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Brazilian Economic Studies

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Foreword

Beginning with the present issue, the papers published in *Brazilian Economic Studies* refer not only to research conducted at IPEA, but also to work carried out by scholars at other institutions in Brazil. In this way, we hope to achieve a better balance between studies made within government institutes and those conducted at the universities. Accordingly, the two opening papers in this collection are signed by economists associated with academic centers: Dionísio Carneiro Netto, the author of the first article, is now at the Catholic University of Rio de Janeiro, and João Sayad, author of the second, is at the State University of São Paulo. Likewise, although David Goodman has worked at IPEA several times in the recent past, he is currently at the London School of Economics, and the paper he wrote in collaboration with Daniel Oliveira is not based on IPEA research. The other contributors — Hamilton Tolosa, Marcelo Abreu and Gervásio Resende — are all members of the Research Institute of IPEA.

The contents of this volume are quite varied, reflecting a diversity which is in accord with the authors' respective affiliations. The issues covered range from a broad analysis of the recent behavior of the Brazilian economy and the effects of macroeconomic policy (Carneiro Netto) to a case study of employment problems in a specific agricultural region — the cacao zone of Bahia (Resende). Employment problems are also dealt with in two other articles (Tolosa and Goodman), but with emphasis on urban areas, given the relevance of this issue to the Brazilian economy at present. An analysis of the financial market (Sayad) and an evaluation of the

public foreign debt policy in the period 1931-1943 (Abreu) complete the set of papers in this collection. Following the norm adopted in BES n.º 2, a book review of a recent foreign work on Brazil is included at the end of the volume.

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Brazilian economic policy in the mid-seventies *

Dionisio Dias Carneiro Netto **

1 — Introduction

To the analyst of the Brazilian economy at present times, there seem to be two major approaches to understanding the problems of rampant inflation, the recalcitrant deficit in the current trade account, and the yet uncertain changes in the growth pattern in the second half the seventies. The first approach stresses the role of the price increases imposed by the OPEC countries in October 1973. According to sponsors of this view, the steady growth enjoyed by the Brazilian economy since 1967 was abruptly, but temporarily, interrupted by a sudden adverse change in the price of a hard-to-substitute import. The resulting deficit in the trade balance, at a time of unfavorable developments in the international economy, imposed new difficulties relative to reproducing the record real-output growth rates of the previous years. Thus, short-run adjustments were required in order to restore external equilibrium and allow for a peaceful return to the ante-crisis growth path.

The second approach seeks in the recent rapid expansion the reasons for the collapse in the trade account after 1974, and emphasizes structural imbalances in the pattern of industrialization as important to explaining both the renewed inflationary pressures after 1973 and the extraordinary 100%—plus increase in imports in 1974. A variant of this line of investigation also looks for endo-

* The author is grateful to Rogério F. Werneck and Lúcia Amado Snijders for valuable comments on early versions of this paper. Lúcia Snijders prepared the tables and charts.

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genous phenomena that could account for the renewed inflationary pressures, relying heavily on estimates of potential GNP or productive capacity in the manufacturing industries. Proponents of this view generally conduct their arguments in aggregate terms, not necessarily probing into "structural" data. However, since some of them do consider imbalances in the composition of industrial output to underlie the exhaustion of aggregate productive capacity, their argument cannot be easily separated from that of the critics of the pattern of industrialization observed during the 1968-1973 boom. In either case, the Arabs are given a supporting role rather than a main part. [1]

Lest we be misunderstood in our claims, we should point out that this note is more in the direction of trying to ask the right questions than of pretending to offer the right answers. For the sake of brevity, we therefore rely on others' contributions and calculations whenever possible, stating beforehand a preference for integration of arguments rather than thoroughness in the probing of evidence. At least in part, the objective of the paper is to briefly review some of the aspects of the economic difficulties experienced by the Brazilian economy in the past four years and to suggest issues for an up-to-date research agenda. [2]

2 — Prologue to the crisis: odds and ends on industrialization and trade policies

In the mid-sixties, the prospects of the Brazilian economy were rather unfavorable. Throughout the economy, the problems of stagnation and inflation reflected a crisis of major consequences to

[1] For a sample of contributions to the analysis of the problems faced by the Brazilian economy in the past four to five years, see: E. L. Bacha, "Issues and Evidence on Recent Brazilian Economic Growth," *World Development* 5 (January-February 1977): 47-67; R. Bonelli and P. S. Malan, "Os Limites do Possível: Notas sobre Balanço de Pagamentos e Indústria nos Anos 70," *Pesquisa e Planejamento Econômico* 6 (August 1976): 353-406; P. S. Malan and L. A. Luz, "O Desequilíbrio do Balanço de Pagamentos: Retrospecto e Perspectivas," in *Brasil: Dilemas de Política Econômica*, ed. D. D. Carneiro Netto (Rio de Janeiro: Editora Campus, 1977); D. D. Carneiro and C. L. Haddad, "Industrialization, the International Crisis and the Brazilian Trade Balance," presented at the Seminar on the New International Economic Order and UNCTAD IV, October 1975 (Mimeographed); C. R. Contador, "Pleno Emprego, Inflação e Política Econômica no Brasil," presented at the IV Encontro de Economistas da ANPEC, Guarujá, 1976 (Mimeographed); W. Suzigan *et al.*, *Crescimento Industrial no Brasil: Desempenho Recente*, Coleção Relatórios de Pesquisa, n.º 26 (Rio de Janeiro: IPEA/INPES, 1974).

[2] In this sense, the paper is a step towards updating the agenda proposed by W. Baer in "The Recent Development of the Brazilian Economy: An Interpretation," *Brazilian Economic Studies* 1 (1975): 7-37.

the industrialization process. Economic development policy was realized to be more than mere provision of adequate stimuli to import-substitution industrialization, and attempts to stop inflation contributed to, if not aggravated, the lack of dynamism. The swarm of institutional reforms, having been made at a time when anti-inflationary efforts were mainly directed to controlling the federal budget, took a few years to mature. In the meantime, idle capacity was increasing in the industrial sector.[3] If the recession of the mid-sixties was not sufficient to eradicate inflation, it was strong enough to take care of the trade deficit.

The government which took over in 1967 decided to take a different course of action on several fronts. To begin with, it inherited an economy with substantial idle capacity in practically every branch of industry. According to Bacha, the GNP gap in 1967 (the trough of the recession) was about 17.5% of potential GNP. Other estimates are higher still. Partly thanks to relief measures taken by the previous government, manufacturing output already showed some mild signs of recovery in 1966; however, it took an upward trend only after 1968.[4]

Nonetheless, despite the moderate recovery as of 1966, it was clearly impossible to adhere to the introverted model of industrial growth, at least without resorting to radical changes in the composition of industrial output, if not in economic structure, the risk of which was not contemplated by Brazilian policy-makers. After recognizing the anti-export bias built into the Brazilian tax-structure and exchange-policy tradition, the authorities decided to abandon import control and adopted an aggressive export-promotion policy. The latter ranged from thorough revision of exchange-rate policy, via adoption of the so-called "mini-devaluations", to a complex system of fiscal incentives to exporters.[5]

The success of export promotion is undeniable. The growth of Brazilian exports averaged 25% per year between 1967 and 1973, in comparison with an annual rate of 1.16% in the previous 17 years. Yet, a significant fact overlooked by almost every analyst of the phenomenon of export growth during the post-1967 recovery is that international trade conditions were exceptionally favorable to the policy of export promotion. As Malan and Bonelli[6] observe,

3 For a description of major changes carried out by the post-1964 regime, see Baer.

4 See Suzigan *et al.*

5 On this issue, see C. von Doellinger *et al.*, *A Política Brasileira de Comércio Exterior e Seus Efeitos, 1967/73*, Coleção Relatórios de Pesquisa, n.º 22 (Rio de Janeiro: IPEA/INPES, 1974).

6 Bonelli and Malan, pp. 24 ff. Also see Malan and Luz.

the evolution of the international situation from the mid-sixties to the early seventies was propitious to the opening of the economy, since the boom experienced by the developed countries was characterized by a substantial increase in both trade and capital flows. In fact, world exports were rising an average 18% per year, while international reserves were mounting at the annual rate of 24% compared to 2.7% in the preceding 20 years.

The stimulus from international trade was decisive first to the recovery of industrial growth and then to the new phase of the industrialization process. In the first years, the growth of exports which followed the attack on the anti-export bias allowed for a substantial pumping of global demand into a system showing precocious signs of stagnation after the end of the import-substitution phase of the fifties. Subsequently, it became possible for the Brazilian economy to engage in the increasing international division of labor: the extraordinary growth in exports created conditions for the importation of capital goods and raw materials which rendered feasible a vigorous expansion of the industrial sector (at the same time encouraging foreign indebtedness by offering good prospects to international creditors). Thus, in an economy with an incipient technological base, the growth of import capacity seems to be important for the opening of the channels of international trade, the major route by which technological progress may be made available, especially that pertaining to product technology.

Once the initial stimuli derived from exchange-rate, fiscal and credit incentives to exporters were exhausted, export-promotion measures were directed to increasing the weight of manufactures on the export list. In this phase, which began around 1972, the government decided to take advantage of the relative abundance of foreign investment capital to create special conditions for the installation of industries whose scale, and thus economic feasibility, depended on the possibility of exporting a considerable portion of their output. This decision opened new possibilities for industrial growth, but introduced new constraints for industrialization and trade policies. In the previous import-substitution phase, the market pre-existed and was guaranteed by protective walls which created market reserves. Under the new industrialization scheme, the expansion of the manufacturing sector became dependent on the dynamism of international trade. Since most of the new plants belong to multinational corporations, they are integrated into the regional division of labor planned by these enterprises. In addition, since the economic feasibility of the new scales in operation rests on sales abroad, internal production costs have to be aligned with international prices. It is therefore natural that import tariffs on components and basic inputs be progressively removed. This policy

has been implemented through the industrial development council (Conselho de Desenvolvimento Industrial — CDI) and a council in charge of granting special fiscal benefits to industries that pledge to export (Benefícios Fiscais às Exportações — BEFIEX).[7]

The vigorous expansion of the Brazilian economy during the late sixties and early seventies may have had profounder consequences than at first apparent. In fastening the economy to a protracted upswing in international trade, the policymakers took advantage of several conditions which were extremely favorable to fostering export growth and to attracting considerable foreign investment. This policy, though successful, imposed severe limitations on domestic policies once the international boom came to an end. More important, by further linking the growth of domestic industry to the development of international trade, the policymakers bet on continued trade expansion precisely when the Bretton Woods arrangement was being disrupted and the signs of a new international economic order were at best uncertain.

These facts certainly pose new difficulties in trying to appraise the prospects for the future. Before saying more on the issue, however, we need to briefly analyze certain aspects of domestic stabilization policies during the same period, with special emphasis on some peculiar features of the Brazilian experience with inflation control.

3 — Controlled inflation

One of the outstanding features of the Brazilian economy in the years prior to the 1974 crisis was the behavior of inflation. By 1966, after a three-year period of orthodox management of monetary variables coupled with a severe wage squeeze, the annual rate of inflation had been reduced to 45%, about half the rate prevailing in 1964. This apparent success in controlling inflationary pressures was, nonetheless, somewhat frustrating to policymakers, due to the high absolute level of inflation and the depressive effect it had upon the economy, especially on the side of industrial growth. In fact, according to the objectives expressed in the government plan known as PAEG (Programa de Ação Econômica do Governo), the target for inflation was 10% in 1966, and that year was expected to be one of recovery of economic activity. The recovery, however, would only come in the following years, after the government had announced a thorough re-examination of priorities and redesigned

[7] See A. L. Baumgarten, Jr. and L. R. Cunha, "A Política Industrial e o Desempenho do Setor na Última Década (1967-77)," in *Brasil: Dilemas da Política Econômica*, ed. Carneiro Netto.

some important aspects of the anti-inflationary policy.[8] The year 1967 was indeed propitious for the change in outlook: the new government could capitalize on abundant crops for the major agricultural products and the past effect of wage restrictions, to say nothing of the important work in the domain of fiscal policy done by their predecessors. With the money supply relieved from the pressures it had been suffering from the government deficit, and with the industrial sector still under the strains of a tight credit policy, there was ample room for granting credit facilities to selected industries. Simultaneously, the government opted for a thorough redefinition of the price-control policy.

The first period of stabilization policy was thus characterized by rather classical measures, such as control of the public deficit, which was then the major source of monetary growth. The federal deficit alone was reduced from 4.3% of GDP to 1.1% between 1963 and 1966, while the annual rate of growth of the money supply was cut from a record 85.9% in 1964 to 15% in 1966.

At the same time, the government implemented a series of important institutional reforms such as the creation of the central bank and the new regulations concerning the capital market, the most significant of which was the adoption of "monetary correction" of debts. Indexing would add important characteristics to Brazilian inflation in the following years, drawing much attention from analysts of inflationary experiences.[9] The main motivation for the introduction of monetary correction on certain debts was to attract savings back to the incipient financial markets, which had been upset by the previous inflationary upsurge.[10] There was a need to create a market for long-term government bonds and to redesign the mortgage system in order to reorganize government financial capability, to make open-market operations feasible, and to allow for the establishment of a long-term financial scheme for the housing market. There is little doubt that monetary correction made significant contributions toward achieving these goals by providing noninflationary sources of finance for governmental activity, as well as by establishing a booming business of savings

[8] See A. Fishlow, "Some Reflections on Post-1964 Brazilian Economic Policy," in *Authoritarian Brazil*, ed. A. Stepan (New Haven: Yale University Press, 1973), pp. 69-118.

[9] For a discussion of the Brazilian experience, see A. Fishlow, "Indexing Brazilian Style: Inflation Without Tears?" *Brookings Papers on Economic Activity* 1 (1974): 261-80.

[10] Cf. M. H. Simonsen, "Inflation and the Money and Capital Markets in Brazil," in *The Economy of Brazil*, ed. H. S. Ellis (Berkeley: University of California Press, 1969), pp. 133-61.

deposits directed to long-term financing of housing and construction. The latter served as a vigorous stimulus to the construction industry.[11]

From 1967 to 1972 inflation decreased moderately but steadily from 25% to 15%, though the rate of growth of money supply was always sufficient to warrant a continuous increase in real cash balances. The most important feature displayed by Brazilian inflation in this period, however, was that it was kept at relatively moderate rates thanks to a system of direct controls ranging from a cost-based rule for industrial wholesale prices to a complicated scheme of retail monitoring. This scheme, administered by the economic staff of the ministry of finance, kept track of the behavior of leading items in the cost of living in the major urban centers, especially of agricultural products and other items in the budget of the working and middle classes. This system worked in synchrony with the control of urban wages, and made feasible (without the losses in real income that the lower classes had suffered in previous years) a policy of slowly decelerating inflation.

One major innovation in economic policy during these years was permitted by the public deficit being relieved from pressure due to notable improvements in tax-collection activities: tax rates, especially on industrial products, could be used as incentive and compensation instruments whenever price controls proved inconsistent with the aims of industrial policy. Temporary relief from tax payments was often granted to avoid undesirable effects on profitability of price controls directed towards keeping the rate of inflation decelerating. One positive result of the coordination of controls was a substantial reduction in the fluctuations in the rate of inflation. An illustration of the phenomenon may be seen in chart 1. The solid line shows the maximum monthly rate of inflation observed each year, and the broken line the corresponding minimum. The vertical distance between the two lines indicates the range of variation.[12]

The outcome of this process of inflation control *cum* generalized indexation was that virtually every aspect of short-run policy was subject to the goal of maintaining inflationary equilibrium. Thus, the widespread use of price controls and indexation allowed

[11] See D. F. F. Werneck, "As Estatísticas sobre Emprego na Indústria de Construção." *Pesquisa e Planejamento Econômico* 5 (December 1975): 577-92.

[12] Chart 2 shows the same phenomenon in terms of rates of inflation for the past 12 months. The maximum and minimum rates observed for each year are plotted in a similar manner.

4 — The impact of the crisis and the pattern of adjustment

Since 1974, debates over economic problems in Brazil have centered around two major issues: the external sector disequilibrium and inflation. After a long period of record output growth rates, stabilized inflation and a favorable balance of payments, the problems historically posed to the managers of economic policy returned to menace the continuity of the performance of the economy in the previous years. The world crisis of 1974-1975 touched the Brazilian economy at a particularly delicate moment due to internal developments which made it peculiarly sensitive to major changes in the international scenario.

The tapering down of growth rates in industrial countries in 1973 did not have any major impact on the world demand for Brazilian exports in the following two years. Indeed, the volume of exports increased substantially during 1973 and 1974 by 55.3% and 38.5%, respectively (table 1). Although import prices climbed steadily throughout 1973, the simultaneous rise in export prices was more than commensurate until at least the end of the year, resulting in a 10% improvement in the terms of trade. Moreover, while the total bill for imports of crude oil and derivatives increased almost fourfold in 1974, its share in total imports less than doubled, going from an average of 11.5% in 1973 to 22% in 1974.[15]

Therefore, the aggravation of the trade deficit after 1974 has to be explained in terms of the strong increase in non-oil imports in that year. The phenomenon has been given several interpretations, among which the speculative behavior of importers and loose credit policy in the presence of full capacity utilization in several industries have scored high. The fact is that the extraordinary increase observed in nonferrous metals, plastics, rubber products and chemicals, as well as machinery and equipment (see table 2), agrees with the hypothesis, advanced in section 2 above, that industrialization and trade policies during the boom led to further dependence on the importation of such items.

If the doubling of imports in 1974 and the high price of oil were something to worry about, there were also clear signals that the economy had been overheated with excess demand in the preceding years. According to evaluations made by several economists at the time, appropriate measures to control aggregate expenditures were bound to take care not only of inflationary pressures, but also of the explosive behavior of imports. In the first eight months of 1975, total exports increased by 28.8%; and the values of

[15] For more details, see Carneiro and Haddad.

Table 1

Brazil: Behavior of Major Exports, 1973-1976

(FOB)

(Values in US$ Million)

Product	1973		1974		1975		1976	
	Value	% of Total	Value	% of Total	Value	% of Total	Value	% of Total
Coffee (Soluble and Beans)	1 344.2	21.7	980.3	12.3	932.0	10.8	2 398.2	23.7
Sugar	552.7	8.9	1 261.6	15.9	974.2	11.3	406.5	3.0
Cotton	218.1	3.5	90.9	1.1	97.8	1.1	6.9	0.0
Cocoa Beans	88.5	1.4	210.0	2.6	220.4	2.5	218.8	2.2
Iron Ore	362.8	5.9	571.2	7.2	908.8	10.5	995.5	9.8
Soy (Beans, Cake and Bran)	917.8	14.8	889.3	11.2	1 159.8	13.4	1 581.9	15.6
Other Primary Products	743.4	12.0	923.1	11.6	1 003.2	11.6	1 001.7	9.9
Industrialized Products	1 810.5	29.2	2 780.3	35.0	3 150.4	36.4	3 235.1	32.0
Semi-Processed	476.2	7.7	633.6	8.0	644.9	7.5	789.5	7.8
Manufactured	1 334.3	21.5	2 146.7	27.0	2 505.5	28.9	2 445.6	24.2
Special Transactions	161.2	2.6	194.6	2.4	208.6	2.4	381.1	3.8
Total	6 199.2	100.0	7 951.0	100.0	8 655.2	100.0	10 125.7	100.0

Source: Raw data provided by Banco do Brasil, Carteira de Comércio Exterior (BB/CACEX).

Table 2

Brazil: Behavior of Major Imports, 1973-1976

(FOB)

(Values in US$ Million)

Product	1973		1974		1975		1976	
	Value	% of Total	Value	% of Total	Value	% of Total	Value	% of Total
Machinery and Equipment	2 142.5	34.6	3 199.1	24.7	3 931.9	32.3	3 518.5	28.9
Fuel and Lubricants	769.4	12.4	2 961.9	23.4	3 073.5	25.3	3 826.9	31.2
Fertilizers	138.5	2.2	405.3	3.2	303.9	2.5	201.6	1.6
Organic Chemical Products	340.5	5.5	636.3	5.0	529.4	4.4	713.5	5.8
Grains	349.9	5.7	486.1	3.8	372.8	3.1	532.1	4.3
Cast Iron and Steel	493.4	8.0	536.0	4.2	1 263.1	10.4	610.4	5.0
Nonferrous Metals	287.8	4.6	592.8	4.7	370.0	3.0	413.1	3.3
Inorganic Chemical Products	99.0	1.6	236.0	1.9	248.9	2.0	240.0	2.0
Plastics	95.6	1.5	300.0	2.4	147.0	1.2	211.7	1.7
Rubber	63.1	1.0	122.0	1.0	105.3	.9	88.3	.7
Paper and Paper Products	82.0	1.3	191.2	1.5	121.8	1.0	197.1	1.6
Optical Instruments and Electrical Equipment	185.3	3.0	241.8	1.9	282.8	2.3	288.0	2.3
Others	1 145.2	18.5	1 812.8	14.3	1 418.4	11.6	1 435.9	11.6
Total Except Item 2	5 422.8	78.6	9 679.4	76.0	9 095.3	74.7	8 450.6	68.8
Total Except Items 1 and 2	3 280.3	53.0	6 560.3	51.9	5 163.4	42.4	4 936.1	40.2
Total	6 192.2	100.0	12 641.3	100.0	12 168.8	100.0	12 277.4	100.0

Source: Same as table 1.

primary products climbed substantially relative to the same period in 1974 (except for coffee, which rose a moderate 6.9%). In the second semester, however, there was a brusk deceleration in exports, resulting in a total increase of less than 9% for the year. In terms of the options for policymaking, this cooling off of export growth occurred at a level too short of that of imports. The reduction in the trade deficit was not sufficient to offset the growth of service expenditures, now overcharged with interest payments on the foreign debt. Thus, the current-account deficit increased, and the authorities finally had to resort to drastic import controls in the form of a requirement that importers deposit in *cruzeiros* at the Banco do Brasil an amount equal to 100% of their import expenditures; these deposits were to be held for one year and neither interest nor monetary correction to be paid on them. Import tariffs were raised wherever possible, but the exchange-rate system was modified in no way.[16]

In practice, the new system of import controls represented a return to tariff barriers which could be circumvented whenever a project was considered of high priority. It also meant stricter control over competitive imports, and generated a wave of arguments about the industrialization model to be followed in the future.[17] Since then, there has been widespread debate on the possibilities of a new phase of import substitution, notably in the capital-goods sector, together with a revival of arguments about the role of domestic versus international markets in the future design of the industrial profile.

Since 1973 the Brazilian international debt has increased considerably,[18] and given the uncertain prospects for export growth, there are limits to what foreign creditors consider a tolerable level of indebtedness. Moreover, uncertainty as to the pattern of international recovery recommends serious consideration of the size and time allocation of future resource commitments. Under the present circumstances, therefore, the Brazilian policymakers have to subject their growth plans to another constraint: the need to generate a progressively increasing trade surplus in order to compensate for at least the growth of the service deficit.

16 Some economists have argued in favor of a strong devaluation. See A. C. Pastore, J. R. M. Barros and D. Kadota, "A Teoria da Paridade do Poder de Compra, Minidesvalorizações e o Equilíbrio da Balança Comercial Brasileira," *Pesquisa e Planejamento Econômico* 6 (August 1976): 287-312.

17 Cf. comments in section 2 above.

18 From 1973 to 1976, the gross debt (public and private, including reserves) went from US$ 12 570 million to US$ 28 400 million. The level of foreign reserves declined from US$ 6 416 million to US$ 4 041 million between 1973 and 1975, but returned to virtually the former value in 1976.

In the meantime, the Brazilian economy experienced two outbursts of inflation. The first, whose prolegomena were described in the last section, resulted from the excess of expenditures over productive capacity brought about by the continuously expansionary policies from late 1972 to the beginning of 1974. In the first four months of 1974, the wholesale price index rose at an average monthly rate of 3.9%, in contrast to an average of less than 1.5% in the previous six years. The reversal in the monetary and credit policy adopted by the new government significantly reduced inflationary pressures on the demand side: from May to December, the monthly rate of inflation (again measured by WPI) averaged 1.4%. However, this deflationary impact of monetary policy was, as usual, accompanied by a strong depressive effect on output.

In fact, the annual growth rate of real cash balances declined steadily from over 30% in the last quarter of 1973 to 1.6% in July 1974, and had become negative by March of the following year. In real terms, however, this contraction of the money supply is only partly attributable to deliberate efforts of the Banco Central, since the task was made considerably easier by the loss of foreign reserves (which implied a net deflationary impact of over Cr$ two billion on the monetary base) and a Cr$ four billion federal budget surplus.

Table 3

Brazil: Monthly Rate of Inflation, 1973-1976

(%)

Month	1973	1974	1975	1976
1	1.8	2.6	2.1	2.6
2	1.2	2.7	2.4	3.7
3	1.4	4.6	1.1	3.7
4	1.1	5.8	1.6	3.6
5	.8	3.9	1.9	3.0
6	1.1	1.7	2.6	2.7
7	1.1	.8	2.0	4.4
8	1.1	1.2	2.8	4.8
9	1.1	1.6	2.6	3.5
10	1.6	1.8	2.7	2.2
11	1.0	1.6	2.1	1.7
12	1.3	2.3	2.2	2.4
Mean	1.20	2.55	2.17	3.19
Standard Deviation	.26	1.44	.47	.88
Coefficient of Variation	.22	.56	.22	.28

Source: Basic data from Fundação Getúlio Vargas (FGV), *Conjuntura Econômica*, various issues.

Table 4

Brazil: Monthly Changes in Money Supply and Monetary Base, 1973-1976

(%)

Period	1973		1974		1975		1976	
	Money Supply	Monetary Base	Money Supply	Monetary Base	Money Supply	Monetary Base	Money Supply	Monetary Base
1	—5.1	—	—4.0	—1.15	—7.2	— 8.73	—6.4	— 7.3
2	3.7	3.48	4.5	4.6	.0	— 1.18	1.6	— 2.8
3	3.0	— .25	3.3	.95	4.0	3.68	1.3	.6
4	5.3	6.11	1.2	4.00	2.1	.94	2.5	4.3
5	4.3	4.35	1.7	2.87	5.1	2.69	3.9	4.3
6	7.6	5.64	4.2	1.53	6.3	4.77	9.1	10.9
7	— .1	2.42	—2.0	— .74	— .7	1.28	— .6	3.5
8	2.4	.60	5.2	3.10	6.7	5.46	.0	.4
9	5.7	2.41	— .2	—4.28	2.1	1.90	2.6	6.4
10	3.0	7.01	2.5	4.79	1.5	— .51	4.4	4.5
11	3.9	2.65	7.4	9.37	8.2	9.12	4.7	7.0
12	6.1	7.63	5.9	4.43	8.9	13.70	9.8	10.9
Mean	3.32	3.32	2.47	2.46	3.08	2.76	2.74	3.56
Standard Deviation	3.17	2.19	3.19	3.37	4.30	5.50	4.05	5.06
Coefficient of Variation	.96	.66	1.29	1.37	1.40	1.99	1.48	1.42

Sources: Basic data from FGV, *Conjuntura Econômica*; and Banco Central do Brasil, *Boletim*.

By the end of 1974, there were clear signs of recession: the 12-month rate of growth of electric-power consumption in the states of Rio de Janeiro and São Paulo, a widely used indicator of the level of activity in the industrial sector, had dropped sharply from a high of 20% in May to virtually zero in December, and practically no growth was recorded up to the first quarter of the following year.

However, a recessive trend in industrial output, compounded with adverse expectations of a prolonged phase of contraction in the world economy, led the monetary authorities to retreat. With monthly rates of inflation back at what seemed to be politically acceptable levels, the government reacted to a 7.2% decrease in the money supply in January 1975 with the announcement of several measures to raise liquidity: (1) reduction in required reserves for commercial banks, (2) expansion of Banco do Brasil loans, (3) fast liberation of credit to the treasury, (4) expansionist open-market operations, and (5) the so-called *"refinanciamento compensatório"*, a device for increasing the free reserves of commercial banks at 6% nominal interest so as to provide more credit to the private sector. As no clear signs of output recovery appeared at once, the government kept pumping credit into the system in an attempt to offset the deflationary impact of the loss of foreign reserves. Thus, at least until the end of the third quarter, a loose credit policy tried to compensate for the recessive effects of the lack of a clearly defined industrial policy.

In mid-1975, however, inflation rates once again began to accelerate following autonomous cost pressures stemming from higher import costs, more permissive wage increases due to a change in the wage-control formula, and the news of crop failures owing to frosts in the South, a prolonged drought in the Northeast, and floods in other parts of the country.

At this point, expectations of higher inflation rates substantially increased the demand for indexed bonds. As the cash balances turned idle from the postponements of firms' capital expenditures or made available through cheap bank credit were directed to the short-term market for public and private bonds, a speculative wave arose in the financial sector. When, in the last quarter, the government announced that "accidental factors" would be "expurgated" from the wholesale price index (used as the basis of monetary correction), a substantial portion of the financial system was caught with its portfolio heavily burdened with indexed bonds. The resulting fall in the market value of such bonds generated a crisis of major proportions which led to a series of capital losses that shook the whole financial system. In order to break the chain of bankruptcies, the Banco Central decided to give rescue

money to brokers and other financial companies, but at the cost of a sharp increase in the money supply in November and December of 1975.

The true causes underlying the acceleration of inflation after mid-1975 remained untouched, however, and were in fact aggravated by the import-control measures adopted as of December. The new inflationary upsurge, now fueled by the demand impacts of the money supply, finally led to the second major change in policy since 1974. In the midst of the inflationary wave provoked by the composition of demand and the cost pressures described above, the government announced a general cut in public-investment projects, a ceiling on wage increases, and, most important of all, accepted lower target rates of GDP growth for the rest of the decade. In spite of the general expectations that 1976 would repeat the mediocre growth record of the previous year, preliminary data showed a rate of 8.8% in real output — a high rate indeed for what was expected to be a recession year.

In the first semester of 1977, the major developments were the persistence of high rates of inflation (above 40% per year) and a reduction in the trade deficit, essentially due to an extraordinary increase in coffee prices that led to a vigorous expansion of exports.

Relieved from the political pressures to reduce the trade deficit, the government decided to concentrate its efforts on controlling the second outburst of inflation since 1975. The main changes were in the direction of giving to the ministry of finance more power to control credit expansion, to set limits on the rise in "critical" prices such as those of gasoline and public services, and especially to subject the agricultural price-support policy to the objective of decelerating the rate of inflation. The principal novelty in the policy measures to control inflation in the first semester of 1977 was the implicit official acceptance of four orders of factors which have been pointed out by critics of the present administration: the need for more centralized command of decisions related to anti-inflation policy, the importance of the so-called structural component of inflationary pressures represented by changes in relative prices, the interdependence of stabilization policies and industrial and trade policies, and finally, the difficulties posed by the presence of indexation when rates of inflation go out of hand.

At the present stage, the government apparently recognizes that, in the presence of a strong structural component, restrictive measures to control global demand alone tend to provoke more recession than deflation. If the rate of inflation is to be reduced and the recessive effect on output minimized, a price-control policy which pays due attention to the logic of relative price changes is required. Also, the peculiarities of a highly indexed economy have

to be taken into explicit consideration in the delicate task of bringing inflation back to politically acceptable levels without causing turbulence in the financial markets by frequent changes in the rules of indexation. One major difficulty ahead will be to determine to what extent the government can confine cost pressures via decelerating wage increases without at the same time controlling interest rates, given the present pattern of firms' indebtedness.

5 — Summary and conclusions

It may be useful, at the end of this note, to summarize some of the issues and ideas involved in our analysis of the impact of the international crisis on the Brazilian economy. We also wish to present some final comments on the nature of the tasks posed to economic policy in the process of adjusting to the new external constraints.

First of all, we distinguished three major phenomena that concur to explain the post-1973 developments: (a) Expenditures exceeded domestic productive capacity due to optimistic expectations as to potential output growth after 1972, as well as the future course of the international economy; this contributed to widening the trade gap and to generating inflationary pressures. (b) Rises in the prices of oil and other imported items increased the domestic cost of foreign exchange. (The short-run effect will be either a reduction in productive capacity or an increase in foreign indebtedness, or possibly a combination of the two. In a longer perspective, movements in the direction of substituting domestic production for imports, including via the exploration of alternative sources of energy, are in order.) (c) The industrial policy of the early seventies was conceived and implemented under exceptionally favorable international conditions that may not recur in the present world recovery. (Due to changes in the international scenario, the structural imbalances embodied in the former growth pattern will have to be corrected; otherwise, the existing bottlenecks in industrial productive capacity will generate inflationary components at every attempt to pursue higher growth rates).

With regard to designing policy instruments to cope with the forementioned situation, it is necessary to reduce real expenditures to deal with both (a) and (b). Furthermore, it is necessary to change the composition of expenditures, especially investments, to deal with (b) and (c). Finally, relative prices will have to be altered to induce essential modifications in consumption and production patterns. These relative changes must be of two kinds: (1) in favor of tradeables, and (2) between tradeables, in the direction of import

substitution if the prospects for export growth are unfavorable in the face of the rising protectionist wave observed in the industrialized nations.

Perhaps the most important lesson we may draw from the above (admittedly incomplete) analysis is the importance of recognizing the changes occurring in the international economy in order to define the possible targets for domestic economic policy. Given the dependence of the Brazilian economy on imported technology and on foreign capital, no growth strategy can be designed without explicit evaluation of the prospects of international trade and capital flows.

Real estate investments and financial markets

João Sayad *

> It may be that in certain historic environments the possession of land has been characterized by a high liquidity-premium in the minds of owners of wealth; and since land resembles money in that its elasticities of production and substitution may be very low, it is conceivable that there have been occasions in history in *which the desire to hold land has played the same role in keeping up the rate of interest at too high a level which money has played in recent times. ... The high rates of interest from mortgages on land, often exceeding the probable net yield from cultivating the land, have been a familiar feature of many agricultural economies. Usury laws have been directed primarily against encumbrances of this character...* And rightly so...
>
> That the world after several millennia of steady individual saving, is so poor as it is in accumulated capital-assets, is to be explained, in my opinion, neither by the improvident propensities of mankind nor even by the destruction of war, but by the high liquidity-premiums formerly attaching to the ownership of land and now attaching to money.
>
> — J. M. Keynes

1 — Introduction

In the period 1967-1973, the Brazilian economy witnessed a rapid succession of speculative processes in different markets. As of 1969 the stock market experienced a sharp upswing, followed by a rapid

* Instituto de Pesquisas Econômicas da Universidade de São Paulo (IPE/USP).

decline in 1971. Soon thereafter began the swift appreciation of real estate, both urban and rural, which has continued to the present (closely seconded only by the market for art). Finally, in the second semester of 1975, an abrupt rise in interest rates on money and government bonds signaled a boom for investors, but a crash for the majority of the financial institutions that deal in such assets.

This series of booms can be attributed to the euphoria that governed the investment community at a time the economy was growing at a rapid pace. However, it also introduces questions as to the role and performance of the financial market. Despite the rapid expansion of the market, frequent complaints on the part of Brazilian firms with respect to the shortage of credit at reasonable costs and terms indicate that it may not be satisfactorily attending to productive activities.

It is our contention that the weak performance of the financial sector can be ascribed to two factors: the preference of investors for real-estate investments, and speculation. We further suggest that the financial institutions will be better able to serve the productive sectors of the economy only after real-estate investments have become less profitable and when there are few opportunities for speculative gains.

Our major conclusion is that, in Brazil, private wealth is mainly invested in real estate, which performs the role of "outside money" in neoclassical growth models. This conclusion suggests the introduction of a tax on capital gains and any other policy that increases the transaction costs in the markets for stores of value.

The next section traces the principal themes to be discussed in the paper, and contains a model in which nonproductive investments in land and productive investments in capital are considered alternative stores of value.

2 — Real estate as a store of value

The model presented in the following paragraphs is not new, [1] and serves only to bring together the ideas debated in the subsequent sections. Since we are concerned with nonproductive investments,

[1] See J. Tobin, "Money and Economic Growth," *Econometrica* 33 (October 1965): 671-84; and *idem*, "Notes on Optimal Monetary Growth," *Journal of Political Economy* 76 (July-August 1968): 833-39. On land as a store of value, see D. A. Nichols, "Land and Economic Growth," *American Economic* Review 60 (June 1970): 332-40.

land will be considered a store of value and not a factor of production. In those cases in which it is a factor of production (e. g. the settlement of new land or the construction of new housing), we assume it is included in capital.

Our results will depend on the characteristics of the stores of value examined and on the nature of the market where these stores are traded. Thus, if the only alternative open to savers were a set of financial assets that financed the purchase of new capital, and if there were no chance for speculative gain, the result would be a conventional neoclassical model. Future prices of capital goods would not be speculated upon, and the rate of growth of capital would be determined by the rate of private saving. Furthermore, if the latter depended on the interest accrued to the savers, the outcome would be a classical model in which interest rates were established by the preference of consumers and the productivity of capital.

The choice of other stores of value, and other hypotheses regarding the market on which they are traded, will yield different results. We could assume, for example, that money is a store of value. If the rate of return demanded from capital were related to that received on money, both the growth rate of the stock of capital and the capital/output ratio for the economy would rest on savers' expectations as to future price changes. These expectations would affect interest rates and the capital/output ratio even in the long run.

Generally speaking, nonproductive real-estate investments are not held to exert a significant influence on the rate of growth of productive capital. The reason is simple: if the total stock of land is constant, such investments comprise mere transfers within the private sector, and could not change total savings and capital accumulation.

However, speculative investments in real estate can influence the rate of capital accumulation through at least two effects: the wealth effect and the rate-of-return effect. Assuming that private wealth includes real estate $(p.T)$ and capital (K),

$$W = K + p.t \qquad (1)$$

Increases in the price of real estate (dp) will raise the overall wealth of the private sector by an amount which depends on the share of $p.T$ in total wealth. Moreover, if private income is defined as money

income plus capital gains from real estate, and if the marginal propensity to save is constant,[2] one has

$$S = dW = s\,(y + dp.T) \tag{2}$$

It is important to note that this rate of savings is not the difference between income and the production of consumer goods, but rather the desired change in the volume of private wealth. Thus, since speculative investments in land do not generate "withdrawals" from the income flows, they do not reduce the aggregate demand placed on firms. Even so, such investments may affect the rate of savings. Private consumption is given by

$$y - S + dp.T = y\,(1 - s) + (1 - S)\,dp.T$$

which shows that consumer demand rises with capital gains derived from land ownership. Consequently, changes in real-estate prices can alter the wealth of the private sector and thereby decrease the volume of savings directed towards capital accumulation. Equating the expressions for the change in wealth and the rate of savings, we obtain

$$\frac{dK}{K} = s\,\frac{Y}{K} + (s - 1)\,\frac{dp}{P}\,.t \tag{3}$$

where $t = \dfrac{p.T}{K}$

This reveals that the demand for capital will grow at a slower rate in the presence of real-estate speculation. If equation (3) is taken to represent the share of productive investments financed by private

2 If capital gains are excluded from current income, the result will be slightly different. The savings function will be

$$S = dW = sy \tag{2a}$$

Consumption expenditures will be given by

$$y - S = y\,(1 - s) + dp.\,T$$

And the rate of capital formation will be

$$\frac{dK}{K} = s\,\frac{Y}{K} - \frac{dp.}{p}\,t$$

For real estate to have the above-mentioned effects, savings must contribute to the formation of wealth (i.e., $S = dW$), and capital gains must be included in total wealth.

savings, speculation on land prices may explain the limited participation of domestic savings relative to government savings and savings from abroad.

In addition to the wealth effect, if real estate is a store of value alternative to capital, savers will demand a rate of return on capital related to the capital gains derived from land ownership. If savers expect a rate of return α on land, and if capital and land are perfect substitutes, the rate of return on capital will be given by changes in the price of land. The demand for productive capital will be the discounted flow of future income from capital, α being the discount rate. Thus $K^d = \frac{y}{\alpha}$, or in terms of production function $y = \alpha K^d$. Capitalists will behave as if they worked with a fixed coefficient production function, α being the required rate of return and the fixed output/capital ratio.

Assuming that the growth rate of the economy is determined by exogenous factors such as the balance-of-payments position, fiscal and monetary policy, political stability, etc., the demand for capital will be

$$\frac{dk^e}{k^e} = \frac{dy^e}{y^e}$$

Solving for the rate of change in the price of land,

$$\frac{dp}{p} = \frac{1}{t\ (1-s)} \qquad (s\alpha - \frac{dy^e}{y^e})$$

The above equation shows that when output grows at rates lower than $s\alpha$, given a constant rate of savings, private investors will demand more real estate and land prices will rise. On the other hand, when the growth rate is higher than $s\alpha$, private savings may be directed to capital; in this case the demand for real estate, and consequently its price, will fall. As a store of value, real estate therefore serves as a protection against possible decreases in the profitability of capital during periods of depression or slower growth rates.

When the economy grows at rates equal to $s\alpha$, real-estate prices will neither rise nor fall. Land prices will grow at the expected rate α only when the economy expands at rates: $\alpha s\ (1 + t) - t$ less than α when $s < 1$ and $t > 0$. The higher t and α, the lower the rate of capital accumulation.

The basic characteristic of the model is that the demand for capital or the growth of the capital stock financed by private savings is a function of expected returns on real estate. Hence, it is important to analyze the formation of these expectations and

the organization of the real-estate market. Since land is also a factor of production, the gains expected are unquestionably related to production values. Thus, an increase in the prices of farm commodities can lead to reassessment of α and further land speculation. Likewise, the rapid growth of large urban centers may foster reappraisal of expected gains from urban property, and slow down the growth of private savings directed toward capital accumulation.

If the private sector is highly optimistic as to the relationship between the growth of income and the returns on real estate, there are two paths open to the government for raising the growth rate of the stock of capital. The first alternative is to allow the real-estate market (or markets for other stores of value) to operate freely, setting the minimum interest rates on capital and fostering the purchase of productive capital via interest-rate control, trade protection, fiscal incentives, etc. The second alternative is to reorganize the store-of-value markets (the real-estate market in the case of this model) by taxing capital gains, levying charges on the nonproductive capital held, etc. It should be noted that this alternative may lead to the appearance of other stores of value, such as foreign currency, gold, and works of art. Since such a policy would lower the returns on private savings, the rate of private savings might decrease.

Expectations concerning capital gains from land or other assets depend on other economic factors and generate considerable instability.[3] In periods marked by rapid growth of income, the private sector may raise the value of α and initiate speculation in stores of value, concomitantly demanding higher rates of return. However, any unexpected event in the real-estate market, such as a sudden fall in the agricultural terms of trade or a cut in mortgage loans for the purchase of urban property, may lower the rates of return on nonproductive assets and consequently hasten the expansion of the stock of productive capital, even if the economy is not growing more rapidly. The basic conclusion to be drawn from the model is that the rate of return on capital can be arbitrarily set by the private sector.

Most important is the fact that the private sector can choose a nonproductive asset such as real estate as a store of value, and that this asset can come to determine the rate of growth of the stock of productive capital. Moreover, stores of value are passed on to future generations that cannot be called upon to give their opinions as to fair prices. For this reason, price formation and speculative processes are fundamental in explaining the rates of return on stores of value.

[3] See Nichols, p. 338.

The sections that follow concern some of the issues introduced by the preceding model. In section 3, it is suggested that the Brazilian government has chosen a strategy to expand the stock of productive capital based on a free store-of-value market and controlled financial interest rates. Also presented is evidence of the influence of real-estate returns on the demand for capital. Section 4 focuses on speculation and the formation of prices on store-of-value markets, while section 5 considers why real estate was chosen as a store of value. Policy measures and the role of the financial sector are discussed in the last section.

3 — The performance of the financial market

Before the passage of the capital-market reform in 1965 (Lei da Reforma do Mercado de Capitais), industrial investments benefited from substantial incentives. Exchange controls and tariff protection were complemented by subsidized interest rates on commercial loans. Agricultural investments, despite being penalized by exchange-rate policy, also profited from the incentive provided by the usury law (Lei da Usura). With the rate of inflation often higher than the 12% interest ceilings set by this law, the banking system clearly furnished considerable incentives to productive investments. Even though it is known that there were various ways to bypass the legal limits,[4] the fact that the government sought to provide incentives to industry and agriculture by controlling interest rates raises an important question: Why should such a large volume of incentives be required to promote productive activities? The answer is not simple. Nonetheless, if productive investments had to be subsidized, either (1) other activities or assets (including real estate) yielded higher profits to the private sector, or (2) the volume of private wealth and/or consumer preferences were such that there was no incentive to borrow or invest in productive activities at higher rates of interest.

In 1965-1967, immediately after the capital-market reform and during a period of marked stagnation, the financial market operated in the complete absence of interest-rate controls. Then, in 1968, stepped-up economic growth led to new interest-rate controls, but accompanied by the rapid expansion of selective credit (at subsidized rates of interest) to agriculture, exports, and other priority sectors and regions. The justification for controlling the interest on financial operations was inflation: reductions in interest rates had not kept

[4] With regard to this point, see A. M. Silveira, "Interest Rates and Rapid Inflation," *Journal of Money, Credit and Banking* 8 (August 1976): 795-805; J. Sayad, "Controle de Juros e Saldos Médios," *Revista Brasileira de Economia* 31 (January-March 1977): 229-48.

pace with decreases in inflation. Thus, in the years 1967-1973, the profitability of financial assets was again subject to government control. Symptomatically, and in accord with the quotation from Keynes that opens this article, only the national housing system (Sistema Financeiro de Habitação) operated with interest rates, via monetary correction. Consequently, only the savings deposits designed to finance real-estate investments and the public debt enjoyed full monetary correction plus interest.

When the rate of inflation began to climb in 1975, the government released financial interest rates. However, at the same time, it imposed controls on monetary correction, indexing on the basis of a new formula which included a 15% expected rate of inflation, when the observed inflation was appreciably higher.

Thus, during only two of the 11 years following the reform of the capital market did the financial sector operate relatively free of interest controls. These two years were 1965-1967, a period in which the economy registered considerably reduced rates of growth. As of 1975, interest rates were released, but the financial sector began to face clear signs of instability. In addition, a significant share of the loans to the productive sector continued to be made through special credit programs. Loans were granted to export and agricultural undertakings and to priority regions at maximum interest rates of 15% per year, even after inflation passed the 20% level in 1973. While those conceded under the special credit lines of the Banco Nacional do Desenvolvimento Econômico (BNDE) and other development banks contained a monetary-correction clause, this was limited to 20% per annum. Only the national housing system, which financed the purchase of private residences and backed real-estate investments, charged high interest rates throughout the period.

There is no doubt that the history of financial control since the capital-market reform has been linked to the history of inflation control. However, it is also clear, especially with reference to the post-1971 period, that interest controls on normal financial operations and the use of selective credit to foster productive investments could also be explained by the presence of more profitable investments, such as those in rural and urban real estate.

We have suggested that real-estate investments can affect the behavior of the financial market in two ways. In the first place, like longer-term assets and other real assets of the private sector, they comprise a form in which wealth can be held. For this reason, the profitability of other assets is dependent on that of real estate. In the second place, an upward trend in real-estate prices can raise the total volume of private wealth, and consequently diminish the flow of savings towards other real assets and new financial assets.

The empirical evidence available for analyzing the effects described in the preceding paragraph is scarce and indirect. Nonetheless, examination of the performance of the financial market in the period 1967-1975 can provide some interesting results. During the greater part of this period, the economy grew at an accelerated pace, presenting decreasing rates of inflation until 1973. Thus, it is only to be expected that the demand for stores of value, as well as the rate of private savings, should have risen rapidly. This is especially true given the fact that financial assets offered no disadvantage with respect to profitability, since both current and expected inflation were clearly on the decline.

As soon as the Brazilian economy started to experience higher growth rates, the stock market experienced a significant upswing. Then, with the rapid decrease of stock prices in 1971 came an appreciation of both rural and urban real estate (table I and graph 1).

Table 1

Farmland Prices[b] and Stock Indices,[a] 1966-1975

Year	Price of Farmland (Cr$/Hectare)	IBV (1975 = 100)
1966	1 268	19.3
1967	1 134	18.9
1968	1 054	26.5
1969	973	72.3
1970	1 051	107.3
1971	957	263.0
1972	1 111	172.4
1973	1 766	116.1
1974	2 338	82.7
1975	2 847	100.0

Source: *Conjuntura Econômica* 28 (June 1974).

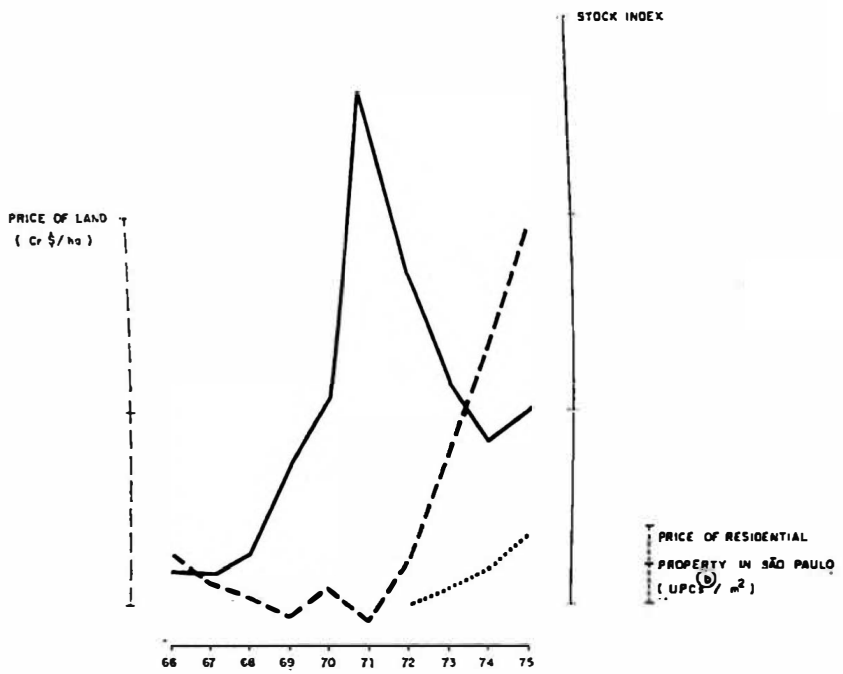
[a] In 1975 *cruzeiros*.

[b] For the Rio exchange only (Índice da Bolsa de Valores do Rio de Janeiro).

The data indicate that private investors considered real estate and stock as substitutes. It could be argued, with reason, that farmland appreciated in response to an improvement in the agricultural terms of trade. However, the increase in stock prices also began with a rise in the profitability of firms due to higher overall growth rates. Moreover, even after 1973, when the terms of trade were quite unfavorable for agriculture, farmland continued to appreciate. It is also known that the prices of urban real estate turned sharply upward as of 1971. In this instance, if the fall in stock prices is rejected as a reason behind the urban property boom, one has to

Graph 1

STOCK INDICES[a] AND REAL-ESTATE PRICES, 1966 - 1975



a Refer to the Rio exchange only (Índice da Bolsa de Valores do Rio de Janeiro — IBV).

b Standard unit of capital (Unidade Padrão de Capital), subject to quarterly adjustment, which serves as the basis for indexation.

rely on the publication of the 1970 census as the alternative explanation, since it provided the first official figures on urban growth rates.

The real-estate and stock speculation observed in this period is by no means typical of the Brazilian economy. The crash of the New York Stock Exchange was preceded by intense speculation in Florida recreation areas,[5] and certain European countries witnessed land and stock speculation at the turn of the century.[6] But in Brazil, the decrease in stock prices in 1971 and the subsequent real-

5 J. K. Galbraith, *The Great Crash, 1929* (Boston: Houghton Mifflin Company, 1954), chap. 2.

6 R. Hilferding, *El Capitalismo Financiero* (Madrid: Editora Tecno, 1963), pp. 140-55.

estate speculation had a different relationship. Whereas the land speculation in the United States was localized and of short duration, while that in Germany was simultaneous with the stock-market boom, the decreasing stock prices in Brazil signaled a return to a more traditional form of holding wealth, and represented a more lasting process.

The competition between real estate and capital can be indirectly analyzed for a longer time span. Graph 2, which compares two indices, provides a clear illustration. The capacity-utilization index obtained by Contador [7] is assumed to measure the profitability of productive investments. The cost-of-construction index for Guanabara (deflated by *Conjuntura Econômica* index 2) is assumed to essentially reflect real-estate prices rather than construction cost per se. The graph shows that the cost-of-construction index registered real increases during years of capacity underutilization, and parallels our findings for the period 1967-1971. [8]

It is interesting to note the change in the relationship between construction costs and capacity utilization in 1967-1975, years during which the economy grew at an accelerated rate and already had a well-developed financial sector. Until 1971, the growth process generated a substantial increase in stock prices. But soon thereafter, with the decreasing stock prices and the mortgage loans of the national housing bank (Banco Nacional da Habitação — BNH), construction costs began to climb together with activity levels.

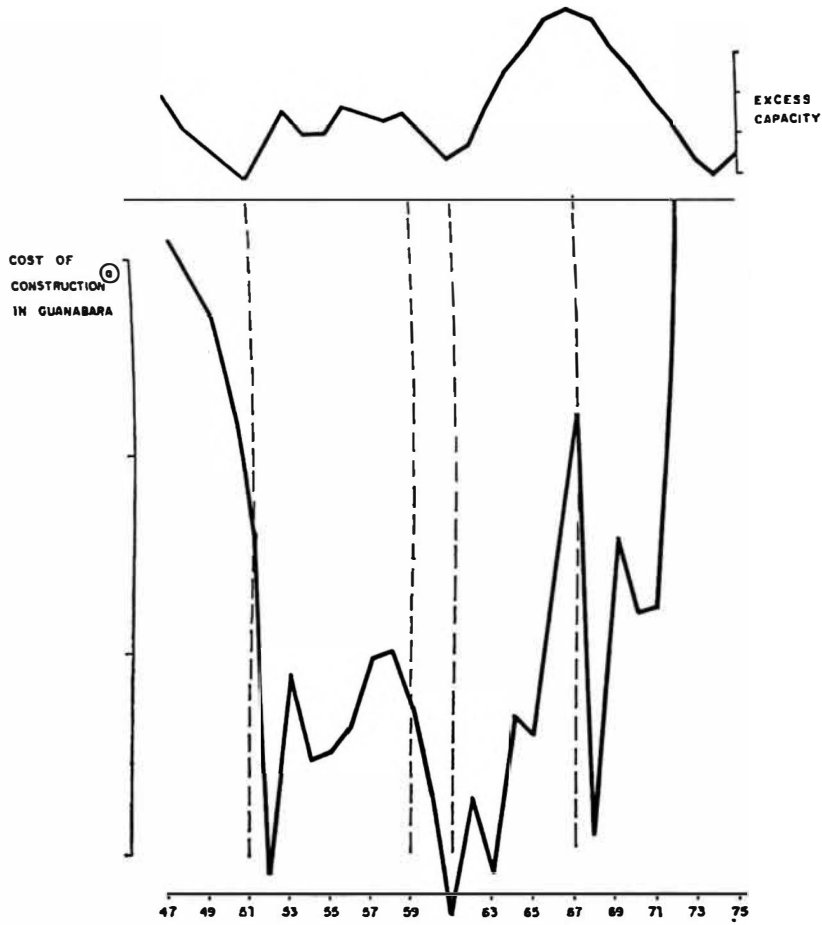
After the fall in stock prices, the financial sector failed to attract a significant share of long-term private resources. Table 3 shows the evolution of the financial assets held by the private sector (banks and the public) as a percentage of GDP.

Financial assets as a share of income rose substantially. However, certain observations are in order. First, only in 1971 did total financial assets achieve values similar to those reached in 1946, when the financial assets available to the public were far more limited, no fiscal incentives existed, and accumulated private savings were probably much lower. Second, the values presented (as published by the Banco Central) are those at which the assets were issued, not those at which they were traded. In the case of cash

[7] C. Contador, "Crescimento Econômico e Combate à Inflação," presented at the IV Encontro Nacional de Economia, Guarujá, 1976 (Mimeographed), p. 10.
[8] The explanation for the demand for real estate might be sought in private expectations concerning inflation. However, inflation rates and real-estate prices (as measured by the construction index for Guanabara) do not reveal this correlation. As graph 2 shows, the rate of inflation declined and the price of real estate rose in 1965-1971. But the opposite occurred in 1957-1964, and in 1947-1956 the rate of inflation fluctuated with no clearly defined trend, while real-estate prices varied considerably.

Graph 2

COST OF CONSTRUCTION AND LEVEL OF ECONOMIC ACTIVITY



Sources : C. Contador, "Crescimento Econômico e Combate à Inflação," presented at the IV Encontro Nacional de Economia, Guarujá, 1978 (Mimeographed) for excess capacity ; and Conjuntura Econômica, various issues for construction costs.

a Deflated by index 2. See text.

deposits and currency this obviously makes no difference; but since bills of exchange, government bonds, and stocks were offered at considerable discounts, the data presented overestimate their real value.

Table 2

Share of Financial Assets in GDP, 1966-1975

(%)

Financial Assets (1)				Year	Stocks as % of GDP	Loans to Financial Institutions as % of GDP	Financial Assets Held by Financial Sector as % of GDP	Total
Year	%	Year	%			(2)	(3)	(4) = (2) + (3)
1946	40.5	1961	27.7					
1947	38.6	1962	27.8					
1948	34.6	1963	25.1					
1949	33.7	1964	24.0					
1950	35.4	1965	28.6	1965	3.4			
1951	38.4	1966	24.5	1966	8.4	.1	1.5	1.6
1952	34.9	1967	29.1	1967	11.9	—	3.2	3.2
1953	34.3	1968	32.5	1968	15.1	1.3	2.8	4.1
1954	30.9	1969	34.1	1969	18.2	1.4	4.2	5.6
1955	28.1	1970	36.3	1970	26.5	1.4	4.4	5.8
1956	26.2	1971	40.5	1971	29.9	2.7	5.4	8.1
1957	27.6	1972	47.5	1972	29.6	3.8	5.7	9.5
1958	27.9	1973	54.3	1973	32.0	4.5	5.2	9.7
1959	28.0	1974	52.3	1974	34.7	7.6	5.2	12.8
1960	27.5	1975	60.3	1975	34.1	10.0	5.9	15.9

Notes by column:

(1) Until 1947, includes only money and time deposits. As of 1958, also includes bills of exchange; 1964, indexed treasury bonds (Obrigações Reajustáveis do Tesouro Nacional - ORTN) in the hands of the public; 1966, savings deposits; 1968, state and municipal bonds; 1969, treasury bills (Letras do Tesouro Nacional - LTN).

(2) Index of loans to financial institutions from the monetary authorities, commercial banks, the Caixa Econômica Federal, the Banco Nacional do Desenvolvimento Econômico (BNDE), and the program for the redistribution of wealth (Programa de Integração Social - PIS).

(3) Stocks and real-estate bills held by commercial banks, investment banks, BNH, the Caixa Econômica Federal, PIS, the Caixa Econômica Estadual, savings and loan associations, real-estate credit companies, BNDE and state development banks, plus the bills of exchange held by investment banks.

Table 3

Share of Different Financial Assets[a] in the Total Growth Rate, 1970-1975

(%)

Quarter		Monetary Assets	Savings Deposits	Time Deposits	Bills of Exchange	Government Bonds	Stocks	Total	Annual Rate of Growth[b]
1970	4	18.5	5.5	9.8	5.6	12.1	50.0	100.0	43.5
1971	1	19.7	7.8	9.8	8.5	5.3	50.6	100.0	33.2
	2	22.0	5.3	10.4	14.5	7.7	44.6	100.0	35.2
	3	24.4	4.3	10.8	15.5	19.3	37.6	100.0	35.3
	4	20.8	4.5	15.8	18.2	14.0	32.9	100.0	41.7
1972	1	17.9	4.2	14.4	14.4	13.6	40.9	100.0	47.4
	2	16.9	5.4	13.2	12.8	17.3	40.1	100.0	45.6
	3	15.7	6.9	13.9	11.0	16.3	38.6	100.0	44.9
	4	21.7	7.2	12.1	9.0	26.5	20.9	100.0	46.5
1973	1	30.1	9.3	17.5	16.1	36.3	9.9	100.0	31.1
	2	29.4	7.5	14.9	11.5	24.0	21.3	100.0	42.6
	3	26.4	6.2	11.5	12.0	16.5	27.6	100.0	49.9
	4	30.9	6.8	7.6	13.8	9.3	35.2	100.0	49.1
1974	1	28.4	7.9	7.1	13.4	8.3	30.1	100.0	45.7
	2	25.1	9.4	5.4	11.8	9.6	30.4	100.0	37.7
	3	22.5	13.1	4.8	9.2	11.9	44.3	100.0	32.8
	4	18.8	17.1	5.6	6.9	14.1	41.3	100.0	36.3
1975	1	15.1	20.2	5.4	4.9	15.3	42.8	100.0	30.9
	2	17.7	19.1	8.3	4.8	19.0	38.3	100.0	42.5
	3	17.9	16.6	9.6	5.1	21.0	32.9	100.0	49.5
	4	19.6	12.7	8.7	4.8	19.4	30.3	100.0	53.0

Source: Banco Central, *Boletim*, various issues.

[a] The figures are not corrected for discount rates, and include transactions between financial institutions.

[b] Cumulative total of issues and shares offered to the public.

Table 2 shows the financial assets held by the financial sector itself, together with interbank loans. The ratio obtained is presented as a percentage of GDP in order to make it comparable to the ratio between financial assets and GDP. This ratio can be interpreted as a measure of the turnover of financial assets. As the table clearly reveals, this turnover picked up rapidly, which indicates that the average time that financial assets were held by the public decreased over the period.

With respect to the growth of total financial assets, table 3 shows that short-term assets such as savings deposits and monetary assets made the largest contribution to the total growth rate, being surpassed only by government bonds. The latter, however, were absorbed by the financial market at high costs and steep discount rates.

Table 4 sketches the structure of private wealth, excluding that held by the financial sector (commercial banks and other financial intermediaries). Private wealth is defined as the stock of physical

Table 4

Share of Private Wealth[a] in GDP, 1966-1975

(%)

Year	Loans to Private Sector/GDP (1)	Financial Assets/GDP (2)	(2) — (1) (3)	Capital/ Income Ratio	Total
1966	13.3	22.9	+ 9.6	201	210.6
1967	16.6	25.9	+ 9.3	204	213.3
1968	21.3	28.4	+ 7.1	190	199.1
1969	24.6	28.5	+ 3.9	183	186.9
1970	31.2	30.5	— .7	160	159.3
1971	37.5	32.3	— 5.2	140*	144.8
1972	43.2	38.0	— 5.2	130*	124.8
1973	51.0	44.6	— 6.4	120*	113.6
1974	57.4	39.5	—17.9	120*	102.1
1975	65.0	44.4	—20.6	120*	99.4

Sources: Banco Central, *Boletim*; Fundação Getúlio Vargas, Instituto Brasileiro de Economia, Centro de Estudos Agrícolas (GV/IBRE/CEA). The capital/income ratios are from C. Langoni, *Causas do Crescimento Econômico*, p. 59, table 18, column (2).

[a] Excluding the financial sector.

capital possessed by the economy, plus aggregate financial assets and government bonds. The wealth/income ratio of the economy is assumed to lie between 4 and 3.5, and the wealth invested in real estate is estimated by the difference. The real estate/income ratios were estimated using changes in prices of farmland and maintaining the amount of land constant. The net position of the private sector relative to the financial sector was calculated as loans issued by the latter in favor of the former less financial assets held by the private sector. That the private sector took a negative position relative to the financial sector as of 1970 is explained by the share of loans from the Banco do Brasil and abroad, as well as by the higher turnover of financial assets, which has doubtlessly contributed to the marked instability observed recently.

Despite the fact that the original share of real estate in private wealth is not known, the rise in property values over the period almost certainly made real estate an important component (perhaps comparable to its pre-1964 weight) in the structure of private wealth. The question that remains is whether the financial market alone is capable of offering to the private sector long-term investments that can compete with real-estate investments. To answer this question, it is necessary to analyze the nature of speculation, especially real-estate speculation. This is the purpose of the next section.

Table 5

Estimated Land/Income Ratios, 1967-1975

Year	Value of Land / GDP (Base = 1.5)	Value of Land / GDP (Base = 1.0)
1967	1.41	.94
1968	1.25	.83
1969	1.20	.79
1970	1.25	.82
1971	1.31	.86
1972	1.32	.99
1973	4.31	2.81
1974	6.16	4.02
1975	6.93	4.52

4 — The nature of speculation

Speculation is an attempt to discover the future price of an asset or good. And since the financial market handles securities that represent purchasing power at different points in time, the speculator is usually involved in a financial transaction.

If the price of good A is expected to rise, speculators should retain a positive volume thereof. In a money economy, the amount of cash held should diminish as loans are contracted for the purchase of larger amounts of A. If investors are optimistic regarding the future of the economy, their joint expectations should lead to an overall reduction in liquidity and the purchase of a greater volume of the goods and assets that represent future buying power. Under these conditions, banks are likely to raise their loan/deposit ratios, while firms, together with the rest of the economy, should aim to reduce their cash positions and take more loans. At the aggregate level, this is possible only if the financial asset turnover increases or if there are foreign loans. The loan/deposit ratios for the Brazilian economy in the period 1960-1975 are shown in table 6.

Table 6

Commercial Banks: Loan/Deposit Ratios, 1960-1975

Year	
1960	.959
1961	.896
1962	.822
1963	.984
1964	.824
1965	.740
1966	.908
1967	.993
1968	1 081
1969	1 159
1970	1 220
1971	1 338
1972	1 358
1973	1 325
1974	1 446
1975	1 523

Source: Banco Central, *Boletim*, various issues.

The loan/deposit ratio climbed rapidly in the period 1967-1975. As Martone demonstrates, this may well have been due to the expansion of loans from the Banco do Brasil and from abroad.[9] But this result is also consistent with the prevailing euphoria and speculation: decreasing levels of liquidity measured by the loan/deposit ratio are in accord with optimism concerning the future.

The relevance of these comments is to draw attention to the fact that the series of speculative activities observed could be wrongly interpreted as the outcome of an expansionist loan policy alone. There is no doubt that such a loan policy, together with a larger money supply, is necessary to speculation. But, on the other hand, a certain amount of speculation can take place without an expansion of the money supply, via a simple increase in the turnover or decrease in the maturity of private financial assets. Thus, while monetary events may contribute to speculation, they can hardly be fully responsible.

Speculation immediately brings Friedman's conclusion[10] to mind: destabilizing speculators lose and stabilizing speculators profit, so that in the long run only the latter remain. For this conclusion to hold true for the recent Brazilian economy, either the destabilizing speculators are going through a painful learning process, or the fluctuating prices observed are the best that stabilizing speculators can manage.

Moreover, Friedman's conclusion is subject to various qualifications. For instance, at the same time destabilizing speculators lose, nonspeculators profit. Thus, unless speculators and nonspeculators are differentiated on a chronological basis, when prices are rising, it is difficult to determine whether the speculators are those who buy (and profit) or those who sell (and lose). Given this problem, Johnson elaborated a general-equilibrium model which leads to the conclusion that those who profit are the speculators who have a higher marginal preference for the good used as "numéraire".[11] Other writers contend that prices are formed in such a way that both destabilizing and stabilizing speculators can profit.[12] These models nullify Friedmansís argument.

[9] C. Martone, "Um Esquema para a Oferta de Moeda e Crédito," *Revista Brasileira de Economia* 30 (October-December 1976): 459-74.

[10] M. Friedman, "The Case for Flexible Exchange Rates," in *Essays in Positive Economics* (Chicago: University of Chicago Press, 1966).

[11] H. G. Johnson, "Destabilizing Speculation: A General Equilibrium Approach," *Journal of Political Economy* 84 (February 1976): 101-108.

[12] J. Williamson, "Another Case of Profitable Destabilizing Speculation," *Journal of International Economics* 3 (February 1973): 77-84 and references cited.

However, such discussions overlook a basic characteristic of the markets in which speculation is most common and lasting. As a rule, speculation involves stores of value such as currency, gold, real estate, stocks, paintings and other works of art. These are durable items for which there exist well-organized markets for used goods. On these markets are traded not only current production, but the stock accumulated over time. The shares negotiated on today's stock exchange, for example, have been issued at different points in time. And the buildings bought and sold on the real-estate market have been constructed over a long period.

Since new products account for a negligible share of total supply, the prices of such goods are ultimately determined by demand. It is not the current cost of construction, for instance, that sets the price of real estate. In fact, the direction of causality may be precisely the opposite, with the cost of construction being established by the price of the buildings bought and sold.

Over a sufficiently long period of time, the supply will clearly play an important role in determining the price of the stock. But on the current market, the price is mainly established by demand. In terms of growth rates, the decision to buy depends on the rule

$$r = \frac{L}{P} + \frac{\dot{\rho}}{\rho}$$

That is, the asset will be bought if the dividends, interest or rent that it yields (L/P) plus the expected changes in price $(\dot{\rho}/\rho)$ are equal to an alternative rate of interest. The decision to buy therefore rests on two factors: the use value (L/P) and the exchange value $(\dot{\rho}/\rho)$. If there were no organized market for used goods, decisions to buy would be based on the use value (L/P) alone.

The next question concerns the operation of markets where prices are determined by demand alone and where the goods traded are stores of value. In the case of securities, several writers have concluded that the market is extremely efficient, but in a special sense: prices wholly reflect existing information and follow a random walk. [13] Other authors point to the existence of third-degree guessing, in which buyers try to find out which shares other buyers will purchase, [14] knowing that those buyers are thinking the same way. Stock prices in 1969-1971, as well as the real-estate prices of today, suggest that the second analysis is more accurate, at least for the Brazilian case.

[13] See W. J. Baumol, *The Stock Market and Economic Efficiency* (New York: Fordham University Press, 1965), chap. 3.
[14] J. M. Keynes, *The General Theory of Employment, Interest and Money* (New York: Harcourt, Brace and Company, 1967), p. 156.

Examination of who profits and who loses while speculation is under way may indicate why speculation is more common and lasting on these markets. Let us consider the stock market by way of example. When the prices of shares rise, all the stockholders profit to a greater or lesser extent. Furthermore, if these shares contribute to the overall wealth of the private sector, there will be no incentive to reverse the upward trend. Even the offering of new shares will not lower prices, since the total volume traded will considerably exceed the additional supply. The same reasoning can be applied to real estate and other stores of value. No one gains from a halt in speculation, and even if a given group did, it could not turn the trend because the supply of new products is negligible relative to the total amount traded.

The market will be affected, however, if one assumes that there is a futures market for the relevant period, that is a period so prolonged that the supply can significantly enlarge the total stock and thereby alter prices. Take, for example, the market for an agricultural product. If there is no futures market for the commodity, the producers will not be able to affect current prices. Only the crop that has already been harvested will be traded on the current market. If the commodity can be stored, its price will be set by demand alone, and those who hold the stocks will profit until the next harvest. If, on the other hand, there is a market for the next crop, a rise in future prices can be stopped by increasing supplies from producers. As the future supply increases, the speculation in the current market will be brought to a halt. Thus, the rise in current prices will be necessary limited.

Unlike farm commodities, stores of value have no clearly defined futures markets. For this reason, there is no way to profit from enlarging the supply, and an upward trend cannot be reversed by an increase in supply which lowers prices at a later date. Moreover, an upward or downward trend may continue for a prolonged period.

Let us now consider a speculative process in more detail. Imagine an economy which has begun to present high growth rates after a period of relative stagnation. Increases in stock prices are forecast due to the larger profits expected. If the stock market is well-organized, prices will begin to rise. Then, as the shareholders profit, there will be an even greater demand for stocks. Depending on the formation of expectation, the upward trend will either gain impetus or stabilize. For a given stock, the "right" price will be set by demand; it may be the current price, or double or half. The

current reproduction cost is increasing, and the long-run reproduction cost is such a remote figure, that any estimated value for current prices has to be considered plausible.

At the same time, the prevailing optimism will lower the demand for liquid assets and raise that for loans. Indebtedness will therefore increase substantially.

Such a process can continue indefinitely. No one loses. Everyone profits. If the goods traded could be produced, firms might seek to profit from expanding supply, and thereby halt speculation. In the case of stock and real estate, however, all profit together (except those who have no access to the stores of value).

There exists, nonetheless, a limit to appreciation. At some point, exchange values become a large proportion of expected returns, and uncertainty may stop the demand. Since the whole economy is in debt and highly vulnerable, the possibility of a reversal or a halt in price increases presents a severe threat. One bankruptcy or one unrenewed loan may generate a series of bankruptcies. The results may be a general panic and an overall decrease in prices. All lose, and no one can pull prices up by withdrawing supply.

Prices rise and fall in accordance with the type of goods traded. In the case of homogeneous assets such as stocks, both upturns and downswings can be very rapid, for there is no need to seek a fair price since one share of firm X is equal to every other. Transactions can therefore be quickly concluded. In the case of real estate, however, each piece of land and each building is different, and it takes time to set a fair price. Thus, a lowering of prices from the supply side does not immediately increase demand, and both upward and downward trends are not only slower, but at times imperceptible. A downward trend may be revealed by a rise in the share of property for sale rather than by a sudden drop in prices. [15]

To the extent that buyers demand a premium on exchange value — that is, consider appreciation associated with higher risk — the market becomes more stable. Stock analysis based on price/earnings ratios, for instance, provides more stability to the market. The more important question, however, refers to the best pedagogic process for investors: Should buyers and sellers be left to a learning-by-doing method, or should a capital-gains tax be adopted to limit speculative gains?

15 D. A. Nichols, "Market Clearing for Heterogeneous Capital Goods," in *Microeconomic Foundations of Employment and Inflation Theory*, ed. E. S. Phelps *et al.* (New York: W. W. Norton and Company, 1970), pp. 394-410.

5 — Real estate as a store of value in Brazil

Stores of value necessarily have low elasticities of supply (and therefore well-organized markets for used goods) and low elasticities of substitution.[16] Real-estate investments clearly present these characteristics. Even so, why real estate is the most important store of value in Brazil deserves analysis. In examining this question we will not consider inflation, though it unquestionably provides the major explanation for the preference for real estate (it must be noted at this point that inflation cannot account for the preference for real-estate over stock investments.

From an historical perspective, it is easy to understand the choice of land as a store of value. Stores of value are passed from generation to generation, and only in the last two or three generations has the Brazilian economy lost its essentially agricultural nature. Thus, the most important reason for the preference of the private sector for land might be mere inertia.

Indeed, a recent survey of Brazilian investors reveals that real-estate is considered high-profit, low-risk, and not necessarily less liquid than other types of investments. The following tables show the results of this study. It should be borne in mind that if investors have identical expectations about a specific asset, there is a great chance that these same expectations will be realized.

On the other hand, there are some specific aspects of the Brazilian economy, of the legal system, of the fiscal system and of the financial sector itself, which can be used to explain the Brazilian preference for real-estate investments. In the first place, the high rates of population growth, especially in urban centers, constitute a "focal point". This information, shared by all investors, is a signal that land is becoming scarce and that its profitability is rising.[17] The building shortage, especially before the housing program, has served to complement this expectation. Paradoxically, the growth of the building industry in the major cities has raised construction costs and encouraged speculation.

In the second place, the legal, fiscal and financial organization of the Brazilian economy has also contributed to the preference for real estate. Despite inflation, the courts are slow to act, and set penalties, fines and indemnities at nominal values. With the rate

[16] Keynes contends that the store of value should also be the unit of measure; that is, the prices of other goods should be nominally fixed when measured by the prices of the store of value.

[17] T. C. Schelling, *The Strategy of Conflict* (Cambridge: Harvard University Press, 1960), p. 54 ff.

Table 7

Ranking of Investments According to Risk, Rio de Janeiro and São Paulo, 1975
(%)

Investment	Risk			No Opinion	No Reply	Total
	High	Medium	Low			
Mutual Funds	35.6	37.7	15.4	8.1	3.2	100.0
Real-Estate Bills	4.5	31.3	51.3	9.1	3.7	100.0
Stocks	36.0	41.2	20.1	1.3	1.3	100.0
Time Deposits	3.7	23.7	67.4	2.9	2.3	100.0
Rental Property	8.3	22.4	66.1	2.1	1.1	100.0
Other Property (except own home)	4.1	20.3	71.1	3.1	1.5	100.0
Bills of Exchange	4.7	34.3	54.4	4.4	2.3	100.0
Savings Deposits[a]	1.8	13.6	79.9	3.1	1.6	100.0
Bonds	7.0	30.7	30.0	22.4	9.9	100.0
ORTN[b]	2.4	15.7	59.6	15.4	6.8	100.0
LTN[c]	2.4	15.3	61.7	14.1	6.5	100.0

Source: J. L. Mello, *Perfil do Investidor no Mercado de Ações* (Rio de Janeiro: IBMEC, 1976), p. 139.
[a] In *cadernetas de poupança.*
[b] Indexed treasury bonds.
[c] Indexed treasury bills.

Table 8

Ranking of Investments According to Profitability, Rio de Janeiro and São Paulo, 1975

(%)

Investment	Profitability			No Opinion	No Reply	Total
	High	Medium	Low			
Mutual Funds	2.3	25.0	60.1	8.1	4.5	100.0
Real-Estate Bills	7.1	57.1	21.4	10.4	3.9	100.0
Stocks	23.5	40.1	32.3	2.4	1.6	100.0
Time Deposits	6.7	61.0	26.3	4.0	1.9	100.0
Rental Property	25.2	44.8	25.8	3.1	1.1	100.0
Other Property (except own home)	37.3	40.9	16.4	3.6	1.8	100.0
Bills of Exchange	8.4	64.1	20.3	5.0	2.1	100.0
Savings Deposits	22.1	56.7	17.0	2.9	1.3	100.0
Bonds	2.9	41.1	22.2	23.7	10.1	100.0
ORTN	8.8	49.0	19.5	16.6	6.2	100.0
LTN	9.3	47.4	21.6	15.6	6.2	100.0

Source: Mello, p. 143.

Table 9

Ranking of Investments According to Liquidity, Rio de Janeiro and São Paulo, 1975
(%)

Investment	Liquidity			No Opinion	No Reply	Total
	High	Medium	Low			
Mutual Funds	18.2	28.9	37.5	10.9	4.5	100.0
Real-Estate Bills	24.0	41.9	15.7	14.1	4.2	100.0
Stocks	40.6	34.7	18.5	3.4	2.8	100.0
Time Deposits	25.2	36.5	29.2	5.7	3.4	100.0
Rental Property	23.5	32.5	39.0	3.4	1.6	100.0
Other Property (except own home)	24.7	35.6	34.4	3.4	2.0	100.0
Bills of Exchange	35.7	44.5	10.9	6.3	2.6	100.0
Savings Deposits	65.7	22.1	6.5	3.4	2.3	100.0
Bonds	9.4	33.4	20.1	26.5	10.6	100.0
ORTN	35.9	29.7	8.8	18.7	7.0	100.0
LTN	37.2	28.7	8.8	18.5	6.8	100.0

Source: Mello, p. 147.

of inflation at 20 to 30% per year, lags render penalties ineffective. Thus, the legal system may turn bankruptcies and agreements highly profitable and investments in financial assets quite risky.

Ultimately, the financial market itself is affected by the sluggishness of the legal system. In order to provide long-term assets that are secure and profitable, the financial market must be stable, solid and capable of covering losses rapidly. In spite of government guarantees, however, the fact that the market is relatively new makes it difficult for it to attract funds via the offering of long-term assets. In addition, the bankruptcies and insolvencies observed in the sector reinforce the position of real estate as a preferred asset.[18]

Furthermore, the financial market itself requires real (i. e. nonfinancial) guarantees for its operations. In the case of subsidized credit, the collateral required is even higher and substitutes higher interest rates. Graph 3 shows the index for the price of farmland in Brazil, together with the subsidies implicit in the rural credit programs. These subsidies were calculated as total rural credit multiplied by the difference between the rate of interest on this type of loan (17%) and the rate of inflation. The figure clearly reveals that the rise in the price of farmland is associated not only with the improvement in the agricultural terms of trade and the decrease in stock prices, but also with the availability of subsidized credit.

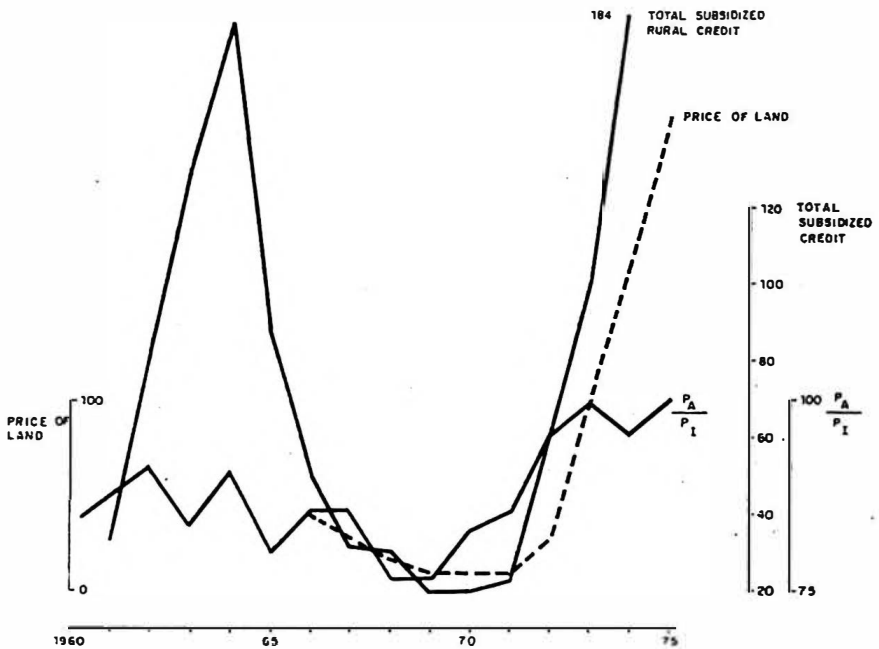
As to urban property, the recent appreciation is linked to the housing program and urban fiscal policy. Since 1964, accelerated urban growth and tax reforms have allowed the *municípios* to make large urban investments. Given the fact that urban taxes are relatively unimportant, the private sector can internalize the benefits derived from urban expenditures by investing in urban property. Since betterment taxes are administratively complex, it is difficult to conceive of a tax system capable of altering this situation. Nonetheless, a general increase in urban taxes might lower the profitability of real-estate investments.

Lastly, it is interesting to reconsider the effect of inertia, this time viewed from a political standpoint. Since 1964 the financial system has been significantly modified. Limits were set on interest rates on loans, and later on interest rates on assets. The regulations concerning monetary correction were changed by means of simple resolutions or directives of the Banco Central. Moreover, all these changes were made with little political conflict and no marked redistribution of wealth. This strongly indicates that private wealth is still concentrated in nonfinancial assets, and that financial assets are not riskless in the long run, because of changes in the "rules of the game".

[18] See the series of articles published in *O Estado de São Paulo*, 3-6 March 1977.

Graph 3

PRICES AND SUBSIDIZED RURAL CREDIT
(1973 = 100)



Source : Conjuntura Econômica, various issues, for prices of land, farm commodities and industrial products.

On the other hand, agrarian reform has been under discussion for almost 20 years, and no concensus has been reached. The importance of land in the wealth of the private sector is probably one of the reasons behind this conflict, and at the same time a guarantee that land will continue to be the safest store of value, at least for the time being.

It might be asked whether urban and rural property values are realistic. On the one hand, the government alleges that apartment prices in Rio de Janeiro are comparable to those in the better sections of New York and Paris. On the other hand, urban property prices have risen at a rate 10% higher than the rate of inflation. In the long run, this means that rents should increase roughly 10% over depreciation. However, unless Brazil becomes a nation of

"rentiers", this hypothesis is far from realistic. Another argument is that the rise in prices is realistic since construction costs are climbing 10% per year. In fact, the problem is that replacement costs are rising at this rate because property prices are increasing. If real-estate speculation diminished, the pace of construction would slow down and building costs would rise at lower rates. This type of analysis reveals the difficulty of analyzing prices when there is a market for used goods.

The most reliable procedure would be to calculate a price/earnings ratio for real estate similar to those estimated for stocks. As these ratios rise, so does the share of exchange value in total returns. Investors should eventually reach the conclusion that price changes have a limit, but there is no way to determine which price/earnings ratio will lead them to this conclusion.

Table 10 gives a price/earnings index for farmland, computed as rent divided by the value of cultivable land. Although rural rent is an imprecise measure of agricultural profit, it serves our purposes since we are interested in the evolution of the index over time. As there have been no basic changes in rent contracts, the index is a rough measure of the price/earnings ratio for land.

As of 1972, the P/E for farmland rose substantially. There remains doubt, however, as to the level considered high by investors. Whereas the P/E for Banco do Brasil shares reached 20 in 1971,

Table 10

Farmland: Price/Rent Ratios, 1966-1975[a]

Year	
1966	7.22
1967	6.44
1968	6.08
1969	5.26
1970	4.80
1971	4.22
1972	4.38
1973	5.83
1974	7.72
1975	9.97

Source: FGV/IBRE/CEA.

[a] Second semester of each year.

that for farmland was 10 in 1975. Obviously, it is impossible to compare these indices owing to the different nature of the two assets.

In urban areas, monthly rent is usually equal to 1% of the property value. The standard P/E is therefore 8.33 (or 1/12). According to a BNH study, rental prices of five-room apartments increased 22% from 1973 to 1974, while the value of real estate in zone 1 in São Paulo rose an average 48% per square meter. Thus, at least in this period, the P/E of urban property decreased approximately 26%.

6 — Policy alternatives and the role of the financial market

In the preceding sections we argued that the greater part of private wealth is still retained in real estate despite the rapid development of the financial market. We attributed this to the nature of stores of value and the markets on which they are traded, as well as to specific characteristics of the Brazilian economy (i. e. its agricultural, legal and tax structure).

Our major conclusion is that the financial sector cannot compete with assets whose returns are set by the market and often surpass the most optimistic forecasts. Competition with market interest rates can only occasion periodic instability within the financial sector itself. As a consequence, the terms, profitability and liquidity of the financial assets to be issued can only be established following a reduction in the returns, liquidity and attractiveness of real-estate investments. At present, only savings deposits (*cadernetas de poupança*) are in a position to compete against real estate; and these deposits are only able to pay the interest stipulated via investments in real estate or government bonds — the only assets that yield sufficient returns.

Returns on property investments might be reduced via capital-gains taxation. However, in the Brazilian economy, with its marked aspirations for rapid growth of income and private wealth, a capital-gains tax limited to real estate could have the effect of merely transferring speculation to other markets where it would be equally undesirable. For this reason, taxation of capital gains should be extended to other assets, though it might take different forms depending on the nature of each.

If the Brazilian economy is less euphoric than in preceding years, the time is opportune to introduce a capital-gains tax. Since slower growth should limit speculative gains, the tax would be felt less. Looking ahead, it would preclude a repetition of the

series of speculative activities observed in 1967-1973. Moreover, controlling speculation relative to stores of value would contribute to the stability of the financial market.

Complementary measures should include: (1) higher municipal taxes so as to keep the benefits of urban improvements from simply reverting to those who invest in urban property; (2) legal reforms; and (3) elimination of selective credit as the principal instrument of government planning, since such credit makes it impossible for the financial sector to invest its funds profitably.

Finally, in an inflationary economy, financial assets must be adequately protected if they are to compete against other forms of wealth. One might argue today that savings deposits with full monetary correction constitute the most attractive financial asset, be it from the standpoint of liquidity, returns or risk. If the profitability of real-estate investments were lowered, certain characteristics of savings deposits might be modified — liquidity, for example. But monetary correction could not be abolished without the risk of the private sector diminishing its savings or seeking an alternative store of value that offers protection against inflation.

7 — The functions of the financial market

It is only appropriate to conclude this article with some observations on the role of the financial market in the Brazilian economy. In separate studies, McKinnon and Shaw [10] present similar arguments for developing economies. They contend that in these economies the lack of integration, the low rate of savings and the poor allocation of savings are explained by low loan/income and money/income ratios. They further maintain that the limited financial intermediation observed is due to the high rates of inflation characteristic of these economies and to the set of controls which they call "financial repression" (e. g. usury laws and other legal provisions). This analysis accurately portrays the Brazilian situation prior to the capital-market reform.

According to these authors, liberalization of financial controls would contribute to improving the overall performance of the economy by leading to better allocation of scarce savings and to integration of the various financial markets. Higher returns on financial assets would promote savings, and hence reduce dependence on foreign loans. Finally, higher interest rates would make inflation control more effective and easier to bear.

[10] R. I. McKinnon, *Money and Capital in Economic Development* (Washington, D. C.: The Brookings Institution, 1973); E. S. Shaw, *Financial Deepening in Economic Development* (New York: Oxford University Press, 1973).

Such optimism regarding the role of the financial sector is subject to qualification. In the first place, liberalization of financial markets does not necessarily narrow the difference in interest rates between regions and sectors. It might even aggravate the disparities in the cost of capital within the economy. In addition, it may generate a redistribution of income in favor of the financial centers, the major borrowers, and large firms.[20]

In the second place, the financial system allocates funds in accordance with market prices. Thus, in an economy in which the government wishes to significantly change the relative price structure and carries out its plans via selective credit, the financial market can become a hindrance. In other words, a developed financial sector may turn programs based on selective credit to chosen areas and activities extremely costly, if not ineffective.[21]

In addition to being decentralized, the financial market differs from other forms of financing in that it attracts savings voluntarily, and, unlike inflation or taxation, yields returns to the investors. However, in Brazil, the development of the financial market has been fostered by substantial fiscal incentives and based on a large amount of forced savings. This indicates that mere increases in returns on financial assets are not sufficient to generate the funds needed by the economy.

Lastly, the financial market, being conservative by nature, distributes loans in relation to the current distribution of wealth. The latter, in turn, largely determines the future distribution of wealth. And in Brazil this may be considered undesirable. It is true that higher interest rates may affect the loan/wealth relationship by making the financial sector more willing to accept greater risks. In this context, the relevant question refers to whether the financial market is more or less conservative than a government planning agency or an official development bank. The answer might favor private financial intermediaries.

Thus, it seems that the Brazilian financial sector has a relatively limited role, since it operates on the basis of market prices, while the government is striving to modify the relative price structure. Moreover, it has an undesirable impact on the distribution of private wealth, and will not necessarily diminish the price and profitability differentials observed in the economy.

Even so, the financial market might have an important task to perform: to modify the savings habits of the private sector. In an

[20] J. Sayad, "Bancos Unitários, Bancos com Agências: Um Critério de Decisão," *Pesquisa e Planejamento Econômico* 6 (December 1976): 683-700.

[21] J. Sayad, "Planejamento, Crédito e Distribuição de Riquezas," *Revista de Estudos Econômicos* 7 (April 1977): 9-34.

inflationary economy that was essentially agricultural until three or four decades ago, it is natural that the more important store of value should have been a real asset such as land. Only a clear preference for investments in nonproductive assets such as real estate (or considerable superfluous consumption) can explain why several decades of industrial development and a highly concentrated income distribution have been characterized by a low share of private domestic savings in financing this development.

The major function of the Brazilian financial market should therefore be to alter the pattern of holding wealth by shifting private investments away from real estate and other nonproductive assets and directing them toward the financing of productive activities. The recent development of the financial market, even after the capital-market reform, indicates that certain changes will have to be made in other parts of the economy if the sector is to fulfill its function. Outstanding among these changes is the need to limit the chance for speculative gains from real estate.

Dualism in the urban labor market *

Hamilton C. Tolosa

1 — Introduction

Employment is the great challenge in the developing countries. After some years of accelerated expansion, several of these economies are now faced with the distortions caused by overemphasis on economic growth and its negative impact on social welfare. Unfortunately, awareness of these problems remains limited, and in many countries it is still held that growth automatically brings redistribution.

A few figures serve to illustrate the magnitude of the problem. According to the International Labor Organization, the growth rate of the labor force in the developing countries will probably rise from 2.1% in the sixties to 2.3% in the seventies. In Latin America, this rate is likely to increase from 2.3% to 2.6%, representing the entrance into the labor market of 25.5 million persons, or one-and-a-half times the number that entered in the sixties. [1] Moreover, since those that should enter the market in the seventies have already been born, the estimates for 1980 are not affected by possible changes in fertility rates. Even over longer periods, lower fertility

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1 See International Labor Organization (ILO), *The World Employment Programme*, International Labor Conference, 1971, section 56a.

rates will not substantially alter the size of the labor force in less than 20 to 30 years. [2]

When analyzing employment in developing countries, two aspects of the problem should be distinguished. On the one hand, many persons are frustrated due to the lack of job opportunities. This group includes not only the unemployed, but also those who would like to work more. On the other hand, a large number of rural and urban workers do not earn enough to meet their personal needs and those of their dependents. The first case is directly related to the underutilization of labor and to greater use of this potentially productive resource. The second is tied to poverty and income distribution. Theoretically, the two are intertwined, though providing job opportunities does not necessarily entail better income distribution.

This article studies patterns of underutilization of labor in medium-size and large cities, especially in metropolitan areas subject to high urban population growth rates and migratory pressures. The employment of unskilled workers is also emphasized.

In the metropolitan areas of Brazil, an appreciable contingent is engaged in low-productivity, low-wage activities. Furthermore, the size of the labor force employed in such activities seems to be closely related to population growth and the economic structure of the metropolitan area. How does this submarket operate? What are the preconditions to vertical mobility? The answers to these questions are of major relevance to employment policy, but can only be answered within the broader context of a model of the urban labor market as a whole.

Although the idea of a segmented or dualistic market has been criticized since Lewis formulated his model, [3] it is still the best approach to understanding the complexities of the labor market in an urban economy. [4] The model presented in the sections that follow is in the Lewis-Fei-Ranis tradition. [5] However, it involves an im-

[2] As a rule, efforts to lower fertility rates produce results within 15 years. In developing countries, however, this period may extend up to 30 years. G. Myrdal, *Asian Drama* (New York: Pantheon, 1968), 2: chap. 28.

[3] W. A. Lewis, "Economic Development with Unlimited Supplies of Labor," *The Manchester School of Economic and Social Studies* (May 1954), reprinted in *The Economics of Underdevelopment*, ed. A. N. Agarwala and S. P. Singh (New York: Oxford University Press, 1963), pp. 400-449.

[4] See H. W. Singer, "Dualism Revisited: A New Approach to the Problems of the Dual Society in Developing Countries," *The Journal of Development Studies* 7 (October 1970): 60-75.

[5] Lewis; J. H. C. Fei and G. Ranis, *Development of the Labor Surplus Economy* (Homewood: Irwin Inc., 1964). A survey of this tradition appears in F. S. O'Brien and C. L. Salm, "Desemprego e Subemprego no Brasil," *Revista Brasileira de Economia* 24 (October-December 1970): 93-115.

portant difference. Lewis focuses on rural-urban migration, and assumes excess rural labor and full urban employment. In contrast, the model herein recognizes the existence of an urban labor surplus (especially supported by urban-urban migration), and stresses transfers from the traditional to the modern sector. The latter approach is better suited to developing countries, where recent studies have revealed high rates of underemployment and unemployment in the cities, and apparently smaller surpluses in agricultural regions.[6] While the model includes characteristics common to large urban centers in all developing countries, it was constructed to reflect the peculiarities of the metropolitan areas of Brazil.

The next section briefly defines traditional versus modern employment. The third section presents the urban labor market model and the accompanying econometric tests. The fourth section is an empirical analysis of some of the principal aspects of the model, such as the relationship between labor underutilization and recent migrations, and the way workers transfer from the traditional to the modern sector. Finally, the fifth section brings together the major conclusions of the study with special reference to economic policy.

2 — The traditional versus the modern sector

Strictly speaking, the traditional and modern sectors should be distinguished on the basis of labor productivity. Low-productivity activities should be designated "traditional", and relatively high-productivity activities "modern". The modern sector is further characterized by higher capital/output ratios and higher average wages, as well as by technological innovations designed to raise the productivity of labor. The traditional and modern sectors also present important differences in terms of labor-market organization. The traditional sector is characterized by free entry, high turnover, small establishments, family enterprises, and limited capital investment. In contrast, entry into the modern sector is more difficult due to regulation. It is to this sector that the larger, more capital-intensive firms belong.[7]

[6] The bibliography on this subject is extensive. The reader is referred to two main sources: W. Galenson (ed.), *Essays on Employment* (Geneva: International Labor Organization, 1971); and R. Jolly *et al.* (eds.), *Third World Employment: Problems and Strategy* (Baltimore: Penguin Books, 1973).

[7] See T. W. Merrick and F. A. Brito, "Informal Sector Employment in Brazil" (Belo Horizonte: Universidade Federal de Minas Gerais, CEDEPLAR, January 1974) (Mimeographed); *idem*, "Migração, Absorção da Mão-de-Obra e Distribuição da Renda," *Estudos Econômicos* 4 (January-May 1974): 75-119.

Recent literature on employment in developing countries has stressed the importance of labor legislation. Harberger, for example, differentiates the "protected" from the "nonprotected" sector. In the first, wage rates are maintained above the market level by minimum-wage legislation and collective bargaining. In the second, wages are determined by supply and demand.[8] The protected market comprises the modern sector and that part of the traditional sector that is covered by social security (i. e. the "formal" traditional subsector). The rest of the urban labor force is in the nonprotected market, or the "informal" traditional subsector.

In sum, the urban labor market can be divided into two main sectors: the modern, typified by high productivity and a relative shortage of labor, and the traditional, marked by low productivity and excess labor. Furthermore, given the importance of institutional factors such as labor legislation and social security, the latter may be divided into two subsectors: the formal-traditional, and the informal-traditional (or nonprotected). On the practical level, identification of these sectors is a complex task, due to frequently insufficient data on skill, income, activity, size of establishment, etc., and varies according to the author and the specific aim of his research.[9]

[8] A. Harberger, "On Measuring the Social Opportunity Cost of Labor," *International Labor Review* 106 (June 1971): 559-79. The importance of social security to the Brazilian odd-jobber is brought out by J. S. Oliveira and R. P. Santos Prado in "O Biscateiro como uma Categoria de Trabalho: Uma Análise Antropológica," in "Informação de Emprego" (Brasília: IPLAN/IBGE/PREALC, September 1974) (Mimeographed).

[9] A discussion of operating criteria is beyond the scope of this study. Several authors have attempted to relate economic, social and legal factors. Friedman and Sullivan, for example, distinguish three broad sectors according to the type and organization of activities within each: (1) the individual-enterprise sector, (2) the family-enterprise sector, and (3) the corporate sector. "The Absorption of Labor in the Urban Economy: The Case of Developing Countries," *Economic Development and Cultural Change* 22 (April 1974): 389.

Other writers prefer to detail activities and occupations. Among these is K. Hart, "Informal Income Opportunities and Urban Employment in Ghana," in *Third World Employment*, pp. 66-70.

In their study of the metropolitan area of Belo Horizonte, Merrick and Brito, p. 16, use a mixed criterion. They include in the formal sector all those who make social-security contributions, persons in the liberal professions, civil servants, and employers in establishments with more than five workers. They place in the informal sector those who make no social-security contributions (except for the above-mentioned employers and civil servants) and domestic workers.

3 — A dualistic model of the urban labor market

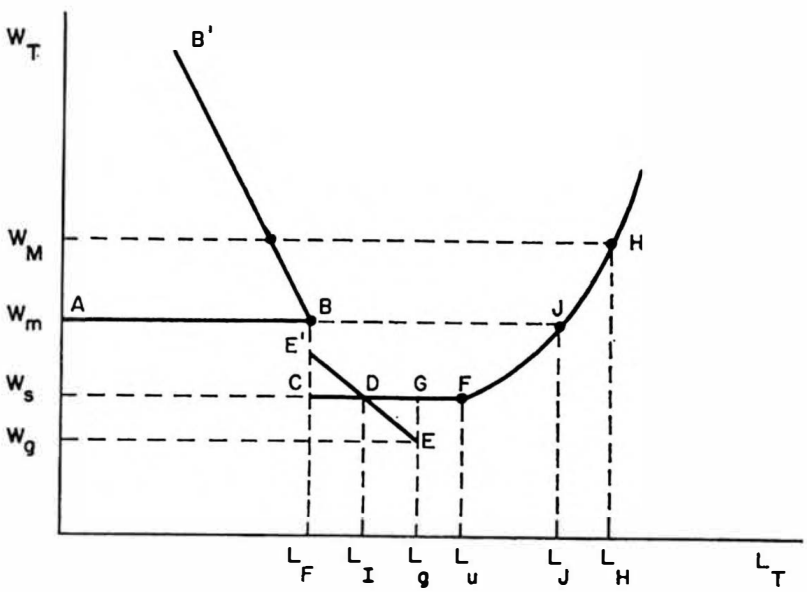
In the modern sector, labor is scarce, which means that the labor-supply curve is inelastic, and at times perfectly so. In contrast, the principal characteristic of the traditional sector is that its supply curve is perfectly elastic to the prevailing wage rate. Moreover, within the traditional sector, two subsectors must be identified. The formal part of the sector embraces workers who are covered by labor legislation, while the informal part includes the residual, or those who are not protected by social security.

3.1 — The traditional sector at equilibrium

Figure 1 portrays the equilibrium conditions in the traditional sector. The number of persons employed in the sector (L_T) is measured on the horizontal axis, and the wage rate (W_T) on the vertical axis.

Figure 1

THE TRADITIONAL MARKET AT EQUILIBRIUM



Let us consider the formal-traditional subsector. In this subsector, competition will lower wages to the legal minimum (W_M) set for a given urban area. At W_M, the amount of labor absorbed by this subsector will be determined by B, the point at which the supply curve AB meets the formal demand curve $B'B$.

The demand curve $B'B$ may be written

$$D_F = D_F(W_T, L_M); \text{ where } D_{FW_T} < 0, D_{FL_M} > 0 \qquad (1)$$

which means that if the prices of the other factors of production are set, the demand in the formal subsector will be a function of the wage rate in this subsector and of the number of workers in the modern sector (L_M) of the urban economy. Including the latter variable in the demand equation implies that the extent to which the formal subsector absorbs labor will depend on the behavior of the modern sector, which, in turn, is a function of supply L_M. It is generally assumed that the partial derivative $D_{FL_M} > 0$ (i. e. the greater availability of L_M) increases the output of the modern sector and, by means of backward linkages, shifts curve $B'B$ to the right. Thus, for a given L_M, the formal subsector will be at equilibrium, at the minimum-wage level, when

$$L_F = D_F(W_m, L_M) \qquad (2)$$

That is, the number of workers engaged in this subsector will be equal to L_F.

All the minimum-wage positions having been filled, a potentially unemployed labor surplus will remain. For the sake of survival, however, these persons will work for less than the legal minimum. Although they could go to smaller cities or even to the countryside, empirical evidence shows that return migration is of little significance.

At this point, it is important to consider how decisions are made in a dualistic labor market. In the modern sector, and even in the formal-traditional subsector, the marginal productivity of labor should be equal to the real wage. Thus, decisions are made in marginal terms, or with reference to the individual worker. However, when wages fall below a certain level — the legal minimum, for example — decisions are no longer based on individual pay but on family income. In other words, in the informal-traditional subsector, individuals try to maximize their average or per capita contributions to family income.

This has salient implications for employment policy. First and foremost, it is essential to identify the dependency relationship

between the individual and his family. In the informal-traditional subsector, for instance, many heads of households are self-employed, and their dependents often contribute to the family income. The family production units in this subsector are small, and not listed in official sources.

In terms of figure 1, the demand curve EE' will be distinct from that for the formal subsector. Furthermore, for several reasons, the differences between the formal and the informal markets are greater than the figure indicates. First, the curve EE', which was arbitrarily placed below BB', could just as well have been placed above it.[10] Second, there is no guarantee that BE' is truly discontinuous. Third, and most important, the variables that determine demand are different in the formal and informal markets.[11]

Let the demand curve for the informal subsector be expressed as

$$D_I = D_I(W_T,\ G,\ S);\ \text{where } D_{IW} < 0,\ D_{IG} > 0,\ D_{IS} > 0 \qquad (8)$$

where G and S are determined exogenously and represent, respectively, the degree of personal (or family) income inequality and the average size of the establishments in the modern sector in the city under study. Let it be further assumed that the greater the concentration of income, the greater the demand for informal employment, mainly on the part of women who perform personal services. Per capita income may also explain much of D_I, especially when taken together with G. High per capita income in the context of marked income inequalities raises informal employment, and especially the rendering of personal services.

Though for entirely different reasons, a slight differential between the minimum wage and the subsistence wage (W_s) produces similar results.[12] In this case, more dependents contribute to family

[10] Should E' be above B, part of the informal labor force will earn more than the legal minimum. If there is a small positive differential between the informal wage and the minimum wage, the worker may, for reasons of stability, wish to transfer to the protected sector. However, a large positive differential will encourage him to remain in the informal sector.

[11] Although a horizontal measure is being used for the number of persons employed in the formal and the informal sectors, it must be borne in mind that, in the latter, decisions are made with reference to family income. It could be argued that there is no demand function in the informal sector, and that the number of persons engaged therein simply depends on the supply. However, we prefer to assume that it is possible to define a production function for an informal sector characterized by low capital intensity, high labor intensity, and low productivity of labor.

[12] The minimum subsistence wage is exogenous to the model. It is difficult to establish a value for W_s, which varies according to physiological and cultural standards.

income through informal employment. If the head of the household is engaged in the formal subsector, the smaller the differential between W_m and W_s, the greater the number of dependents who will enter the labor market.[13] Thus, under these conditions, in the informal subsector there is an inverse relationship between the urban activity rate and the wage rate.

The effect of S is far more complex. In small establishments (mainly industrial) in the modern sector, maintenance and repair services are initially performed within the establishment. Then, as plants expand, self-employed workers are called upon. However, once a certain production scale has been reached, it is advantageous for the plant to start its own maintenance and repair or to contract specialized firms. The effect of the size of the establishment on the demand for informal labor will therefore take the shape of an inverted U, indicating that once a certain production scale has been reached, the variable S has a negative net impact on D_I, due to the creation of activities that replace informal employment.[14]

Other services, mainly those provided by odd-jobbers with no clearly defined field of activity, are not represented in the informal demand function traced above. As a rule, the demand for such services is inversely correlated with the urban income level. This means that the economic growth of the cities, and especially of the modern sector, eliminates an increasing number of informal activities.

The demand function for the informal subsector having been defined, equilibrium occurs at point D, the subsistence-wage level. Then

$$L_I = D_I(W_s, G, S) \qquad (4)$$

where $(L_I - L_F)$ measures the volume of employment in the informal subsector.[15]

13 Another possibility is that the head of the household and/or some of his dependents have several informal jobs, or one job in the protected sector and other(s) in the nonprotected sector. This possibility does not change the essence of the model.

14 Since specialized service firms usually operate on economies of scale, they have a negative net effect on the absorption of urban manpower. See K. Mardsen, "Progressive Technologies for Developing Countries," in *Third World Employment*, pp. 113-40.

15 The informal wage may be defined as the amount for which unskilled manpower is willing to work, i. e. as the "voluntary supply price". Harberger considers this the best yardstick for measuring the social opportunity cost of labor in urban projects.

Finally, there are those who do not manage to get jobs even though they are willing to work for a subsistence wage. It is these individuals who comprise the mass of the urban unemployed. In figure 1, open unemployment is depicted by $(L_u - L_I)$. In Brazil, open unemployment is quite low at 3 to 7%.[16] Despite the high turnover rate in the informal subsector, workers move from one job to another almost immediately. The same is not true in the protected sector (formal-traditional or modern), where a considerable amount of time may pass before a worker finds another job.[17] Should he be dismissed, the person who was originally in the protected sector has two choices: he may either remain unemployed, or accept work in the informal subsector while waiting for an opening in the protected sector. His decision will depend on his own qualifications and on the general state of the urban economy, especially in the city where he works. In practice, the lack of unemployment insurance encourages individuals to accept temporary jobs, including in informal activities. Under these conditions, what is held to be open unemployment may actually be frictional unemployment, that is, the situation of persons who are moving from one job to another, particularly in the protected sector.[18]

In figure 1, the subsistence wage W_s is defined with reference to the individual. However, as seen above, in the informal subsector, employment decisions are often based on family income. It is therefore likely that some persons will be willing to work for less than W_s as long as they can contribute to the income of the family. In this case, employment will shift from D to G, and $(L_g - L_F)$ stands for the absorption of informal labor.

From the standpoint of the model, the existence of point E implies relinquishing the informal demand curve; in other words, the volume of informal employment is entirely determined by the labor

16 This rate includes the unemployed and those seeking jobs for the first time; the latter account for roughly 40% of total open unemployment. The rates for dependents are higher than those for heads of households.

17 In fact, the notions of open unemployment and turnover have little meaning in the informal sector, which is characterized by rapid job changes and high occupational mobility. In certain activities it is difficult to identify open unemployment owing to widespread vertical mobility. Informal employment is also marked by horizontal mobility. Finally, it is impossible to compare utilization of manpower in terms of hours worked because in the informal market negotiating a task often takes longer than actually performing it.

18 The term "frictional" is used in contrast to "chronic" or "structural" unemployment. Harberger considers it usual for 6 to 7% of the urban labor force to be frictionally unemployed in developing countries.

supply.[10] It is also possible that heads of households are mainly situated on $(L_I - L_F)$, whereas dependents are distributed along $(L_g - L_I)$ due to their willingness to work below subsistence wage W_s. Open (and/or frictional) unemployment is thereby further reduced to $(L_u - L_g)$.

Even disregarding point E, there remains a question as to point F, where the supply curve turns upward. Let us assume that the equations of the model refer to time t. Then, in order to determine F on the supply curve, let M stand for the number of in-migrants who move to the city between $t-1$ and t. Next, suppose that these recent migrants find jobs only in the informal subsector or remain unemployed.[20] Under these circumstances,

$$M = L_u - L_F \tag{5}$$

Although point F can be determined on the basis of equation (5), the equation is too restrictive because of the assumption that all the workers in the informal subsector are recent migrants.[21] Quite to the contrary, the available data indicate that the informal subsector engages not only migrants, but nonmigrants as well. It should be pointed out, however, that among the migrants the recently arrived predominate, especially those in the 15-35 age group.

19 Bhalla contends that a small proportion of tertiary employment is a function of the income-elasticity of the demand for modern services. The greater part is of the informal type and has no observable relation to the effective demand for labor. In the informal market, the participants themselves are responsible for sharing a given volume of work. See A. S. Bhalla, "The Role of Services in Employment Expansion," in *Essays on Employment*, p. 158; and *idem*, "A Disaggregative Approach to Employment in LDC's," *Journal of Development Studies* 10 (October 1973): 50-65.

20 A recent migrant may fill a job either directly, or indirectly by replacing a worker who has shifted from the informal to the protected sector.

21 The equation therefore applies mainly to heads of households and dependents of working age, and M should be restricted to migrants in these groups. This hypothesis is merely intended to simplify the presentation of the model. Equation (5) could easily be relaxed to cover nonmigrants as well as migrants. The simplest alternative would be to adopt the equation $M = L_u - L_I$, and thereby place the nonmigrants on CD. Assuming that point E exists, this implies that some recent migrants $(L_g - L_I)$ receive less than the subsistence wage, while others $(L_u - L_g)$ remain openly unemployed. A second, more logical alternative would be to consider CFH a function of the choice between work and leisure; this would allow migrants to be placed at any point on the supply curve. It is important to remember that the above discussion refers only to recent migrants, and that old migrants are lumped with urban nonmigrants.

Given W_M, point H on the rising supply curve can be established using the following equation:

$$L_T = L_T(W_T) \text{ to } L_T \geq L_u \tag{6}$$

where

$$L_{TW} > 0$$

That the supply curve turns upward and to the right at point F means that this segment includes those persons who refuse to work for a subsistence wage, but would enter the market if the wage rate were higher.[22] Point H, in turn, covers all those who would work for an amount equal to or less than that paid by the modern sector (W_M), but not for less than the subsistence wage. Following the same line of reasoning, a new variable may be introduced — Q or the amount of labor available for immediate transfer to the modern sector.[23]

$$Q = (L_H - L_F) = (L_H - L_J) + (L_J - L_u) + (L_u - L_I) + (L_I - L_F) \tag{7}$$

where

$(L_H - L_J)$ = voluntary open unemployment at the minimum-wage level

$(L_J - L_u)$ = voluntary open unemployment at the subsistence-wage level

$(L_u - L_I)$ = involuntary open unemployment

$(L_I - L_F)$ = informal employment

In sum, the supply curve for the traditional market is represented by the broken line *ABCFH*. The demand curve also has two sections, with *BB'* referring to the formal and *EE'* to the informal

22 In other words, the voluntary supply price would be higher than the subsistence wage. In this case, the subsistence wage represents a "reserve price" below which individuals choose to remain unemployed.

23 Theoretically, some or all of the workers in the formal-traditional subsector should also be ready to transfer to the modern sector. The greater the differential between the wages in the two, the greater this possibility should be. In actuality, however, the worker in the formal-traditional subsector, relative to his counterpart in the informal-traditional subsector, is subject to inertia due to comparative job stability and the protection of labor legislation. Given his neutrality in terms of the model, let us therefore leave aside the individual who shifts from the formal-traditional subsector to the modern sector, and consider instead the situation of the migrant.

subsector. The protected market will be at equilibrium at point B, while D and F define the levels of informal employment and open unemployment.

To complete the description of the traditional sector, all that remains is to specify a behavioral equation for internal migrations. Theoretically,

$$M \quad M\,(W_T/W_r,\ W_T/EW,\ q,\ (1 - L_F/L_u)) \tag{8}$$

where

$$M_{W_T/W_r} > 0;\ M_{W_T/EW} > 0;$$

$$M_q < 0;\ M_{(1-L_F/L_u)} < 0$$

According to neoclassical theory, migratory flows are a function of relative wages. Rural-urban movements occur in direct proportion to the urban/rural wage differential (W_T/W_r), and urban-urban movements in relation to the differential between the wages paid in a given city and the average wage in the urban system as a whole (EW). In metropolitan areas, there tend to be appreciably more urban-urban than rural-urban migrants. The average rural and urban wages (W_r and EW, respectively) are considered exogenous to the model, and it is assumed that EW is not significantly affected by wage variations in the city under study. It is important to emphasize that, in defining relative prices, the wage used was that of the traditional sector (W_T), since this is the first sector to employ recent migrants. This implies that the migrant, when calculating his expected income in his urban destination center, takes as his point of reference the traditional-sector wage, or, for reasons of stability, the formal-traditional wage.[24]

The other independent variables in equation (8) are the rate of labor turnover in the informal subsector (q), and the share of this same labor in total traditional-sector employment $(1 - L_F/L_u)$.[25] Generally speaking, the higher the rate of turnover, the less atractive the city to migrants. Higher turnover means less security, especially if job opportunities are limited to the informal subsector.[26] Furthermore, a high value for $(1 - L_F/L_u)$ is indicative

[24] The expectations of the migrant also depend on his educational level, as well as on his income and cultural environment in his region of origin.

[25] Friedman and Sullivan, p. 398, maintain that increases in urban employment opportunities lead to more than proportional migration to the cities. Thus, relative to urban employment, the elasticity of migration is higher than one.

[26] With respect to the role of q in determining wage rates, see J. E. Stiglitz, "Alternative Theories of Wage Determination and Unemployment in LDC's: The Labor Turnover Model," *Quarterly Journal of Economics* 88 (May 1974): 194-227.

of restricted intersectoral mobility, that is, of difficulty in transferring to the protected sector. Finally, if the probability of belonging to the informal subsector is positively correlated with the time the migrant has participated in this market, an increase in this probability will discourage internal migration. [27]

3.2 — The modern sector at equilibrium

The labor-demand equation for the modern sector may be generically expressed as

$$D_M \quad D_M(W_M, Y, g) \tag{9}$$

where

$$D_{MW_M} < 0;\ D_{MY} > 0;\ D_{Mg} < 0$$

The assumptions underlying equation (9) are that demand in the modern sector depends on the overall level of economic activity, represented by domestic product (Y), and on the economic structure of the city under study (g). Especially in metropolitan areas, a large share of the output of the modern sector is for domestic consumption. A higher overall level of economic activity will therefore shift the labor-demand curve to the right. As to the economic structure of the city, the effect of specialization (g) is less predictable. [28] We will assume that urban centers with more diversified structures (lower values for g) generate more employment opportunities in both quantitative and qualitative terms. Diversification favors division of labor among firms and sectors, raising the multiplier of indirect employment.

The labor supply in the modern sector is defined as the sum of employment in period $t - 1$ (L_{OM}) plus all the workers transferred from the traditional to the modern sector (N) between $t - 1$ and t.

$$L_M = L_{OM} + N \tag{10}$$

[27] Todaro uses a similar measure for the probability of a migrant finding work in his urban destination center. The main difference is in the numerator, which in Todaro's measure is the volume of open unemployment. The problem with this approach is that it is weakened when there is little open unemployment, or when such employment is indistinguishable from frictional unemployment. See M. P. Todaro, "A Model of Labor Migration and Urban Unemployment in Less Developed Countries," *American Economic Review* 59 (March 1969): 135-47.

[28] The coefficient of specialization measures the deviation of the structure of a given city from the national average. See W. Isard *et al., Methods of Regional Analysis* (Cambridge: MIT Press, 1960), chap. 7.

The equilibrium wage in the modern sector (W_M) will be determined by

$$D_M = L_M \tag{11}$$

The impact of the shifting of labor from the traditional to the modern market must be underlined. Equation (10) implies that any increase in employment in the modern sector occurs via such transfers. The labor-transfer equation (N) therefore transforms traditional manpower into modern manpower. This transformation clearly involves costs for the metropolitan economy, costs which fall on firms in the modern sector in the form of higher market wages. In general terms, N can be specified as

$$N = N(Q,\ D_M,\ h,\ e(Q)) \tag{12}$$

where

$$N_Q > 0,\ N_{D_M} > 0;\ N_h < 0;\ N_e > 0$$

According to equation (12), the volume of the traditional-to-modern shift primarily rests on the availability of labor in the traditional sector (Q) and on the demand for labor in the modern sector (D_M). In addition, certain qualitative characteristics of Q and D_M encourage or discourage intersectoral transfers. Equation (12) covers two of these characteristics: the cost of hiring and training the workers so transferred (h),[29] and the previously acquired skills (or education) of these same workers (e). As a rule, a rise in h will serve as a disincentive to intersectoral shifts. On the other hand, the higher the qualifications of the workers in the traditional sector, the easier it will be to transfer them to the modern sector.[30] The relative wages are also implicitly contained in equation (12) in the variables Q and D_M.

29 These costs raise the firm's labor expenses, and include outlays on damaged equipment and loss of efficiency (foregone output). If all the manpower transferred had to be trained, if h were constant per worker, and q_M denoted the average rate of turnover in the modern sector, the total cost of labor would be

$$W_M\ [L_{oM} + N\ (1 + q_M\ h)]$$

In regard to this point, see Stiglitz, pp. 197-99. In practice, not all the workers transferred require training, since some bring previously acquired skills to their new jobs.

30 Estimates based on equation (12) should point to multicolinearity between h and e (Q), since $h = h$ (e), where $h_e < 0$.

Figure 2 depicts the modern market at equilibrium. Note that the volume of the shift is small enough to preclude the supply from extending along the broken line BA'. The supply curve is therefore ABC, with equilibrium occurring at point C. In this case, the shift, and consequently the labor supply, will limit the modern sector.

Given the premises of the model, point B will rarely lie to the right of E; that is, the restriction imposed by N will seldom be redundant. However, should this happen, which is not very likely in a metropolitan economy, the restrictive element will be, as in the traditional sector, the demand for labor. Even so, it must be borne in mind that the traditional and modern markets are interdependent and form a system of simultaneous equations.

Figure 3 is a diagram of the urban economy divided into its several sectors: modern, traditional, rural, and the rest of the urban system. The arrows denote the variables that link the sectors, and indicate whether these variables enter the respective equations exogenously or endogenously. Not only the importance, but also the similarity of M and N should be stressed, for the two are simply different stages in the intersectoral labor shift. Migration brings workers into the traditional urban sector, and N moves them into the modern sector.

The static model presented above describes the urban labor market at equilibrium on the basis of 12 simultaneous equations involving four endogenous variables for the modern sector and eight for the traditional sector.[31] This model can easily be rendered dynamic through the redefinition of certain relationships. To begin with, let us assume that all transactions in the traditional sector are instantaneous, and that the variables in the modern sector are defined as follows:

D^*_{Mt} = potential demand for labor in the modern sector in period t

D_{Mt} = observed or current demand for labor in the modern sector in period t

N_t = transfers from the traditional to the modern sector in period t

[31] For the modern sector, the endogenous variables are L_M, D_M, W_E, N, and the exogenous variables Y, g, h, e, L_{eM}. For the traditional sector, the endogenous variables comprise D_F, L_F, D_I, L_u, L_r, M, Q, and the exogenous variables W_r, W_m, W_r, EW, G, S, q.

Figure 2

THE MODERN MARKET AT EQUILIBRIUM

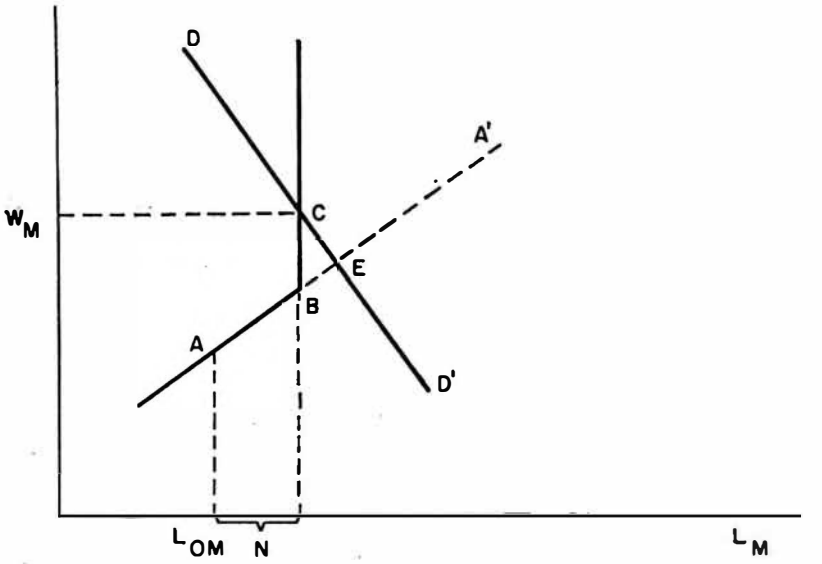
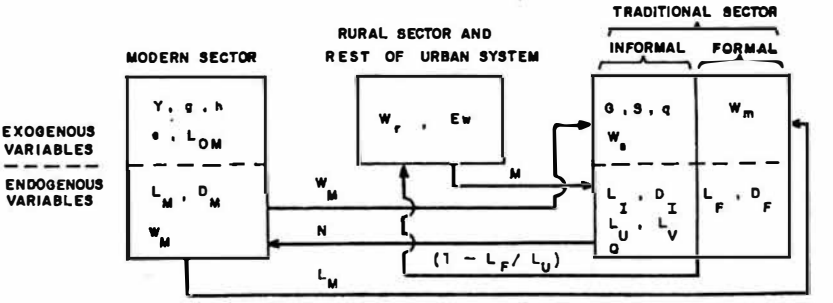


Figure 3

MODEL OF THE URBAN LABOR MARKET



W^*_M = permanent wage in the modern sector

R^*_M = permanent rate of profit in the modern sector

W^*_M and R^*_M denote the expected pattern of wage and profit rates, and are calculated using a distributed-lag or moving-average regression. Thus,

$$D^*_{Mt} = D^* ((W_M/W^*_M)_{t-1};\ (R_M/R^*_M)_{t-1}) \tag{13}$$

where

$$D^*_{W/W^*} < 0 \quad \text{and} \quad D^*_{R/R^*} > 0$$

In equation (13), the signs of the partial derivatives indicate that a temporary wage increase may lead to high labor costs, the adoption of labor-saving techniques, and a subsequent decrease in potential demand. On the other hand, higher profits may signify larger investments and a resulting increase in the potential demand for labor.

The volume of the transfer from the traditional to the modern sector is defined by

$$N_t = B[D^*_{Mt} - D_{Mt-1}] \tag{14}$$

where B is a response coefficient. Current supply and demand may be expressed, respectively, as

$$L_{Mt} = L_{Mt-1} + N \tag{15}$$

$$D_{Mt} = D_{Mt}(W_{Mt}) \tag{16}$$

and equilibrium as

$$D_{Mt} = L_{Mt} \tag{17}$$

The response coefficient, B, may be endogenously determined as follows:

$$B = B(Q,\ h,\ e) \tag{18}$$

where the variables Q, h, and e are defined as before, and $B_Q > 0$; $B_h > 0$; $B_e > 0$.

When labor is scarce in the modern sector, the response coefficient should meet the constraint $0 < B \leqslant 1$. In terms of figure 2, this means that B should lie to the left of E. In the dynamic model, equations (9) to (12) are replaced by (13) to (18). Under these circumstances, the endogenous variables for the modern sector include D^*_M, D_M, L_M, W_M, B and N, it being necessary to set a prior condition for L_M.

4 — Some empirical evidence on two hypotheses of the model

Two aspects of the preceding model immediately stand out: the role of internal migration and the importance of intersectoral labor transfers. Is this section, empirical tests are made of the relationship between migration and informal employment, and of the mechanism through which workers are transferred from the traditional to the modern sector.

4.1 — Internal migration and informal employment

According to the model, recent migrants are either engaged in the informal sector or remain openly unemployed. The reason for simplifying the hypothesis to this point was to facilitate the presentation of the model. Even so, when applying the model, it is important to determine to what extent the informal sector is responsible for absorbing migrants, and to measure the share of migrants among the unemployed.

On the basis of a sample taken in the metropolitan area of Belo Horizonte in 1972, Merrick[32] estimates the percentage of the labor force engaged in informal activities by migrant status, sex, and age group. For recent migrants (less than five years of residence), it was possible to tabulate only the information relating to heads of households, whether male or female. Although there was a higher proportion of recent migrants than of other migrants in the informal sector, there was no great difference between migrants and nonmigrants. In 1972, 22% of the recent male migrants and 54% of the recent female migrants were performing informal activities. The respective figures for other migrants were 16.5% and 56%, for nonmigrants 23.4% and 50.5%, and for the total labor force 19% and 54%. Among the recent migrants, the highest rates of participation in the informal market were at the tails of the age distribution, that is, in the 15-19 and 50-and-over age groups.

[32] Merrick and Brito, "Informal Sector Employment in Brazil," pp. 17-21.

The activity that absorbed the most male migrants was construction, followed by manufacturing and commerce. At the time of the survey, approximately 22.1% of the new migrants (less than one year of residence) and 22.5% of the recent migrants (one to five years) were employed by the construction industry. The comparable percentages were 19.1% and 20.6% in manufacturing, and 14.2% and 16.2% in commerce.

Services (mainly personal) absorbed the greatest proportion of female migrants, accounting for 73.1% of the new migrants and 66.6% of the recent migrants. Generally speaking, there were more women than men in the informal subsector, and as a rule the former earned less than the latter. About 78.3% of the new female migrants and 71.5% of the recent female migrants were receiving less than the minimum wage prevailing in the metropolitan area. For the male migrants, the figures were, respectively, 32.9% and 28.5%.

Arguing from this empirical evidence, Merrick concludes that the informal subsector plays an important role in assimilating migrants (especially recent migrants) in the metropolitan area of Belo Horizonte.[33]

This conclusion can apparently be extended to other metropolitan areas and to smaller urban centers. In 1973, surveys conducted in the marginal areas of four cities in the states of Ceará (Fortaleza, Sobral, Crato, and Juazeiro)[34] revealed a higher index of underutilization among recent migrants than among other migrants and nonmigrants. In Fortaleza, the index was 32.7% for recent migrants (less than eight years of residence), compared to 23% for those with over eight years of residence and 30.4% for nonmigrants. In the other cities, the figures were 56.6% for recent migrants, and 43.6% and 45.7%, respectively, for other migrants and nonmigrants. The highest index for recent migrants was found in Crato (61.7%), followed by Sobral (57.9%) and Juazeiro (50.9%).

[33] *Ibid.*, p. 18.

[34] See J. H. Gondim Silva, "Subutilização de Recursos Humanos em Áreas Urbano-Marginais Selecionadas do Nordeste," presented at the second meeting of the Associação Nacional dos Centros de Pós-Graduação em Economia, Belo Horizonte, October 1974 (Mimeographed). This paper includes the partial results of a broader survey covering 12 cities in four states in the Northeast. The index of underutilization, calculated on the basis of foregone income, is defined as $I_i = 1 - wh/\overline{wh}$, where I_i represents the index of underutilization of worker i, and w stands for the hourly wage, h for the number of hours actually worked, and $\overline{w}$ and $\overline{h}$ for the wage and number of hours considered "ideal" by i. The values of $\overline{w}$ and $\overline{h}$ are entirely subjective. For the sake of consistency with the model presented in section 3, it is assumed that the "ideal" wage is always equal to or higher than the regional minimum.

According to the model of the traditional sector, some recent migrants remain unemployed.[35] The household surveys taken in 1972 show the average rate of open unemployment in Brazilian cities to have been about 4.8%. The highest rates were in Minas Gerais and Espírito Santo (6%), and the lowest in São Paulo (3.5%).[36]

In the marginal areas of Fortaleza, open unemployment among migrants falls significantly after eight years of residence. The results of the 1970 census indicate that this pattern applies to other urban areas as well.[37]

In the developing countries, the rate of open urban unemployment ranges from 4% to 20% of the labor force, and in some cases reaches 40% in the 15-24 age group.[38] The rates of underutilization (which include unemployment) are generally higher among young people with little formal education, women, and dependents. Turnham considers 15% a normal rate of unemployment in developing countries.[39] However, Bairoch terms this level "hyperunemployment", defined as marked structural unemployment caused by an imbalance between the supply and demand for labor which leads to extensive rural-urban migration.[40]

Compared to the open unemployment rates in other developing countries, the Brazilian rates appear quite low. This reinforces the argument that these rates may be reflecting frictional unemployment to a greater extent than open unemployment per se. One way to test this argument is through time spent looking for work. Under normal conditions, the frictionally unemployed spend less time looking for jobs than the openly unemployed. According to the 1972

35 The number of years a migrant is classed as "recent" varies from study to study. The criterion used by Merrick and Brito and by M. Mata *et. al.*, *Migrações Internas no Brasil: Aspectos Económicos e Demográficos*, Coleção Relatórios de Pesquisa, n.º 19 (Rio de Janeiro: IPEA/INPES, 1973) is five years, but that used by Gondim Silva is eight years. The latter, pp. 27-28, argues that migrants require the longer period to adapt to the marginal areas of Fortaleza.

36 Instituto Brasileiro de Geografia e Estatística, *Pesquisa Nacional por Amostragem de Domicílios*, October-December 1972.

37 The rate of unemployment was 3.6% among migrants with less than 10 years of residence, compared to 2.4% among migrants with more than 10 years of residence and 3.3% for the urban labor force as a whole. See Mata *et al.*, p. 129.

38 See P. Bairoch, *El Desempleo Urbano en los Países en Desarrollo* (Geneva: International Labor Organization, 1973), tables 15 and 16; D. Turnham, "Empirical Evidence of Open Unemployment in Developing Countries," in *Third World Employment*, pp. 42-54; ILO, "La Subutilización de La Mano de Obra Urbana en Países Subdesarrollados," presented at the Seminário sobre Sistemas de Informação para Políticas de Emprego, Brasília, September 1974 (Mimeographed).

39 Turnham, p. 49.

40 Bairoch, pp. 70-73.

household surveys, approximately 85.6% of the unemployed[41] had been seeking jobs for three months or less, and of these 49.5% had been looking for work for less than one month. The percentages vary somewhat with sex, to the slight disadvantage of women. Since the figure drops sharply to 14.4% after three months, this period may be considered the average unemployment span in Brazil.

Unfortunately, there is little such data on other countries, and they are difficult to compare with the information on Brazil. In the urban areas of India in 1961-1962, the periods of unemployment were as follows: 21% — one month; 38% — one to nine months; 41% — more than nine months.[42] In Assunción in 1973, they were: 25% — one month; 25% — one to three months; 50% — more than three months.[43] In the marginal areas of Managua in 1971, 54.5% of the unemployed spent up to three months looking for work.[44] Thus, while the empirical evidence points to the unemployment span being shorter in Brazil than in other developing countries, more data are needed to prove the hypothesis. Likewise, the possibility of a statistical overlap between open unemployment and frictional unemployment is a topic for future research.[45]

4.2 — Intersectoral mobility

In 1973, about 66% of the urban labor force, or just under 14 million workers, was covered by social security.[46] These figures serve as rough indicators of the size of the protected sector. The rest of the urban labor force was engaged in informal activities.

The difficulty of classifying labor by sector complicates analysis of intersectoral transfers. With respect to such transfers, the most recent and most complete data refer to the metropolitan area of

[41] Since it was not possible to disaggregate agricultural and nonagricultural activities, this rate may include some seasonal unemployment in the agricultural sector.

[42] Turnham, p. 49.

[43] ILO, "La Subutilización de La Mano de Obra Urbana," table V-15.

[44] *Ibid.*, table III-4.

[45] In addition, as Salm contends, the term "open unemployment" is more applicable to employees than to employers, self-employed workers, and unpaid family workers. Since the number of wage earners increases with development, unemployment also tends to rise. See C. Salm, "Evolução do Mercado de Trabalho, 1969-1972," *Estudos CEBRAP* 8 (April-June 1974): 111.

[46] These figures are underestimates, since some workers, e. g. civil servants, are covered by special social-security programs. See E. L. Bacha *et al.*, *Encargos Trabalhistas e Absorção de Mão-de-Obra: Uma Interpretação do Problema e seu Debate*, Coleção Relatórios de Pesquisa, n.º 12 (Rio de Janeiro: IPEA/INPES, 1972), pp. 43-46.

Belo Horizonte.[47] These data, gathered in 1972, trace the employment history of the labor force and allow for comparison of first and present jobs. The information was classified by criteria such as branch of activity, type of occupation, formal or informal subsector, etc. In relative terms, all other activities lagged behind modern services. However, what is most striking is the lack of mobility; the probability of an individual remaining in the activity in which he held his first job is always over 50%.[48]

The degree of mobility rises when the market is divided by employer-employee status or by size of firm.[49] There are general trends toward self-employment or employment in larger firms. Those employed by small firms tend to move to larger firms (37% probability) or to become self-employed (18%). In domestic services, the

Table 1

Probability Matrix for Intersectoral Transfers in the Metropolitan Area of Belo Horizonte

First Job	Present Job	
	Protected (.79)	Informal (.21)
Protected (.33)	(.86)	(.14)
Informal (.67)	(.76)	(.24)

Source: F. R. Brito, "Mobilidade Ocupacional e Distribuição da Renda", presented at the second meeting of the Associação dos Centros de Pós-Graduação em Economia, Belo Horizonte, October 1974 (Mimeographed).

Note: The protected market includes persons who make social-security contributions, those in the liberal professions, civil servants, and workers in establishments with five or more employees. The nonprotected market comprises persons who do not make social-security contributions and domestic workers. The numbers between parentheses indicate the sectoral distribution of first and present jobs. The lines of the matrix total 1.0.

[47] F. R. Brito, "Mobilidade Ocupacional e Distribuição de Renda," presented at the second meeting of the Associação dos Centros de Pós-Graduação em Economia, Belo Horizonte, October 1974 (Mimeographed).

[48] *Ibid.*, p. 4. The activities are broken down as follows: primary, manufacturing, construction, commercial and financial services, traditional services (domestic, cleaning, and repair), and modern services (lodging, food, etc).

[49] *Ibid.*, table III.

pattern is the opposite, with the probability of workers taking jobs in large firms being 19% and the chance of their becoming self-employed being 41%.

The same data can be aggregated into two separate markets — the protected (including the formal-traditional and the modern sectors) and the informal — as in table 1. Whereas 67% of the workers were originally employed in the informal market, only 21% were still in this market at the time of the survey. The probability of intersectoral mobility is therefore high at 76%. As Brito concludes, the informal market plays a dominant role in absorbing new labor. Unfortunately, it was not possible to determine the average time that individuals stay in the market.

An important characteristic of the informal market is the large proportion of self-employed workers. Among these workers, turnover is high, income is irregular, and mobility is horizontal. In 1970, self-employed workers accounted for about 20.3% of the labor force in the tertiary sector and 13.7% in the secondary sector. Within the tertiary sector, self-employed workers rendered 21.8% of the services and conducted 38.7% of the commerce.

The 1972 household surveys show the distribution of self-employed workers by activity. Table 2 reveals that the majority of these workers were in services and commerce, i. e. in those branches that provide the greatest amount of informal employment. Although 63.3% of the self-employed were men, women predominated in certain activities such as personal services. Special attention should be paid to the far-right column, which gives the percentage of workers in each region who would like to work full time for the minimum wage. What these figures truly indicate is how many self-employed workers would prefer to move to the protected sector (formal-traditional or modern) due to job dissatisfaction, questions of security and stability, or social-security benefits. Although some of these individuals may be earning more than the legal minimum, [60] the fact that their income is uncertain and subject to fluctuations may enhance the attraction of the protected sector. Moreover, social-security benefits, especially in the form of health and medical care, may represent important increases in real income.

Note that the Northeast was the region with the greatest number of self-employed workers, and also the region in which the highest percentage would like to transfer to the protected sector. It was seconded by Minas Gerais and Espírito Santo, which have likewise traditionally been characterized by extensive informal employment.

[60] In terms of figure 1, this is the case when point E' is above *B*.

Table 2

Distribution of Self-Employed Nonagricultural Workers by Activity

Region	Number of Self-Employed Workers (1 000)	Activity (%)							
		Manufacturing	Construction	Commerce	Personal Services	Liberal Professions	Social Services and Public Administration	Other	TR[a]
Guanabara, Rio de Janeiro	402.5 (11.0)	1.7	.5	23.9	57.5	3.0	1.7	11.7	34.5
São Paulo	785.7 (21.5)	3.5	.5	26.9	50.1	3.4	1.9	13.7	17.8
Paraná, Santa Catarina, Rio Grande do Sul	556.7 (15.3)	4.7	.4	24.0	48.2	2.0	.8	18.4	34.3
Minas Gerais, Espírito Santo	467.9 (12.8)	5.8	.3	22.2	52.0	2.7	.4	15.7	55.7
Northeast[b]	1 406.5 (38.6)	17.0	.3	29.3	41.2	1.0	1.5	8.8	60.8
Distrito Federal	29.0 (.8)	2.3	.3	24.1	55.2	3.4	1.2	13.5	35.2
Brazil[c]	3.648.3 (100.0)	9.3	.3	26.6	47.6	2.2	1.3	12.7	42.8

Source: Instituto Brasileiro de Geografia e Estatística, *Pesquisa Nacional por Amostragem de Domicílios*, October–December 1972.

Note: The numbers in parentheses stand for the regional share of the national total.

[a] The percentage of the self-employed who would like to work full time for the minimum wage.

[b] Northeast = Maranhão, Piauí, Ceará, Rio Grande do Norte, Paraíba, Pernambuco, Alagoas, Sergipe, and Bahia.

[c] The household surveys do not cover the North and the Center-West.

The percentage of persons desiring to shift to the protected sector is inversely related to the per capita income of the region, and directly related to the proportion engaged in liberal professions.

According to the model of the dualistic labor market, as the modern sector grows, new job opportunities should arise in the traditional sector. At the same time, informal employment may be negatively affected, mainly due to the creation of capital-intensive specialized service establishments. However, it is difficult to measure these effects given the lack of statistical data. It is only known that the average size of industrial establishments has risen with development, while the average size of commercial establishments (measured in terms of wage employment) rapidly fell from 10.4 in 1940 to 8.0 in 1950 and 1.4 in 1960. By the same token, in personal services the number of wage earners per establishment dropped from 18.9 in 1940 to 2.0 in 1950 and 1.5 in 1960. This may mean that, as the average size of traditional service establishments has diminished (perhaps revealing the growing participation of self-employed workers), the expanding industrial establishments have set up their own repair and maintenance shops, and thereby exerted a negative net impact on informal employment.

5 — Final observations

The underutilization of labor is a growing urban problem. In the metropolitan areas of the developing world, it is common to observe sizeable contingents performing temporary, low-pay tasks. This informal segment of the labor market has its own rules, which differ fundamentally from those of the wage-earning sector of the urban economy. Informal employment is often associated with economic inefficiency and frequently has pejorative connotations. From a realistic standpoint, however, the informal worker is quite efficient. If the earnings of the members of the family equal the average product rather than the marginal product, it is reasonable to incorporate as many persons as possible into the labor force. This holds true as long as each member contributes to raising the family income, even if the average income of each is below the subsistence level. Under these conditions, the opportunity cost of each new worker is near zero.

It is therefore essential to distinguish the decision-making units in the protected and informal markets. In the former, decisions refer to the individual, and the wage rate equals the marginal productivity of each worker. In the latter, decisions refer to the family and the goal is to maximize family income.

Another point that should be stressed is how labor transfers from the informal-traditional to the modern sector. A substantial share of the so-called modern sector is accounted for by industry. However, industrial employment is growing far more slowly than the labor force in the developing countries.[51] The result is the swelling of the tertiary sector, mainly as informal employment in personal services and commerce. Two interrelated factors hinder the modern sector from generating more employment: (1) imported capital-intensive technologies, and (2) transfer costs, which include hiring and training expenses.

Employment policy must include both medium-range and long-range goals. The medium-range policy should be aimed at safeguarding the informal sector so as to attenuate the employment crisis. Governments often strive for this aim by supporting handicrafts. This is not sufficient, however, and other farther-reaching measures should be adopted. One such measure might be to provide incentives to raising urban-infrastructure employment.[52] The long-range policy should be twofold. On the one hand, rural workers should be held to the land through the expansion of agroindustries and market activities. On the other hand, while it is clearly impossible to adopt labor-intensive techniques throughout the secondary sector, since this would jeopardize the rate of growth of the economy, certain industrial and service subsectors should be encouraged to absorb a greater amount of labor.

[51] See W. Baer and M. E. Hervé, "Employment and Industrialization in Developing Countries," *Quarterly Journal of Economics* 80 (February 1966): 88-107; D. Morawetz, "Employment Implications of Industrialization in Developing Countries: A Survey," *The Economic Journal* 84 (September 1974): 491-542.

[52] I owe this suggestion to Fernando Rezende. One way to do this might be to distribute federal resources among the *municípios* in such a way as to foster employment in urban sanitation, city administration, and other public services. The assumption that local development rests on capital investment alone is false, and can lead to serious disequilibria between current and capital expenditures. Moreover, additional public-service employment in small and medium-size cities implies the further benefit of reducing migration to the large urban centers.

Urban unemployment in Brazil

David E. Goodman and Daniel R. Oliveira *

1 — Introduction

One unchallenged tenet of public policy and economic discourse in Brazil is that open unemployment can safely be ignored as a policy issue. The force of this conventional wisdom is such that policy statements and economic-planning documents rarely distinguish between the active population and the labor force in employment. Rates of aggregate open unemployment indeed are low, particularly when the rural sector is included (table 1). With unemployment rates fluctuating around 3%, it is easy to dismiss unemployment as "frictional" in order to concentrate upon the more fundamental condition of poverty and low-income employment. The inadequacy of income is certainly the critical dimension of the employment problem in Brazil, as in other countries.[1] Nevertheless, there are cogent reasons why a comprehensive treatment of this problem should analyze open unemployment separately. Low unemployment rates divert attention away from the absolute magnitude of open

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1 On the case of Brazil, see H. Tolosa, "Dualismo do Mercado de Trabalho Urbano," *Pesquisa e Planejamento Econômico* 5 (June 1975): 1-35; C. Salm, "Evolução do Mercado de Trabalho, 1969-72," *Estudos* CEBRAP 8 (April-June 1974); D. E. Goodman, "The Brazilian Economic 'Miracle' and Regional Policy: Some Evidence for the Urban Northeast," *Journal of Latin American Studies* 8 (May 1976): 1-27. More generally, see D. Turnham and I. Jaeger, *The Employment Problem in Less Developed Countries* (Paris: OECD, 1971); J. Weeks, "Does Unemployment Matter?" in *Third World Employment*, ed. R. Jolly *et al.* (London: Penguin Books, 1971), pp. 61-65.

unemployment, and the serious and specific social consequences arising from its differential incidence within the labor market are frequently ignored. In Brazil, unemployment rates exceeding 3% imply that over one million individuals are out of work.[2] These include the poorest and most disadvantaged members of Brazilian society. Indeed, our results indicate that the incidence of urban open unemployment is significantly greater among young secondary family members, and particularly those from poor households — that is, families whose per capita income is less than half the official monthly minimum wage (this measure is widely interpreted in Brazil as the official poverty line or poverty threshold). Here, we examine relations between unemployment and the socio-demographic characteristics of secondary family members in order to elucidate this striking feature of urban labor markets in Brazil.

Table 1

Aggregate Rates of Open Unemployment, 1968-1973[a]

(%)

Year	Total Labor Force	Males	Females	Nonagricultural Labor Force
1968	2.3	2.2	2.5	3.5
1969	2.3	2.3	2.3	3.5
1971[b]	—	—	—	
1972	3.1	2.6	4.1	4.8
1973	2.7	2.3	3.4	4.0

Source: Instituto Brasileiro de Geografia e Estatística (IBGE), *Pesquisa Nacional por Amostra de Domicílios* (PNAD), 4th quarter of each year.

[a] In 1968 and 1969, the labor force is defined by PNAD as the active population of 14 years and over. After 1969, this definition was revised to include the active population of 10 years and over.

[b] The PNAD surveys were discontinued in 1970 and restricted to only three regions in 1971.

In a subsequent paper, we hope to extend this analysis to factors which determine access to these markets and hypotheses on labor-market segmentation.

National household survey data provide a broad overview of open unemployment, but our empirical analysis focuses mainly on

2 Although not considered here, there are marked regional differentials in rates of urban unemployment in Brazil. An indication of these differentials is given in table 3.

the city of Belo Horizonte, a rapidly growing industrial center in the Southeast region of Brazil. The national household surveys (PNAD) taken since 1967 give comprehensive geographical coverage of employment, unemployment and earnings.[3] However, the published PNAD data adopt the state or region as standard units of observation, and these are far too aggregative to be taken as adequate representations of individual labor markets. This situation will improve in the near future with the publication of PNAD survey data for the country's nine metropolitan areas. Fortunately, in the case of Belo Horizonte, we have access to more complete socio-demographic data drawn from a household survey of the metropolitan area, referred to below as the C-P survey.[4]

These two sources are used to assess arguments advanced to explain relationships between socio-demographic characteristics and urban unemployment. We give attention primarily to the unemployment of secondary family members and utilize C-P survey data in a logit analysis of this phenomenon in Belo Horizonte. Before proceeding, however, we must note several distinctive institutional aspects of urban labor markets in Brazil.

At first glance, the definition and measurement of open unemployment in Brazil would appear to be straightforward. Thus, the unemployed in the PNAD survey are defined as individuals unemployed in the reference week who have made some positive effort to obtain work in the preceding two months. However, although this definition closely resembles those adopted in advanced

[3] The PNAD surveys (Pesquisa Nacional por Amostra de Domicílios) were instituted in the second quarter of 1967 and subsequently extended to cover the six major geographical regions of Brazil. The series was discontinued after the first quarter of 1970 but reintroduced in the fourth quarter of 1971. Another source of unemployment data is the demographic census of 1970, which uses a definition of unemployment very similar to that adopted by PNAD. (The 1950 census uses a definition which excludes those looking for their first job. The unemployment data from the 1960 census have not been published.)

[4] This survey was conducted in November 1972 by the center for regional development and planning (Centro de Desenvolvimento e Planejamento Regional — CEDEPLAR) of the federal university of Minas Gerais, in conjunction with PLAMBEL, the planning commission for the metropolitan area of Belo Horizonte. Methodology and sampling procedures utilized in the survey are described in PLAMBEL, "Metodologia da Pesquisa Sócio-Econômica" (Belo Horizonte: Fundação João Pinheiro, May 1974). These data have been used by Merrick to examine informal urban labor markets and, more recently, by Sant'Anna, Merrick and Mazumdar to analyze the effects of household structure and related economic variables of urban poverty. See T. Merrick, "Employment and Earnings in a Dualistic Urban Economy: The Case of Belo Horizonte, Brazil" (Belo Horizonte: CEDEPLAR, 1974); A. M. Sant'Anna, T. W. Merrick and D. Mazumdar, "Income Distribution and the Economy of the Urban Household: The Case of Belo Horizonte."

industrial economies, institutional and structural differences seriously distort the comparison of measured open unemployment. Specifically, in the absence of a comprehensive unemployment-insurance system, family-income-maintenance programs and an effective employment service, the costs of unemployment in Brazil fall principally upon the unemployed. The present unemployment compensation scheme, known as the time of service guarantee fund (FGTS), only covers workers employed in the formal, corporate sector of the urban economy.[5] This fund is financed by employer contributions, equal to 8% of the employee's earnings, which are deposited in indexed accounts in the name of the employee. Workers can draw on these deposits only in the event of dismissal and under certain other carefully defined circumstances.[6] For an individual worker, the FGTS deposit represents personal wealth accumulated as forced saving. Withdrawals consequently reduce personal net worth and the financial reserves available to attenuate the income loss imposed by future periods of unemployment.[7] Moreover, the effectiveness of this scheme in meeting future contingencies depends crucially on whether or not workers are fortunate enough to enjoy lengthy periods of stable and continuous employment during which substantial deposits can be accumulated. Less fortunate workers in the formal sector, as well as approximately 40% of the urban labor force which is engaged in informal activities, have no alternative institutionalized source of unemployment assistance. There is thus a powerful incentive for urban workers in Brazil to avoid unemployment and restrict its duration. In contrast to the unemployment

5 That is, employees of firms which observe the provisions of the consolidated labor legislation (Consolidação das Leis do Trabalho — CLT). This legislation gives workers such rights as the official minimum wage, an eight-hour day, paid holidays, and membership in the FGTS scheme (Fundo de Garantia de Tempo de Serviço). Workers protected by the CLT are also guaranteed access to the social-welfare programs administered by the national social security institute (Instituto Nacional de Previdência Social — INPS), notably family health care, disability insurance and old-age pensions. PNAD data for the fourth quarter of 1972 indicate that 60% of all employees engaged in nonagricultural activities are covered by official labor legislation. For further details, see E. L. Bacha *et al., Encargos Trabalhistas e Absorção de Mão-de-Obra: Uma Interpretação do Problema e Seu Debate*, Coleção Relatórios de Pesquisa, n.º 12 (Rio de Janeiro: IPEA/INPES, 1972); D. Mahar and F. Rezende da Silva, *Saúde e Previdência Social: Uma Análise Econômica*, Coleção Relatórios de Pesquisa, n.º 21 (Rio de Janeiro: IPEA/INPES, 1974).

6 These include retirement, serious illness, payment of wedding expenses, and the purchase of a house or small business. In practice, workers can request to be dismissed in order to gain access to their FGTS deposits and subsequently return to the same job. Casual evidence and frequent press reports suggest that collusion of this kind is widespread.

7 Deposits are typically withdrawn as a lump sum, and can thus be used for a variety of purposes other than financing unemployment.

insurance systems commonly found in advanced countries, the pecuniary costs of unemployment and job search in Brazil are borne by the unemployed.

These institutional features combine to depress open unemployment rates since individuals actively seeking a job often exercise some form of economic activity as a provisional stop-gap measure. This may involve part-time work, perhaps of an intermittent nature, or casual self-employment in the informal services and handicraft sectors of the urban economy. Such individuals, though actively engaged in job search for "satisfactory" employment in terms of pay, hours or working conditions, will be enumerated among the employed population if conventional definitions of open unemployment are applied. Married men, particularly those who are heads of households and the main source of support for their families, will be under strong pressure to find interim employment. These structural characteristics of urban labor markets provide a necessary qualification to the statistically low rates of open unemployment found in Brazil and emphasize the hazards and limitations of international comparisons.

In the following section, we review theoretical explanations of relations between urban unemployment and the socio-demographic attributes of the labor force. This discussion focuses on the variables used in the empirical analysis of unemployment among secondary family members. The results of this analysis are presented in section 3 and some conclusions in section 4.

2 — Unemployment and personal characteristics

The probability of an individual being unemployed depends upon a variety of factors related to his labor-supply decisions, those of other suppliers, and demand conditions for the type of labor in question. As Metcalf notes, the unemployment rate is determined by the probability (i) of voluntary separation; (ii) of involuntary separation as the result of being laid off, dismissed or made redundant; (iii) of being offered a job; and (iv) of accepting a job.[8] These probabilities will be determined *inter alia* by the personal characteristics of the labor force insofar as these influence labor supply and demand decisions. We shall now consider theoretical predictions of the effects on the unemployment rate of selected

[8] D. Metcalf, "Urban Unemployment in England," *The Economic Journal* 85 (September 1975): 570-89.

socio-economic and demographic variables utilized in recent household surveys in Brazil.

(a) *Position in the household.* Heads of household are likely to have a lower probability of unemployment than other members of the family. This hypothesis derives from their role as the primary source of family income, as well as social conventions which impose high psychic costs of unemployment on this group. Heads of household are expected, *ceteris paribus,* to have lower rates of job turnover due to voluntary separation and shorter periods of unemployment. In LDCs lacking unemployment insurance, heads of household are more likely to accept temporary interim jobs which fall below their long-run expectations as an alternative to open unemployment and full-time job search. This hypothesis is supported on the demand side by postulating that employers prefer heads of household, as their lower voluntary turnover rates and more disciplined work patterns reduce hiring costs.

(b) *Sex.* Discrimination by employers against women, particularly those of child-bearing age in order to limit labor turnover, will raise the probability of unemployment of female workers. This discrimination is frequently strongly rooted in social convention in LDCs.

(c) *Age.* The standard hypothesis is that both young workers and those past prime-age have higher unemployment rates. Young workers are inexperienced in job search and have limited access to informal information networks which play an important part in the labor-market clearing process.[9] Employment patterns of young workers are characterized by marked job instability [10] due to relatively high rates of voluntary separation. This behavior may reflect young workers' more limited information and experience of different occupations, suggesting that job turnover performs a pedagogic function.[11] The high voluntary quit rates of young workers will

[9] A. Rees, "Information Networks in Labor Markets," *American Economic Review* 56 (May 1966): 559-66.

[10] R. Hall, "Why Is Unemployment So High at Full Employment?" *Brookings Papers on Economic Activity,* n.º 3 (1970).

[11] E. Kalachek, *The Youth Labor Market* (Washington, D. C.: Institute of Labor Industrial Relations and the National Manpower Policy Task Force, 1969).

A related hypothesis regarding youth unemployment is that the marginal utility of income relative to leisure is lower for young workers than prime-age workers, particularly those adults who are heads of household. This difference would emerge not only in higher voluntary quit rates, but also in the duration of unemployment and the intensity of job search. The difficulty of distinguishing varying degrees of intensity of job search emphasizes the limitations of standard measures of "involuntary" unemployment.

lead to discrimination by firms seeking to reduce fixed hiring costs. Furthermore, the young are less experienced and therefore less productive than adults. This difference will reinforce the preference for prime-age workers, particularly if labor legislation does not permit firms to make wage payments which incorporate this productivity differential.[12] Previous work experience per se also may be given weight by employers as one additional item of information which contributes to lowering the risks involved in hiring new workers. Older workers are also expected to have higher unemployment rates than prime-age adults. Despite low turnover rates, old workers once unemployed have difficulty in finding new jobs, possibly because firms have less time in which to recover hiring and training costs.

(d) *Education.* Alternative behavioral specifications of urban labor markets can be distinguished in the extensive literature on the relationship between education and unemployment in LDCs.[13] Several specifications are adapted from labor-market models previously advanced to explain the relative unemployment rates of skilled and unskilled workers in advanced industrial economies. The bumping-down-the-skill hierarchy model formulated by Reder[14] predicts that skilled workers have a lower probability of unemployment than the unskilled. Skilled workers can descend the skill hierarchy to perform the tasks of the unskilled, whereas the reverse is less likely to occur. With excess labor supply, firms are expected to support this behavior in order to retain their skilled work force. The bumping-down model can readily be extended to LDCs and labor markets where the supply of educated workers exceeds the number of skilled jobs. One specification of this model makes the twin assumptions that employers prefer to hire the surplus educated rather than the uneducated for unskilled jobs and that the wage structure is rigid, with "the wage being set for the job and not according to the qualifications of the individual who fills the job".[15] In the event of unemployment in the skilled labor market,

[12] Labor legislation in Brazil allows employers to pay half the official minimum wage to those workers in the 14-17 age bracket who are classified as apprentices (*aprendizes*).

[13] See Turnham and Jaeger; M. Blaug *et al., The Causes of Graduate Unemployment in India* (London: Allen Lane, 1969). A more recent discussion is given by M. Blaug, *Education and the Unemployment Problem in Developing Countries* (Geneva: ILO, 1973).

[14] R. Reder, ""The Theory of Occupational Wage Differentials," *The American Economic Review* 45 (December 1955): 833-52.

[15] G. S. Fields, "The Private Demand for Education in Relation to Labour Market Conditions in Less Developed Countries," *The Economic Journal* 84 (December 1974): 906-25.

it is argued that the educated will seek unskilled jobs only if the expected returns (allowing for the probability of finding a job) from employment in the skilled and unskilled labor market are equal. This argument, which is consistent with high rates of educated unemployment, appears to afford a reasonable explanation of this phenomenon in those developing countries where government jobs represent a large proportion of educated employment opportunities. In Brazil, however, where this proportion is relatively low, skilled labor markets are likely to be characterized by greater wage flexibility. We would expect an excess of educated labor to produce bumping-down behavior and, consequently, relatively higher rates of unemployment among uneducated workers. The specific-training hypothesis advanced by Oi [16] predicts a similar result if there are surplus educated workers. Employers will first dismiss the unskilled and semi-skilled since skilled workers receive more firm-specific training.

Some supply-side arguments predict higher rates of unemployment among the educated if the supply of educated workers exceeds that of skilled jobs. One argument suggests that the educated are socially and culturally alienated from manual blue-collar work and will only accept jobs considered commensurate with their skills and status aspirations, even if wage rates are below those prevailing in unskilled occupations.[17] This behavioral assumption means that labor markets are stratified on the supply side, and is consistent with protracted or structural educated unemployment in the event of an excess supply of educated workers. Since we anticipate bumping-down behavior to be the major factor explaining the relation between unemployment and education in Brazil, an inverse relationship between these variables is expected.

(e) *Family income.* The direction of the net effect of an increase in this variable on unemployment is difficult to determine a priori. The relation between family income and unemployment is also complicated by simultaneity problems, as we emphasize in section 3 below. Households with higher incomes are better able to finance job search and periods of unemployment of family members. For this reason, workers from poor households will tend to have, *ceteris paribus,* lower unemployment rates than those from higher-income households. Conversely, where employment opportunities depend strongly upon personal contacts and social influence, as appears to be the case in Brazil, poor workers may have higher unemployment rates.

[16] W. Y. Oi, "Labor as a Quasi-Fixed Factor," *Journal of Political Economy* 70 (December 1962): 538-55.

[17] G. Myrdal, *Asian Drama* (New York: Pantheon, 1968).

(f) *Migrants.* One argument suggests that migrants are less informed about labor market conditions than nonmigrants and so have higher unemployment rates. However, it is possible that migrants rely on an extensive social network of relatives and friends to provide labor-market information about potential destinations before embarking on further migration. If, in addition, it is assumed that migrants are more highly motivated and ambitious to succeed, they can be expected to restrict the duration of unemployment and so have lower unemployment rates than nonmigrants. Migrants are also likely to have utilized family and personal savings during migration, which will reduce their ability to finance the costs of protracted job search after arrival in urban areas. This constraint may induce lower rates of voluntary separation and greater willingness to accept inferior jobs including casual work, resulting in lower unemployment among migrants.

3 — Empirical estimates

In this section, we review estimates of urban unemployment rates drawn from PNAD and C-P surveys and then present the results of a logit analysis of C-P data for Belo Horizonte.

3.1 — The national household survey data [18]

Despite serious shortcomings for detailed urban-labor-market analysis, the national coverage of the PNAD surveys provides an invaluable background to the subsequent case study of Belo Horizonte. The PNAD data are broadly consistent with the a priori statements of relationships between unemployment and the socio-demographic attributes of the labor force discussed in section 2. Briefly, females have higher and less stable unemployment rates than males, ranging from 2.3% to 4.1% between 1968 and 1973 (table 1). The importance of family position and age can be inferred from the marked participation of secondary family members and young workers in total unemployment (table 2). Heads of household represent only 15% of the unemployed; dependent children account for 64%. Correspondingly, the unemployed are encountered primarily in the younger age groups, and 72% are workers of 24

18 PNAD data for the fourth quarter of 1972 are presented to facilitate comparison with the results of the CEDEPLAR-PLAMBEL survey taken in November 1972.

years or less. The question of youth unemployment, and particularly of dependent family members, is clearly central to the unemployment problem in Brazil. This point is emphasized by the fact that the rate of unemployment of workers under 20 years of age is two or three times that of the labor force as a whole and six times that of workers over 25 years (table 3).

Table 2

Structure of Open Unemployment by Age and Family Position, 1972

(%)

Age Group[a]	Total	Males	Females	New Entrants Only (Total)
10 - 14	9.5	10.5	7.9	19.2
15 - 19	35.9	35.7	36.1	51.9
20 - 24	26.6	26.1	27.3	20.2
25 and Over	28.0	27.6	28.7	8.7
	100.0	*100.0*	*100.0*	*100.0*
Family Position[b]				
Heads of Household	14.8	20.6	5.8	—
Dependents	82.8	76.9	90.7	—
Spouse	7.1	—	18.6	—
Children	64.5	67.0	60.6	—
Other Relations	10.5	9.9	11.5	
No Kinship	3.0	2.5	3.5	
	100.0	*100.0*	*100.0*	

Source: IBGE, PNAD, 4th quarter of 1972.

[a] Unemployed engaged in nonagricultural activities.

[b] Unemployed in rural and urban areas combined.

Table 3

Rates of Urban Open Unemployment by Age, 1972[a]

(%)

Region and State[b]	Age Group				
	Total	10–14	15–19	20–24	25 and Over
I Guanabara, Rio de Janeiro	4.9	16.7	15.1	7.9	2.3
Guanabara	3.5	7.1	12.3	6.7	1.7
Rio de Janeiro	6.5	20.3	17.4	9.2	3.1
II São Paulo	3.5	11.5	7.7	4.9	1.6
III Paraná, Santa Catarina, Rio Grande do Sul	4.8	13.9	12.7	6.3	1.9
Paraná	2.9	8.3	7.6	4.0	1.1
Rio Grande do Sul	5.7	17.7	16.5	7.6	2.5
IV Minas Gerais, Espírito Santo	6.0	18.1	14.2	8.7	2.2
Minas Gerais	6.3	19.3	15.0	9.0	2.2
V Northeast	5.8	8.8	13.8	10.7	2.5
Pernambuco	7.4	13.0	15.6	13.3	3.6
Bahia	5.8	11.0	13.3	11.1	2.5
VI Distrito Federal (Brasília)	4.9	15.9	15.0	7.4	2.2
Brazil	4.8	12.6	11.8	7.4	2.1

Source: IBGE, PNAD, 4th quarter of 1972.

[a] Unemployment as a proportion of the urban active population in each age group. Unemployment includes new entrants to the labor force who are seeking employment for the first time.

[b] The regions are defined in table 1.

In view of the educational composition of the labor force, it is hardly surprising that workers with primary education form the largest group of unemployed [10] (table 4). Unemployment rates differ considerably by educational category, however, increasing to 7.2% for workers who have reached the "middle school" (*primeiro ciclo*) stage of secondary education and subsequently declining to 1.8% for the group with higher education. On this evidence, the distribution of unemployment rates by educational level describes an inverted U-shaped curve, with lower unemployment rates at the two tails. Unfortunately, use of the PNAD data to analyze relationships between unemployment and education is inhibited by the absence of cross-tabulations by age.

[10] A major difficulty of the PNAD surveys arises from the fact that unemployment data are presented by the level of education attained rather than the number of years of schooling or the educational qualification obtained. This problem is particularly troublesome when analyzing unemployment in the group with primary education, since there is no indication whether the primary curriculum was completed successfully or not. The practice of referring students who fail to pass the examinations which demarcate stages within and between educational categories also means that there is no simple correspondence between educational level and number of years of schooling.

Table 4

Rates and Structure of Open Unemployment by Education of the Nonagricultural Labor Force, 1972

(%)

Educational Level	Unemployment Rate	Structure of Unemployment		Labor Force Composition
		Total	New Entrants	
Illiterate	3.7	9.8	7.8	12.9
Primary[a]	4.9	57.4	50.6	57.4
Secondary	6.2	30.9	39.1	24.6
Middle School	7.2	22.4	27.3	15.4
High School	4.5	8.5	11.8	9.2
Higher Education	1.8	1.9	2.5	5.1
Total	4.8	100.0	100.0	100.0

Source: IBGE, PNAD, 4th quarter of 1972.

[a] Including persons with incomplete primary education.

3.2 — The CEDEPLAR–PLAMBEL survey for Belo Horizonte

Belo Horizonte is the third largest city in Brazil, with a metropolitan population of 1.7 million in 1972. The substantial influx of migrants, mainly from the depressed rural interior of Minas Gerais, sustained an annual compound rate of population growth of 6.5% in the period 1950-1970. The CEDEPLAR-PLAMBEL (C-P) survey provides information on the labor-market behavior and socio-demographic attributes of 3 600 households in this rapidly growing metropolitan area.

According to the C-P survey, open unemployment was 9.8% in metropolitan Belo Horizonte in November 1972.[20] The compositional features of open unemployment are in broad agreement with those found at the national level, with higher unemployment rates among females, young workers and individuals who completed primary and secondary education (tables 5 and 6). However, the inverted U-shaped curve is not observed in the case of secondary family members. For this group, although the unemployment rate is

20 The C-P definition of unemployment differs from the PNAD measure in two ways. First, the labor force includes individuals of 14 years and over, whereas the PNAD survey covers those of 10 years or more. Secondly, no check is made to verify whether the person took positive steps to find a job in the two previous months.

markedly lower at the university level, no clear pattern emerges in relation to the other educational categories. This strongly suggests that the inverted U-shaped curve arises primarily from the higher average age of heads of households vis-à-vis secondary family members. With the recent expansion of the education system, the educational level of the young workers now entering the labor market exceeds the average attained by the labor force as a whole. This factor will distort analyses of unemployment and education unless age is explicitly taken into account.

Table 5

Structure of Open Unemployment and Personal Characteristics, Belo Horizonte, 1972

(%)

Variable	All Family Members			Secondary Family Members		
	Total	Males	Females	Total	Males	Females
Sex						
Males	52.1	—	—	51.4	—	—
Females	47.9	—	—	48.6	—	—
Household Position[a]						
Heads	4.9	6.2	3.6			
Wives	4.7	—	7.7			
Other	90.4	93.8	88.7			
Education						
Illiterate	4.5	4.0	5.0	4.5	4.3	4.7
Primary: Incomplete	16.9	19.9	13.8	14.7	16.6	12.8
Primary: Complete	37.7	44.1	30.4	38.3	45.1	30.9
Secondary	39.9	32.0	48.7	41.5	34.1	49.6
University	1.0	—	2.0	1.0	—	2.1
Age						
14 – 17	31.5	36.5	26.2	33.1	39.0	27.1
18 – 24	49.6	48.2	50.8	51.4	50.4	52.2
25 – 34	11.6	8.7	14.9	10.0	6.3	13.9
35 and Over	7.3	6.6	8.2	5.5	4.3	6.8
Origin						
Nonmigrants	55.1	62.9	46.8	56.2	63.8	48.0
Migrants	44.9	37.4	53.2	43.8	36.2	52.0
Total (Each Variable)	100.0	100.0	100.0	100.0	100.0	100.0

Source: CEDEPLAR-PLAMBEL survey (C-P file).

[a] Domestic servants are classified as heads of single households.

Table 6

Rates of Open Unemployment and Personal Characteristics, Belo Horizonte, 1972

(%)

Variable	All Family Members			Secondary Family Members		
	Total	Males	Females	Total	Males	Females
Household Position[a]						
Heads	.9	.8	1.3			
Wives	6.0		6.0			
Other	21.9	20.8	23.2			
Education						
Illiterate	6.3	5.7	6.8	22.2	30.0	17.4
Primary: Incomplete	6.8	6.3	7.8	18.6	21.1	16.1
Primary: Complete	12.8	11.3	14.6	24.7	26.0	22.6
Secondary	12.0	8.4	17.2	19.6	18.2	20.8
University	1.3		3.8	2.9		4.4
Age						
14 - 17	34.0	37.0	30.3	39.4	38.7	40.4
18 - 24	17.6	16.7	18.5	22.5	20.3	25.2
25 - 34	4.3	2.6	7.7	8.5	5.9	10.9
35 and Over	1.9	1.3	3.4	7.4	18.0	5.3
Origin[b]						
Nonmigrants	15.7	14.9	16.9	25.1	27.1	22.6
Migrants	6.7	4.6	10.3	15.8	15.0	16.5
Total	9.8	8.1	12.6	20.0	21.0	18.9

Source: C-P file.

[a] Domestic servants are classified as heads of single households.

[b] The data on origin refer to life-time migration.

As at the national level, the structure of unemployment in Belo Horizonte shows a high concentration by education and age group, with 55% of the unemployed in the two primary education categories and 81% in the 14-24 age group (table 5). The unemployment rates of 34% and 18% in the 14-17 and 18-24 age groups provide a sharp contrast to the 1.9% rate for workers of 35 years or more. The importance of position in the household is striking, as can readily be seen from the .9% unemployment rate for heads of household and the 20% rate for secondary family members.[21] Indeed, the phenomenon of open unemployment is restricted principally to secondary family members, suggesting that analyses which focus on aggregate unemployment rates for all family members are likely to produce misleading results. Accordingly, the remaining sections

[21] Among the secondary members of the family, wives had a lower rate of unemployment (7.4%) than the other members (21.9%). Unfortunately, the size of the sample does not allow disaggregation of unemployment by personal characteristics for wives and other family members separately.

of the paper are addressed to the problem of open unemployment of secondary family members alone.

The gravity of the social problems posed by open unemployment in Belo Horizonte can be inferred from its pronounced incidence among members of poorer families. Over 50% of unemployed secondary family members are dependents in households whose total income is below Cr$ 537 per month, approximately US$ 88 at November 1972 prices (table 7). This point is reinforced when unemployment rates for dependents are cross-tabulated with per capita monthly family income, as shown in table 8.[22] In households where this income is Cr$ 68 or less, that is, 25% of the regional monthly minimum wage officially established for Belo Horizonte, unemployment among secondary family members reaches the alarming rate of 48.5%. The concentration of open unemployment in poorer households at the lower end of the urban-income distribution is again emphasized by evidence that over 70% of the unemployed belong to families with a per capita monthly income of Cr$ 134, less than half the official monthly minimum wage (table 7). The association between family income and the probability of unemployment of secondary family members is examined more rigorously below in the logit analysis of the C-P survey data.

Table 7

Structure of Open Unemployment by Sex and Family Income, Belo Horizonte, 1972

(%)

Variable	All Family Members			Secondary Family Members		
	Total	Males	Females	Total	Males	Females
Total Family Income						
Cr$ 268 or Less	17.5	21.5	13.2	15.2	18.4	12.0
Cr$ 269 - 536	34.2	34.4	33.8	34.7	35.6	33.5
Cr$ 537 - 1 072	24.2	26.7	21.6	25.2	28.0	22.4
Cr$ 1 073 - 1 875	15.2	10.2	20.7	15.7	10.9	21.0
Cr$ 1 876 or More	8.9	7.2	10.7	9.1	7.1	11.2
	100.0	100.0	100.0	100.0	100.0	100.0
Per Capita Family Income						
Cr$ 68 or Less	46.9	52.6	40.6	48.5	51.5	40.0
Cr$ 69 - 134	26.9	26.1	28.0	27.0	26.3	27.9
Cr$ 135 - 268	17.8	16.5	18.8	18.5	17.6	19.0
Cr$ 269 - 536	6.9	3.2	10.8	6.9	2.8	11.2
Cr$ 537 or More	1.7	1.6	1.7	1.7	1.7	1.8
	100.0	100.0	100.0	100.0	100.0	100.0

Source: C-P file.

[22] Although young children and adults receive the same weight, the per capita measure of family income is considered adequate for simple descriptive purposes.

Table 8

Rates of Unemployment by Sex and Family Income,[a] Belo Horizonte, 1972
(%)

Variable	All Family Members			Secondary Family Members		
	Total	Males	Females	Total	Males	Females
Total Family Income						
Cr$ 268 or Less	11.9	22.0	6.6	53.3	61.9	43.5
Cr$ 269 – 536	15.4	11.6	24.0	37.9	42.5	33.7
Cr$ 537 – 1 072	9.6	7.8	13.8	18.6	19.7	17.4
Cr$ 1 073 – 1 875	8 1	4.5	14.2	12.7	0.2	10.1
Cr$ 1 876 or More	4.3	2.7	7.1	7.4	6.9	7.8
Per Capita Family Income						
Cr$ 68 or Less	25.3	22.6	30.6	48.5	54.0	42.8
Cr$ 69 – 134	10.9	7.8	18.0	21.1	18.7	24.2
Cr$ 135 – 268	7.4	5.5	10.8	13.8	13.4	14.0
Cr$ 269 – 536	4.1	1.7	7.2	8.4	4.3	11.1
Cr$ 537 or More	.9	.9	1.0	2.8	3.9	2.2
Total	9.8	8.1	12.6	20.0	21.0	18.9

Source: C-P file.
[a] The official minimum monthly wage for Belo Horizonte at the time of the PLAMBEL survey in November 1972 was Cr$ 268.

3.3 – The C-P employment data: a logit analysis

Logit analysis is a statistical technique which analyzes the effect that different explanatory variables have on the probability of some event. In the present case, we have a dichotomous dependent variable, Yi, that takes on the values zero or one if a person is employed or unemployed, respectively. If the probability of being unemployed, $P(Yi = 1)$, is assumed to depend on a vector of explanatory variables, Xi, logit analysis can be used to estimate the model: $P(Y_i = 1) = F(X'_i\beta)$, where the transformation $F(.)$, denotes the cumulative distribution function (cdf) of the standardized logistic distribution. That is, $P(Yi = 1) = [1 - EXP(X'_i\beta)]^{-1}$. The logistic transformation, in addition to its algebraic simplicity, has a cdf that gives numerical results which are close to the cdf of a normal distribution.[23] This model is estimated using maximum-

[23] The difference between the normal and logistic cumulative distribution functions is slight, except at the extremes. See, for example, W. D. Ashton, *The Logit Transformation* (New York: Hafner, 1972). A comprehensive discussion of applications of logistic analysis in the social sciences is given by M. Nerlove and S. J. Press, *Univariate and Multivariate Log Linear and Logistic Models*, R-1306-EDA/NIH (Santa Monica: The Rand Corporation, 1973). For a recent review, see D. McFadden, "Conditional Logit Analysis of Qualitative Choice Behaviour," in *Frontiers of Econometrics*, ed. P. Zarembka (New York: Academic Press, 1974), pp. 105-42.

likelihood methods. Here we use logit analysis to investigate relationships between selected socio-demographic variables and the probability of unemployment.

Some brief comments on the statistical and definitional problems of the variables used in the analysis are necessary before we turn to the results.

(a) *Sex.* Dummy variables with the value of one and zero for males and females, respectively, are used.

(b) *Origin.* The dummy variables for migrants and non-migrants have values of one and zero, respectively.

(c) *Education.* Either the number of years of schooling[24] or a set of dummy variables is used to account for possible non-linearities or discontinuities in the function. Dummies are used for incomplete primary, complete primary, secondary and university education. Since the dummy for illiteracy is the variable excluded, the coefficients of the education variables relate to the additional probability (over illiterates) associated with a given level of schooling or educational attainment.

(d) *Age.* This is measured by years of age. A quadratic of this variable is used in some estimates to allow for nonlinearities related to life-cycle expectations of unemployment.

(e) *Income.* The use of total family income is precluded by its close correlation with the employment situation of family members. Even in the absence of any association between family social background and wealth and the probability of unemployment, we would still expect to find a strong correlation for the simple reason that families with unemployed members tend to have lower income, *ceteris paribus.* To avoid this problem, we measure income by the sum of earnings of other family members, i. e. by the family's non-wage income. This measure also presents simultaneity problems and clearly must be treated circumspectly. The unemployment of one or more members will affect family income and so influence family labor-supply decisions, since the other family members are likely to attempt to compensate for the consequent loss of income. This income effect will give a bias towards a positive

[24] As the information in the C-P file is by course rather than by years of schooling, we assigned values to each level equivalent to the number of years formally required to reach each one. The values for each level are: illiteracy (0), incomplete primary (2), complete primary (4), incomplete secondary, first cycle (6), complete secondary, first cycle (8), incomplete secondary, second cycle (9.5), complete secondary, second cycle (11), incomplete university (13), complete university (15).

relationship between unemployment and the earnings of other family members.[25]

(f) *Family size.* This variable is included for two reasons. First, if income is to serve as a measure of relative poverty, it must be related to family size and, secondly, some control for "voluntary" unemployment is needed. Larger families with more children are likely to attach greater value to work in the home, and secondary family members can be expected to conduct job search less intensively and be more selective in terms of market work schedules.

3.4 — Results

Estimates of logit functions for all secondary family members, males, and females are shown in tables 9, 10 and 11, respectively.

The estimated logit coefficients and respective *t*-ratios (based on asymptotic standard errors) are shown in the odd-numbered columns of each table.[26] The effect of a unit change (calculated at the mean) in each explanatory variable on the probability of unemployment is presented in the even-numbered columns. The likelihood-ratio statistic for the test of the hypothesis $Ho{:}Bj = 0$ for all $j = 1, 2 \ldots$ (corresponding to all explanatory variables) is also presented.[27] As these statistics are highly significant in all equations, the hypothesis *Ho* is rejected. Coefficients with a negative sign indicate an inverse relationship between the associated variables and the probability of unemployment, *ceteris paribus.* The four versions of the logit functions are distinguished by the inclusion of a quadratic term for age (columnns 3 and 7) and the use of dummies rather than number of years of schooling as the educational variables (columns 5 and 7).

If we turn first to the results for both sexes (table 9), the negative coefficient of the dummy variable for males suggests that females do face discrimination in the labor market. The marginal

25 This bias is likely to be of minor importance since the analysis of unemployment is concerned with secondary family members alone. Moreover, an earlier study of the C-P data indicates that the supply of labor of heads of household, the principal source of family earnings, is relatively inelastic. D. Oliveira, "Estimating a Labour Supply Function, the Case of Brazil," Working Paper, Centre for the Economics of Education, The London School of Economics and Political Science, 1975.

26 The *t*-ratios, which are shown in parentheses below the estimated logit coefficients, have a normal distribution given the size of the sample.

27 This statistic has a chi-square distribution with as many degrees of freedom as the number of exogenous variables.

Table 9

Logit Analysis: Probability of Unemployment of Secondary Family Members of Both Sexes

Variable	Average or Proportion	Logit Coefficient (1)	Marginal Effect[a] (2)	Logit Coefficient (3)	Marginal Effect (4)	Logit Coefficient (5)	Marginal Effect (6)	Logit Coefficient (7)	Marginal Effect (8)
Sex (Males = 1)	.487	−.3577***	−.0501	−.3557***	−.0385	−.2805***	−.0385	−.2845***	−.0343
		(3.60)		(3.53)		(2.84)		(2.85)	
Years of Schooling	5.853	−.1175***	−.0165	−.1045***	−.0113				
		(6.10)		(5.37)					
Primary: Incomplete	.164					−1.0588***	−.1455	−.9581***	−.1156
						(3.35)		(3.09)	
Primary: Complete	.317					−.0781***	−.1344	−.8376***	−.1010
						(3.19)		(2.79)	
Secondary	.431					−1.1804***	−.1622	−1.0247***	−.1236
						(3.82)		(3.38)	
University	.056					−2.7427***	−.3708	−2.4801***	−.2991
						(4.59)		(4.17)	
Age	24.854	−.1006***	−.0141	−.2455***	−.0131	−.1031***	−.0142	−.2530***	−.0149
		(11.53)		(10.33)		(11.30)		(10.62)	
Age Squared				.0025***				.0026***	
				(7.26)				(7.58)	
Income of Other Family Members[b]	1.104	−.1910***	− 0208	−.1781***	−.0193	−.2714***	−.0373	−.2450***	−.0297
		(2.94)		(2.80)		(4.05)		(3.75)	
Family Size	7.014	.0310*	.0043	.0253	.0027	.0368**	.0551	.0297*	.0036
		(1.89)		(1.52)		(2.24)		(1.78)	
Origin (Migrant = 1)	.470	−.4101***	−.0575	−.4107***	.0444	−.3824***	− 0525	− 3845***	−.0464
		(4.10)		(4.06)		(3.81)		(3.78)	
Constant Term		1.9686***		3.7818***		2.4509***		4.2609***	
		(6.98)		(9.33)		(5.88)		(8.51)	
Likelihood Ratio Test(λ)		370.4		404.4		362.2		399.68	
		(6.00)		(7.00)		(9.00)		(10.00)	
Number of Observations		1900		1900		1900		1900	

[a] Evaluated at sample means.
[b] Income figures in Cr$ 1 000.
* Significant at the 90% level.
** Significant at the 95% level.
*** Significant at the 99% level.

Table 10

Logit Analysis: Probability of Unemployment of Male Secondary Family Members

Variable	Average or Proportion	Logit Coefficient (1)	Marginal Effect (2)	Logit Coefficient (3)	Marginal Effect (4)	Logit Coefficient (5)	Marginal Effect (6)	Logit Coefficient (7)	Marginal Effect (8)
Years of Schooling	5.315	−.1430*** (4.58)	−.0196	−.1270*** (4.04)	−.0159				
Primary: Incompleto	(.186)					−1.1624** (2.29)	−.1721	−1.0324**	−.1029
Primary: Complete	(.381)					− .8390* (1.70)	−.1243	−.6480 (1.36)	−.1024
Secondary	(4.10)					− 1.4538*** (2.80)	−.2152	−1.2632*** (2.62)	−.1993
University	•								
Age	22.434 (22.37)	−.1108*** (7.32)	−.0152	−.2926*** (8.61)	−.0181	−.1174*** (7.55)	−.0174	−.3102*** (8.73)	−.0242
Age Squared	503.28 (500.44)			.0033*** (7.00)				.0035*** (7.08)	
Income of Other Family Members	1.054 (.976)	−.2617*** (2.51)	−.0358	−.2627*** (2.62)	−.0328	−.2890*** (2.68)	−.0426	−.2763*** (2.63)	−.0436
Family Size	7.405 (7.49)	.0170 (.80)	(.0024)	.0138 (.64)	(.0017)	.0151 (.66)	(.0022)	.0098 (.42)	.0015
Origin (Migrant = 1)	.423 (.421)	−.6886*** (5.19)	−2.0942	−.7096*** (5.20)	−.0887	−.6638*** (4.60)	−.0983	−.6816*** (4.64)	−.1075
Constant Term		2.1814*** (5.49)		4.3919*** (7.87)		2.8072*** (4.41)		5.0448*** (6.70)	
Likelihood Ratio Test (λ)		178.7 (5.00)		207.1 (6.00)		160.2 (7.00)		191.4 (8.00)	
Number of Observations		928		928		881		881	

Notes: See table 9. The averages or proportions shown in parentheses refer only to the subsample that excludes those with university education.

Table 11

Logit Analysis: Probability of Unemployment of Female Secondary Family Members

Variable	Average or Proportion	Logit Coefficient (1)	Marginal Effect (2)	Logit Coefficient (3)	Marginal Effect (4)	Logit Coefficient (5)	Marginal Effect (6)	Logit Coefficient (7)	Marginal Effect (8)
Years of Schooling	6.365	−.0973*** (3.94)	−.0133	−.0886*** (3.55)	−.0119				
Primary: Incomplete	.150					−.8524** (2.25)	−.1127	−.8728** (2.14)	−.0999
Primary: Complete	.271					−1.1364*** (2.84)	−.1503	−1.0662*** (2.70)	−.1220
Secondary	.466					−.8714** (2.19)	−.1153	−.7784** (1.98)	−.0891
University	.071					−2.1123*** (3.26)	−.2794	−1.9318*** (2.98)	−.2211
Age	27.156	−.0959*** (8.90)	−.0131	−.2001*** (6.07)	−.0143	−.0962*** (8.47)	−.0127	−.2158*** (6.29)	−.0123
Age Squared	1.270			.0019*** (3.71)				.0020*** (3.98)	
Income of Other Family Members	1.270	−.1453* (1.75)	−.0198	−.1310 (1.60)	−.0716	−.2743*** (3.09)	−.0363	−.2490*** (2.83)	−.0285
Family Size	6.639	.0525** (2.18)	.0072	.0460* (1.89)	.0062	.0617** (2.58)	.0082	.0535** (2.19)	.0061
Origin (Migrant = 1)	.515	−.1219 (.86)	−.0166	−.1101 (.77)	−.0148	−.0803 (.56)	−.0106	.0706 (.48)	.0081
Constant Term		1.4217 (3.79)		2.8804*** (5.00)		1.8614*** (3.38)		3.3812*** (4.87)	
Likelihood Ratio Test (λ) (Degrees of Freedom)		200.2 (5.00)		209.5 (6.00)		200.1 (8.00)		210.9 (9.00)	
Number of Observations		972		972		972		972	

Notes: See table 9.

effect indicates that males have a 3.4-5% lower probability of being unemployed than females, other things being equal.

As the high t-ratios demonstrate, age is an extremely significant variable for all three groups (tables 9-11). Moreover, the quadratic term of the age variable is significant in all versions where it is used. The effect of this term is more pronounced in the case of males, where its introduction also raises the significance of the nonquadratic term. This result lends support to the hypothesis that there is a nonmonotonic relationship between age and the probability of unemployment. The respective signs of the quadratic and nonquadratic terms for age suggest that, although the probability of unemployment diminishes as age increases, a point is subsequently reached where this relation is reversed.[28] The marginal effect of age on unemployment is also slightly larger for males (1.5-2.4%) than females (1.2-1.4%).

The education variable, when defined as the number of years of schooling, contributes significantly to all the functions estimated, and the negative coefficients indicate that the probability of unemployment declines with education. Differences between males and females in the marginal effect of further years of schooling on the probability of unemployment are slight. Substitution of the four dummy variables for years of schooling does not modify these results, and, in general, both males and females with education are less likely to be unemployed than illiterate workers. However, there are indications that this relation is not monotonic with rising levels of education. Thus, for females, secondary education contributes relatively less to reducing the probability of unemployment than the attainment of other educational levels.

In the case of males, the absence of unemployment among university graduates complicates the use of dummy education variables. The absolute value of the dummy for university education will tend toward infinity, posing a serious problem of nonconvergence for our iterative maximum likelihood computing method. In such cases, the solution involves partitioning the sample by the offending variable, as Nerlove and Press have shown.[29] Accordingly, the estimates in columns (5) and (7) of table 10 are obtained by excluding university graduates from the sample. The estimated probability function is consequently conditioned on the event that males do not have university education. The dummy education variables for males again imply a negative but nonmonotonic relation between levels of education and the probability of unemployment. The dum-

[28] The minimum points of these functions, where the probability of unemployment begins to rise directly with age, were calculated as approximately 45 and 54 years for males and females, respectively.

[29] Nerlove and Press.

my for completed primary education is less significant than the other education dummies; moreover, the variable has a lower marginal effect on the probability of unemployment than the dummy for incomplete primary education.[30]

It is evident that the coefficients of the education variables are generally less significant when dummies are used rather than years of schooling. These differences could well be due to multicollinearity between the income variables and the dummy education variables.[31] Since the educational level of individual family members is likely to be strongly correlated, we would expect a relatively high correlation between the educational status of one member and the combined earnings of other family members. With this caveat, the results reveal an inverse relation between education and the probability of unemployment. This conclusion emerges more clearly when education is defined as years of schooling. In general terms, the evidence for Belo Horizonte gives qualified support to a bumping-down model of the labor market.

The income variable has uniformly negative coefficients, despite the positive bias introduced by the simultaneity problems discussed earlier. These results suggest that socio-economic status, taking family income as a proxy, influences the probability of unemployment. Despite some multicollinearity in relation to age and education, the income variable is significant at the 10% level in all but one equation. This problem becomes more evident when the quadratic term for age is introduced and probably reflects the tendency for members of poorer families to enter the labor force at a younger age, when the probability of unemployment is greater.[32]

The variable for family size is only significant for female secondary family members, and the positive coefficient suggests that there is some voluntary unemployment in this group. Conversely, this variable is clearly negligible in the case of males, possibly due to their more limited role in domestic work, particularly child care.

The data on migration refer to life-time migrants and thus tend to be biased by the inclusion of the "survivors" of the migratory process. With this strong qualification, the uniformly negative

30 The marginal effects of complete and incomplete primary education are 12.4% and 17.2%, respectively (table 10, column [6]).

31 This seems to be particularly so for females, where the introduction of dummy education variables is accompanied by relatively marked increases in the significance of the income variable (table 11).

32 Of the 14-17 year age group in the labor force, 42.4% has a per capita family income of one-quarter of the minimum wage for Belo Horizonte. This proportion rises to 75.3% if a per capita family income of one-half or less of the official minimum is considered.

variable conflicts with the assumption that migrants are less well-informed about employment opportunities and have greater difficulty in finding jobs than nonmigrants. This hypothesis needs more rigorous analysis using data which distinguish the length of time that migrants have participated in urban labor markets. Finally, whereas the migration variable is highly significant for males, with a strong negative marginal effect on the probability of unemployment (9-10%), this is patently not so for females. This result is puzzling and requires clarification.

4 — Conclusions

The institutional structure of urban labor markets makes it imperative to qualify the low rates of unemployment observed in Brazil. Moreover, comparison with unemployment in advanced economies is hazardous since institutional differences strongly influence relative private costs of unemployment.

The PNAD and C-P surveys both reveal that open unemployment is an important dimension of the overall problem in Brazil. However, in the absence of effective unemployment insurance and family-income-maintenance systems, the incidence of open unemployment is primarily restricted to young secondary family members. The evidence on this point is overwhelming, even when allowance is made for the probable existence of some "voluntary" unemployment in this group.[33] This recommends that analyses of urban unemployment in developing countries distinguish between the labor-market behavior of heads of households and secondary family members.

The empirical estimates for Belo Horizonte broadly confirm conventional theoretical statements concerning the relationships between unemployment and the socio-demographic attributes of the labor force.

With other variables held constant, age easily emerges as the most significant variable, and there is some evidence that the relation with unemployment is nonlinear. This finding is consistent with the high unemployment rates of young workers. This problem seems particularly acute for members of poorer households, presumably because they tend to enter the labor force at a younger age.

[33] The term "voluntary" unemployment is used here to indicate that the intensity with which individuals look for work varies. This reveals one of the main limitations of conventional measures of "involuntary" unemployment. For the empirical measurement of unemployment to more closely approximate theoretical concepts, it would be necessary to incorporate some measure of the intensity of job search. This problem is particularly troublesome in the case of survey data, as claims related to job search are virtually impossible to verify.

Rising rates of juvenile crime and vagrancy in the major urban centers offer harsh testimony to the neglect of youth employment issues in Brazil.

The concentration of unemployment among low-income families is reflected in our estimates, which yield a strong inverse relationship between unemployment and family income, *ceteris paribus,* with uniformly negative coefficients. Migrants do not appear to be at a competitive disadvantage with nonmigrants in the Belo Horizonte labor market, though this result is severely qualified by the use of life-time migration data.

The PNAD and C-P surveys offer interesting evidence on the relation between unemployment and education. At first glance, both sources suggest that an inverted U-shaped curve describes the relationship between unemployment rates of the total labor force (including secondary family members) and the level of education, with the highest unemployment rates occurring among workers in the secondary education category. Such a finding would provide *prima facie* evidence for a model of the labor market with a rigid wage structure and also be consistent with the view that the education system alienates educated workers from manual, unskilled jobs. However, the estimates for Belo Horizonte show convincingly that this interpretation is unwarranted. The inverted U-shaped curves seem to derive primarily from the growth of the public-education system since the mid-1960s. The level of education of workers in the younger age groups, where the incidence of unemployment is heavily concentrated, exceeds the average of the total labor force. Furthermore, the results of the logit analysis yield an inverse relation between unemployment and education. This is consistent with a bumping-down, flexible-wage-structure model and accords with our expectations about urban labor-market behavior.

The broader significance of this analysis arises from the evidence of two striking features of urban labor markets in Brazil: the concentration of open unemployment among young secondary family members, and, within this group, the significantly higher unemployment rates of workers from low-income households. In Belo Horizonte, 75% of the unemployed secondary family members come from households with per capita monthly family incomes of one-half the official monthly minimum wage or less. This wage is frequently regarded as the official poverty line or threshold. The post-1972 decline in economic growth has disturbing implications both in terms of the magnitude of open unemployment and its differential impact on young workers from poor families. On the evidence for Belo Horizonte, it is likely that Brazil's major industrial conurbations will face mounting problems of youth unemployment, which already constitutes an important dimension of urban poverty.

Brazilian public foreign debt policy, 1931-1943 *

Marcelo de Paiva Abreu

> "We shall never be able to move again unless we can free our limbs from these paper shackles."
>
> — J. M. Keynes

1 — Introduction

This is a shortened version of a longer paper on the Brazilian policy concerning foreign-held public debt during Vargas' first period of government, and on the successive negotiations between 1931 and 1943 to reduce the service on this debt.[1]

During the thirties and early forties, one of the major problems facing economic policymakers in Brazil was how to deal with the public foreign debt. On the one hand, measures had to be taken to smooth the adjustment of the economy as a whole to the almost complete cessation of the substantial inflow of foreign capital which had characterized the earlier period. On the other hand, ways to service the outstanding debt had to be chosen, given the chronic scarcity of foreign exchange.

This paper is basically an evaluation of the latter set of policies. The second section is mainly a definition of the public foreign debt problem in 1931. The third traces the negotiations between 1931 and 1943, as well as assessing their results from the

* While writing the first version of this paper, which was presented at the Symposium on Foreign Investment and Foreign Finance in Latin America held in Cambridge in June 1974, the author was on leave from IPEA to do graduate work at Clare Hall and the Faculty of Economics and Politics, University of Cambridge. He held a technical assistance fellowship from the Overseas Development Administration for part of the period during which research in the Public Record Office was undertaken. He thanks Mr. W. Fritsch, Mr. A. Sochaczewski, Dr. B. Van Arkadie and Dr. J. Wells for their comments on a preliminary version of this paper.

1 By public foreign capital is meant the foreign-currency bonds floated by Brazilian public authorities and held by private foreign nationals. It does not include direct government financing during the Second World War.

point of view of the three main parties: Brazil, Great Britain and the United States. Some consideration is also given to Anglo-American rivalry in this field and to its impact on Brazilian policy.[2] The fourth section is an attempt to judge Brazilian foreign-debt policy for the period as a whole and to relate it to internal economic conditions. The consequences of the 1937 total default are examined in some detail. The last section is more speculative than the rest of the paper because of the scarcity of useful literature on the domestic economy of the day.

The major primary sources were the records of the Foreign Office and the Treasury papers deposited in the Public Record Office, and the surviving records of the Corporation of Foreign Bondholders (CFB). Since Brazilian and American primary sources were not used — except for the State Department documents printed in *Foreign Relations of the United States* — it is likely that the paper suffers from excessive reliance on British sources.

2 — Sources of public foreign capital

Britain's dominance as supplier of capital to the Brazilian authorities was challenged only after the First World War. Between 1915 and 1930, Brazilian public loans placed in London amounted to £ 54.3 million, while those placed in New York totaled £ 86.5 million. The American contribution was larger than the British at all levels (federal, state and *município*) except in the case of coffee loans, where the British stake was more than three times the American, since the U. S. government held coffee valorization to be against the American national interest.[3]

2 The participation of the French in the negotiations is not dealt with because franc loans accounted for a small proportion of the total Brazilian debt. In addition, the Brazilian government considered the French defeat in 1940 sufficient reason not to resume service payments and to leave a new settlement until after the war. On this, see Ministério da Fazenda (MF), *Dívida Externa: Compromissos Brasileiros em Francos, 1888-1957*, Finanças do Brasil, vol. 20 (Rio de Janeiro, 1957).

A description of the negotiations (up to the outbreak of the war) from an American point of view is that by D. Giffin, "The Normal Years: Brazilian-American Relations, 1930-1939" (Ph. D. dissertation, Vanderbilt University, 1962), chap. 3. However, only American sources, and primarily the documents printed in U. S., Department of State, Foreign Relations of the United States (FRUS) are used.

3 In 1925, for instance, the State Department informed American bankers that it would not approve a bond issue for the state of São Paulo which was to be sold in New York. See B. H. Williams, *Economic Foreign Policy of the United States* (New York: McGraw-Hill, 1929), pp. 94 and 400-403. British reluctance to supply capital to increase coffee stocks was limited to Rothschilds' refusal to become involved with the first valorization loan. After the war, Schroeders and Lazards were heavily engaged in coffee loans.

At the end of 1930, British loans still accounted for 64.5% of the total outstanding Brazilian public foreign debt. American loans answered for 30.3%, and French loans for most of the residual (see table 1). The continued British preeminence[4] — in stock

Table 1

Nominal Outstanding Public Foreign Debt, 1929-1945[a]

(£ Million)

Year	Sterling Loans	Dollar Loans	Franc Loans	Guilder Loans	Total
1929	153.2	70.9	12.4	1.0	237.5
1930	163.0	76.6	12.4	.9	252.9
1931	156.7	107.6	17.6	1.1	283.0
1932	154.8	109.5	18.0	1.0	283.3
1933	161.2	73.9	19.7	1.0	255.8
1934	162.2	76.1	22.8	1.1	262.4
1935	160.4	75.2	22.5	1.2	259.3
1936	157.9	74.5	16.0	.9	249.3
1937	156.4	71.4	11.4	.9	240.1
1938	156.3	76.4	9.4	1.0	243.1
1939	156.3	90.7	9.5	1.1	257.6
1940	152.7	82.5	3.5	.6	239.3
1941	150.8	78.9	3.5	.6	233.8
1942	146.7	75.5	3.5	.6	226.3
1943	145.0	71.4	3.5	.6	220.5
1944	119.5	59.5	3.5	.6	183.1
1945	110.9	54.3	3.5	.6	169.3

Sources: Ministério da Fazenda (MF), *Dívida Externa, 1824-1945*, Finanças do Brasil, vol. 19 (Rio de Janeiro, 1955); League of Nations, *Statistical Yearbook*, various years; *Monthly Bulletin* 27 (June 1946): 253.

[a] Since the figures were converted to pounds sterling, year-to-year variations in the outstanding debt may be the result of real variations in the debt itself, of exchange-rate variations (i.e. sterling in relation to other currencies), or of both.

[4] A few sterling loans were floated not in London, but in other European financial centers; however, the share of the latter in the total debt was negligible. On the other hand, many sterling bonds were held outside Britain, notably in Portugal, where Brazilian bonds amounting to at least £ 15 million (nominal) and possibly £ 50 million (nominal) were held in the early thirties. See J. E. Dias Costa, *A Moratória Brasileira e a Economia Nacional* (Lisbon, n. d.), p. 2; A. C. Miranda, *O Brasil: As Suas Dívidas Externas e os Interêsses Portugueses* (Porto, 1934), p. 18. Thus, while the interchangeable use of the terms "sterling loans" and "British loans" is not strictly accurate, it is acceptable since the non-British sterling bondholders had no say in the negotiations. Despite the presence of a representative of the Portuguese bondholders in 1934, the Brazilian government tended to agree with a leading British official that "nobody need take the Portuguese seriously". Niemeyer to Waley, 15 March 1934, Foreign Office (FO) 371/17481, A2214/147/6.

terms — is explained by the relatively longer terms of the British loans, and by Brazil's suspending amortization of loans covered by the 1898 funding loan from 1898 to 1910 and of loans included in the 1914 funding loan from 1914 to 1927.

The fact that the amount owed to Britain was more than twice that owed to the United States, at a time that Britain was declining as a trade partner of Brazil,[5] is of paramount importance to a full understanding of Anglo-American rivalry in Brazil during the thirties. While the Americans tended to adopt a relatively conciliatory stand regarding financial negotiations and to concentrate on maintaining their position as Brazil's major trade partner, the British were relatively resigned to their waning commercial importance. This became especially clear after the Ottawa Conference of 1932; Britain left very little room for concessions to Brazilian imports and sought to maximize Brazilian financial payments.

The British position was also quite different from the American in another respect. The British had a more important stake in the better-secured federal and coffee loans.[6] Moreover, their loans generally carried lower rates of interest and lighter sinking-fund provisions than the American loans contracted in the twenties. This is clear from the data presented in table 2. In 1930, the service (interest plus amortization) on American loans corresponded to more than 35% of the total debt service, but the American share of the total outstanding debt was only 30.3%.[7] These imbalances were to become major sources of conflict between the creditors during the ensuing negotiations.

5 Britain's share of Brazilian imports declined from roughly 30% in the first decade of the century to 20% by the late twenties, while its share of exports fell from 20 to 5%.

6 In 1930, the British stake was 71.6% of the outstanding federal debt, 47.1% of the state debt, 42.5% of the *município* debt, and 78.2% of the coffee debt.

7 The conventional studies of the Brazilian public foreign debt, in restricting analysis to outstanding debt and legislation, do not pay due attention to the flow of payments over time. See MF, *Dívida Externa, 1824-1945,* Finanças do Brasil, vol. 19 (Rio de Janeiro, 1955); and C. Souza Lemos, *Dívida Externa: Andlise, Legislação e Documentos Elucidativos* (Rio de Janeiro: Imprensa Nacional, 1946). Some other studies are based on unreliable data. D. Avramovic, for example, uses information on theoretical rather than actual service in *Debt Servicing Capacity and Post-War Growth in International Indebtedness* (Baltimore: The Johns Hopkins Press, 1958).

British suspicion concerning the banking methods prevalent in New York during the late twenties was not groundless. With regard to the quality of the foreign bonds issued in the United States over the decade, Mintz suggests that "a large number of foreign loans ... were mistaken *ex ante*, i. e. had they been carefully weighed in the light of then prevailing conditions they would never have been granted". See I. Mintz, *Deterioration in the Quality of Foreign Bonds Issued in the United States, 1920-1930* (New York: National Bureau of Economic Research, 1951), passim.

Table 2

Public Foreign Debt Service, 1929-1945[a]

(£ Million)

Year	Sterling Loans	Dollar Loans	Franc Loans	Guilder Loans	Total
1929	10.5	6.4	.1	.2	17.3
1930	12.0	7.0	.5	.2	19.7
1931	10.4	9.0	.7	.3	20.4
1932	4.7	1.9	—	.1	6.8
1933	4.7	1.1	.4	—	6.2
1934	3.8	1.6	1.6	—	7.1
1935	4.6	2.4	.4	—	7.5
1936	5.0	2.7	.3	—	7.9
1937	5.3	3.0	.2	—	8.5
1938	—	—	—	—	—
1939	—	—	—	—	—
1940	2.0	1.4	—	—	3.4
1941	2.4	1.6	—	—	4.1
1942	2.5	1.5	—	—	4.0
1943	2.4	1.5	—	—	3.9
1944	11.2	7.6	—	—	18.8
1945	6.5	4.3	—	—	10.8

Sources: *1929-1937*: MF, *União, Estados e Municípios* (Rio de Janeiro, 1938). *1938-1945*: Instituto Brasileiro de Geografia e Estatística (IBGE), *Anuário Estatístico do Brasil*, various years. *Exchange rates*: League of Nations, *Statistical Yearbook*, various years.

[a] It is not clear whether these data include the special redemptions (totaling £ 6.1 million and US$ 22.2 million at nominal values) reported in the *Retrospecto Comercial do Jornal do Commercio* between 1940 and 1943.

By early 1931, Brazil had completely exhausted its gold and foreign-exchange reserves, and accumulated an overdraft of £ 6.5 million with Rothschilds. It was therefore obvious that the country could not continue full service on the foreign debt, as this would absorb an intolerably large share of the "total inflow" (as defined in table 3 below), even disregarding the likely flight of private foreign capital. Thus, service payments had to be adjusted to the

Table 3

Public Foreign Debt and Selected Data on the Brazilian Balance of Payments, 1925-1945[a]

(£ Million)

Year	Debt Service (A)	Trade Balance[b] (B)	Net Amount of New Loans (C)	Net Inflow Related to Public Foreign Debt (D) = (C) — (A)	Debt Service as % of Trade Balance (E) = (A)/(B)	Debt Service as % of Total Inflow (F) = (A)/[(B) + (C)]	Trade Balance Plus Net Inflow Related to Public Foreign Debt (G) = (B) + (D)
1925	10.2	18.4	3.0	— 7.2	55.4	47.7	11.2
1926	11.6	14.4	25.8	14.2	80.6	28.9	28.6
1927	13.3	9.1	24.0	10.7	146.2	40.2	19.8
1928	16.9	6.7	23.5	6.6	252.2	56.0	13.3
1929	17.3	8.1	2.5	—14.8	213.6	163.2	— 6.7
1930	19.7	12.1	18.0[c]	— 1.7	162.8	65.4	10.5
1931	20.4	23.7	—	—20.4	86.1	86.1	3.3
1932	6.8	20.7	—	— 6.8	32.9	32.9	13.9
1933	6.2	11.3	—	— 6.2	54.9	54.9	5.1
1934	7.1	16.1	—	— 7.1	44.1	44.1	9.0

1935	7.5	9.1	—	— 7.5	82.4	82.4	1.6
1936	7.9	17.8	—	— 7.9	44.4	44.4	9.9
1937	8.5	3.3	—	— 8.5	257.6	257.6	— 5.2
1938	—	.1	—	—	—	—	.1
1939	—	10.0	—	—	—	—	10.0
1940	3.4	—	—	— 3.4	...	...	— 3.4
1941	4.1	15.0	—	— 4.1	27.3	27.3	10.9
1942	4.0	35.1	—	— 4.0	11.4	11.4	31.1
1943	3.9	31.3	—	— 3.9	12.5	12.5	27.4
1944	18.8	32.5	—	—18.8	57.9	57.9	13.7
1945	10.8	43.5	—	—10.8	24.8	24.8	32.4

Sources: Table 2; IBGE, *Anuário Estatístico do Brasil*, 1947; MF, *Dívida Externa, 1824-1946*, passim.

[a] Although consideration of foreign private capital inflows would be relevant, this is precluded by lack of reliable data for the period.

[b] The "trade-balance" concept used (exports FOB less imports CIF) is that employed by the negotiators in the period under study when determining the country's capacity to pay. It is not as misleading as might appear at first sight, for the Brazilian share in shipping, insurance, etc. was negligible. Payments related to these items ranged from 11.9 to 13.5% of CIF import values in "normal" years, and rose during the war to 26.2% in 1945. The usual trade-balance concept would produce relatively higher values, especially for the war years. (See IBGE, *Anuário Estatístico do Brasil*, 1947, p. 306). Comparison of the Brazilian statistics and those of its major trade partners suggests that the former consistently underestimate the Brazilian trade surplus, especially for the late twenties.

[c] £ 18.4 million of 1931 funding bonds were issued between 1931 and 1934. However, given the purely accounting nature of these operations, the corresponding values are not included in column (C).

economy's reduced capacity to generate foreign exchange.[8] The inevitability of default stands out when it is noted that, if the contractual debt had been fully serviced in 1932, the outlay would have exceeded even the considerably increased trade surplus resulting from an appreciable drop in imports in that year.[9]

The readjustment process was gradual. A partial three-year funding loan was negotiated in 1931; in 1934 a four-year scheme of reduced payments was agreed upon; in 1937 Brazil defaulted completely; and, finally, in 1943 an agreement was reached concerning permanent settlement of the Brazilian public-foreign-debt question.

3 — Foreign-debt service: negotiations and unilateral decisions, 1931-1943

3.1 — 1931-1933

On 1 September 1931, the Brazilian authorities decided to suspend sinking-fund payments on all foreign loans except the fundings.

[8] This does not take into account the foreign-exchange cover required for transfers related to direct foreign investments in Brazil and for private remittances, together estimated to total £ 20 million. See MF, *Relatório Apresentado pelo Ministro Oswaldo Aranha. Exposição Relativa ao Período de 3 de Novembro de 1930 a 15 de Novembro de 1933* (Rio de Janeiro, 1933), p. 81. The economy's capacity to pay was also limited by the fall in public revenues associated with the Depression. The pre-Depression international economic system and the cyclical recurrence of transfer problems are examined by Nurske: "The variability of foreign lending has tended in the past to aggravate particularly the fluctuations in the balance of payments of primary producing countries. Capital has usually been attracted to these countries at times when their export prices are rising. A decline in the prices of export products and a consequent worsening of internal conditions has usually led to a sharp decline or complete stoppage of long-term capital imports. The inflow of funds has been liable to change suddenly into a net outflow because of the contractual obligations to maintain not only the interest service but also the amortization of the outstanding debt. Only too often default has been the result of the rigidity of loan contracts in the face of wide fluctuations of national income, demand and employment in the industrial creditor states" (League of Nations, Economic, Financial and Transit Department, *International Currency Experience* [n.p., 1944], pp. 203-204).

[9] Had there been no default, the ratio of interest payments (on public foreign debt only) to export earnings would have increased to a maximum of about 25% in 1932. The ratio of total service payments (on public foreign debt) to export earnings would have risen to 45%. These ratios cannot be compared to those on other countries presented by Finch, for the latter refer to total foreign investment service excluding amortization. However, the limited data available on Brazil suggest ratios considerably in excess of those for the countries that did not default. See D. Finch, "Investment Service of Underdeveloped Countries," *IMF Staff Papers* 2 (September 1951).

Then, shortly after asking Rothschilds for their suggestions, they also decided to suspend interest payments.

At the end of September, Rothschilds recommended that the total debt be divided into three categories: (1) funding loans, (2) secured loans, and (3) unsecured loans. The first category was to receive full service, the second contractual interest only (except the 1922 dollar loan which, being less well secured, would receive only 50% of the contractual interest), and the third 25% of contractual interest. Unpaid interest was to be settled through the issuing of "arrears certificates". The scheme was to remain in effect for three months, then be reassessed in the light of new developments. However, this suggestion was not accepted by the Brazilian authorities, whose counterproposal formed the basis of the final agreement. [10]

Under the terms of this agreement, the Brazilian government undertook to provide foreign exchange for the full service of the previous funding loans, as well as for the payment of loans floated in pre-1914 francs. The latter was in accord with a decision of the Hague International Court of Justice concerning French arrears. Sinking-fund payments on all other Brazilian loans were suspended, and interest payments were funded for three years through the issue of 5% bonds. These bonds were to be serviced normally.

This arrangement worked to the advantage of holders of British or French loans, since the 1898 and 1914 fundings did not cover American loans. Moreover, the British managed to pressure the Brazilians into paying the guaranteed sterling loans in "dollar equivalents", that is, in gold pounds instead of pounds sterling.[11] The discrimination against American interests — apparently not even heard by the Brazilians — was possible because of the rather unsatisfactory state of Brazil–U.S. political relations at the time. In addition, Sir Otto Niemeyer's influence was at its peak when service payments were suspended. His report on the Brazilian economy had been published just two months previous, and his correspondence with J. M. Whitaker, the Brazilian finance

10 See J. M. Whitaker, *A Administração Financeira do Governo Provisório de 4 de Novembro de 1930 a 16 de Novembro de 1931* (São Paulo: Revista dos Tribunaes, 1933).

11 This concession was obtained after sterling had gone off the gold standard, and remained in effect until the dollar was devalued in 1933. See *United States of Brazil Funding Bonds*, London, 14 March 1932 (announcement published on behalf and by the direction of the Government of the United States of Brazil by N. M. Rothschild & Sons).

minister, suggests that his personal influence was crucial to the British success in obtaining a favorable settlement.[12]

From the Brazilian point of view, the funding-loan arrangements would appear *ex post* to have been unsatisfactory, as they merely postponed the short-run problem of finding foreign exchange and resulted in a larger outstanding total debt. Interest charges remained at 5%, which was roughly equivalent to the average contractual rate of interest on the total outstanding debt. Even so, this did not compare unfavorably with the very high rates of interest prevailing in the leading international financial markets (the United States excluded) during the latter half of 1931. The "dollar-equivalent" clause operating in favor of some sterling loans was, of course, most damaging to Brazilian interests.[13]

In spite of the seemingly preferential treatment of British interests, Niemeyer opposed the funding loan so strongly — on the argument that a £ 20 million trade surplus was compatible with the maintenance of interest payments on all federal loans and full service of the previous funding loans — that the Foreign Office considered the possibility of protesting to the Brazilian government. The embassy in Rio, however, had no sympathy for London's current views on the Brazilian foreign-exchange position and successfully prevented such a move.[14]

The dissension created by the scarcity of foreign-exchange cover was considerable not only between Brazil and her creditors, but also between creditors of different nationality and between financial and commercial creditors of the same nationality. The British

12 The U. S. government had declared an embargo on the export of arms to the Brazilian rebels just two days before the fall of the Constitutional government. See Lindsay to Foreign Office (FO), tel. 546 (R), 28 October 1930, FO 371/14201, A6293/106/6; and Brazil, *Annual Report, 1930*, p. 11, FO 371/15067, A1849/6. No support was found for the claim that the 1930 coup had the backing of American interests. On this, see M. Bandeira, *Presença dos Estados Unidos no Brasil: Dois Séculos de História* (Rio de Janeiro: Civilização Brasileira, 1973), chap. 32.

On Whitaker-Niemeyer relations, see extract from memorandum from Irving to H. M. Ambassador to Brazil, Rio de Janeiro, 4 April 1931, FO 371/15065, A2659/283/6; FO to Keeling (Niemeyer to Whitaker), tel. 107, 5 October 1931, FO 371/15063, A5892/283/6; and Keeling to FO (Whitaker to Niemeyer), tel. 104, 8 August 1931, FO 371/15063, A5985/283/6. It must be noted that, as negotiations concerning the 1931 funding loan were conducted directly between the ministry of finance and Rothschilds, access to some of the relevant material in Britain seems to be out of the question.

13 For rates of interest, see League of Nations, *World Economic Survey, 1931-1932* (Geneva, 1932), pp. 186-88.

14 FO to Keeling, tel. 107, cited in fn. 12; Seeds to Craigie, 18 February 1932, FO 371/15805, A1494/308/6.

ambassador noted in early 1932 that Rothschild's representatives, as well as Niemeyer, were clearly fighting for the adoption of a foreign-exchange policy in Brazil which would discriminate in favor of financial payments. [15]

Although the 1931 scheme reduced service payments, it did not bring sufficient relief. In 1933-1934 Brazil had to negotiate additional agreements to release foreign exchange related to *cruzeiro* deposits so as to allow for profit remittances and settlement of trade debts which could not be transferred because of the lack of foreign-exchange cover. These agreements, which were with the United States, Great Britain and France, involved a total of £ 11.8 million.

3.2 — 1934-1936

In 1934, when the funding-loan arrangement was expiring, the Brazilian government and its principal creditors decided that negotiations should begin concerning resumption of payments on loans other than those receiving full service under the provisions of the 1931 scheme. This would be in the interest of both the majority of the creditors — who would receive something instead of nothing — and the debtor nation — which wanted to avoid a further increase in its total outstanding debt. Agreement was to be sought not only on Brazil's capacity to pay, but also on the distribution of the payments among the various loans. Theoretically, the latter was to respect relative priorities as stated in the original contracts.

The protection of British interests was once more assured by Niemeyer, who, on his way home after presenting a report on central banking in the Argentine, stopped over in Rio and suggested to Aranha, the finance minister, the ideas which were to form the basis for the discussion.

The main feature of the proposed scheme was classification of the loans according to seven grades. The lower the standing of the loan, the less interest it would receive (i. e., the lower the percentage to be paid of the interest contractually due); in the case of low-graded loans, this percentage would increase in each of the four years covered by the scheme. Grades 1 (funding loans) and 2 (1930 coffee loan) would receive full contractual interest; grade 3 (all guaranteed federal loans plus the loan to the Instituto do Café de São Paulo) would receive 30% in the first year, rising to 50% in

[15] Rothschilds' representative went so far as to support the Brazilian legislation enforcing the consumption of local raw materials — including coal — to assure the payment of financial commitments. Seeds to Henderson, n.º 8, 13 January 1931, FO 371/15062, A732/283/6.

the fourth year; grade 4 (unguaranteed federal loans and some loans to the state of São Paulo) 25% rising to 40%; grade 5 (some state loans) 20% rising to 35%; grade 6 (state and *municipio* loans) 10% rising to 15%; and grade 7 ("rubbish") nothing at all. Grade 1 would receive 100% and grade 2 would receive 50% of their contractual sinking-fund payments, while the other loans would receive no such payments whatever.

In fact, how to divide the available resources among the creditors proved much more difficult than determining Brazil's capacity to pay, which all parties agreed was around £ 8 to £ 9 million per year.[16] The Americans felt, with reason, that the proposal favored sterling loans excessively. In order to avoid an unfair settlement, their ambassador was instructed to tell Aranha that the American government "has no desire to invoke the fact of the strong unfavorable balance of trade of the United States with Brazil as an argument... [and] hopes it will not be compelled by developments to have recourse to the growing practice of bilateral compensation agreements".[17]

In the final agreement, the American negotiatior managed to have the sterling loan to the Instituto do Café de São Paulo demoted from grade 3 to a revised grade 5, and the sterling loans to the state of São Paulo from old grade 4 to new grade 6 (former grade 5). He also succeeded in getting a dollar loan to Rio Grande do Sul promoted to new grade 6. In addition, the terms offered to new grade 7 (comprised more or less equally of sterling and dollar loans) were improved, while no payments were to be made on new grade 8 (old grade 7). Total annual payments were to gradually increase from £ 7.3 million in the first year to £ 9 million in the fourth year. All in all, these changes were relatively minor, involving a net improvement in interest payments of only £.3 million over the four years of the agreement.

The Americans also convinced the Brazilians to change their commitment to the British as to redemption of the 20-year 1931 funding bonds by lowering the amount to be paid from £ 1.2 to £ .6 million. But this was *ex post* a dead promise anyway.

Although the actual British losses resulting from the American-sponsored modifications were negligible, the British negotiator

[16] This figure was obtained by applying the rule of thumb that debt payments should correspond to roughly 50% of the balance of trade. *Correio da Manhã*, 1 July 1933, reporting a meeting of the Conselho Técnico de Economia e Finanças of 30 June 1933.

[17] Caffery to Gibson, Instruction n.º 28, 24 October 1933, 832.51/799, *FRUS*, 1933, pp. 83-87. (Throughout this paper, references to *FRUS* are to the volumes including material on Brazil.)

was able to obtain, as compensation for the improved American position, a promise from the Brazilian government to redeem over four years, at market prices, low-graded sterling bonds valued at £ .4 million. The Brazilians succeeded in introducing into the final agreement a provision which allowed, when and if foreign exchange became available, the redemption of bonds at market prices in spite of the partial default. This provision was used extensively only in the case of the coffee loans. There is evidence, however, that during the war other types of loans were also cleared through market purchases.

Aranha, by way of forestalling domestic criticism of the settlement, claimed that Brazil would pay £ 33.6 million in four years instead of the contractual £ 90.7 million, with the subsequent real "gains" being £ 57.1 million over the period.[18] This claim has been repeated by economic historians without adequate qualification.[19] It is clear that Aranha was wrongly describing reductions in interest payments and mere postponement of sinking-fund payments as "gains". In the fourth section of this paper, some attention will be given to the distinction between different types of gains.

The British press, besides criticizing the terms as too advantageous to Brazil, resented what it considered the preferential treatment given to certain American loans to the detriment of sounder British loans. Even so, it recognized that the United States was in a far stronger position to exert pressure on the Brazilian government, and that there was a similarity between the American behavior in Brazil and the British behavior in the Argentine.[20] In London, there was also some criticism of Niemeyer because of his alleged protection of the interests of some issuing houses — Rothschilds in particular — to the detriment of Lazards, which had floated the downgraded loan to the Instituto do Café de São Paulo.[21]

Niemeyer himself, as well as the Foreign Office and Treasury officials concerned with the question, thought that the offer was the

18 MF, Exposição de Motivos n.º 56, 3 February 1934, as translated by *The Times*, 23 February 1934.

19 See, for instance, the Brazilian authors cited in fn. 7 and A. V. Villela and W. Suzigan, *Política do Governo e Crescimento da Economia Brasileira, 1889-1945*, Série Monográfica, n.º 10 (Rio de Janeiro: IPEA/INPES, 1973).

20 *The Times*, 10 February 1934; and *The Economist*, 17 February 1934.

21 Law to Sargent, 16 February 1934, FO 371/1748, A1620147/6.

best the bondholders could hope to get.[22] The Foreign Office in particular strongly resisted all pressures to intervene. The secretary of state, Sir John Simon, argued that "my predecessor Lord Palmerston, who is not generally regarded as having been backward in the defence of British interests, laid down the doctrine that if investors choose to buy the bonds of a foreign country carrying a high rate of interest in preference to British Government Bonds carrying a lower rate of interest, they cannot claim that the British Government is bound to intervene in the event of a default" and that the Foreign Office would only consider intervention if there were evidence of discrimination against British interests.[23]

On the whole, the British satisfaction was not groundless. The basic outline of the plan had been of British conception, and once the Americans had obtained relatively minor concessions, the British were able to redress the balance by exacting counter-concessions from the Brazilians. Moreover, this was achieved without the immense bargaining power which the Americans had because of their deficit in the Brazilian trade.

The Americans, despite the apparent satisfaction of the Foreign Bondholders Protective Council (FBPC) at the time, very much resented their exclusion from the early stages of the negotiations, which had resulted in a scheme which was "rigged to favor unduly sterling loans".[24]

The implementation of what came to be known as the "Aranha scheme" was not without problems in view of the stiff competition for foreign exchange which persisted throughout the thirties. There is little doubt that Vargas would have decided to default in 1935 had it not been for agreements for the progressive liquidation of commercial arrears, thus yielding to the pressures of government officials who thought it preferable to declare a moratorium on the foreign debt rather than face a permanent shortage of the foreign exchange needed to settle trade debts.[25]

22 Broad's minute (Major Sir Alan McLean's parliamentary question), 16 February 1934, FO 371/17481, A1503/147/6; Niemeyer to Waley, 1 March 1934, FO 371/17481, A1768/147/6.

23 Draft, Simon to Leather, March 1934, FO 371/17481, A1440/147/6.

24 Gibson to Hull, tel. 14, 25 January 1934, 832.51/861; Clark to FBPC Executive Committee, 25 January 1934, *FRUS*, 1934, pp. 615-16.

25 Sousa Dantas to Souza Costa, 6 January 1935, Getúlio Vargas Archives (GV): 4/16, and Vargas to Aranha, 9 January 1935, GV: 6/17, cited by H. Silva, *1935, A Revolta Vermelha* (Rio de Janeiro: Civilização Brasileira, 1969), pp. 49-50.

3.3 — 1937-1939

The foreign-debt question was discussed by Souza Costa, the finance minister, and the FBPC during the summer of 1937, when a Brazilian mission visited the United States. However, no agreement was reached on the general lines of a new settlement, and it was decided that upon his return to Brazil Souza Costa draw up a proposal which would be taken as a basis for discussion. [26]

Following the change of government in November 1937, Brazil announced the suspension of all public foreign-debt payments for three years. Vargas argued that Brazil had been forced to default because of the impossibility of both servicing the debt and paying for imports essential to re-equipping the railway system and the armed forces. The alternative of entering into a new funding scheme was considered unacceptable, since it would increase the outstanding debt, which was already held to be out of proportion with the country's capacity to pay. [27]

The Economist's assessment of the default is representative of the response of the British press: "The [Brazilian] default ranks among the most cynical that the London market remembers. [28] The reaction of the Americans was relatively mild, and fit their basically defensive tactics of letting the British appear as the villains and do the spade work, and then pressing their specific claims, which generally concerned the distribution rather than the level of payments. They seemed to be especially anxious as to the possibility that any retaliation to the default could involve new Brazilian trade restrictions, which would work against their primary foreign economic policy objective. [29]

In fact, the American bondholders were being most ably defended by Aranha, who after some years as Brazilian ambassador in Washington had turned into an enthusiastic supporter of a foreign policy involving much closer ties with the United States. He thought that "the default [would] cost more in dollars and pounds than it would have cost to pay", and that in "the United States alone there were almost a million people who depended on the Brazilian payments for the means of livelihood ... mostly poor and to make

[26] Lindsay to Eden, n.º 699E, 2 August 1937, FO 371/20605, A5744/316/6.

[27] G. Vargas, *A Nova Política do Brasil* (Rio de Janeiro: José Olympio, 1938), 5:26-28, speech of 10 November 1937.

[28] *The Economist*, 13 November 1937.

[29] Hull to Caffery, tel. 80, 16 November 1937, 832.51/200, *FRUS*, 1937, pp. 353-54.

enemies of them would be an economic and political mistake, especially in view of the fact that the American people consumed half Brazil's exports". [30]

The main reason for the mildness of the American reaction, however, must be sought neither in the context of the defense of multilateral as opposed to bilateral trade nor in Aranha's pro-American stand, but in Roosevelt's overall political strategy regarding the role of Brazil under the Good Neighbor Policy. [31] Souza Costa's mission had returned with the feeling that the United States would not retaliate if Brazil stopped debt payments, and this was certainly taken into consideration when it was decided to default. [32] After the default, the Americans went so far as to block the French from retaliating by banning coffee imports from Brazil. [33]

The British, on the other hand, were theoretically prepared to make use of the Debts Clearing Office Act of 1934 to deal with the default; but "unfortunately ... in the case of Brazil the balance of payments is not such as to make the threat of a Clearing effective". Moreover, the British authorities perceived that "if the United States were to exercise all the pressure on Brazil which they are in a position to exercise they could secure the payment of the dollar bonds in full and leave nothing for the sterling bondholders". [34]

In early 1938 *The Economist* returned to the subject without mincing words: "Brazil policy is putting an almost unbearable strain on her ultimate interests: for though the London market has always been willing to give temporary accommodation to hardpressed debtors, it does not forgive high-handed default". Provided "the Government plays its part in restraining tendencies to extravagant imports" — and taking into consideration both the rapid expansion of import-substituting industrial output and the campaign to increase the cultivation of wheat — "Brazil needs not make a rigid choice of destroyers or debt service", since after the liquidation of the commercial arrears in 1940 some exchange cover would be freed. If

30 Aranha's interview to the press, 23 December 1937, as reported in Gurney to Eden, n.º 401, 30 December 1937, FO 371/21420, A222/25/6.

31 Morgenthau, the U. S. secretary of the treasury, attributed the American financial assistance promised to Brazil in 1937 to Roosevelt's desires to counter German influence on Latin American dictators and to keep Vargas a Pan-Americanist in spite of his personal distaste for the man. J. M. Blum, *From the Morgenthau Diaries: Years of Crisis, 1928-1938* (Boston: Houghton and Mifflin, 1959), p. 493.

32 See F. D. McCann, Jr., "Brazil and the United States and the Coming of World War II, 1937-1942" (Ph. D. dissertation, Indiana University, 1967), p. 45.

33 Hull to Caffery, tel. 80, 16 November 1937, 832.51/1200, *FRUS*, 1937, pp. 353-54; Lindsay to FO, tel. 436, 29 November 1937, FO 371/20608, A8591/795/6.

34 Waley to Holman, 29 December 1937, FO 371/20632, A9412/3505/6.

"extravagant imports" are taken as meaning consumer-goods imports, the argument is irrelevant. On average, these were only £ 1.3 million higher (on a yearly basis) during the default period (1938-1939) than they had been between 1933 and 1937.[35]

The Economist's views were fully representative of those of the Foreign Office and the CFB. On the other hand, both the British ambassador in Rio and Sir Henry Lynch (Rothschilds' resident representative in Brazil) were much more sympathetic to the Brazilian version of the reasons behind the default. While it was relatively easy to discount Lynch's views by suggesting that he was "rather going native", the ambassador's influence was such as to block or soften some of the CFB's blunter protests.[36] It is interesting to note that the American ambassador, relative to the State Department, was also a "liberal" as far as the debt question was concerned.[37]

3.4 — 1939-1942

Throughout 1938 the creditors attempted to convince the Brazilian government to reconsider its position, but in vain. The negotiations which eventually started in September 1939 were the direct result of Aranha's (now minister for foreign affairs) visit to the United States early in the year to discuss a wide range of commercial and financial questions. As a concession to the Americans, who had agreed to extend up to US$ 19.2 million to the Banco do Brasil through EXIMBANK to clear commercial arrears, as well as to seek congressional permission to give financial backing to a projected Brazilian central bank, Aranha informed Hull that the Brazilian government intended to resume payments on the public foreign debt on 1 July 1939.[38]

[35] *The Economist*, 12 February 1938 and 12 March 1938. There is some irony in the fact that the money which the CFB — where Niemeyer sat on the Council — could not get for the bondholders went to Vickers (one of the shipyards involved in the construction of destroyers for the Brazilian navy) and to Vickers Armstrong (involved in the electrification of the Central do Brasil railway) — a group of companies to which Niemeyer was closely linked as a director of Vickers Armstrong.

[36] Busk's minute, 1 June 1938, FO 371/21421, A4219/25/6; Gurney to Balfour, 6 July 1938, FO 371/21421, A5526/25/6. *The Economist's* views were certainly milder than those of Sir David Waley of the Treasury: "Of course, I agree that the Brazilians are dirty dogs, but my point is that I do not think it would help the bondholders to tell them so" (Waley to Balfour, 2 August 1938, FO 371/21429, A6040/4176/6).

[37] Caffery to Hull, 7 March 1938, 832.51/1280, *FRUS*, 1938, p. 375; Hull to Caffery, 25 March 1938, 832.51/1281, *FRUS*, 1938, pp. 375-76.

[38] Department of State, press release n.º 84, 9 March 1939, and appendices.

This commitment, which apparently exceeded Aranha's instructions, was strongly criticized in Brazil, and Souza Costa vetoed service resumption on the promised date. On the 1st of July the Brazilian government made a token payment of US$ 1 million in New York, informed the creditor nations of its intention to resume payments in the future, and invited the bondholders' associations to send representatives to discuss the matter in Rio.

In the meantime, Aranha was repeatedly reassuring Caffery, the American ambassador, that the president had decided to adopt a policy of full cooperation with the United States. His plan was "to lay down a policy that Brazil [would] pay debts out of her commercial capacity to pay having regard to her balance of trade with each separate country. The result in [the] case [of the United States] of course would be that [the American] bondholders would be favored, the French also to some extent and the British not at all".[39]

The foreign negotiators did not arrive in Rio until August, and by then it had become clear that the Brazilian government would have to wait and see what impact the war would have on the export trade before entering into any commitment concerning debt payments.

After extensive use of delay tactics — which led the Americans to send their representative home — Souza Costa hinted to the British in November that £ 3 million per year was the maximum that Brazil could afford to pay; that is, about one-third of the amount due under the Aranha scheme in its first year. The Americans kept aloof of these preliminary negotiations, and limited their intervention to advising the Brazilians that they expected equitable treatment for dollar bonds. When, however, the Americans knew that the Europeans were talking with Souza Costa in terms of a permanent settlement of the federal debt only, Caffery was authorized by the State Department to take part in the discussions. By this time, the Americans had turned the tide in their favor, Vargas being reported as saying that he was interested in doing something only for the Americans and the Portuguese holding sterling bonds. Among the sticks used to get Brazil into a negotiating mood was the intimation that no American cooperation for the building of a steel mill would be forthcoming unless the debt

[39] Caffery to Hull, tel. 305, 30 June 1939, 832.51/1494, *FRUS*, 1939, pp. 361-62; Caffery to Hull, tel. 209, 1 July 1939, 832.51/1496, *FRUS*, 1939, pp. 364-65; Caffery to Hull, tel. 211, 5 July 1939, 832.51/1502, *FRUS*, 1939, p. 365; Caffery to Hull, tel. 219, 18 July 1939, 832.51/1522, *FRUS*, 1939, pp. 367-68.

question had been settled.[40] These pressures were effective. In January 1940, Souza Costa made a definite proposal for a temporary settlement at 50% of the payments due under the Aranha scheme. The creditors' representatives deemed the proposal worthy of consideration.

The Americans improved their position by convincing the Brazilians to take the last year of the Aranha plan as the basis for the new scheme. Grades 1 to 3 would receive 50% of the interest that would have been paid in the last year of the Aranha plan; grades 4 to 7, 40% in the first year, rising to 50% in the last year; and sinking-fund payments would be at 40% of the amounts set for the last year of the Aranha plan. Total payments would rise from £ 4 million in the first year to £ 4.3 million in the final year, or £ .6 million more, over the four years, than in the first concrete Brazilian proposal. The British negotiator accepted the American proposal, which among other things involved smaller payments for the prime sterling bonds which had been successfully protected in the past, because of a Brazilian *quid pro quo* promise to redeem no less than £ 1.6 million of British bonds, at market prices, over four years.

During the negotiations there was a clash between Phillimore (the British representative) and the British embassy on one side, and the CFB on the other. Phillimore found the Council's ideas entirely unrealistic, "as the whole question [did] not hinge on Brazil's capacity to pay but on the political difficulties which the Government [had] to face in order to reinitiate payments if confronted with the extremely low standard of living and chaotic deficiency of transport and other equipment". Sir Geoffrey Knox, H. M. ambassador in Brazil, added that the Council, in selecting the level of contractual payments as its measuring rod, was failing to recognize that some loans had long been in default, and that service in the past had been met with the proceeds of new loans rather than out of tax revenues and trade surpluses. He thought the Council "appeared to be in the clouds" and recommended that they "should possess their soul in patience" as "bluff and bluster would only indispose the Brazilians and do no good".[41]

Sir Otto Niemeyer was still able to indulge in typical rhetoric: "I am quite sure [that Brazil] cannot expect to get away in the

[40] Caffery to Hull, tel. 461, 30 December 1939, 832.51/1675, *FRUS*, 1939, pp. 378-79; Phillimore to Philp, 13 January 1940, CFB Archives, 341/14; Phillimore's memorandum, 4 April 1940, FO 371/241171, A2967/45/6.

[41] Knox to FO (Phillimore to CFB), tel. 143, 12 December 1939, FO 371/22721, A8715/136/6; Knox to FO, tel. 144, 13 December 1939, FO 371/22721, A8747/136/6.

end without making a more adequate recognition of her obligations. If she does not, she will merely be written off in disgust as a fraudulent bilk".[42]

The Americans were able to recover some of the ground lost in previous settlements due to the further strengthening of the bargaining power of the United States as a result of Brazil losing her Central European export markets after the outbreak of the war. The origin of a good deal of Vargas' leverage — which allowed him to deal in a relatively satisfactory way with Anglo-American claims in the late thirties — had been his clever manipulation of the German threat, especially as it touched American commercial interests.[43] Unlike the Argentinians, who could not play the game because Great Britain, their main customer, was prepared to enforce clearing agreements, Vargas was relatively protected from American retaliation by the U.S. policy of multilateralism.[44] The Argentinian case is, indeed, an important exception to the widely held view that the exacerbation of imperialist rivalry during the thirties made control over the peripheral countries more difficult.

The main opponents to the settlement of the foreign debt were certain groups that were still able to show pro-German sympathies due to the indecisive result of the war. As a consequence, it required the combined efforts of Souza Costa and Aranha to persuade Vargas to sign the final agreement.[45]

[42] Niemeyer to Phillimore, 8 February 1940, CFB 241/15. This can be contrasted with Mr. Dalton's speech to the Brazilian Chamber of Commerce on 6 May 1947 on the problems of the blocked sterling owed by Britain to her war suppliers (Brazilian sterling balances then amounted to £ 65 million): "The vast accumulation of debt (by Britain) represents an unreal, unjust and unsupportable burden. If lease-lend and Mutual Aid had been applied among all members of the Grand Alliance as they were between the USA and the British Commonwealth, by far the greater part of these debts would never have been charged up against us. Sooner or later this mass must be very substantially scaled down. Britain is strong, but one sign of her strength must be the refusal to take on fantastic commitments which are beyond all limits of good sense and fair play" *Keesing's Contemporary Archives* 1947, May 3-10, p. 8587. The author thanks Mr. A. O'Connell for drawing his attention to this speech.

[43] Germany had substantially increased its share of the Brazilian import market from 12% in 1933 to around 20% in 1937-1938 (import values corrected for the overvaluation of imports from Germany implicit in the Brazilian statistics).

[44] There is a good deal of interest in comparative study of the foreign economic relations of Brazil and Argentina during the thirties, and in the parallel roles of the U. S. and Britain. The contradictions between British commercial policy were impossible to resolve; while in Argentina the approved slogan was "comprar a quien nos compra", in Brazil H. M. ambassador was denouncing this slogan and urging that sales should be the privilege of those "who sell you the best". See *Buenos Aires Herald*, 1 May 1934 and 4 May 1934.

[45] Phillimore's memorandum, 4 April 1940, FO 371/24171, A2967/43/6.

Whatever the strength of the pro-German faction in Brazil, the fact remained that Germany controlled neither shipping nor shipping routes. Left without the German market as an outlet for her exports and uncertain about the level of future Allied purchases, Brazil had no alternative but to continue to move more and more towards the United States. To the hard economic facts must be added the growing political friction between Argentina — pro-German enough to remain neutral for a long time, but ironically protected from American pressure as its foodstuff exports were vital to the British war effort — and Brazil — where pro-German leanings found a progressively more hostile environment due to the country's increasing economic ties with the United States.[46]

The improvement of the American position in the debt settlement signals a turning point in Brazilian foreign policy. Even before the war, the economic and political influence of the United States had been on the rise since Aranha's visit to Washington. The Americans were almost certainly helped when Aranha replaced Souza Costa as the minister in charge of the negotiations when these reached the crucial stage. While it is true that Aranha often favored American interests, it would be wrong not to qualify this assertion by mentioning that the situation was not without ambiguity, as he was subject to conflicting pressures through his links with Olavo Sousa Aranha, whose firms represented Schroeders and were involved in the compensation mark trade with Germany. From 1940 onwards, however, Sousa Aranha's interests turned to supplying cotton to Great Britain and neutral countries, and to financial deals related to the nationalization of certain British investments in Brazil.[47]

If anything, the payments established under the 1940 agreement were on the low side — as acknowledged by Souza Costa when he told Phillimore that he would be willing to pay £ 5 to £ 5.5 million per year for a permanent settlement of the federal debt. However, the Americans took care not to overmilk their Pan-American ally, and the British and French were eager to receive some payments, however low, from Brazil.

[46] During the war, American influence grew to such a point that the State Department advised the Foreign Office that it regarded the U. S. ambassador in Rio "in the same light" as the Foreign Office regarded the British ambassador in Egypt. See Charles to Scott, 5 February 1942, FO 371/30365, A2764/2764/6.

[47] See S. Hilton, "Brazil and Great Power Trade Rivalry in South America, 1934-1939" (Ph. D. dissertation, University of Texas, 1969), chap. 10; Charles to Scott, 11 February 1943, FO 371/33678, A2506/2506/6; Treasury (T) 160, file F16522/01/3 (Brazilian government's attitude towards certain railway companies in Brazil); T 160, F18535/01 (Spanish cotton purchases in Brazil).

Moreover, it seems clear that the British underestimated their requirements for Brazilian raw materials, and that this was the cause of the sharp reversal in the Brazilian sterling position in 1941. Before 1941 Britain had to artificially expand her purchasing program in Brazil to assure the payment of the country's sterling commitments, but from 1941 on there was a progressive accumulation of sterling in the Brazilian special account.

3.5 — 1943

In early 1943, Souza Costa felt that the occasion was ripe for the beginning of talks with the British concerning the renewal of the 1940 agreement, which was to expire at the end of the year. This Brazilian move seems to have been prompted by the rapid accumulation of blocked sterling balances in London — which already totaled £ 12 million — and the likely continuation of this trend. Souza Costa anticipated that after the war Brazilian exports would have problems adjusting to competition in a normalized world market, and that heavy demands would be made on the existing foreign exchange reserves for the importation of essential capital goods for which there was considerable repressed demand. Thus, from his point of view, the moment was ideal for a permanent settlement of the foreign debt question. He was prepared to spend £ 7.5 million in total yearly payments (£ 4 million in interest and £ 3.5 million in sinking-fund payments), as well as £ 26 million for special amortization of as much as possible of the outstanding debt.[48]

After three months of negotiations — without the Americans — this offer was improved. Two options were offered to the bondholders. Under option A, there would be no reduction of the outstanding debt; payments would be at 70% of the level of the last year of the Aranha scheme, and would total £ 7.3 million (£ 4.4 million in interest and £ 2.9 million in sinking-fund payments) if all bondholders chose this alternative. Under option B, a proportion of the outstanding debt would be redeemed through cash payments, while the residual cash would be converted into new 4% federal bonds in the case of all loans. Cash payments of £ 20.7 million would redeem £ 85.6 million of the outstanding debt — almost 40% of the total debt, at an average cost of 24% — while yearly payments would total £ 8.1 million (£ 4.4 million in interest and £ 3.7 million in sinking-fund payments) if all bondholders elected

[48] Charles to FO (Phillimore to Niemeyer), tels. 93 and 94, FO 371/33661, A1383 and A1397/473/6.

this alternative. It should be noted that contractual rates of interest ranged from 4 to 8%.[49]

London considered the Brazilian proposal unfair, given the country's favorable foreign-exchange position. Phillimore was dismayed, viewing London's line as unrealistic and based on lack of appreciation that the foreign-exchange position was the result of a wartime export boom coupled with a temporary inability to obtain imports, and that this was unlikely to continue after the war.[50]

Only in June did Souza Costa disclose to the Americans that negotiations had been under way with the British since the beginning of the year. This was an important source of the ill feelings of the Americans towards the British during the following joint negotiations. After a long delay, the United States decided to send representatives to Rio. The instructions made clear the American intention to settle for good their differences with the British concerning what they regarded as grossly discriminatory and unduly favorable treatment of high-graded loans in the past. They wanted a restructuring of grades which would demote grades 2 and 5 and promote grade 3, thereby fundamentally changing the framework of the Aranha plan to the detriment of the sterling loans. Their first proposal to Souza Costa mentioned payments of £ 9.7 million per year (£ 6.4 million in interest and £ 3.3 million in sinking-fund payments). The Brazilians found the proposal unacceptable and tactfully decided not to get entangled in the distribution controversy, claiming that restructuring was essentially an Anglo-American question.

After tough negotiations all parties agreed to a permanent settlement which, like the Brazilian proposal, offered two options. In order to cover the damage to sterling loans, no mention was made as to classification by grade. Option A would involve annual payment of £ 7.7 million (£ 5.2 million interest) assuming that all bondholders chose this alternative. Option B would involve yearly payments of £ 8.4 million (£ 4.9 million interest) related to new 3.75% federal bonds, as well as cash payments of £ 22.9 million to redeem £ 79 million of the outstanding debt at an average cost of 29% — also on the assumption that all bondholders would choose this option. Old grade 8 loans were to be redeemed at 12% of the outstanding debt. The bulk of the interest arrears — those corresponding to the 1937-1940 default — were to be liquidated at

[49] Major Pam of Schroeders was the father of a scheme roughly on the lines described above. Interview with Mr. John Phillimore, London, 2 April 1974. See Phillimore to Niemeyer, tel. P183, 7 February 1943, CFB 241/20.

[50] Broadmead to FO (Phillimore to Niemeyer), 349, 10 June 1943, FO 371/33661, A5520/473/6.

25% of the rates stipulated in the 1940 agreement; in the "best case", that of the funding loans, this was to be at 12.5% of contractual interest.

The settlement meant a partial abandonment of the principle that better-secured loans (British) should receive priority in the event of a partial default. All British attempts to move the Americans from their position failed. When they approached the State Department, they opened their flank to an attack by Adolf Berle, who claimed that "what differences remained were solely between classes of bondholders", and that Phillimore, who had been working for Barings, was trying to maintain a privileged position for issues this house had floated. He accused Phillimore of having stated in Rio that it was the issuing houses whose wishes should be considered by the Brazilian government, not widows and orphans, because issuing houses floated loans, and that if the Brazilians agreed with the American proposal to regroup, they could look for no further financial accommodation in England.[51] This was the origin of a wrangle between London and Washington which outlived the negotiations. Its consideration, however, is beyond the scope of this paper.

That the settlement was not favorable to the British is clear from a comparison between the press releases of the CFB and of the State Department. The CFB made it known that "the allocation of available money between the various Bonds revealed marked differences of outlook not only between the creditors' representatives and the Brazilian government but between the British and the Americans and that [they could] not pretend to be satisfied with the resulting differentiation between the various Bonds". The State Department, on the other hand, stated that "the proposal is a manifestation of Brazil's earnest desire to meet its foreign obligations within [the] limits of its capacity. This Government is extremely gratified that an arrangement of this far reaching and definite nature has been reached between the Brazilian authorities and the United States and British bondholders".[52]

Officials in the Foreign Office, while not dissatisfied with the outcome of the negotiations, were critical of the CFB's secretive methods in keeping the Americans in the dark for so long, and blamed Niemeyer, "who believes he holds some special position in Brazil as the G[rand] O[ld] M[an] of finance".[53] They where

[51] Campbell to Scott, 26 November 1943, FO 371/33665, A10714/473/6; Washington to FO, tel. 5376, 28 November 1943, FO 371/33665, A10483/473/6.

[52] CFB announcement, 26 November 1943, FO 371/33665, A10774/473/6; Washington to FO, tel. 5376, 28 November 1943, FO 371/33665, A10846/473/6.

[53] Mather Jackson's minute, 27 November 1943, FO 371/33665, A10714/473/6

unwilling to give due credit to Niemeyer for the British achievements in 1931 and 1943.

Phillimore ascribed the behavior of the Americans throughout the negotiations to their tendency "to regard Brazil as their own backyard" and their being inclined "to be upset when anyone else comes and plays in it uninvited". According to him, Souza Costa's irritation with the unreasonable American demands had led to his appointing Bouças, his main advisor, to proceed with the negotiations, and contended that this had worked to the disadvantage of the British, for "though Bouças may know how to handle the Americans, he also derives his income from that quarter". Although Phillimore found the unfavorable reaction of the London market inconsistent with the quotation of Brazilian bonds on the Stock Exchange, he argued that the market had come to realize that "there is a political factor too and that Brazil's will to pay is in a less healthy condition than her capacity".[54]

The Economist, as could be expected, considered the payments too low relative to the Brazilian capacity to pay, and argued that priority should have been given to loans with specific as opposed to general security: "... to put the matter quite bluntly, the British holder of Brazilian obligations has been made a sacrifice to Pan-Americanism".[55] This was not wide off the mark, for the aims of H. M. government concerning Latin America had been defined earlier in the year as being "to preserve, and if possible intensify, by all suitable means, our existing good political, economic and cultural relations subject to the overriding necessities of the successful prosecution of the war and of the maintenance of the fullest unity and understanding with the United States".[56]

Phillimore, not unreasonably, took exception to the criticism which focused on the low level of Brazilian payments under the agreement, pointing out that it was useless to insist that Brazil should pay more since in the past she had paid out only £ 2.6 million net per annum (1901-1941 average), and her other financial commitments were estimated at £ 5 to £ 20 million per year. Moreover, the Brazilian contractual service so often mentioned in the press included some loans which no responsible banker should ever have made. The American loans, which were entitled to 41% of total interest and 46% of sinking-fund payments, would get considerably

54 Phillimore to Elliot Butler, 8 December 1943, FO 371/37836, A16/16/6.

55 *The Economist,* 25 December 1943.

56 Perowne's printed memorandum on *The United States and Great Britain in Latin America,* FO 371/33903, A2230/348/51. In 1941 Churchill had instructed the Foreign Office to adopt a "petting Vargas" policy. Churchill's minute, 27 October 1941, FO 371/25783, A8705/190/6.

less under either option A or option B. He argued that the superior status of the secured loans had been maintained, but avoided mentioning that it had been less respected in 1943 than in the previous agreements.

Phillimore added that Brazil was offering the settlement not because of any compelling sense of moral obligation, but for strictly material reasons. Because her economic situation was not prosperous, some of the more conservative government officials (Aranha, Souza Costa, etc.) recognized that her future depended largely on the ability to attract foreign capital. If the settlement did not restore her tarnished credit, Brazil "may well decide that these many millions of much-needed cash are too high a price for such dubious publicity".[57]

It is tempting to suggest that Anglo-American conflicts benefited the Brazilians, since negotiations tended to concentrate on the distribution rather than on the level of total payments. However, difficulties concerning the distribution of payments between sterling and dollar loans invariably involved larger Brazilian total payments to break the deadlock. This is not to say that the Brazilians abstained from fostering the conflict between creditors. This was patently the case, for example, when Souza Costa disclosed to the Americans his "secret" talks with the Bristish in early 1943.

From the Brazilian point of view, the settlement came at the right time. By the end of the war, more foreign-exchange reserves would have accumulated, so it would have been difficult to avoid making larger payments. If the postwar economic policymakers did not profit from this relief, the fault was not lack of foresight on the part of the Vargas administration.[58] Even so, the Brazilians were perhaps too timid in their offers regarding cash payments. They might have further reduced their sterling debt using "sterile" blocked sterling which was spent on relatively expensive imports

[57] He added in a *post scriptum*: "I am thinking of sending you a series of snap shots, for publication in the press, of cross-sections of the population of Rio disporting themselves during Carnival. Any bondholder who saw them could be guaranteed to take Plan B and to take it quick; and instead of sighing for that mythical 23 million pounds a year which he never in fact received, he would marvel with me at the magnitude of what he is now being offered" (Phillimore to Powell, 26 February 1944, FO 128/425 [7]).

[58] In contrast to Brazil, Argentina used part of her much larger reserves to redeem at par more than £ 60 million of the federal foreign debt. In addition, she spent more than £ 160 million on nationalizing foreign-owned railways. See C. Lewis, *The United States and Foreign Investment Problems* (Washington, D. C.; The Brookings Institution, 1948), p. 79. Nationalization of British-owned companies was also a far from negligible way of absorbing sterling balances in Brazil. At least £ 22 million was used in this way between 1945 and 1952. *Keesing's Contemporary Archives*, 1945-1952.

in the late forties and early fifties. In 1949, the country's blocked sterling balances still amounted to roughly £ 40 million.

As mentioned above, throughout the negotiations concerning the Brazilian foreign debt, the Americans and the British adopted different tactics. Whereas the Americans took a rather conciliatory stand, paying careful attention to their strategic economic and political aims in Brazil, the British tended to worry only about maximization of financial payments. While this is easily understandable for 1940 and 1943, when Britain desperately needed cash, the difference is more difficult to explain for the earlier period.

As opposed to Great Britain, which had a Corporation of Foreign Bondholders as early as 1968, the United States — because of its limited experience as a creditor nation — initially faced the wave of defaults without a bondholders association. The Foreign Bondholders Protective Council was finally organized in 1934, but it was never, despite federal denials, as independent of the government as its British counterpart. This semi-official character of the FBPC led the institution to much more readily adapt its claims to American foreign policy. Although the FBPC and the State Department were represented by different negotiators in 1943, there was never much doubt as to who held the real power.

During the Hoover period, the American banks were unable to obtain official support in their attempts to protect the interests of bondholders. This aloofness of the State Department, which continued during Roosevelt's administration, contrasts with the official blessing given to the agreements signed in 1933 between the Banco do Brasil and several American companies to allow for the remittance of accumulated profits and commercial arrears. Granting priority to the transfer of frozen commercial credits over payments to bondholders was at strong variance with British policy.[59]

The American ambassador in Rio explained the policy to the consul general, who was a critic of the Brazilian treatment of American arrears, in the following terms: "If securing exchange cover was our only problem in Brazil we might well enough send the fleet, land marines and get what we wanted but... we must not forget that this is only one phase of the relations between the two countries".[60]

Even Sir Otto Niemeyer, who was known as being neither slow nor considerate when he thought that British interests were being

[59] See J. H. Wilson, *American Business & Foreign Policy, 1920-1933* (Boston: Beacon, 1971), pp. 171-85; Hilton, pp. 38-39.

[60] Gibson to Wilson, 13 March 1934, 832.5151/339 1/2, cited by Hilton, p. 38.

discriminated against, recognized that the Americans were mild in their financial negotiations with Brazil: "As a whole, it must be admitted that the Americans have used their complete power over Brazilian exchange with extreme moderation: the changes which they finally accepted in the [1934] Plan as originally proposed by the Brazilian Government are, in relation to the whole, exceedingly small".[61] Phillimore thought that "there had been little evidence in the last few years — rather the contrary — that the Americans were interested in collecting their claims in Latin American at all".[62] Sir William Seeds, the British ambassador in 1934, felt that the Americans thought it "more politic to let Brazil gradually realize her position vis à vis the States than to impress it on her *vi et armis*" and therefore abstained from using their strong bargaining power to exact full payment from Brazil.[63]

A discussion between Phillimore and the State Department representative throws further light on the different approaches adopted by the main creditors on how best "to avoid in future the difficulties that arose on the present [1934] occasion through divergence between the British and American points of view". They agreed that there were three principal ways to deal with a similar situation in the future: (1) the councils could first agree on their main objectives, and then send their representatives to negotiate jointly with the debtor country; (2) recognizing that their interests did not always coincide, they could negotiate with the debtor country separately, and the one reaching an agreement first would include a most-favored nation clause; (3) without consulting one another previously, they could send representatives to negotiate with the debtor country simultaneously, and attempt to solve their differences in the course of the talks.

McCormick, the State Department negotiator, thought that (1) was the worst alternative, as "the debtor might think that the big stick was going to be used and would accordingly withdraw to his shell". Phillimore preferred (2), "which had been employed successfully in the past". Butler, of the CFB in London, had no doubts that method (1) was "incomparably the best... the argument about the big stick may chime in with the Good Neighbour policy, but

61 Niemeyer's note enclosed in a letter from Waley to Craigie, 27 March 1934, FO 371/17487, A2549/170/6. Also see Niemeyer to Craigie, 29 May 1934, FO 371/17488, A4362/170/6.

62 Phillimore to Bessborough, 4 January 1944, FO 128/425 (7). Mr. Phillimore confirmed to the author that the Americans — as opposed to the British — tended to subject their financial negotiations to constraints related to their political and economic aims in Brazil. Interview with Mr. John Phillimore, London, 2 April 1974.

63 Seeds to Craigie, 5 June 1934, FO 371/17488, A5053/310/6, cited by Hilton, p. 369.

is, of course, absurd from the Bondholder's point of view; it is only too evident that the majority of Finance Ministers require to be convinced of the eminence of the stick (or carrot) before they produce even their second best".[64]

4 — An assessment of public-foreign-debt policy

One of the striking features of the Brazilian economy during the twenties was its increasing reliance on public foreign capital. The inflow, however, was barely sufficient to cover the outflow related to servicing the outstanding debt. It is tempting to argue that public-foreign-debt flows were "neutral" from the balance-of-payments standpoint, and that private and profit remittances (or private capital movements in general) entirely absorbed the trade surplus during the decade. This assertion, however, would be too sweeping as it does not take into account important year-to-year variations. In fact, the Brazilian trade surplus had not only failed to increase since the beginning of the century, but actually decreased between 1925 and 1930; during these years, the fall was offset by a substantial net inflow of public foreign capital (see table 3).[65]

Up to 1930, the pattern of Brazilian foreign indebtedness seems to have been mainly shaped by the cyclical conditions affecting the supply of foreign portfolio capital. Moreover, the foreign-exchange constraint appears to have become operative much earlier than conventional theory would suggest.[66] Likewise, the Brazilian

64 Phillimore to Elliot Butler, 8 December 1943, FO 371/37836, A16/16/6.

65 Taking five-year averages from 1891 on, the net inflow related to public foreign debt was: nihil in 1891-1895; £ .1 million yearly in 1896-1900; £ 2.7 million yearly in 1911-1915; — £ 9.6 million in 1916-1920; and — £ 1.9 million yearly in 1921-1925. The rough data on direct foreign investment suggest that the total remained approximately constant between 1914 and 1930. On this, see M. Abreu, "A Missão Niemeyer," *Revista de Administração de Empresas* 14 (June 1974): 7-28.

66 This case constitutes Chenery and Strout's phase I B, i. e. when a country does not reach its target savings/income ratio because of the existence of a "precocious" foreign-exchange constraint. See their article "Foreign Assistance and Economic Development," *American Economic Review* 56 (September 1966): 690.

It is somewhat surprising that contemporary economic theorists did not pay more attention to the default experience of underdeveloped countries. In fact, the controversy concerning the transfer problem in the late twenties and early thirties was often presented in terms of a curious mixture of theoretical arguments and "empirical" considerations related to the German economy. The Brazilian experience supplies the ideal case for the Keynesian pessimism regarding the price-elasticity of foreign demand for the paying country's exports. See J. Viner, *Studies in the Theory of International Trade* (London: Allen and Unwin, 1964), pp. 307-12, and articles by Keynes and Ohlin in *The Economic Journal*, 1929.

experience diverges from the notion — implicitly or explicitly based on the case of the United States — that there is a debt cycle and that present debtors, having reached a savings/income ratio threshold, will in due course expand their exports to eliminate their debts.[67] This is in sharp contradiction to Brazilian experience. The fragmentary evidence available indicates that foreign capital made a negative net contribution to the Brazilian foreign-exchange supply from 1914 until at least the end of the Second World War.

When a country depends on foreign capital either to expand its export infrastructure or to avoid outflows related to debt service and profit remittances, there is a strong incentive not to default as long as the suppliers of capital are willing to go on lending. However, if the traditional lenders are not willing to provide capital, as was the case after 1930, the best policy from the debtors' point of view is to default. This is true even disregarding the reduction in the economy's capacity to generate foreign exchange caused by the outflow of private foreign capital and a fall in export prices coupled with a need to maintain adequate import levels. There are, of course, political arguments which may influence the decision, as well as the possibility of retaliation, especially in the commercial field.

Overall evaluation of the Brazilian policy concerning public foreign debt payments points to the country's having paid (or increased her debt) more in the early thirties than might have been expected from actual economic conditions. The contrary was true of the 1940 and 1943 agreements, as the total payments stipulated seem to have been low relative to the country's capacity to pay. This is not surprising, since settlements tend to be the outcome of political rather than economic considerations. Brazil was no exception to this rule.[68]

The initial over-generous Brazilian concessions in 1931 can be explained partly as a specific manifestation of the orthodox (in intent) British-influenced policy adopted by Vargas' first finance minister, J. M. Whitaker, in 1930-1931, and partly as a failure to recognize that the country was facing a long-term international crisis. The excessively favorable terms granted in 1931 obliged the

[67] See, for instance, D. Avramovic *et al., Economic Growth and External Debt* (Baltimore: The Johns Hopkins Press, 1964), chap. 5, where, in spite of the recognition of the weaknesses of the three-stage growth-cum-debt cycle, the analysis follows this framework. See Chenery and Strout for a more flexible version of this approach.

[68] See *State Insolvency and Foreign Bondholders*, 2 vols. (New Haven: Yale University Press, 1951), vol. 1, *General Principles*, by E. Borchard, p. 322, fn. 61; vol. 2, *Selected Case Histories*, by W. H. Wynne, is a good source on the experience of other debtor countries.

Brazilian government to accept in 1934 a scheme of British inspiration which was too optimistic relative to the economy's limited capacity to generate foreign exchange, as shown by its accumulated commercial arrears.

In attempting to quantify the Brazilian "gains" from the successive settlements, it is important to distinguish between two distinct concepts related to the reduction of service payments. On the one hand, there are what can be called "postponement gains", which bring short-run balance-of-payments relief and are strictly equivalent to forced loans. This is the case, for instance, when sinking-fund payments are suspended but the debtor remains legally bound to pay in the future. On the other hand, there are "permanent-relief gains", which correspond to a real reduction in payments and carry no legal obligation to cover what has not been fully paid. This is the case when interest coupons are tendered by bondholders in return for an agreed reduction of contractual payment.[69]

Column (1) of table 4 depicts the postponement gains for the period under consideration, assuming a theoretical (that is, contractual) total service of roughly £ 23 million per year. Column (2) shows the permanent-relief gains, which are the sum of: actual reduction of interest payment corresponding to the 1934 and 1940 settlements; unpaid interest on loans in chronic default redeemed at 12% in 1943; interest arrears which were not fully paid in 1943; gains related to the redemption of grade 8 loans at 12%; and foregone interest on arrears, also in 1943.

Evaluation of the actual gains resulting from postponement of debt payments involves problems similar to those faced in assessing external borrowing in general, i. e., the advantages of having access to foreign exchange versus the interest costs of borrowing. To the extent that postponement gains were considerably larger than imports of nonessential and/or non-foreign-exchange-generating goods, postponement would tend to have been advantageous from the point of view of both the balance of payments and the level of activity. The importance of postponement gains is made clear by the fact that they corresponded to 53% of total imports in 1932, declining to 22% in 1937 and rising to roughly 40% in 1938-1939.[70] From the standpoint of availability of foreign exchange, the suc-

[69] The Brazilian gains were not equivalent to the bondholders' losses, for in many instances Brazilian loans were floated at a heavy discount.

[70] Straight comparisons between postponement gains and import levels do not tell the whole story because of the accumulation of commercial arrears during the period.

Table 4

Brazilian Gains[a] Resulting from Defaults, 1932-1944

(£ Million)

Year	Postponement Gains	Permanent-Relief Gains
1932	16.2	.4
1933	16.8	.4
1934	15.9	5.7
1935	15.5	7.3
1936	15.1	6.9
1937	14.5	5.6
1938	23.0	1.4
1939	23.0	2.0
1940	19.6	9.4
1941	18.9	9.2
1942	19.0	9.0
1943	19.1	8.2
1944	4.2	38.4[b]

[a] Difference between amounts actually paid and those due at par value.

[b] For 1944, the figures do not include the "gains" resulting from reductions in interest rates and principal brought about by the 1943 agreement. The immediate gains relative to cash payments would have totaled £ 45 million if all bondholders had preferred this option. The average interest rate on outstanding debt was reduced by 1.3%.

cessive reductions in service payments were equivalent to an increase in exports, and made it possible to avoid further reductions in imports.[71]

The drop in economic activity — and particularly in imports — led to an absolute fall in federal revenue, which did not recover its 1928 nominal level until 1934. Table 5 reveals that, even if there had been no foreign-exchange constraints, it would hardly have been practical to have gone on fully servicing the debt when this would have required more than a third of total federal revenue. The relief brought about by the reduction in payments allowed the government to shift outlays from foreign-debt payments to the domestic purchase of goods and services; this had a beneficial influence on the overall level of domestic activity. The share of the ministry of finance in total federal expenditures fell from 42% in

[71] For data on the import structure, see Fundação Getúlio Vargas, "Estrutura do Comércio Exterior do Brasil, 1920-1964" (Rio de Janeiro, 1960) (Mimeographed), vol. 2.

Table 5

Selected Statistics on the Public Foreign Debt Service, 1929-1945

Year	Total Service as % of Total Exports[a]	Service on Federal Loans as % of Federal Revenue[b]	Total Service Deflated by Capacity to Import[c] in £ Million (Capacity to Import in 1937 = 100)
1929	18.3	19.2	11.3
1930	30.0	31.2	18.4
1931	38.0	32.4	18.0
1932	13.3	4.1	7.2
1933	11.7	5.6	6.1
1934	12.2	12.8	6.1
1935	13.6	14.1	8.3
1936	12.2	13.5	7.9
1937	12.1	10.9	8.5
1938	—	—	—
1939	—	—	—
1940	5.5	3.7	4.3
1941	4.9	4.2	4.0
1942	4.2	4.0	5.1
1943	3.6	3.0	4.4
1944	13.9	7.1	18.3
1945	7.0	5.6	9.4

[a] The service data are from table 2. The information on total imports — converted from gold pounds and *cruzeiros* into pounds sterling — is from IBGE, *Anuário Estatístico do Brasil*, several years.

[b] Federal service does not include coffee loans. Revenue includes taxes earmarked for the public-works and national-defense plan of 1939-1943, and the works and equipment program of 1944-1946. The revenue data are from IBGE, *Anuário Estatístico do Brasil*, 1939-1940, pp. 1 268 and 1 410; 1947, p. 459.

[c] The capacity-to-import data are from A. V. Villela and W. Suzigan, *Política do Governo e Crescimento da Economia Brasileira, 1889-1945*, Série Monográfica, n.º 10 (Rio de Janeiro: IPEA/INPES, 1973), p. 441. The use of other "classical" series on capacity to import (those prepared by CEPAL, for example) would not alter the results appreciably.

1929 to 29% in 1938, while the share of the armed forces rose from 22% to 30% and that of the ministry of transport from 23% to 26%. It would be interesting to know more about the breakdown of federal expenditures, but information on this is unreliable.[72]

It might be suggested that policymakers failed to introduce measures that would have assured a much larger relative reduction in consumer-goods imports during the 1930s — in particular of consumer durables — and would thereby have left more foreign exchange available for capital-goods imports or debt service. However, on the whole, it does not appear that increased consumer-goods imports were made at the expense of the more essential capital-goods imports. Firstly, the importation of some nondurable goods, especially foodstuffs, was difficult to compress. Secondly, an increase in the share of consumer-durable imports was to be expected, since these were mainly "new" goods recently introduced in the Brazilian market. Thirdly, until 1934 and after 1937, exchange controls assured the availability of foreign exchange for essential imports. Fourthly, the demand for imported capital goods was artificially reduced by the ban from 1931 to 1937 on the importation of machinery for industries which produced a wide range of consumer goods and were judged to have excess productive capacity.

As far as the choice between consumer-goods imports and debt payments is concerned, it is obvious that the government found it politically more convenient to court public opinion by allowing a certain level of nonessential imports rather than by paying more debt service, an alternative which did not involve immediate advantages. This course of action was further backed by the lukewarm American policy, partly related to potential nonessential exports, concerning the foreign debt.

Examination of the real reasons behind the 1937 default, as well as of its consequences, is particularly interesting because this was the only instance when policymakers decided that the need to import essential goods was pressing enough to entirely suspend service on the foreign debt. It could be argued that there was some similarity between the Brazilian default in 1937 (a result of the American recession) and that in 1931 (the outcome of a world-wide depression). This would be misleading, however. In the first place, Brazil managed to pay something, even during the early years of the decade when exports were below those of the late 1930s. In the second place, while it is true that the real cost of

[72] The Fundação Getúlio Vargas data on government capital formation presented in Villela and Suzigan do not make sense, varying from 10.3% of total federal expenditures in 1933 to 1% in 1937.

servicing the debt — in terms of imports foregone, or debt service divided by capacity to import — had been increasing noticeably, it was still far from the 1929 levels (see table 5, column [3]). Finally, the further contraction of the trade surplus in 1938 indicates that policymakers attached high priority to ensuring relatively high imports. The decision to default was a clear reversal in Brazilian public-foreign-debt policy; it was the result not of the fall in export earnings, but of the need to increase (or at least not decrease) essential imports.

The decision to default also involved noneconomic considerations related to the stability of the *Estado Novo*. By casting the decision in terms of "either we pay the foreign debt or we reequip the armed forces and the transport network", Vargas was simultaneously able to mobilize military support for the new regime and to weaken internal criticism of the decision itself.

Evidence suggests that Vargas' claim that the inevitability of the default was linked to the need to import essential goods was partly an *ex post* rationalization of what had already happened in 1937. The huge increase in the value of imports between 1936 and 1937, was, indeed, even more pronounced in the case of capital goods (particularly railway-equipment imports, which doubled in value) and to a lesser extent in that of consumer durables. Although total imports fell in both 1938 and 1939, it can be argued that the default prevented an even greater drop, especially in capital-goods imports, which remained roughly stable in value between 1937 and 1939.

It is difficult to assess the effect of capital-goods imports on output, as there is no reliable information on capacity utilization. It seems clear, however, that the heavy imports of railway equipment which characterized the second half of the 1930s were related to the rapid expansion of the transport sector after 1935. The relatively poor showing of industry in the late 1930s is largely explained by the disappointing performance of agriculture (mainly sugar) in 1936-1938, rather than by the competition of imports or the nonavailability of capital goods (in 1939, food processing still accounted for over 30% of total industrial value added).[73] Military-equipment imports do not seem to have been an important drain on foreign exchange, for they probably required no more than

[73] The author thanks Professor A. Fishlow for allowing access to the disaggregated industrial indices which serve as the basis for table A1 of his article "Origins and Consequences of Import Substitution in Brazil," in *International Economics and Development*, ed. L. E. DiMarco (New York: Academic Press, 1972).

£ 3 to £ 4 million in 1938-1939. Actual payments in hard currency related to the two main military contracts — for German field guns and British destroyers — involved only £ 2.5 million.[74]

The 1940, and to a lesser degree the 1943, agreements stipulated much less annual service than had been the case in the past. (1944 was a somewhat atypical year since a considerable proportion of payments was related to cash settlements under option B.) The lower payments naturally resulted in much smaller strains on available exchange and on government revenue than those typical of the mid-1930s. Thus, up to 1943, Brazil continued to enjoy considerable postponement and permanent-relief gains.

On the other hand, the holders of Brazilian bonds may have lost out as a result of the succession of partial and total defaults; and the fact that the conditions of the 1943 agreement were respected raises the question of to what extent. If details were available on actual Brazilian payments, as well as on the actual net proceeds from all loans, it would be possible to calculate an internal rate of return which could be compared with ruling rates of interest for prime investments. This, in turn, would indicate how well the foreign bond markets allowed for risk, and how much the bondholders lost (if, as a group, they lost at all).

Unfortunately, however, there is no detailed information on the redemption terms of public loans. The purpose of these remarks is to put into perspective the unqualified views of those who see as particularly disastrous the overall long-run experience of holders of Brazilian bonds.

Brazilian foreign-debt policy apparently changed between the early thirties, when the primary consideration was "what is the minimum the creditors will accept", and the late thirties and forties, when the principal guideline was the maximum the country could pay without unduly limiting its access to essential imports. It would be hazardous, however, to generalize this observation for Brazilian foreign economic policy as a whole. Overall assessment would necessarily entail consideration not only of the public-foreign-debt question — despite its importance — but also of commercial policy, exchange-allocation policy, policies concerning private foreign capital, and so forth. The most likely result of such an aggregate evaluation would be to show that the conclusions reached with respect to the foreign-debt issue cannot be extended to other areas of national economic policy.

74 Knox to FO, tel. 364, 7 December 1940, FO 371/24172, A6040/4176/6; Waley to Balfour, 23 October 1939, FO 371/22721, A5021/71/6.

Production, employment and agrarian structure in the cacao regions of Bahia

Gervásio Castro de Rezende •

1 — Introduction

Certain evidence, of an admittedly selective and sparse nature, suggests that Brazilian agricultural development has been accompanied by increasing concentration of income and means of production. (1) For example, it is precisely in the regions most dynamic in terms of capital accumulation and technical progress that rural labor conditions have proven most unsatisfactory (in the case of migrant labor, or the *bóias frias*).[1] (2) In certain Northeastern regions such as the *agreste*, agricultural workers employed on large landholdings have been liberated as cropland has been turned into pasture.[2] (3) The settlement of frontier regions has been characterized by low labor absorption, it being notable that in some instances the traditional labor force has been displaced.[3]

• Research economist, IPEA/INPES. In processing the data, the author counted on the collaboration and excellent working relationship of Hermino Ramos de Souza and Ana Maria Reis of CEPLAC.

1 For a case study of a dynamic region in São Paulo, see M. C. I. Mello, *O "Bóia Fria": Acumulação e Miséria* (Petrópolis: Editora Vozes, 1975).

2 For a recent contribution to the analysis of this process, see M. L. Mello, "Proletarização e Emigração nas Regiões Canavieira e Agrestina de Pernambuco," Departamento de Ciências Geográficas, Universidade Federal de Pernambuco, June 1976 (Mimeographed).

3 Since these phenomena are occurring at present, the findings of some studies are still unpublished. See, for example, J. Hebette and R. E. Marin, "Colonização Espontânea, Política Agrária e Grupos Sociais," Núcleo de Altos Estudos da Amazônia, Universidade Federal do Pará, 1977 (Mimeographed); D. Goodman, "The Central West Region of Brazil: Federal Development Programs and Settlement of the Agricultural Frontier," report presented to the World Bank, February 1976 (Mimeographed).

These development patterns constitute the focus of this paper. In particular, we will analyze the agrarian structure in order to shed light on income levels, agricultural production and rural labor conditions. [4] For this purpose, a model of the duality "family sector/ wage sector" is presented in the second section. "Family production" is defined as that based on family labor, while "wage production" is that in which the labor force is predominantly comprised of wage workers. [5] This duality is further expressed as a sharp contrast not only in techno-economic aspects — such as product mixes, resource use and productivity, functional distribution of income, degrees and forms of market participation, etc. — but also in property holding and access to the means of production. Whereas the family sector is characterized by restricted income and production possibilities, it is only in the wage sector that accumulation and technical progress are feasible.

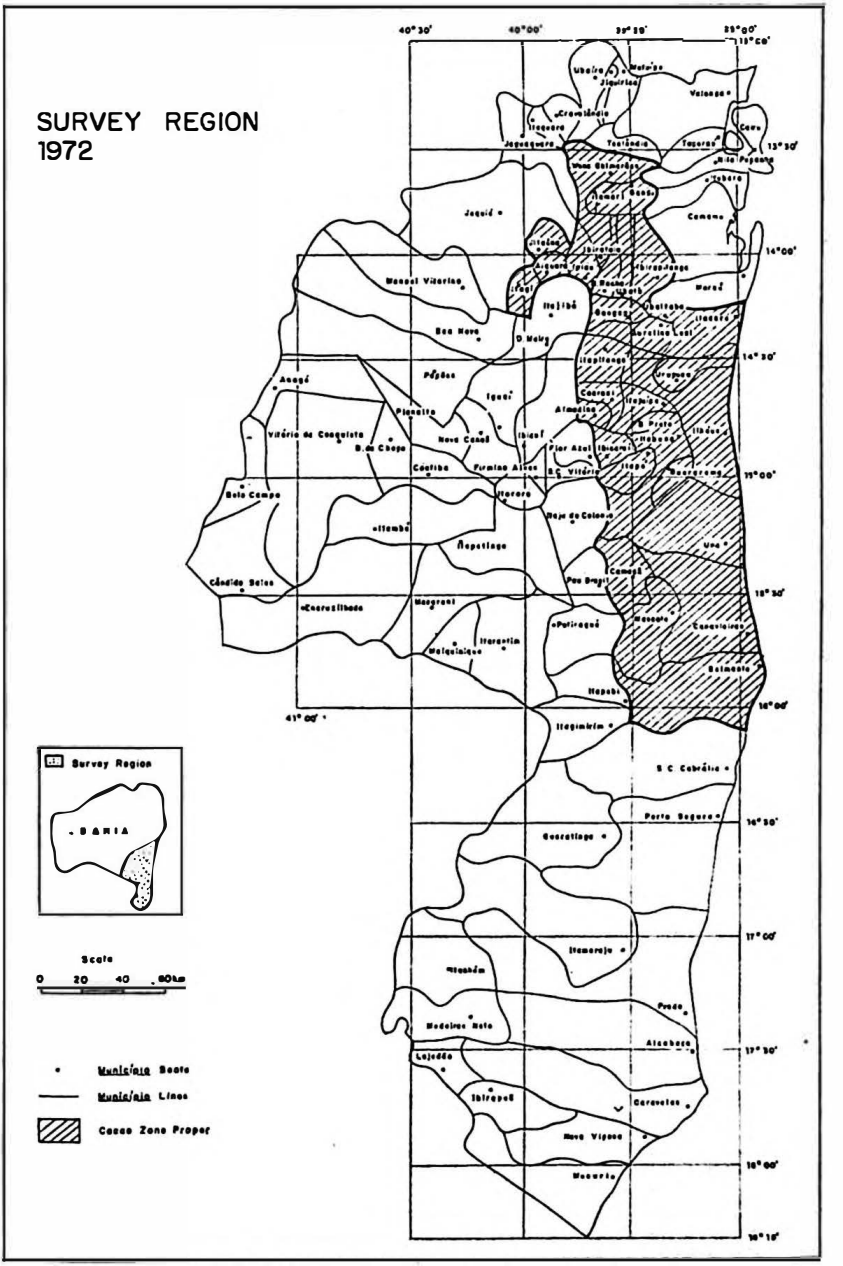
2 — An empirical analysis of the duality family/wage production

The data to be used were gathered by a federal agency — Comissão Executiva do Plano de Recuperação Econômico-Social da Lavoura Cacaueira (CEPLAC) — established in 1957 to cope with the financial problems of cacao production, then, as now, a predominantly export crop which is highly concentrated in southern Bahia. As a result of the broadening of its objectives, this agency conducted an economic and social survey designed to lead to concrete measures for regional development. This survey, begun in 1971, covered 89 *municípios* with an area of 92 thousand square kilometers and more than two million inhabitants in 1970 (see map). [6]

[4] In this sense, the present study continues previous research by the author. See G. C. Rezende, "Plantation Systems, Land Tenure and Labor Supply: An Historical Analysis of the Brazilian Case with a Contemporary Study of the Cacao Regions of Bahia, Brazil" (Ph. D. dissertation, University of Wisconsin, 1976); *idem*, "Estrutura e Nível Técnico da Agricultura Brasileira Segundo Furtado," *Pesquisa e Planejamento Econômico* 5 (June 1975): 219-30.

[5] "Family production" should not be taken as a synonym for "small", nor "wage production" as a synonym for "large". Likewise, family production is not necessarily subsistence (or nonmarket) production, the use of capital goods is not necessarily restricted to the wage sector, and there is no association between wage production and advanced technology. While the two sectors may differ as to size and the relative importance of market activities, in this paper these aspects are subordinated to the duality expressed in the dichotomy family labor/ wage labor.

[6] For more detailed information, see "Diagnóstico Socio-Econômico da Região Cacaueira do Estado da Bahia," prepared by the CEPLAC group in charge of the survey and presented to the 10th annual meeting of the Sociedade Brasileira de Economistas Rurais, Brasília, July 1972.


SURVEY REGION
1972
Survey Region
BAHIA
Scale
0 20 40 80km
Municipio Seats
Municipio Lines
Cacao Zone Proper

In tables 1 and 2, the size distributions of the production units (UPs) for the sample and the universe are compared. Partly due to the sampling procedures (mainly the large sample size), the empirical analysis is limited to direct comparisons of simple averages and other sample statistics. It is implicit throughout the discussion that more precise statistical analysis would corroborate the general conclusion as to the existence of a sharp contrast between family and wage production throughout the agriculture of the region. Though simple, the effectiveness of such an analysis can be seen as an indication of the cleavage between the two types of production; in this connection, the high degree of consistency in the empirical results is notable.

In the following, we consider first the data relative to the cacao zone proper, then that for the entire survey region. A production unit is classified in the family sector if less than 40% of the labor effectively used, in equivalent man-years, was hired (or wage) labor. Otherwise it is classified in the wage sector.

The sectoral distributions of the UPs according to size are presented in table 3. These distributions differ markedly, with a much higher incidence of smaller units in the family sector, and of medium and larger units in the wage sector. It must be noted, however, that almost one quarter of the wage UPs have less than 20 hectares, and that a considerable proportion of the UPs in both sectors are in the medium size class (20-100 hectares). Even so, in terms of labor utilization, the pure forms of the two types of production predominate in both sectors (column [5]).

The size distributions partially conceal the divergence between the two sectors, which is revealed in various other ways. In terms of wealth, for example, the differences in the incidence of multiple-property holding, as shown in column (3) of table 3, leave no doubt as to this division.[7] These property differentials are inseparably linked to the technical and economic characteristics of the two sectors, which we shall begin to discuss with the aid of tables 4 and 5.[8]

[7] It should be noted that, in view of our objectives, we have omitted from our discussion the landless workers, who constitute the majority in the zone, as columns (4) and (5) indicate, and whose property conditions certainly put them at the bottom of the overall distribution.

[8] In these and subsequent tables, a UP is considered "specialized" in a "main economic activity" if this activity (whether a single undertaking or a combination such as cacao-manioc or cacao-livestock) accounts for at least 67% of the gross value of the output of the UP. It is notable that almost 72% of the family UPs, corresponding to 75% of the area under this form of production, satisfy this criterion.

Table 1

Cacao Zone: Percentage Distribution and Average Area of UPs by Size

Size Class (Hectares)	Sample			Universe		
	Number (%)	Area (%)	Average Area (Hectares)	Number (%)	Area (%)	Average Area (Hectares)
0 — 10	32.8	2.3	3.5	18.7	1.4	4.6
10 — 20	15.6	4.4	14.0	20.1	4.4	13.6
20 — 50	28.2	17.6	31.0	32.2	15.8	30.5
50 — 100	12.8	17.3	67.0	16.3	17.6	66.6
100 — 200	5.5	14.4	130.0	7.6	16.0	130.9
200 — 500	3.9	20.9	266.0	3.9	18.0	288.0
500 — 1 000	.7	9.1	646.0	.9	9.4	640.1
1 000 and Over	.5	14.0	1 396.0	.4	17.4	2 771.9
Total	100.0	100.0	50.0	100.0	100.0	61.8

Sources: Sample: CEPLAC survey.
Universe: Instituto Brasileiro de Geografia e Estatística (IBGE), *Censo Agropecuário da Bahia*, 1970.

Table 2

Survey Region: Percentage Distribution and Average Area of UPs by Size

Size Class (Hectares)	Sample			Universe		
	Number (%)	Area (%)	Average Area (Hectares)	Number (%)	Area (%)	Average Area (Hectares)
0 — 10	35.8	1.6	3.1	20.4	1.1	4.4
10 — 20	12.0	2.4	13.5	16.4	2.6	13.2
20 — 50	22.7	10.2	30.8	29.2	10.8	30.2
50 — 100	13.6	13.3	67.3	16.2	13.1	66.2
100 — 200	8.2	15.6	130.0	9.2	14.7	130.1
200 — 500	5.7	23.7	285.3	5.8	20.8	292.4
500 — 1 000	1.2	11.4	638.0	1.7	13.8	659.5
1 000 and Over	.8	21.8	1 777.2	.9	23.1	2 017.9
Total	100.0	100.0	68.4	100.0	100.0	81.8

Sources: Sample: CEPLAC survey.
Universe: IBGE, *Censo Agropecuário da Bahia*, 1970.

Table 3

Cacao Zone: Distribution of UPs by Sector and Size, Multiple-Property Holding, and Composition of the Labor Force

Sector and Size Class (Hectares)	UPs		Area		Multiple-Property Index[a] (%)		Labor Use (Man-Years)	Hired Labor (%)
	Number (1)	%	Hectares (2)	%	Number (3)	Area	(4)	(5)
Family Production	*532*	*100.0*	*10 382*	*100.0*	*19.2*	*23.8*	*856*	*8.7*
0 — 20	349	65.6	2 121	20.4	16.3	43.8	451	2.9
20 — 100	173	32.5	6 883	66.3	22.0	11.1	368	5.4
100 and Over	10	1.9	1 378	13.3	80.0	58.1	42	4.8
Wage Production	*415*	*100.0*	*38 212*	*100.0*	*137.0*	*237.0*	*2 745*	*91.3*
0 — 20	98	23.7	956	2.5	96.9	377.9	203	79.3
20 — 100	220	53.3	9 818	25.7	133.6	352.9	1 065	86.9
100 and Over	95	23.0	27 439	71.8	185.3	190.6	1 470	96.5

Source: CEPLAC survey.

[a] Number (or area) of additional UPs reported/number (or area) of UPs interviewed.

Table 4

Cacao Zone: Main Economic Activity by Sector

Sector and Main Economic Activity	UPs		Area		Labor Use	
	Number (1)	%	Hectares (2)	%	Man-Years (3)	%
Family Production	*533*	*100.0*	*10 382*	*100.0*	*856*	*100.0*
Cacao	168	31.5	3 608	35.6	200	33.0
Manioc	169	31.7	2 805	27 0	270	32.6
Other[a]	45	8.4	1 185	11.4	73	8 5
Miscellaneous[b]	151	28.3	2 604	25.1	214	25.0
Wage Production	*411*	*100.0*	*38 212*	*100.0*	*2 745*	*100.0*
Cacao	310	77.6	30 646	80.2	2 372	86.4
Other[c]	28	6.8	4 163	10.0	182	6.6
Miscellaneous[b]	64	15.6	3 403	8.0	101	7.0

Source: CEPLAC survey.

[a] Includes livestock and manioc-cacao.

[b] Only the UPs "specialized" in properly defined "main economic activity(ies)" are analyzed in the CEPLAC survey.

[c] Includes livestock and livestock-cacao.

In the cacao zone, family production is not a mere subsistence mode, but is well-integrated into the market, an observation which is backed by the relatively low rate of on-farm consumption. On the other hand, the findings confirm, as expected, that wage production is characterized by a stronger market orientation, as shown by the greater importance of specialized UPs in terms of number, area and labor use, as well as by a virtual absence of onfarm consumption (see table 4 and column [4] of table 5).

With regard to composition of outputs, monoculture is a striking phenomenon. Moreover, even though the data refer only to the specialized UPs, the wage sector accounts for over 90% of cacao production, leaving little more than 6% to the family sector (the *burareiros*). In the case of temporary crops, however, the situation is nearly the opposite, with family units responsible for at least 80% of manioc production[9] (table 5).

[9] This estimate takes into account the unreported data for the nonspecialized UPs, in whose production manioc must play an important role.

Table 5

Cacao Zone: Distribution of Economic Activity by Sector

Sector and Main Economic Activity	Total Output		Output of Cacao				Output of Temporary Crops				Own Consumption[e] (% of Total Output)
							Total		Manioc		
	Cr$ 1 000	%	Cr$ 1 000	%	1 000 *Arrobas*	%	Cr$ 1 000	%	Tons	%	
	(1)		(2)				(3)				(4)
Total for Zone[a]	*24 326*	*100.0*	*22 096*	*100.0*	*367*	*100.0*	*697*	*100.0*	*5 516*	*100.0*	*2.1*
Family Production	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*11.9*
Cacao	946	3.9	892	4.0	20	5.3	37	4.9	263	4.8	4.2
Manioc	357	1.5	44	—	1	.3	302	43.3	2 650	48.2	21.6
Other[b]	192	.8	73	.3	2	.5	46	6.5	303	5.5	16.4
Miscellaneous[c]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	15.9
Wage Production	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	*1.2*
Cacao	20 626	84.8	19 967	90.4	325	88.5	84	12.1	737	13.4	.9
Other[d]	845	3.5	414	1.9	10	2.6	15	2.2	289	5.2	3.4
Miscellaneous[c]	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	5.4

Source: CEPLAC survey.

[a] Covers some UPs which could not be classified in either sector.

[b] Includes livestock and manioc-cacao.

[c] Only the UPs "specialized" in properly defined "main economic activity(ies)" are analyzed in the CEPLAC survey.

[d] Includes livestock and livestock-cacao.

[e] Excludes on-farm produce used as seed.

Table 6 presents some selected indicators of the sizes of the UPs by sector and economic activity. As to area, the family UPs, irrespective of the activities carried out, form a homogeneous group vis-à-vis the wage UPs (column [1]). Within the family sector, the higher average output of the cacao UPs is due, at least in part, to the greater cost of cacao production, which involves larger capital outlays, as evidenced in column (4).

Table 6

Cacao Zone: Indicators of Size by Sector and Main Economic Activity

Sector and Main Economic Activity	Area per UP (Hectares) (1)	Gross Output per UP (Cr$) (2)	Labor per UP (Man-Years) (3)	Capital per UP (Cr$) (4)
Total for Zone	*49.8*	*18 749*	*3.65*	*125 814*
Family Production	*19.6*	*2 972*	*1.61*	*20 139*
Cacao	22.0	4 280	1.72	30 839
Manioc	17.1	2 059	1.65	9 396
Other	26.3	3 067	1.62	26 511
Miscellaneous	17.2	2 331	1.42	18 358
Wage Production	*92.5*	*41 097*	*6.68*	*275 871*
Cacao	96.1	48 511	7.43	327 147
Other	148.7	31 964	6.50	190 464
Miscellaneous	53.2	8 141	2.98	53 719

Source: CEPLAC survey.

The additional information given in table 7 shows that the family UPs are also characterized by distinctly inferior technical conditions, as the several indicators of resource endowments suggest. In the light of these results, the differences within the family sector (between the cacao and the manioc UPs, for instance) are seen to be less significant than the duality family/wage production.

Table 8 shows that, in cacao production, the techno-economic conditions of the family UPs are appreciably inferior to those of the wage UPs. Although physical productivity per area clearly depends on the whole technical process, the poorer quality of land in the family sector may be an important factor. In turn, the relative lack of processing facilities, and the probably inferior marketing conditions facing the family producers (not only on account of their smaller crops, insufficient processing, etc., but also due to lack of financing) must underlie the considerably lower average price they

Table 7

Cacao Zone: Resource Endowments by Sector and Main Economic Activity

Sector and Main Economic Activity	Land per Worker (Hectare/ Man-Year) (1)	Quality of Land[a] (%) (2)	Capital[b] per Worker (Cr$/ Man-Year) (3)	Capital[b] per Land (Cr$/ Hectare) (4)	Multiple-Property Index (%)	
					Number (5)	Area (5)
Total for Zone	*13.7*	*19.0*	*34 844*	*2 527*	*70.3*	*197.0*
Family Production	*12.1*	*n.a.*	*12 540*	*1 034*	*19.1*	*23.8*
Cacao	12.8	31.0	17 866	1 401	27.4	33.9
Manioc	10.4	43.0	5 692	549	10.1	6.6
Other	16.2	37.6	16 342	1 007	26.7	21.6
Miscellaneous	12.2	n.a.	12 953	1 065	17.9	29.5
Wage Production	*13.9*	*n.a.*	*41 305*	*2 967*	*137.7*	*237.0*
Cacao	12.9	14.8	43 997	3 405	141.1	233.0
Other	22.9	6.9	30 687	1 342	100.0	139.7
Miscellaneous	17.8	n.a.	18 000	1 010	137.5	392.5

Source: CEPLAC survey.

[a] Percentage of *capoeira*-land in total land area. The meaningfulness of this proxy for land quality is strengthened by the first-hand knowledge of a CEPLAC agronomist, according to whom family production is for the most part restricted to scattered small areas with poorer soils ("*capoeira*-land" in his words).

[b] Excluding land.

Table 8

Cacao Zone: Techno-Economic Aspects of Cacao Production by Sector and Main Economic Activity

Sector and Main Economic Activity	Share of Cacao in Total Output (%) (1)	Output of Cacao per Area (Cr$/Hectare) (2)	Output of Cacao per Area (*Arrobas*/Hectare) (3)	Price Received for Cacao (Cr$/*Arroba*) (4)	Processing Facilities per Cacao Produced (Cr$/*Arroba*) (5)
Total for Zone	*90.8*	*1 232*	*21.3*	*60.2*	*163.9*
Family Production	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Cacao	94.3	786	17.3	45.5	69.0
Manioc	12.4	159	3.4	46.1	380.8
Other	38.1	446	10.3	43.1	222.3
Miscellaneous	n.a.	n.a.	n.a.	n.a.	n.a.
Wage Production	*n.a.*	*n.a.*	*n.a.*	*n.a.*	*n.a.*
Cacao	96.8	1 426	23.2	61.5	167.1
Other	49.0	892	20.5	43.4	197.1
Miscellaneous	n.a.	n.a.	n.a.	n.a.	n.a.

Source: CEPLAC survey.

receive. Taken together, lower physical productivity and lower prices lead to the result shown in column (2): in terms of value, wage production yields almost twice as much (Cr$ 786/hectare) as family production (Cr$ 426/hectare).

Further evidence on the duality family/wage production of cacao is presented in table 9. The two sectors are significantly and consistently differentiated in terms of (1) economic size, (2) resource endowments, including multiple-property holding, and (3) productivity of labor and land. Interestingly, in cacao production the family sector is not characterized by greater use of labor per area than the wage sector. In both sectors, however, the smaller units use more labor and produce more per area than the larger units.[10]

The contrasts between family and wage production which prevail in cacao are also observed in the broader geographic region covered by the CEPLAC survey (table 10). However, as we add the other subareas to the cacao zone proper, family production assumes greater importance, as indicated by the substantial amount of labor in this sector.[11] Moreover, table 11 confirms that family production is not synonymous with subsistence or nonmarket production, though wage production, as expected, is much more integrated into the market (see column [4]). This comparative market integration is also revealed by the relative importance of specialized UPs in the two sectors (columns [1] and [2]).

On the other hand, manioc is typically a family production sphere. This is evident even if we restrict ourselves to the specialized manioc UPs in the two sectors, though it is certain that the 818 nonspecialized UPs in the family sector ("miscellaneous") have in manioc an important source of income. The specialized manioc UPs represent almost 29% of all UPs, and are responsible for nearly 28% of all the labor employed in family production. Were the composition of output of the "miscellaneous" UPs available, manioc may be seen to engage up to 50% of the workers in family production. In sharp contrast, manioc is truly marginal in the wage sector; consistent with this fact, in this sector the manioc UPs present a lower degree of market integration and use less hired labor than the other UPs.

10 For additional data and further discussion of decreasing intensity of land use with size of UP, see Rezende, "Plantation Systems," pp. 284-99.

11 As pointed out in Rezende, "Plantation Systems," pp. 269-71, analysis of more detailed data suggests that family production is comparatively less important (in terms of land use and labor absorption) in the two subareas best suited to cacao and livestock activities — the cacao zone proper and the Pastoril de Itapetinga.

Table 9

Cacao Zone: Size Indicators, Resource Endowments, and Productivity of Cacao by Sector and Size of UP

Item and Sector	Total	Size Class (Hectares)						
		0–10	10–20	20–50	50–100	100–200	200–500	500 and Over
Number of UPs								
Family Production	168	71	33	43	16	4	1	—
Wage Production	320	31	43	110	61	36	28	11
Average Area (Hectares)								
Family Production	22.1	4.2	15.0	30.0	61.8	110.8	200	—
Wage Production	95.4	5.2	14.5	31.4	69.8	134.1	201.8	807.5
Labor Use per UP (Man-Years)								
Family Production	1.7	1.1	1.9	2.0	2.3	4.3	4.0	—
Wage Production	7.4	1.6	2.7	4.0	7.4	10.9	17.3	40.0
Total Output per UP (Cr$)								
Family Production	4 280	2 232	4 884	4 780	6 670	16 689	19 985	—
Wage Production	48 300	4 207	13 942	21 644	53 120	79 124	102 026	310 807
Capital per UP (Cr$)								
Family Production	30 839	12 351	31 136	34 066	59 531	129 816	340 061	—
Wage Production	326 125	20 879	54 323	105 206	265 007	526 116	785 774	2 071 067
Number of Additional UPs (%)[a]								
Family Production	27.4	26.8	18.2	34.9	6.3	125.0	—	—
Wage Production	140.6	129.0	88.4	135.5	157.4	191.7	121.4	218.2

Area of Additional UPs (%)[a]								
Family Production	33.8	110.4	22.1	20.8	2.4	118.5	—	—
Wage Production	233.9	796.9	183.2	394.4	366.9	304.7	155.4	137.9
Capital per Worker (Cr$/Man-Year)								
Family Production	18 141	11 228	16 387	17 033	25 883	30 190	85 015	—
Wage Production	44 071	13 040	20 120	26 324	35 824	48 268	45 420	74 277
Capital per Land (Cr$/Hectare)								
Family Production	1 395	2 041	2 076	1 136	963	1 172	1 700	—
Wage Production	3 419	4 015	3 746	3 353	3 798	3 923	3 001	3 310
Land/Worker Ratio (Hectare/Man-Year)								
Family Production	13.0	3.8	7.9	15.0	26.9	25.8	50.0	—
Wage Production	12.9	3.3	5.4	7.9	9.4	12.3	15.1	22.4
Quality of Land (%)[b]								
Family Production	48.3	18.9	24.5	53.2	53.2	65.5	57.5	—
Wage Production	29.1	6.2	17.0	20.2	24.6	27.0	36.7	30.7
Output per Worker (Cr$/Man-Year)								
Family Production	2 518	2 029	2 570	2 395	2 900	3 881	4 996	—
Wage Production	6 535	2 620	5 164	5 411	7 178	7 259	5 897	7 770
Output per Area (Cr$/Hectare)								
Family Production	194	531	326	160	108	151	100	—
Wage Production	507	809	962	989	761	590	390	346

Source: CEPLAC survey.

[a] Number (or area) of additional UPs reported/number (or area) of UPs interviewed.

[b] Includes wooded and *capoeira*-land.

Table 10

Survey Region: Distribution of UPs by Sector and Size, Multiple-Property Holding, and Composition of the Labor Force

Sector and Size Class (Hectares)	UPs		Area		Multiple-Property Index (%)		Labor Use (Man-Years)	Hired Labor (%)
	Number (1)	%	Hectares (2)	%	Number (3)	Area	(4)	(5)
Family Production	*2 087*	*100.0*	*64 347*	*100.0*	*16.2*	*23.7*	*3 944*	*3.9*
0 — 20	1 225	58.7	6 500	10.1	13.1	43.1	1 807	2.2
20 — 100	699	33.5	29 888	46.4	17.2	17.7	1 618	4.4
100 and Over	163	7.8	27 959	43.5	35.6	25.7	519	8.3
Wage Production	*855*	*100.0*	*142 699*	*100.0*	*113.2*	*125.5*	*4 716*	*88.4*
0 — 20	171	20.0	1 441	1.0	73.7	447.1	322	74.8
20 — 100	362	42.3	17 355	12.2	109.9	259.1	1 546	83.3
100 and Over	322	37.7	123 904	86.8	137.9	103.0	2 847	92.8

Source: CEPLAC survey.

Table 11

Survey Region: Distribution of UPs by Sector and Main Economic Activity

Sector and Main Economic Activity	UPs		Area		Labor Use		Own Consumption[d] (% of Output)	Hired Labor (%)
	Number	%	Hectares	%	Man-Years	%		
	(1)		(2)		(3)		(4)	(5)
Family Production	*2 087*	*100.0*	*64 547*	*100.0*	*5 944*	*100.0*	*23.2*	*5.9*
Manioc	602	28.8	11 820	18.4	1 096	27.8	26.9	1.9
Cacao	230	11.0	5 469	8.5	425	10.8	4.8	5.6
Livestock	106	0.4	16 444	25.6	473	12.0	30.7	8.2
Swine	77	3.7	2 108	3.3	136	3.4	29.6	2.9
Other[a]	164	7.0	3 075	4.8	250	6.3	17.0	3.2
Miscellaneous[b]	818	39.2	25 431	39.5	1 564	39.7	41.9	3.6
Wage Production	*856*	*100.0*	*142 699*	*100.0*	*4 716*	*100.0*	*4.2*	*88.4*
Cacao	358	41.0	35 850	25.1	2 607	55.3	1.0	92.1
Livestock	203	23.7	74 514	52.2	1 007	22.0	0.3	88.5
Manioc	38	4.4	1 713	1.2	104	2.2	13.6	75.0
Other[c]	60	7.0	10 753	7.5	283	6.0	1.3	80.8
Miscellaneous[b]	196	22.0	19 869	13.9	655	13.9	18.8	75.1

Source: CEPLAC Survey.

[a] Includes *dendê*, manioc-cacao, beans, bananas, and coffee.

[b] Only the UPs "specialized" in properly defined "main economic activity(ies)" are analyzed in the CEPLAC survey.

[c] Includes *piaçaba*, livestock-cacao, and *dendê*.

[d] Excludes on-farm produce used as seed.

The above evidence (tables 10 and 11) shows that manioc has established itself more fully in family production, while livestock activities have come to the fore in wage production (compare tables 11 and 4). These trends might be interpreted as an allocation of specific activities to each sector. Manioc is the activity with the lowest resource requirements per UP (columns [1] and [4] in table 12), or rather per family, which is the living and working unit in this case (column [3]). This is in marked contrast to the average resources used in livestock activities in the wage sector.

The data on multiple-property holding (column [5]) show that there is a clear association between the property holdings of the producers and the resource requirements of the activities. It should be pointed out that in the wage sector manioc production is of slight economic significance, is carried out on a smaller scale than other activities, and is characterized by lower degrees of market integration and use of hired labor. In accordance, its producers differ from other wage producers as to property holding. In a word, even when manioc shows up in wage production, it resembles the patterns prevalent in family production.

Some final points must be discussed with reference to the data presented in table 12. Firstly, it is clear that area alone cannot serve as a measure of economic size in comparing two activities as technically different as cacao and livestock; thus, while in both sectors the average area of a livestock UP is several times that of a cacao UP, they approach each other if we consider the value of the means of production used, i.e. the total capital per UP (see columns [1] and [4]).[12] In addition, and referring specifically to the wage sector, it is interesting to note the greater incidence of multiple-property holding in cacao production (column [5]) — or rather in the cacao zone. This suggests that in cacao it is not the degree, but the form of concentration that is different.[13]

The sharp distinction between the two sectors, in terms of availability of means of production relative to labor, is clear in table 13. The results on total output per area and per worker

[12] Since cacao land is much more valuable than pasture land, this conclusion might change to the extent that land has been excluded from the value of capital due to lack of data. Inclusion of land would differentiate the two sectors even more owing to the greater presence of cacao production in the wage sector.

[13] This has been completely overlooked in some works which emphasize the relatively small average area of the UPs in the cacao zone, compared with the general pattern in coffee, sugar, livestock, etc. See, for example, M. H. Alencar, "Aspectos da Concentração da Produção de Cacau e da Estrutura Fundiária na Região Cacaueira do Estado da Bahia," Itabuna, Bahia, CEPLAC, March 1970 (Mimeographed). For additional evidence and further discussion of this issue, see Rezende, "Plantation Systems," pp. 271-75.

Table 12

Survey Region: Indicators of Size and Multiple-Property Holding by Sector and Main Economic Activity

Sector and Main Economic Activity	Area per UP (Hectares)	Output per UP (Cr$)	Labor per UP (Man-Years)	Capital per UP (Cr$)	Multiple-Property Index (%)	
					Number	Area
	(1)	(2)	(3)	(4)	(5)	
Total for Region	*68.4*	*12 217*	*2.8*	*77 836*	*44.8*	*95.7*
Family Production	*30.8*	*2 314*	*1.9*	*16 933*	*16.2*	*23.7*
Manioc	19.8	1 629	1.8	6 270	9.1	10.3
Cacao	23.8	4 138	1.8	30 698	28.3	33.5
Livestock	83.9	8 994	2.4	37 874	35.2	31.3
Swine	27.4	354[a]	1.8	6 421[a]	14.3	23.1
Other	18.8	1 578	1.5	16 683	17.7	18.0
Miscellaneous	31.1	1 037	1.9	12 059	12.3	23.7
Wage Production	*166.9*	*38 351*	*5.5*	*238 666*	*113.2*	*125.5*
Cacao	100.2	45 532	7.3	311 265	137.2	209.4
Livestock	367.1	63 410	5.3	343 307	120.7	90.4
Manioc	45.1	5 224	2.7	26 207	34.2	54.6
Other	179.2	23 962	4.7	157 396	145.0	150.5
Miscellaneous	101.3	10 109	3.3	63 754	67.3	98.5

Source: CEPLAC survey.

[a] Probably erroneous.

Table 13

Survey Region: Techno-Economic Aspects of Production by Sector and Main Economic Activity

Sector and Main Economic Activity	Area per Worker (Hectares/Man-Year) (1)	Capital per Worker (Cr$/Man-Year) (2)	Output per Area (Cr$/Hectares) (3)	Output per Worker (Cr$/Man-Year) (4)
Total for Region	*24.5*	*27 902*	*178.7*	*4 380*
Family Production	*16.3*	*8 960*	*75.0*	*1 224*
Manioc	10.8	3 447	82.9	894
Cacao	12.9	16 613	174.0	2 239
Livestock	34.8	15 694	107.2	3 727
Swine	15.5	3 636*	12.9*	200*
Other	12.3	10 944	84.2	1 035
Miscellaneous	16.3	6 307	33.3	542
Wage Production	*30.3*	*43 270*	*229.8*	*6 963*
Cacao	13.8	42 744	454.6	6 253
Livestock	69.8	65 315	172.7	12 064
Manioc	16.5	9 576	115.8	1 908
Other	38.0	33 370	133.7	5 080
Miscellaneous	30.3	19 078	100.0	3 025

Source: CEPLAC survey.

* Probably erroneous.

reported in columns (3) and (4) are fully consistent with all the conclusions presented so far. It can be argued, furthermore, that the table only partially expresses the actual cleavage between the two sectors, since there is no indication of the quality of land used at the survey region level.

3 — A theoretical perspective on the duality family/wage production

In the analysis of the cacao zone presented in section 2, we emphasized that family production, which is responsible for an almost insignificant share of total cacao output, is characterized by distinctly inferior technical and economic conditions in comparison to the dominant wage production of the same crop. Furthermore, examination of the more complete data referring to the whole CEPLAC survey region showed that the family producers as a group have a small share in the economically dominant activities. In particular, they are expelled to lands that are marginal as far as cacao is concerned; in their *capoeira*-land they find an income in manioc, which, to the extent that it is known as a "poor man's crop", accurately discloses the precarious conditions of property and access to the means of production which mark the family sector relative to the wage sector.

The limited property holdings of the family producers — and the subsequent restrictions on their access to credit, marketing channels, etc. — imply that the activities conducted in the family sector must satisfy two prerequisites: firstly, the resource requirements, in terms of land, capital, etc., must be consistent with the prevailing conditions of property and access to the means of production; and secondly, the level of income in these activities must be such as to make them unattractive to wage producers, or in more precise terms, the account rate of profit in family production [14] must be less than the ruling rate of profit in the wage sector.

Activities which satisfy the first prerequisite are manioc and cacao in marginal lands. The basic fact here is that the particular combination of factors of production depends on the the property holdings of the producer. It would therefore be misleading to attribute only to greater productive efficiency arising from better

[14] Defined as the ratio net income (after imputation of the current wage rate to family labor)/value of means of production.

education and entrepreneurial capacity the readier access that wage producers have to factor markets (through credit, for instance).[15]

Concerning the second prerequisite, the issue is the following: it is easy to understand why family producers are excluded from cacao, livestock, etc., but why do wage producers, since they have greater economic power, not plant manioc? The answer lies in the significant differential between the ruling rate of profit in the wage sector and the account rate of profit in the family sector, the latter being a measure of the rate of profit which would have ensued had the activities in family production been developed using wage labor.

Table 14 presents, in columns (3) and (4), these rates of profit, leaving no doubt that the results of such a simple calculation are fully consistent with our hypothesis. Notwithstanding the lack of data on the "miscellaneous" group, it seems reasonable to assume, in view of the previous evidence on their production, that the rates for this group would approach those of the manioc UPs, strengthening the hypothesis even further.

The second prerequisite for the existence of family production may be expressed as a relationship between the income per worker in the family sector and the remuneration of labor in the wage sector. Let us call L and K the total labor (in man-years) and the total value of the means of production, respectively, associated with a total net income Y in family production. Define $\frac{Y}{L} = y$ and $\frac{K}{L} = k$ the income per worker and the capital/labor ratio, respectively. Let w and r stand for the wage rate and the rate of profit in the wage sector, and r_a for the account rate of profit. In terms of our hypothesis, the duality family/wage production involves the following relationship between these two rates of profit:

$$r_a < r \qquad (1)$$

15 We depart, consequently, from a literature which does not make explicit the effect of property holdings on the techno-economic characteristics of the respective types of production. The pervasive contrasts are reduced to mere differences in factor ratios, which are then interpreted as the results of optimum adjustments to different factor prices. These prices, in turn, are attributed to an environment in which factor-market imperfections are analytically relevant. See, for example, W. R. Cline, *Economic Consequences of a Land Reform in Brazil* (Amsterdam: North-Holland Publishing Co., 1970); W. R. Cline and R. A. Berry, "Farm Size, Factor Productivity and Technical Change in Developing Countries," n. p., January 1976 (Mimeographed); K. Griffing, *Land Concentration and Rural Poverty* (London: Macmillan, 1976); P. K. Bardhan, "A Model of Growth of Capitalism in a Dual Agrarian Economy," in *Development and Planning*, ed. J. Bhagwati and R. S. Eckaus (London: George Allen & Unwin Ltd., 1972), pp. 109-17.

Table 14

Survey Region: Income, Wage, and Profit Rates by Sector and Main Economic Activity

Sector and Main Economic Activity	Net Income per Worker in Family Production[a] (Cr$/Man-Year) (1)	Average Wage Rate in Wage Production (Cr$/Man-Year) (2)	Account Rate of Profit in Family Production[b] (%) (3)	Effective Rate of Profit in Wage Production (%)
Family Production	n.a.		n.a.	
Manioc	709		(--) 31.6	
Cacao	1 597		(—) 1.3	
Livestock	3 194		8.1	
Swine	37[c]		(- -) 47.6[c]	
Other	608		(—) 10.7	
Miscellaneous	n.a.		n.a.	
Wage Production		n.a.		n.a.
Cacao		1 976		5.6
Livestock		1 492		11.5
Manioc		609		5.0
Other		1 917		8.3
Miscellaneous		n.a.		n.a.

Source: CEPLAC survey.

[a] Calculated *before* imputation of an income to family labor used.

[b] Calculated *after* imputation to family labor of the average wage rate in wage production (Cr$ 1 800).

[c] Probably erroneous.

Replacing r_a with its previous definition, we have

$$\frac{Y - w.L}{K} < r$$

an expression which can be rewritten as

$$y - w < rk \qquad (2)$$

Therefore, the duality family/wage production implies a relationship between the level of income per man-year in family production and the remuneration of labor in wage production. This relationship can be interpreted as a mechanism by which a maximum is set on the income per worker in the family sector.[16] This mechanism is related to the fact that in the family sector the direct producer (i.e. the family head or member) is also the owner of the means of production, and that for this reason there is no need to distinguish income attributable to capital from income attributable to labor. These categories of income require differentiation only in the wage sector, where the direct producer (i. e. the wage worker) is not the owner of the means of production. This structural feature of family production has been clearly perceived in an anthropological study of the cacao zone:

> The nature of land use shows that it is a means of maintenance or subsistence comparable to the worker's labor for wages. The similarity of these two subsistence techniques (sic) stands out clearly when contrasted with the land use of the *fazendeiros* to increase capital resources.[17]

Nonetheless, this feature alone cannot account for the fact that the level of income per worker in family production is directly

[16] Interpreted in this way, such a relationship is precisely the opposite of the type posited in the dual models — e. g. in A. Lewis' "Development with Unlimited Supplies of Labor" — which take as given the income level in family production, this level setting a minimum on the remuneration in the wage sector. Relationship (2) above, however, leaves open the mechanism for determining this wage. See Rezende, "Plantation Systems," for an historical analysis of this issue in the Brazilian case.

[17] A. Leeds, "Economic Cycles in Brazil: The Persistence of a Total Culture Pattern, Cacao and Other Cases" (Ph. D. dissertation, Columbia University, 1957), p. 262. This attribute of family production (i. e. of not presupposing a rate of profit in the same terms as wage production) is the object of an interesting discussion by F. Oliveira, "Agricultura e Crescimento Econômico no Brasil," in *O Banquete e o Sonho* (São Paulo: Brasiliense, 1976), pp. 28-33. There is a growing literature which acknowledges this aspect of family production, but it makes no reference to its structural character, seeing in it instead an imperfection in factor markets. See, for example, Cline, p. 25ff.; E. R. A. Alves and C. E. Schuh, "Agricultura de Subsistência: Teste de Um Modelo de Equilíbrio Subjetivo nas Condições do Brasil," in *Agricultura e Desenvolvimento*, ed. J. Pastore (Rio de Janeiro: APEC/ABCAR, 1973), pp. 150-72.

related to the remuneration of labor in the wage sector. To understand this relationship, it is necessary to turn to another aspect of the duality under discussion.

So far, the duality family/wage production has been proposed as giving rise to, and at the same time expressing itself through, two related phenomena, namely (1) a systematic difference between the account rate of profit and the ruling rate of profit, and (2) a definite relationship between the net income per worker in the family sector and the remuneration of labor in the wage sector.

A third important aspect, closely linked to these phenomena, refers to the fact that only by selling their commodities at prices which make these activities unattractive to wage producers are family producers able to compete. Limiting ourselves to the output of the family sector which is marketed, it is easy to see that, to the extent that the account rate of profit r_a in family production is lower than the ruling rate of profit r in wage production, the prices of the commodities produced under the family system are lower than they would be were they produced on the basis of wage labor.[18] In fact, it is only in this way that equations (1) and (2) can be satisfied.

There is an important analytical result associated with this condition. Let us consider the family sector as a supplier of wage goods to the wage sector — as it is in the case of manioc, beans, corn, etc. Let us further suppose that the real wage (in terms of wage goods) is given, so that the nominal wage changes in proportion to the prices of these goods. This implies a cheapening of labor costs to the wage sector, and a concomitant increase in the rate of profit, thereby leading to a transfer of income from family to wage producers.[19]

It could also be argued that, even though the laborers employed in wage production are free to move, the relatively precarious techno-economic conditions of family production would make

18 This conclusion requires, of course, that no cost reduction occur in this (simulated) takeover of family by wage production.

19 This law of price formation and its relation to capital accumulation have already been proposed in a growing literature addressed to the analysis of family production in Brazilian agriculture. See, for example, J. S. Martins, *Capitalismo e Tradicionalismo* (São Paulo: Livraria Pioneira Editôra, 1976); J. C. Duarte and O. Queda, "Agricultura e Acumulação," *Debate e Crítica,* n.º 2 (January-June 1974): 90-97. It is interesting to refer to an early account by Marx of a similar feature of family production in Europe, as quoted in M. R. G. Loureiro, *Parceria e Capitalismo* (Rio de Janeiro: Zahar, 1977), pp. 123-24. The so-called "low-returns" problem in American agriculture, in which the family farm predominates, might also be cited. In the pertinent literature, this problem is identified in a significantly low account rate of profit in agriculture relative to the effective rate of profit in other sectors of the U. S. economy.

this sector a poor alternative for them. In other words, the low productivity of family workers should play an important role in assuring a labor supply to the wage sector at the given wage rate.[20]

As can be seen in columns (1) and (2) of table 14, there is a significant gap between the average income in the family sector and the remuneration in the wage sector, implying an even greater gap between the wage and the marginal income of family labor.[21] Moreover, the evidence in tables 15 to 17 shows that family laborers also do off-farm work, most likely in the wage sector.[22] Such outhiring is apparently connected to the limited income-earning possibilities of own production in the family sector.[23]

[20] The relevance of the precariousness of family production for the labor supply of the wage sector is the object of historical analysis in Rezende, "Plantation Systems." Such a connection between the techno-economic conditions of family production and the labor supply of "agro-mercantile enterprise" (sic) was previously proposed by Celso Furtado in "A Estrutura Agrária no Subdesenvolvimento Brasileiro," in *Análise do Modelo Brasileiro* (Rio de Janeiro: Civilização Brasileira, 1972). It should be pointed out that in this paper it is not argued that the wage rate is determined, à la Lewis, by the income per worker in family production; however, such a wage theory does seem to be present in Furtado's work.

[21] On the basis of production function analysis, and using sample data covering the Northeast as a whole, Scandizzo and Barbosa have found a similar gap. See P. L. Scandizzo and T. Barhosa, "Substituição e Produtividade de Fatores na Agricultura Nordestina," *Pesquisa e Planejamento Econômico* 7 (August 1977): 381-86.

[22] This empirical evidence further serves to show that in Brazil the identification of family production with subsistence (or non-market) production is a misleading stereotype. Family workers are integrated not only into the product markets, but also into the labor market. In this respect, it is interesting to refer to the data (especially to the point because relative to some of the most backward areas of Brazilian agriculture) in G. F. Patrick and J. J. Carvalho Filho, *Low Income Groups in Brazilian Agriculture*, Purdue Agricultural Experiment Station Bulletin, n.º 79 (April 1975).

[23] It is outside the scope of this work to go deeper into the question of how the family allocates its labor between own production and wage employment. This question includes issues such as the worker's notion of independence in family production compared to his lack thereof in wage labor, the probability of finding wage employment, etc. These issues can be more appropriately clarified only by anthropological research. In this respect, it is interesting to refer to Mintz's interpretation of family production in the Caribbean as a form of resistance to the plantation (see "The Caribbean," *Daedalus*, Spring 1974, pp. 61-62). In our own historical analysis of the Brazilian case, family production has been interpreted as an option to plantation work, given the low wages and harsh working conditions on the plantations. In general, these issues are completely absent in the dual models, in their characterization of the process of the labor transfer from the so-called subsistence sector to the wage sector. For a perceptive critique of these dual models, see J. S. Leite Lopes, "Notas Críticas ao Desemprego e Subemprego no Brasil," Programa de Pós-Graduação em Antropologia Social, Museu Nacional, n.º 5, Rio de Janeiro, 1976; J. Weeks, "The Political Economy of Labor Transfer," *Science and Society*, n.º 35 (1971): 463-80.

Table 15

Survey Region: Incidence of Outhiring in Family Production According to Size of UPs in Hectares

Size Class (Hectares)	Number of UPs	Average Area (Hectares)	Total Labor		Outhiring		Rate of Outhiring[a] (%)	Family Labor per UP (Man-Years)	Total Labor per Area (Man-Years/ Hectare)	Hired Labor (%)
			Man-Years	%	Man-Years	%				
	(1)	(2)	(3)		(4)		(5)	(6)	(7)	(8)
Total	*2 087*	*30.8*	*3 944*	*100.0*	*631*	*100.0*	*14.3*	*1.8*	*.06*	*5.9*
0 — 10	951	3.0	1 255	31.8	332	52 6	21 2	1.3	.45	1.8
10 — 20	274	13.5	551	14.0	99	15.7	15.6	2.0	.15	3.1
20 — 50	451	30.2	1 045	26.5	119	18.0	10.6	2.2	.08	3.4
50 — 100	248	65.7	573	14.5	57	9.0	9.6	2.2	.04	5.9
100 and Over	163	171.5	519	13.2	23	3.6	4.6	2.9	.02	8.2

Source: CEPLAC survey.

[a] Calculated as $\frac{\text{off-farm family labor}}{\text{off-farm + on-farm family labor}}$. See the text.

Table 16

Survey Region: Incidence of Outhiring in Family Production According to Size of UPs in Terms of Labor Use

Size Class (Man-Years)	Number of UPs	Average Area (Hectares)	Total Labor		Outhiring		Rate of Outhiring[a] (%)	Family Labor per UP (Man-Years)	Total Labor per Area (Man-Years/ Hectare)	Hired Labor (%)
			Man-Years	%	Man-Years	%				
	(1)	(2)	(3)		(4)		(5)	(6)	(7)	(8)
Total	2 087	30.8	3 944	100.0	681	100.0	14.5	1.5	.06	5.9
0 — 1	602	16.5	328	8.3	287	45.5	47.1	.5	.03	1.8
1 — 2	723	27.0	950	24.1	175	27.7	16.0	1.3	.05	3.4
2 — 4	554	37.9	1 506	38.2	128	20.3	8.1	2.6	.07	3.8
4 — 8	181	58.2	915	23.2	38	6.0	4.2	4.8	.09	6.5
8 and Over	27	122.1	245	0.2	2	.3	.8	8.7	.07	3.3

Source: CEPLAC survey.

[a] See note to table 13.

Table 17

Survey Region: Incidence of Outhiring in Family Production According to Main Economic Activity

Main Economic Activity	Number of UPs	Average Area (Hectares)	Total Labor		Outhiring		Rate of Outhiring[a] (%)	Family Labor per UP (Man-Years)	Total Labor per Area (Man-Years/ Hectares)	Hired Labor (%)
			Man-Years	%	Man-Years	%				
	(1)	(2)	(3)		(4)		(5)	(6)	(7)	(8)
Total	*2 087*	*30.8*	*3 944*	*100.0*	*631*	*100.0*	*14.3*	*1.8*	*.06*	*3.9*
Manioc	603	19.8	1 097	27.8	191	30.3	15.1	1.8	.09	1.9
Cacao	230	23.8	425	10 8	84	13.3	17.3	1.7	.08	5.6
Livestock	106	83.0	473	12.0	38	0.0	8.1	2.2	.03	8.2
Swine	77	27.4	136	3.4	23	3.6	14.8	1.7	.06	2.9
Other	164	18.8	249	6.3	68	10.8	21 9	1.5	.04	3.2
Miscellaneous	817	31.0	1 564	39.7	227	36.0	13.1	1.8	.06	3.6

Source: CEPLAC survey.

[a] See note to table 13.

Table 15 presents the data on this off-farm work according to the size of the UPs in hectares. The rate of outhiring (column [5]) [24] is a measure of the insufficiency of the overall technical and economic conditions of family production in relation to the subsistence needs of the family. It is interesting to note that the index differs consistently by size groups; in particular, it shows that one-fifth of the total family labor on UPs under 10 hectares is off-farm work. These smaller UPs, with an average area of three hectares, comprise almost half of the family UPs. As can be seen from columns (6) and (7), these smaller units are characterized by much greater intensity of land use (labor per hectare) and less utilization of family labor on the UP. It would seem, therefore, that a relative shortage of means of production — first and foremost, land — leads to intensive cultivation coupled with part-time wage work on larger plantations.[25] This labor pattern, together with the miniscule size of these UPs, makes it possible to denominate this large subsector of family production the *minifúndio*.[26]

Further insight into outhiring in the family sector is allowed by table 16, where the UPs are stratified according to the total amount of labor used in own production. The family UPs with less than one man-year of labor used show a high incidence of off-farm

24 Defined as $\frac{\text{off-farm work}}{\text{off-farm work} + \text{on-farm work}}$.

25 Further analysis might indicate that this low degree of labor absorption of the *minifúndio* leads to out-migration, especially of the most productive family members, leaving behind the least productive (the women, the oldest and the youngest). In this way, a vicious-circle dearth of means of production → low productivity → low absorptive capacity → out-migration of the ablest → low productivity would be set in motion.

26 For a discussion of the precarious economic conditions of a group of family producers in the cacao zone, whose "lack of resources makes them work for others in search of their subsistence", see A. D. Landim, "Cooperativa Agrícola Mista de Una Resp. Ltda.," Itabuna, Bahia, CEPLAC, 1975 (Mimeographed). Similarly, Leeds observes that "many concurrently or alternately work on their plots and take jobs as laborers on *fazendas*" (p. 252). For an overview of the incidence of *minifúndios* in Brazilian agriculture, see Interamerican Committee for Agricultural Development, *Land Tenure Conditions and Socio-Economic Development of the Agricultural Sector: Brazil* (Washington, D. C.: Pan American Union, 1966) pp. 81-117, where emphasis is given to the inability of the *minifúndio* to allow for the subsistence needs of the producer. As an example of the abundant literature on the pervasiveness of part-time wage work in plantation systems other than in Brazil, see J. S. Handler, "Small-Scale Sugar Cane Farming in Barbados, *Ethnology* 5 (January 1965): 264-83; in this article, the author analyzes a community of family producers that "cannot depend upon the cash proceeds derived from cane alone to satisfy all or most of their cash needs. They must seek income from other sources ... such as plantation wage labor" (p. 280).

work. From the average area of these UPs, as well as their significantly lower intensity of land and labor utilization (see columns [6] and [7]), it may be tentatively concluded that two different situations lead to outhiring in the family sector. In the first case, that of the typical *minifúndio,* intensive land use is coupled with outhiring. In the second case, factors other than land shortage cause outhiring. It may be that this second case would vanish had we allowed for land quality, but lack of data leaves the question open to further research.

Lastly, table 17 indicates that there are no appreciable differences in the average rate of outhiring, nor in the patterns of land and labor use, by activity, with the exception of livestock, whose producers therefore seem to form an upper stratum within the family sector (a conclusion which is supported by the income data in table 14).

These data on the incidence of outhiring in family production lead to the conclusion that equations (1) and (2) are satisfied due to the fact that low income levels induce a large proportion of the workers in this sector to participate in the labor market. In this way, low income levels in family production play the double role of (1) cheapening wage goods, and (2) making the family sector a source of labor for the wage sector.[27]

4 — Socio-economic structure and economic analysis: a final word

There is a last and decisive implication of the distinct techno-economic conditions of production in the two sectors. On the one hand, in the family sector, the basic characteristics of property holding and access to the means of production are reproduced to the extent that income appropriated by family producers is not high enough to allow for savings and therefore precludes investments. This implication necessarily follows from equation (2), if it is assumed that the remuneration of labor in the wage sector is just sufficient to cover subsistence needs. On the other hand, profit and investment are the rule in the wage sector.

27 This link is highly contradictory due to the technical backwardness of the sector which produces the wage goods. For a discussion of this point, see A. Corten, "Valor de la Fuerza de Trabajo y Formas de Proletarizaction," *Revista Latinoamericana de Sociologia* (Nueva Epoca), n.º 1 (1974): 45-64. For a theoretical perspective on plantation systems with emphasis on the Brazilian case, see Rezende, "Plantation Systems," chap. 4, pp. 101-30.

Consequently, the existing conditions of property and access to means of production are reinforced by processes of production and distribution which, in turn, rest on these same structural foundations.[28] Our model has attempted to describe this socio-economic structure and its effects on production and distribution.

[28] The preservation, and in some cases even the worsening, of the family producers' conditions of property and access to the means of production are also related to politico-institutional processes which discriminate against the family sector, especially in virgin lands on the frontier (North, Center-West) and in old-settled areas which have turned profitable for wage production (due to new crops, new technology, improved transportation, etc.). In our model, however, we have left aside these seemingly noneconomic, or politico-institutional factors, in order to focus more sharply on the role of market processes in the preservation of the family wage structure.

Book Review

Manufactured export expansion and industrialization in Brazil

Tyler, William G. *Manufactured Export Expansion and Industrialization in Brazil.* Kieler Studien. Tübingen: J. C. B. Hohr, 1976. 373 pp.

Carlos von Doellinger

William Tyler is a longtime analyst of the Brazilian external sector. He started to publish occasional articles as of 1969, and from 1972 to 1974 did research at the Kiel Institute for World Economics, where he brought his studies together in the comprehensive volume which is the subject of this review.

The book is clearly meant for newcomers to the Brazilian economy. In striving to reach this public, the outstanding merit of the work is its unified yet many-sided view of the external sector in relation to postwar industrialization and economic policy. It is rare to encounter such a complete work in English, though the literature in Portuguese is extensive.

In the paragraphs that follow, the several chapters, and finally the book as a whole, are commented upon.

Chapter 2, a survey of the economic development of Brazil, focuses on the postwar industrialization of the country. Also included are observations on the various lines of economic thought (the monetarist-structuralist controversy, for example) and their impact on foreign trade. Most interesting is the portrayal of Brazil as "latecomer" in the Gerschenkon context; this allows for international comparisons and underlines the importance of the historical approach.

In chapter 3, an attempt to quantify the contributions to industrialization of the three basic demand components – import substitution, expansion of the internal market, and exports – Tyler uses the growth-source methodology pioneered by Chenery. The version he employs, however, is that proposed by Morley and Smith, since it is better suited to measuring the effects of intermediate demand on import substitution. The exercise is relevant, but the results questionable due to the lack of a reliable input-output table

for the period. Such a table became available only in late 1976, when the Instituto Brasileiro de Geografia e Estatística (IBGE) published a preliminary version based on the 1970 economic census. Nevertheless, it is interesting to note the relative importance of import substitution in the fifties, in contrast to its negative contribution in the sixties and seventies. Internal demand always predominated, even in 1967-1971, a period characterized by intense export expansion.

Tyler next considers the supply factors underlying industrial growth (chapter 4). His major tool is production-function adjustment, by branch of industry, in the Cobb-Douglas and C.E.S. forms. Some fragmentary evidence of industrial efficiency is also presented. Unfortunately, neither the results of the adjustments nor the efficiency data are sufficiently conclusive for the demanding reader.

As of chapter 5, the author turns his attention wholly to the export sector. He begins with an overview of the situation prior to 1964, the year in which major institutional changes were made to promote exports and open the economy. These changes embraced reorientation of the foreign-trade strategy with respect to exchange-rate policy, fiscal and financial export incentives, bureaucratic simplification, etc.

Constant-market-share analysis is used to identify the sources of export growth from the demand side. This type of analysis aims to distinguish the effects on total value of exports (1) of overall market growth, (2) of product recomposition, (3) of market recomposition, and (4) of increased competitive capacity. The results show that between 1964 and 1971, 43% of the growth of exports was due to improvements in the competitive capacity of Brazilian goods, especially manufactures, on the world market. The recomposition effect was highly negative, and in exact inverse proportion to the gains achieved through increased competitive capacity (43%). The author explains this by pointing to the fact that the export list was heavy in primary products, for which the international market was unfavorable in this period. Thus, Brazil was able to do no more than retain her 1964 "slice" of the market. Had it not been for the increased competitive capacity of her exports, the country would have lost part of her share of the world market, as happened almost uninterruptedly from the end of World War II until 1964.

Chapter 6, which measures the employment resulting from the Brazilian export drive, is most enlightening. Export promotion has often been viewed as the panacea for chronic problems — including unemployment — faced in developing economies. Tyler's conclusions, however, are far from encouraging. Despite the precariousness of the

input-output matrix used to gauge indirect employment, the findings would be hard to contend in terms of magnitude. The main conclusions are best summarized in the words of the author himself:

> While manufactured export expansion activities are more labor intensive than import substitution activities, this is not to say that the promotion of manufactured exports will have an immediate and significant impact on the unemployment situation in Brazil. ... The additional employment generated by manufactured export expansion between 1964 and 1971 accounted for only 5.7% of the total increase in the Brazilian labor force. Despite the high growth rates experienced by Brazilian exports, their employment generating effects are still low in relation to total labor force growth (p. 175).

Foreign-trade policies and institutions comprise the subject of chapter 7. The wealth of details and explanations renders these pages most useful for comparison of the Brazilian experience and those of other countries. The occasional errors are understandable given the complexity of the institutional framework, which confuses even the Brazilian experts. Only the errors regarding the agency for fiscal benefits to exports (Benefícios Fiscais às Exportações – BEFIEX) are significant enough to demand rectification. Tyler ascribes to this organization more extensive powers than it actually (or legally) possesses.

BEFIEX is an interministerial agency under the ministry of industry and commerce (not, as the author states, the ministry of finance). Its function is limited to final review of investment projects which are export-oriented and require fiscal incentives beyond those normally granted to manufactured exports. Up to the end of 1976, the agency had approved 27 projects which should generate an average US$ 1 billion per year when operating at full capacity. Created in 1972, the program is basically designed to encourage the multinationals to export.

The other errors, being slight, do not prejudice the description of the "institutional complex". One point that might be mentioned is the fact that some judgments are dependent on the political context of the period in which this part of the book was presumably written (1972-1973). For example, the author concludes that all economic policy-making "of a rather discretionary sort was concentrated in the hands of the Finance Minister" (p. 90). However, this was due less to the institutional framework than to the informal division of power among the ministers.

The description of the fiscal and financial incentives is equally rich in detail. However, in assessing their impact on resource allocation, the author relies heavily on previous studies (especially those by Mendonça de Barros), and concludes that relatively more benefits (subsidies) are conceded to products with less chance on the international market. This is open to question, since there are indications that the industries most benefited are precisely those that operate with larger economies of scale and greater technical efficiency (which suggests an "infant-industry" pattern), and that have better opportunities to compete on the world market. At this point, the author seems to have forgotten his own assertion (chapters 3 and 4) that it was successful import-substitution industrialization that enabled manufactured-export activities to develop.

Lastly, there appears to be a major oversight. Only a single superficial paragraph is devoted to an extremely important aspect of the export incentives (subsidies): What is their cost in terms of the allocation of government resources? What is the marginal cost of foreign exchange, or the *effective* exchange rate for manufactured exports? This system is an alternative to exchange devaluation and a means of introducing a certain selectivity; but is it the most efficient procedure? Such questions, the subject of recent IPEA studies,[1] might have received more attention.

Tyler concludes his analysis in chapter 8, unquestionably the best part of the work for those who wish to draw lessons from the Brazilian experience. The factors behind the performance of exports in the period under study are examined from two approaches: (1) an econometric model based on export supply functions, and (2) a series of interviews with export firms in 1969 (during the initial phase of the export drive) and in 1973 (during the consolidation phase).

The econometric model includes variables such as the effective exchange rate, industrial output, capacity utilization, etc., with lags and proxies. What first stands out is the sensitivity of exports to fiscal and financial incentives (subsidies), whose price effect is stronger than that of the "pure" exchange rate. Next in importance, at least until 1969, is utilization of installed capacity — the weaker the internal market, the higher export production, and vice versa. In 1969, the adoption of the most important subsidies (tax credits relative to value-added taxes) substantially altered the situation. Due to the short time span covered, the author was able to use quarterly data. The results of the adjustments are satisfactory and accu-

[1] See, for example, C. von Doellinger *et al.*, *Transformação da Estrutura das Exportações Brasileiras, 1964/70*, Coleção Relatórios de Pesquisa, n.º 14 (Rio de Janeiro: IPEA/INPES, 1973).

rately portray the sector. The model is complemented and qualified by the interviews. This part of the work ends with a discussion of general problems (marketing, transport infrastructure, etc.) and of obstacles to the long-term maintenance of the Brazilian export drive.

While somewhat naive in parts and outdated in others, *Manufactured Export Expansion and Industrialization in Brazil* is a definite contribution to the study of the Brazilian economy in recent years. The work improves considerably as of chapter 5, when the focus turns to the export sector, and reaches its high point in chapter 8. It is mainly directed to the foreign reader, and has an almost textbook style: restrained direct language, logical organization, numerous tables, appendices, and a thorough bibliography.

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