demand elasticity has been as high as it has in recent years because the growth of investment and output, particularly in the industrial sector, has increased requirements for intermediate and capital goods more rapidly than the output of respective domestic

industries has been able to expand. With a downturn in the overall rate of economic growth from 10-11 to 8.5 percent, import demand elasticity should be reduced. Moreover, the effect of such a downturn should be reinforced by the ongoing expansion of Brazil's intermediate goods industries and by government incentives for the expansion of the domestic capital goods industries.

316. As a proxy for the effect on import demand of this structural evolution, this report assumes that, along an 8.5 percent growth path, capital goods imports will increase by about 12 percent annually in dollar terms -- or by about 9 percent annually in real terms -- while the output of the domestic capital goods industry increases at an 11 percent pace in real terms. By 1978, therefore, the share of the domestic capital goods industry in total equipment procurement would have increased to 75 percent, compared to 72 percent in 1971 and to 78 percent in 1967 (see Table 2.4, Statistical Appendix). Assuming, therefore, that Brazil continues to supply about one-third of its crude petroleum requirements, that wheat imports average one million tons annually and that other imports follow recent trends (see methodological notes to Table 2.6, Statistical Appendix, for estimating equations) overall import growth along an 8.5 percent growth path has been projected at 13.9 percent annually in dollar terms and at 11.7 percent in real terms.

Table 68: ALTERNATIVE PROJECTIONS OF MERCHANDISE IMPORTS (CIF)

(Current US$ millions)

	Projections for 1978					
	8.5% Growth		7.5% Growth		5.0% Growth	
	Amount	Average %	Amount	Average %	Amount	Average %
Investment Goods	2,807	11.6	2,453	9.5	1,771	4.5
Intermediate Goods	3,951	16.0	3,604	14.5	3,076	11.9
Consumer Goods	922	14.3	859	13.2	736	10.7
Petroleum	1,006	16.9	943	15.8	842	13.9
Wheat	77	-4.7	77	-4.7	77	-4.7
Miscellaneous	53	8.0	51	7.3	46	5.8
TOTAL	9,816	13.9	7,987	12.3	6,549	9.2

Source: Table 3.12, Statistical Appendix.

External Resource Gap and Its Financing

317. The fact that imports may grow slightly less rapidly than exports along an 8.5 percent growth path means that the external resource gap eventually would be reduced in absolute terms. Owing to the very large excess of imports over exports in 1972, however, such reduction would not come about until after 1978. Over the entire 1972-78 period the gap would exceed US$1 billion.

318. Even assuming that official external lenders, both bilateral and multilateral, increase the annual volume of their loan commitments to Brazil by about 50 percent above 1972 levels as of 1975 in line with the volume of projects available for external financing, and that suppliers continue to finance about one-third of Brazil's equipment imports, these resource gaps would require substantial coverage of Brazil's foreign exchange requirements with financial credits.

Table 69: COMPOSITION OF M & LT LOAN DISBURSEMENTS

(Assuming 50% increase in official loan commitments by 1975)

	1972	1973	1974	1975	1976	1977	1978
8.5% Case							
Official Lenders	524	729	916	1,033	1,157	1,275	1,373
Suppliers' Credits	564	675	754	803	858	924	934
Bond Sales	60	100	100	200	200	200	200
TOTAL	1,148	1,504	1,770	2,036	2,215	2,399	2,507
7.5% Case							
Official Lenders	524	729	916	1,033	1,157	1,275	1,373
Suppliers' Credits	564	675	731	786	849	927	955
Bond Sales	60	100	100	200	200	200	200
TOTAL	1,148	1,504	1,747	2,019	2,206	2,402	2,528
5.0% Case							
Official Lenders	524	715	885	1,020	1,156	1,290	1,383
Suppliers' Credits	564	675	465	494	530	582	585
Bond Sales	60	100	100	200	200	200	200
TOTAL	1,148	1,490	1,450	1,714	1,886	2,072	2,168

Source: Staff estimates.

319. With Brazil's progress in improving the term structure of its financial debt, the major question in this regard may not be the implication for liquidity of the enormous increase of this type of indebtedness in 1972 but rather the extent to which external financial creditors will be willing to transfer additional resources to Brazil in this fashion in the future. A related issue is the extent to which inflow of financial credits will be dampened by the recent imposition of a marginal 25 percent reserve requirement on the cruzeiro counterpart thereof.

320. This report tests three assumptions in regard to the future behavior of financial credits.

(i) The first assumes that financial indebtedness increases by US$1 billion annually over 1973-78, after having increased by an estimated US$1.7 billion in 1972. This means that gross financial credit inflows would have to increase from about US$3.5 billion in 1972 to US$4.7 billion in 1978;

(ii) the second assumes that gross financial credit inflows remain constant at US$3.1 billion after 1973. This means that net increases in financial indebtedness would decline from about US$0.9 billion in 1973 to US$0.1 billion in 1978; and,

(iii) the third assumes that external financial creditors and/or internal borrowers are unwilling to increase the stock of Brazil's external financial debt after 1973.

321. In its 7.5 and 5.0 percent economic growth path hypotheses, this report combines, respectively, assumptions (ii) and (iii) above with lower rates of growth of domestic capital goods output (9.5 and 6.5 percent respectively) and, in the 5 percent growth hypothesis, with the "moderate" rate of export growth projected in Chapter VI. Of course, import requirements and suppliers' credit finance both are reduced in these lower growth rate hypotheses. Official external financing, on the other hand, is assumed, with deliberate optimism in the 5.0% case, to remain about the same. The result is the delineation of a sort of frontier along which alternative combinations of external factors are likely to limit Brazilian growth.

External Liquidity

322. At each of the three points along this frontier which this projection defines for 1978, Brazil's external liquidity would not have deteriorated significantly vis-a-vis 1972. Moreover, the substantial additional reserve accumulation implicit in the 8.5 percent case both permitted and required by additional accumulation of financial debt would not be so great as to cause monetary management problems. In all three cases the overall debt service ratio would be in the 60 to 70 percent range, compared to about 54 percent in 1972. However, this would be offset by a higher level of "free" foreign reserves in the 8.5 and 5.0 percent cases and by improvement in the structure of financial debt in all cases. The result would be that the liquidity ratio described in Chapter VI would be at the 1972 level in the 8.5 and 5.0 percent cases and somewhat higher, i.e., at the 1971 level, in the 7.5 percent case.

Table 70: ALTERNATIVE BALANCE OF PAYMENTS FORECASTS FOR 1972-78

	1972	1973	1974	1975	1976	1977	1978
8.5% Case							
Resource Gap	-1,092	1,212	1,440	1,333	1,325	1,323	1,153
Net Factor Payments	-435	-622	-830	-993	-1,215	-1,348	-1,663
Current Account Deficit	-1,527	-1,834	-2,270	-2,326	-2,540	-2,761	-2,816
Miscellaneous Accounts	401	402	405	408	410	413	416
M & LT Lending	692	1,131	1,283	1,430	1,507	1,541	1,485
Disbursement	(1,148)	(1,504)	(1,770)	(2,036)	(2,215)	(2,399)	(2,507)
Amortization	(-456)	(-373)	(-487)	(-606)	(-708)	(-858)	(-1,022)
Net Financial Credit Inflow	2,177	1,000	1,000	1,000	1,000	1,000	1,000
Reserve Change	1,743	699	418	512	376	193	85
7.5% Case							
Resource Gap	-1,092	-1,166	-1,339	-1,181	-1,117	-1,052	- 818
Net Factor Payments	-435	-622	-828	-972	-1,172	-1,362	-1,543
Current Account Deficit	-1,527	-1,788	-2,167	-2,153	-2,289	-2,414	-2,361
Miscellaneous Accounts	401	402	405	408	410	413	416
M & LT Lending	692	1,134	1,262	1,419	1,507	1,554	1,515
Disbursement	(1,148)	(1,504)	(1,747)	(2,019)	(2,206)	(2,402)	(2,528)
Amortization	(-456)	(-370)	(0485)	(-600)	(-699)	(-848)	(-1,013)
Net Financial Credit Inflow	2,177	887	551	496	253	139	72
Reserve Change	1,743	635	51	170	-119	-308	-358
5.0% Case							
Resource Gap	-1,092	- 785	-865	-675	-663	-722	-755
Net Factor Payments	-435	-617	-814	-1,214	-1,064	-1,217	-1,371
Current Account Deficit	-1,527	-1,402	-1,679	-1,889	-1,727	-1,939	-2,126
Miscellaneous Accounts	401	402	405	408	410	413	416
M & LT Lending	692	1,120	965	1,153	1,266	1,349	1,334
Disbursement	(1,148)	(1,490)	(1,450)	(1,714)	(1,886)	(2,072)	(2,168)
Amortization	(-456)	(-370)	(-485)	(-561)	(-620)	(-723)	(-834)
Net Financial Credit Inflow	2,177	887	-	-	-	-	-
Reserve Change	1,743	1,006	-309	-328	- 51	-176	-377

Source: Table 4.4, Statistical Appendix.

Table 71: LIQUIDITY IMPLICATIONS OF ALTERNATIVE GROWTH FORECASTS

	1971	1972	1978		
			8.5% Case	7.5% Case	5.0% Case
A. Basic Data (US$ Millions)					
1. Debt Outstanding & Disbursed	6,601	9,409	23,786	20,198	17,483
a. M & LT	3,408	4,039	12,416	12,430	11,226
b. Financial Credits	3,193	5,370	11,370	7,768	6,257
2. Net Foreign Reserves	2,056	3,749	6,032	3,820	3,514
3. Exports and NFS	3,174	4,033	9,056	9,056	6,948
4. Imports and NFS	4,028	5,125	10,209	9,873	7,703
5. Net Interest Payments	302	275	1,324	1,205	1,033
a. M & LT	(344)	(382)	(684)	(681)	(618)
b. Financial Credits			(903)	(703)	(595)
c. Received from Reserves	(-42)	(-107)	(-263)	(-179)	(-179)
6. Amortization Payments	1,367	1,778	4,746	4,041	3,431
a. M & LT	(425)	(455)	(1,022)	(1,013)	(834)
b. Financial Credits	(942)	(1,323)	(3,724)	(3,028)	(2,597)
B. Debt Service Burden Indicators					
7. Debt Service (t+1)/Debt (t)	32.3	32.7	29.0	27.9	28.8
a. Interest	(6.5)	(5.8)	(7.5)	(7.4)	(7.5)
b. Amortization	(25.8)	(26.9)	(21.5)	(20.5)	(21.3)
8. Financial Credits/Total Debt	48.4	57.1	47.8	38.5	35.8
9. Debt Service Ratios					
a. Total (6+5a+5b/3)	53.9	53.6	69.9	59.9	66.8
b. Excluding Financial Credit Amortization (6a+5a 5b/3)	24.2	20.8	28.8	26.5	29.4
c. Net of Interest Received (6a+5/3)	22.9	18.1	25.9	24.5	26.7
10. Liquidity Measures					
a. Reserves as Months Imports	4.4	4.8	6.7	4.6	6.5
b. Reserves/total Debt	31.2	30.6	25.4	18.9	20.1
c. DS-(NFR-.25M)/X	37.9	31.7	29.5	39.1	31.7

Source: Staff estimates.

323. In conclusion, while no balance of payments and external debt forecast spanning several years should be regarded as meriting narrow confidence limits, analysis of probable export performance, import requirements and availabilities of external financing suggests that the highest level of economic growth compatible with an acceptable debt service situation and reasonable external liquidity is about 8.5 percent per year. Unless export growth can be accelerated and/or marginal import requirements reduced even further than considered likely by this report, the rate of growth will have to be moderated from the present 11 percent pace. The present Government is committed to maintenance of a rapid rate of growth in order, inter alia, to generate employment and alleviate the dualism of the Brazilian economy and the poverty that results from it. Thus, there remains an element of doubt as to the Government's willingness to restrain growth to the 8 to 9 percent range despite the fact that it would provide sufficient margin to expand the productive base and provide needed infrastructure, while distributing the benefits of growth more broadly. The Government is, in fact, giving additional emphasis to import substitution and continuing vigorous export promotion. The authorities feel that the near term balance of payments situation is sufficiently strong so that they can wait and see what the impact of these programs is on the resource gap before facing a decision to reduce the rate of growth.

324. The present strong foreign exchange reserve position of the monetary authorities does not indicate that Brazil has no need to increase the flow of long-term capital from abroad. The strength of this foreign exchange position is largely a result of the unexpectedly large inflow of financial credits in recent years, reflecting among other things, the attractiveness of Brazilian prosperity and stability to the international financial community. To protect external liquidity, the Government is deliberately following monetary policy which results in substantial reserve accumulation. The need to offset the inflow of financial credits with foreign exchange reserves greatly reduces their contribution toward financing the resource gap. Financial credits are only a partial and imperfect substitute for long-term capital and the mobilization of large flows of official capital will play a crucial role over the long term.

325. The second conclusion which emerges from this analysis is that -- despite its strong reserve position and impressive export performance -- Brazil needs continuing support from external lenders. This is warranted not only by the quality of Brazil's economic management but also by the massive opportunities clearly afforded by Brazil for the productive use of external resources.

Income Distribution

326. Owing to the reliance of its development strategy on an incomes policy which favors profits in order to promote exports, mobilize savings and stimulate investment, the distribution of Brazilian incomes is unlikely to

improve over the next several years. However, rapid growth will maximize public savings of which a substantial portion has been and will continue to be used to alleviate absolute poverty and to improve the qualifications of Brazil's human resources.

327. It is not easy to define in specific terms an alternative development strategy for Brazil which, while giving top priority to the improvement of income distribution, could insure the resource generation needed to increase incomes rapidly in absolute terms. However, the Government is considering various modifications of existing strategy which could have beneficial distribution effects.

328. One such modification would have to do with improvement of the capacity of regional development agencies in the Northeast to absorb productively the resources transferred to them by the Government's fiscal mechanisms. To a certain extent such improvement already is underway; rationalization and expansion of Brazil's agricultural research and extension facilities is crucial in this respect. Additionally, however, clearer delegation of authority in the conduct of regional development efforts is required as is better balance in the allocation of regional development resources as between highway construction on the one hand, and rural development, on the other.

329. Another modification which may be required depending on local revenue effort and resource absorption capacity is for the Central Government to increase the revenues it shares with states and municipalities. This would be done in a selective way, perhaps by increasing the Special Fund through which federal income and value-added taxes are transferred to specific states rather than to all states on an automatic basis.

330. The distribution of agricultural credit is still another crucial issue: it might be advisable for the Government to undertake a program designed specifically to extend agricultural credit and extension services to the smallholder.

331. Even if technological factors may have prevented the heavy burden of payroll taxes from distorting specific production functions, such taxes probably have discouraged expansion of labor intensive lines of activity and slowed wage rate increases in certain sectors. At least some of the burden of financing Brazil's ambitious social security and housing programs probably should be transferred to other forms of taxation. Additional central government tax resources could be generated for this purpose by applying some form of pay as you go to the corporate income tax.

332. On the assumption that the payroll taxes are replaced, Table 66 above projects, rather optimistically, a sharp increase after 1974 in the industrial sector's employment elasticity. Moreover, on the further assumption that growth of the overall urban labor force would not accelerate, average productivity of labor in the "other" urban sector (services) -- where considerable underemployment is now concentrated -- would increase.

333. Although it seems far removed from the question of income distribution, the balance of payments analysis of this chapter in fact deals with an issue of great distributional significance. The regressive incomes effects of the 1964-67 stabilization period were a very likely if not an inevitable outcome of Brazil's 1964 balance of payments crisis. Avoiding "stop-and-go" development in the future, therefore would appear to be an important component of an equitable incomes policy. It is thus doubly encouraging that the Government attaches great importance to the steadiness as well as to the overall magnitude of Brazilian economic growth.

MARCH 1965

IBRD-1485