INFLATION AND THE DEVELOPMENT OF THE BRAZILIAN ECONOMY

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I

The development of the Brazilian economy after the Second World War was extremely rapid. The average annual growth rate from 1947 to 1951 was 5.4%. From 1952 to 1956 it was 5.1%, then in the 1957–1961 period the growth rate reached 6.9% annually. But on the other hand the acceleration of inflation was also rapid. The rise in the general price level during the period from 1947 to 1961 climbed to an annual average of 16.5%. In the last five years, inflation has reached an annual rate of 24%.[1]

There has already been much discussion concerning the relationship between economic growth and inflation. If the main points of view in this discussion are divided into three groups according to the emphasis they place upon inflation, they would be as follows: First, there is the standpoint that inflation can be beneficial and encourage economic development. The second point of view is the complete opposite of this; this viewpoint emphasizes the notion that monetary stability is a basic essential for steady economic growth. The third point of view is that inflation is an unavoidable concomitant of rapid economic growth. These three points of view were often clearly in evidence in the disputes between the so-called "Monetarists" and "Structuralists" in Latin America.[2]

In the case of the Brazilian economy, where we find rapid economic growth and rapid inflation existing together, it would seem appropriate, at first glance, to say that inflation encourages economic growth. However, the Brazilian experience does not deny the correctness of the proposition that inflation is an inevitable concomitant of the economic

1 Fundação Gentúlio Vargas (FGV), *Revista Brasileira de Economia*, ano 16, no. 1, manço de 1962.

2 For details, see Werner Baer and Isaac Kerstenetzky ed., *Inflation and Growth in Latin America*, Connecticut, Yale University Press, 1964.

growth process. Moreover, if we take the experience of Mexico as a case in point, here we find rapid economic growth and moderate inflation existing together. Therefore, the problem arises of whether or not it would have been impossible for Brazil to reach its present level of development without acute inflation. If we suppose that it would have been impossible, we must go into the question of what factors are responsible for this. In other words, even if inflation is a necessary condition for the economic development of Brazil, is this due to some positive effect in the inflationary process, or was the inflation policy adopted because conditions would not permit the adopting of a more effective policy which would bring about development with stability? These two questions will have to be clarified. On the other hand, it can be that even though inflation is essentially growth-inhibiting, this may have been offset by such growth-encouraging factors as the inflow of foreign capital and improvement in the terms of trade. If this is the case, then despite rapid inflation, the continuous development of the Brazilian economy would have been made possible.

Thus, the coexistence of rapid development and inflation in the Brazilian economy presents us with a number of important problems. It is the purpose of this paper to investigate the extent to which the proposition that inflation is beneficial to economic growth is correct, and to clarify to what extent inflation has been able to raise the level of capital formation in Brazil. However, we would like to make it clear in advance that the effect of inflation should be regarded as beneficial to the growth of the economy only so long as it accelerates the self-sustained development of the economy through the stimulus to capital formation in the private sector. In this article we shall not discuss whether development is achieved by an inflationary supply of funds in the public or private sectors. The reason for this is that whether investment is dependent upon inflationary measures or not it will inevitably promote economic growth, and therefore we shall not devote any attention to this aspect.

For this reason, this analysis is concentrated on (1) the question of what influence inflation exerted upon the supply of funds or saving rate in the private sector, (2) an examination of the structure of the capital market, in order to verify the efficiency with which voluntary savings are effectively channelled into productive capital formation, and (3) the relationship between inflation and private investment. The results of this analysis should be useful in evaluating the effect of inflation upon the economic development of Brazil.

II

As Table 1 shows, the rapid growth of the Brazilian economy was accompanied by an increase in the over-all savings ratio. In 1947 the over-all savings rate was less than 10%, but recently the rate has gone over 20%. Moreover, as a more detailed estimate shows, the saving rate was on the increase in the first half of the 1950's, but in the latter half of the 1950's there was sharp decrease in this rate. Then, during the last three years, the rate has been stable at a high level. However, we should note that this is primarily due to the surplus on current account of the government. On the other hand, it is important to note that the private saving rate has stagnated. During the period 1947–1954, the rate of private saving showed a steady increase, but thereafter as inflation increases sharply, this rate tends to decrease or stagnate. It is well known that inflation has an income redistribution effect favourable to high-income groups. This fact is used to explain why the saving rate increases in the inflationary process. But in Brazil the fact that this relationship between inflation and the saving rate is not always clear presents an important problem.

Table 1. SAVINGS AND THE RATE OF INFLATION

(Unit: billion cruzeiro)

		Domestic Savings			Rate of Saving (%)			
	(A) National Income	(B) Gross Savings	(C) Net Private Savings	(D) Surplus on Current Account of Government	$\frac{(B)}{(A)}$	$\frac{(C)}{(A)}$	$\frac{(D)}{(A)}$	Rate of Inflation (%)
1947	139.2	18.0	3.7	6.1	9.3	2.6	4.3	—
1948	156.6	21.3	5.1	7.0	13.6	3.2	4.4	3.7
1949	179.8	26.9	8.7	7.5	14.9	4.8	4.1	9.3
1950	212.6	30.0	11.8	5.6	14.1	5.5	2.6	11.9
1951	252.9	43.3	15.1	13.0	17.1	5.9	5.1	14.9
1952	292.6	49.2	20.2	11.5	16.8	6.9	3.9	8.6
1953	356.7	55.8	30.4	4.1	15.6	8.5	1.1	18.6
1954	451.3	92.9	45.2	20.2	20.5	10.0	4.4	20.2
1955	573.3	90.0	42.8	12.9	15.7	7.4	2.2	16.7
1956	726.7	100.0	50.5	5.6	13.7	6.9	0.7	25.5
1957	865.3	134.3	68.7	13.1	15.5	7.9	1.5	11.8
1958	1,046.2	212.7	91.5	56.2	20.3	8.7	5.3	16.3
1959	1,403.9	292.6	120.2	83.7	20.8	8.5	5.9	27.2
1960	1,879.2	392.9	179.3	95.4	20.9	9.5	5.0	25.4

Source: FGV, *Revista Brasileira de Economia*, ano 16, no. 1, março de 1962.

In considering this problem, the changes in the distribution of income are important. However, since there is not enough appropriate information concerning the agricultural sector, we cannot make an exact evaluation of the effect of inflation on income distribution. Table 2 shows enough information about the non-agricultural sector however to make a preparatory evaluation possible. At first glance Column D in Table 2 would seem to indicate that inflation has not caused a distribution of income favourable to the high-income classes. However, if Column D and the rate of inflation are compared, these two sets of figures show a positive correlation for the period 1947–1954. This means that after 1947 the increase in the rate of inflation has been accompanied by an increase in the total of rent, interest, and profits, i. e., Column D. In 1952, as inflation decreases, so does the figure in Column D. As the rate of inflation goes over 20% in 1954, the share indicated by Column D also reaches a peak. This relationship can probably also be found in the agricultural sector where there is considerable dependence on merchants and middlemen. Nonetheless, after 1954 the clear-correlation between the rate of inflation and figures in Column D diminishes. This is due, as Column A shows, to two factors in the latter half of the 1950's: an increase in the minimum wage and an accompanying adjustment of wages which resulted in a redistribution of income favourable to the wage-earning classes. Therefore, in Brazil,

Table 2. INCOME DISTRIBUTION ACCORDING TO MAJOR SECTORS (%)

	Non-Agricultural					Agricultural
	(A) Wages	(B) Profit	(C) Interest-Rent	(D) (B)+(C)	(E) Composite Income, etc.	
1947	29.3	9.2	4.0	13.2	30.6	26.9
1948	30.4	8.1	4.3	12.4	28.9	28.3
1949	31.9	8.3	4.5	12.8	27.4	27.9
1950	32.6	8.8	4.9	13.7	25.1	28.6
1951	31.8	11.4	4.8	16.2	24.1	27.9
1952	33.3	9.1	4.9	14.0	23.8	28.9
1953	32.8	10.4	5.0	15.4	22.7	29.1
1954	32.7	11.5	4.7	16.2	21.3	29.8
1955	35.1	9.7	4.4	14.1	21.1	29.7
1956	38.3	8.6	4.4	13.0	21.4	27.3
1957	38.1	7.5	5.1	12.6	21.4	27.9
1958	38.3	9.2	5.8	15.0	21.0	25.7
1959	37.9	9.0	5.2	14.2	20.8	27.1
1960	37.8	9.4	5.1	14.5	19.6	28.1

Source: FGV, *Revista Brasileira de Economia*, ano 16, no. 1, março de 1962.

inflation has not necessarily given rise to a redistribution of income favourable to the upper-income classes. This fact is conceivably one of the major causes of stagnation in the rate of saving in the private sector.

However, on the other hand, the change in the saving propensity of persons in the high-income groups is also important. If this group decided to save a smaller portion of its additional income, the over-all savings rate would move in the same direction. This becomes clear if we assume that the private saving rate is completely dependent upon the high-income groups. If we look at Table 3 where the figures tend to bear out this assumption, we see that during the period 1947–1954 the saving rate of all the upper-income group was increasing each year, but thereafter the saving rate decreases or stagnates as inflation rises.

But changes in the propensity to save are not found only in the high-income groups. If we exclude the assumption that all saving is done by this group, it is conceivable that part of the saving could have been done by professionals and individual entrepreneurs. However, if we assume that the consumption of these groups is based upon the level of past income, the savings rate will decrease because inflation reduces their real income. In Brazil during the latter half of the 1950's there was an increase in the real wage, but if we also consider the fact that the share of income received by these groups took a sharp drop, as shown by Column E of Table 2, we will have no difficulty in understanding why there was a decrease in their rate of saving. We must also note the fact that industrialization has been accompanied by a concentration of people in the cities and a flow of the rural population to the factories, businesses, transportation industries, and financing houses of the cities. There can be little doubt that their money income and even real income was substantially increased. Nonetheless, it is likely that the increase in their income was absorbed in consumption as a result of the demonstration effect in the cities.[1]

Therefore, it will be necessary to examine in detail the various factors which have an influence on the propensity to save of the high-income groups. The " high-income groups" which we have mentioned, include industrialists, merchants, speculators in real estate, and *rentiers*. Each of these groups should have a different attitude towards inflation and increases in income. The consumption habits of the groups as a whole can be different from those of the traditional coffee producers

1 Joint Brazil-United States Economic Development Commission, *The Development of Brazil*, Washington, 1953, p. 43.

Table 3. INCOME AND SAVINGS RATE OF HIGH-INCOME GROUPS

	(A) Income of High-Income Groups		(B)	
	Actual Figure (billion cruzeiro)	Per Cent of National Income	Private Saving Rate	$\frac{(B)}{(A)}$
1947	38.4	27.5	2.6	9.4
1948	40.3	25.7	3.2	12.4
1949	45.3	25.1	4.8	19.1
1950	52.8	24.8	5.5	22.1
1951	67.4	26.6	5.9	22.1
1952	71.3	24.3	6.9	28.3
1953	90.6	25.3	8.5	33.5
1954	115.8	25.6	10.0	39.0
1955	133.8	23.3	7.4	31.7
1956	160.5	22.0	6.9	31.3
1957	187.8	21.7	7.9	36.4
1958	247.3	23.6	8.7	36.8
1959	321.3	22.8	8.5	37.2
1960	428.6	22.8	9.5	41.6

Source: FGV, *Revista Brasileira de Economia*, ano 16, no. 1, março de 1962.
Note: (A) includes profits, interest and rent of the non-agricultural sector as well as the income of industrialists and managers.

and large landowners, but even within these high-income groups there are fairly large differences in consumption habits. For example, there are differences between the consumption behaviour of industrialists and merchants. The propensity to consume of such traditional industrialists as those in the textile or food-processing industries are conceivably higher than those of modern industrialists.[1] In countries like Brazil which have only recently entered the industrialization process, we must remember that the connection between mercantile elements and manufacturing elements is strong. The problem is that inflation in Brazil did not have a discriminatory effect on the distribution of income. Undeniably, until about the middle of the 1950's inflation did create a redistribution of income favourable to the high-income groups, but it is doubtful whether or not this redistribution was more favourable to those members of the high-income groups who have a low propensity to consume. Since we do not have statistics for the profits received by the different industries, an exact evaluation is difficult. Nonetheless, if we take the income of present industrial managers as an indicator, the ratio occupied by the commercial sector exceeds 50% during our period

1 Yoshiaki Nishimukai, *Burajiru no Keizaihatten no Ippanteki Tokushitsu* (General Characteristics of the Economic Development of Brazil), Kōbe, Kōbe University, 1963, pp. 93–94.

of estimate.[1] It was not possible to obtain data on traditional industries, but it is certain that post-war inflation extending over a long period was favourable to this sector, despite the fact that the traditional industries have been stagnant in recent years.[2]

These considerations do not present us with any conclusive data concerning the content of changes in the distribution of income, but they do suggest the following important clue. If the income redistribution effect of inflation on the Brazilian economy was favourable to merchants and traditional industrialists, then provided their propensity to save is low compared to other members of the high-income group, the effectiveness of inflation in stimulating capital formation decreases. This consideration points out the need for a reconsideration of the argument emphasizing economic development through inflation.

Finally we would like to comment briefly on the forms of saving in Brazil. Tradition and custom exert the same influence upon saving in Brazil which they do upon the level of consumption and consumption patterns. Traditionally, the high-income groups have preferred land and buildings to constitute their savings. This tendency was stimulated by inflation, which spurred an even higher rate of investment in frontier agricultural development and in lands bordering cities. This same tendency to invest in land and buildings may also be found among professionals and people in the middle classes. It is even reported that these people often venture to invest in completely unknown areas.[3] Moreover, the middle class tend to invest almost all of their savings in housing.[4] Flights of capital and accumulation of foreign currency are not widespread in Brazil, because the present inflation is not regarded as hyper-inflation. Another reason cited for this is that the increase in real estate prices is greater than the rate of inflation.[5] The view is commonly held that, compared to investment in real estate, hoarding of precious metals is not very common.

III

The existence of an effective capital market is a prerequisite for channelling voluntary saving into productive investment. The rate of

1 According to the data in Table 3.
2 Yoshiaki Nishimukai, op. cit., Chapter 4, especially Section 2.
3 Oliver Ónody, *A Inflação Brasileira, 1820–1958*, Rio de Janeiro, 1960, p. 77.
4 Ibid., p. 231.
5 Ibid., p. 73–74.

stock transactions in Brazil increases along with the increase of inflation. Transactions in the 1947–1949 period amounted to an annual average of 1.9 billion cruzeiro, while in the 1957–1959 period the average was 7.5 billion cruzeiro. Stock and company bonds, especially stock, accounted primarily for the increase in the rate of transactions during the above-mentioned period. The ratio of stocks and company bonds sold, as a percentage of total transactions, increased from 34.7% to 54.2% during this period. The ratio of public bonds during this period decreased from 65.3% to 45.8%. This phenomenon is easy to understand when it is considered together with the rate of inflation, which was over 20% per year.[1] However, the Brazilian capital market is still narrow and immature, since the stock company system has not yet been adopted on a nation-wide basis. Many companies which call themselves stock companies are actually ordinary or limited partnerships. The capital structure of many companies is made up of stock in the hands of relatives of the company owner or persons having some other special connections with the company. The amount of stock which circulates on the market as floating stock is very small. In addition, the stock exchange system is not consolidated, therefore it is not possible to buy and sell stock with a simple endorsement because the system of special endorsement is still dominant. Furthermore, regulations governing stock transactions are not sufficiently thorough.[2]

For the reason mentioned above, it is difficult for enterprises to raise medium- or long-term funds in the capital market. They must rely upon banks and other financial organizations. Medium- and long-term credit is restricted on the one hand by inflation, and on the other by the regulations restricting a high rate of interest (*A Lei da Usura*).[3] This law tends to cause a decrease in the relative ratio of time deposits. In 1951 time deposits accounted for 21.7% of total deposits, but these dropped rapidly to 8.8% in 1960.[4] As we might imagine under such conditions, commercial banks find difficulty in meeting the demand for medium- or long-term funds, in addition to their essential business. Commercial banks now handle only short-term financing of 90 or 120 days. As the Bank of Brazil (Banco do Brasil) is primarily a commercial

1 Conselho Nacional de Estatistica, Brasil, *Anuário Estatístico do Brasil—1958, –1959,* Rio de Janeiro, 1958 and 1959.

2 *South American Bank Survey Monthly,* 41st issue, 1961, Sept.-Oct., p. 11.

3 Established on April 7, 1933, this law specifies 12% as the maximum rate (Public Law no. 22,626).

4 Mário Henrique Simonsen, "A Lei da Usura," *Desenvolvimento & Conjuntura,* ano VI, no. 8, agôsto de 1962, p. 45.

bank, the ratio of medium- and long-term financing is low. Recent research has shown that the percentage of bank lending and new stock issues as a source of funds is low, indicating that the percentage of financing by "other floating liabilities" is high.[1]

In a discussion of finance in Brazil the function of the so-called trust companies (Sociedade de Crédito e Financiamento) cannot be overlooked. There is some doubt concerning the legal basis of the trust companies and their managerial content, and a precise definition of exactly what they are is difficult, but we can say that they fulfil such functions of a trust business as supplying funds for consumer's credit, filling the demand for funds by enterprises, and investing in stock. The recent development of the durable consumer goods industries and the automobile industry has greatly increased the necessity for working funds to sustain an instalment sale system. However, it was impossible for commercial banks to loan these funds. This was the immediate cause for the appearance of the trust companies. In place of deposits these companies collect funds by selling participation certificates. These certificates are a promise that the enterprise which is given a loan by the trust company will share part of his profits with the holder of the certificate (over 30% of the value of the certificate); or, on the basis of the guarantee of profit-sharing, the trust company honours the bill which is drawn by the enterprise, and the latter sells it at about 30% minus premium (deságio) in the stock market. The enterprise is thus able to raise the money which it needs. These procedures avoid the restrictions imposed by the high interest regulations.[2]

Trust companies have come to play an important role in the Brazilian capital market through the use of these methods. Such methods of financing have attracted the attention of investors as an alternative to time deposits which have been discouraged by inflation and the high interest law. However, there are some problems which the trust companies have created. One of these is the increase in the cost of capital. The deságio of the draft increases along with the deságio of trade notes of the Bank of Brazil, which are transacted in the same manner. This serves to increase further the cost of capital. The second important problem is the composition of the group which contributes to the funds of the trust companies. If the holders of participation certificates and drafts are mainly the general public, this will be significant because the

1 Werner Baer, "Brazil: Inflation and Economic Efficiency," *Economic Development and Cultural Change*, Vol. XI, No. 4, 1963, p. 399.

2 For details, see Mario Henrique Simonsen, op. cit.

trust companies tend to absorb voluntary savings. However, if the share contributed by financial organizations is large, medium- and long-term loans through the trust companies will be accompanied by the addition to currency. The major part of private saving which is necessary to finance their operations can be undoubtedly forced savings rather than voluntary savings. The third problem is the usage of capital by the trust companies. As stated above, the trust companies are carrying on several kinds of businesses, but looking at the way they came into existence, it is doubtful whether their investment in stock is more important than their function as a loan organization. Unfortunately, there are not enough relevant data on this point, but most likely the financing for instalment sale is the centre of activity. If we suppose that this is the case, many important problems remain, such as the difficulty in raising funds experienced by enterprises which do not produce durable goods, and the lack of funds for investment in basic industries.

Even if we suppose that the problem of medium-term loans is solved to a certain extent by the trust companies, Brazil's problem of long-term credit remains unsolved. Raising long-term loans is almost impossible because of rapid inflation and the regulations restricting high rates of interest. At first, it might seem that long-term loans could be made using the same loophole which the trust companies used above. For example, when a company issues bonds, it is conceivable that it could sell them at a prearranged deságio which corresponded to paying a prearranged amount of interest. But by this method, even though the buyer could be guaranteed a predetermined amount of interest, this rate of interest remains fixed. The actual rate of interest would depend upon the rate of inflation. But, it is not possible to predict the rise in prices 5–10 years hence in a country like Brazil. A mistake in the prediction would put one party or the other at a disadvantage. In Brazil the possibility of such a miscalculation is very great. This fact has created a great imbalance between the demand for and supply of long-term credit. It may be said that the problem no longer lies in the law restricting high interest but in inflation itself.

It we suppose that private financial organizations are powerless to supply long-term capital, the only recourse is the financial agency of the government. The government has set up a number of organizations to correct the disequilibrium in supply and demand for funds in the private sector, but the most important of these is the Economic Development Bank (Banco National do Desenvolvimento Econômico) which acts as an investment bank. This bank is playing an important role in developing basic industries, but the funds available for loan are insufficient when compared to the demand for funds.

The amount of funds authorized for the period 1952–1959 did not reach 40% of the total amount applied for.[1] On the demand side: (1) due to rapid inflation, already approved investment projects came to require more funds for their completion; (2) The new projects require much more funds because of inflation. (3) The degree of dependence on the funds of BNDE for the expansion of the whole national economy increased. On the other hand, on the supply side: (1) The source of funds for BNDE gradually became concentrated in additional income tax levies; (2) The rate of reserve in the Federal Savings Bank (Caixas Econômicas Federais) dropped below the legally specified rate. (3) The main source of funds, receipts of additional taxes, came to be used to alleviate the deficit in the accounts of the federal government. Thus, the government could not deliver these funds to BNDE or was able to deliver only part of the funds.

As is clear from the foregoing considerations, the institutions of the financial and capital markets in Brazil are not fulfilling their role of supplying the necessary funds to enterprises, especially to the manufacturing sector. This failure is due in large measure to the high interest regulations. Although these regulations were intended to avoid increases in the cost of capital, they have actually created the opposite effect. These regulations have increased the imbalance between the supply and demand for capital funds and are forcing an expansion of the means of payment. In effect, a large part of these funds are being obtained through an increase in the supply of currency and this has become one of the important causes for the inflationary pressure. Furthermore, private banks which provide funds for industry and agriculture are few. These banks put their funds instead into commerce and use them for speculation. If we tie these conclusions together with the previous considerations concerning the saving rate, we find that the size of the saving rate is in part due to forced savings, and is not solely dependent upon voluntary savings. As is clear from the structure of the capital market, most of the funds used for investment in the industrial and other productive sectors are not supplied by voluntary savings, but by newly created money.

Another problem which we must consider together with the above

1 BNDE, *Oitava Exposição sôbre o Programa de Reaparelhamento Econômico, Exercicio de 1959*, p. 94.

is the fact that the formation and application of saving in Brazil is dependent upon the stage of economic and social development of the country. This fact, along with the various elements of Brazil's culture and institutions, explains much of the activity of savers and investors as well as that of private financial organizations. Despite rapid industrialization, 28% of Brazil's national income is generated in the agricultural sector. The ratio occupied by commerce and other service industries is also large.[1] Moreover, if we consider rapid urbanization, inflation, and the effects of the high interest regulations, we are forced to admit that the attitude of the masses, that of buying real estate in farm villages and on the outskirts of cities, is based on an economic rationale. We can also approve of the interest shown by financial organizations in nonproductive sectors, provided we think for a moment about the importance of such sectors in the economy. Moreover, it is only natural that private financial institutions, including the trust companies, should show more interest in commercial loans than in the less advantageous long-term investments. We must understand the capital market of Brazil, its structure and functions, in the light of the country's stage of economic and social development and the cultural and institutional factors.

IV

Finally we would like to consider the question of what influence inflation has had upon the rate of capital formation in Brazil.

First, we may say that the rate of gross capital formation of the Brazilian economy as a whole during the period under consideration was 15–16%. The periods when there was a sharp increase in this rate were 1951–1952, 1954 and 1959, when the rate reached 19–20% (see Table 4). The high rates of these periods are to be explained mainly by exogenous factors. For example, during the period 1951–1952 there was a sharp increase in the inflow of capital. The rise in the purchasing power of exports during 1950–1951 made an increase of imports of equipment possible.[2] Similarly, in 1954 there was a fair inflow of foreign capital and again, this was the year when the purchas-

1 According to data of FGV, the total percentage of the national income in 1960 was about 26.4%. The share of industry is about 25.8%.

2 During 1947–1950 imports of capital goods amounted to 10–12 billion cruzeiro; this figure increased sharply in 1951 to 29 billion and to 32 billion in 1952. (Conselho Nacional de Economia, *Exposição Geral da Situação Econômica do Brasil—1959*, Rio de Janeiro, p. 75.)

ing power of exports reached its postwar peak. In 1959 the causes were both an inflow of foreign capital and the increase of stock, mainly coffee. In addition, in the remaining years we must also note that the

Table 4. GROSS NATIONAL PRODUCT AND CAPITAL FORMATION; CAPACITY TO IMPORT AND NET INFLOW OF CAPITAL

(Unit: billion cruzeiro)

	(A) Gross National Product	(B) Gross Capital Formation	(C) Fixed Capital Formation	$\frac{(B)}{(A)}$	$\frac{(C)}{(A)}$	Rate of Increase in Real Production (%)	Purchasing Power of Exports	Net Inflow of Capital
1947	163.1	25.6	28.4	15.7	17.4	1.8	104	+3.1
1948	184.6	29.3	30.0	15.8	16.2	9.5	100	+0.8
1949	213.4	28.2	32.3	13.2	15.1	5.6	107	+2.2
1950	251.1	28.9	33.6	11.5	13.3	5.0	152	−1.9
1951	304.0	57.8	49.2	19.0	16.1	5.1	159	+8.7
1952	349.6	71.4	54.4	20.4	15.5	5.6	108	+13.2
1953	425.2	58.5	55.8	13.7	13.1	3.2	130	−0.6
1954	550.6	113.9	91.4	20.6	16.6	7.7	177	+6.7
1955	685.9	112.7	99.2	16.4	14.4	6.8	149	+1.0
1956	877.5	133.1	117.0	15.1	13.3	1.9	141	−0.7
1957	1,049.9	170.4	137.9	16.2	13.1	6.9	127	+14.2
1958	1,300.0	206.4	181.0	15.8	13.9	6.6	119	+18.0
1959	1,774.3	354.1	288.0	19.9	16.2	7.3	119	+33.2
1960	2,363.6	423.8	355.6	17.9	15.4	6.3	131	+58.0

Source: FGV, *Revista Brasileira de Economia,* ano 16, no. 1, março de 1962, and *Conjuntura Econômica,* setembro de 1961.

Table 5. ORIGIN OF GROSS CAPITAL FORMATION (Unit: billion cruzeiro)

	(A) External Factors			(B) Internal Factor	(C) Gross Capital Formation	$\frac{(A)}{(C)}$	$\frac{(B)}{(C)}$
	Terms of Trade Effect	Net Inflow of Capital	Total				
1948	—	0.8	0.8	28.5	29.3	2.8	97.2
1949	0.7	2.2	2.9	25.3	28.2	10.3	89.7
1950	7.9	−1.9	6.0	22.9	28.9	20.8	79.2
1951	15.4	8.7	24.1	33.7	57.8	41.7	58.3
1952	12.8	13.2	26.0	45.4	71.4	36.4	63.6
1953	11.4	−0.6	10.8	47.7	58.5	18.5	81.5
1954	20.4	6.7	27.1	86.8	113.9	23.8	76.2
1955	19.3	1.0	20.3	92.4	112.7	18.1	81.9
1956	23.8	−0.7	23.1	110.0	133.1	17.4	82.6
1957	25.7	14.2	39.9	130.5	170.4	23.4	76.6
1958	26.3	18.0	44.3	162.1	206.4	21.5	78.5
1959	27.9	33.2	61.1	293.0	354.1	17.3	82.7

Source: *Conjuntura Econômica,* abril de 1961, p. 47, and FGV, *Revista Brasileira de Economia,* ano 16, no. 1, março de 1962.

role of external factors in the capital formation in Brazil has increased, indicating an increased trend over the prewar period. For example, during the 1939–1945 period, the external terms of trade effect reached 17.5% of the gross capital formation. But, on the other hand, the outflow of capital cancelled out 18.5% of the gross capital formation.[1] Nonetheless, during the postwar period the improvement in the terms of trade and the net inflow of capital contributed greatly to capital formation in Brazil. As Table 5 shows, in contrast to the prewar and wartime periods, when capital formation depended chiefly upon domestic savings, the postwar period, especially the first half of the 1950's, shows a great dependence upon external factors. However, in the latter half of the 1950's domestic funds accounted for 80% of the gross capital formation. This shows that the effect of the net capital inflow is cancelled by continuous decreases in the purchasing power of exports after 1954. This fact in turn reveals the stagnation of the rate of gross capital formation. In contrast to the situation in the first half of the 1950's, the decrease in the purchasing power of exports did not cause the sharp drop in the rate of capital formation. Part of the reason for this phenomenon is that during this period the import substitution progressed in the industries which produce capital goods. In fact, in 1949 the self-sufficiency rate for machinery and equipment was

Table 6. FIXED CAPITAL FORMATION ACCORDING TO SECTOR

(Unit: billion cruzeiro)

	Total	(A) Public Sector	(B) Private Sector	$\frac{(A)}{(B)}$	Percentage of GNP (A)	Percentage of GNP (B)
1947	28.4	4.5	23.9	18.8	2.8	14.6
1948	30.0	7.0	23.0	30.4	3.8	12.4
1949	32.3	9.5	22.8	41.7	4.5	10.6
1950	33.6	11.8	21.8	54.1	4.7	8.6
1951	49.2	12.3	36.9	33.3	4.0	12.1
1952	54.4	14.6	39.8	36.6	4.2	11.3
1953	55.8	16.4	39.4	41.6	3.9	9.2
1954	91.4	22.2	69.2	32.0	4.1	12.5
1955	99.2	23.8	75.4	31.5	3.5	10.9
1956	117.0	29.0	88.0	32.9	3.3	10.0
1957	137.9	51.0	86.9	58.6	4.9	8.2
1958	181.0	73.9	107.1	68.9	5.7	8.2
1959	288.0	93.1	194.9	47.5	5.3	10.9
1960	355.6	136.5	219.1	62.3	6.2	9.2

Source: FGV, *Revista Brasileira de Economia*, ano 16, no. 1, março de 1962.

1 CNE, *Exposição Geral da Situação Econômic do Brasil—1960*, Rio de Janeiro, 1961, p. 33.

47.3%, but this same rate increased to 67.2% by 1958.[1] Another fact which should be noted concerning capital formation in the latter half of the 1950's is the series of coffee price-support policies adopted by the government. The main measure was the increase in government purchases of coffee, and consequently stocks of this product were increased.

Next, we would like to consider the effect of inflation on capital formation in the economic sectors. The first feature to be noted is that, along with the decrease in the relative importance of the private sector, the role of government has gradually increased (see Table 6). The government contribution to fixed capital formation from 1947–1949 was about 30% of that of the private sector, but in 1950 it reached 51.4%. Thereafter, until 1956 the government's role decreases, but after 1957 it increases again. The average for the last three years has reached 60%. Compared with 1947, the present private capital formation rate is at a fairly low level. However, this rate is not following a fixed trend; as we pointed out under discussion of the rate of gross capital formation, there was a fair degree of recovery in 1951–1952, 1954 and 1959. This shows the great influence of the increase in the purchasing power of exports and increase in net inflow of capital on the private capital formation.

Clearly, the rate of private investment may be increased by a number of factors. For example, it is possible for BNDE to supply funds and stimulate it, or if *per capita* income increases rapidly, industrialists will have wider opportunities to invest. Furthermore, the increase in government investment in various basic industries will facilitate the increase of the private investment rate. When considering the Brazilian economy these factors should be studied by all means, but in this study we shall confine the discussion to our main problem of whether or not inflation was a cause of the increase in private capital formation.

In as much as inflation brings about a larger profit margin, it stimulates private investment. Moreover, if industrialists foresee the continuation of inflation, this will increase investment. Investment will protect their savings, and will be a means of supplementing their profits. This aspect of the Brazilian economy is shown in Table 7. As we mentioned in connection with the savings rate, since we do not have statistics for profits according to industry we have had to exclude consideration of agriculture. However, we can understand trends to a certain extent. Excluding 1948 and 1952, the profits contained in

1 *O Plano Trienal de Desenvolvimento Economico e Social* (*1963–65*), Quadro XII.

current prices have always been on the rise. On the other hand, until 1951 real private investment was increasing. In 1952 it decreased slightly, but thereafter increased, reaching a peak in 1954. Thereafter it showed a tendency to decrease. Near the end of the 1950's there was a slight increase, but the level was a fair amount lower than that of 1954. The rate of increase in real profits does not run nearly as high as that of monetary profits, but changes in the rate of increase in real profits have a close relationship with real investment.

We may draw the following conclusions from the foregoing considerations. There is almost no relation between private fixed capital formation and the increase in monetary profits caused by inflation. Instead, we find that private fixed capital formation has a very close correlation with real profits. This shows that the price of imports has an important influence on the investment decisions. Until 1953, there was no great difference between the price index for imported capital goods and the other imported goods. When we consider the fact that the import of capital goods occupied a large share of imports because of direct control of imports, we may say that the price of imported capital goods had a very large influence upon investment decisions.

Table 7. PROFIT AND PRIVATE FIXED CAPITAL FORMATION

(Unit: billion cruzeiro)

	Non-Agricultural Profits				Private Fixed Capital Formation	
	Monetary Profits	Index 1947=100	Real Profits	Index 1947=100	Real Investment	Index 1947=100
1947	13.0	100.0	13.8	100.0	25.2	100.0
1948	12.8	98.4	12.8	92.7	23.0	91.2
1949	15.1	116.1	17.5	126.8	26.5	105.1
1950	19.1	146.9	24.4	176.8	27.9	110.7
1951	29.2	224.6	30.4	220.2	38.4	152.3
1952	26.5	203.8	25.0	181.1	37.5	148.8
1953	37.6	289.2	37.2	269.5	39.0	154.7
1954	52.3	402.3	37.1	268.8	49.0	194.4
1955	56.3	433.0	27.2	197.1	36.4	144.4
1956	62.8	183.0	22.8	165.2	32.0	126.9
1957	65.4	503.0	22.7	163.7	30.1	119.4
1958	96.9	745.3	26.2	189.8	29.0	115.0
1959	128.1	985.3	25.3	183.3	38.6	153.1
1960	178.6	1,373.8	33.8	244.9	40.3	159.9

Source: FGV, *Revista Brasileira de Economia,* ano 16, no. 1, março de 1962.

Note: Real values should be deflated using the index for capital goods prices, but because of the lack of appropriate data the price index for imports has been used.

Since the importance of domestic capital goods increased during the latter half of the 1950's, the meaning of Table 7 is somewhat altered. But nevertheless, we may safely assume that there is no great change, because the percentage of imported capital goods was still high. Furthermore, we cannot overlook the basic problem that the availability of imported capital goods has an important effect on the rate of investment. In 1951–1954 and 1959, when there was a marked increase in private investment, there was also an increase in the purchasing power of exports and an increase in the net inflow of capital. On the other hand, during the periods when the rate of investment was low, the opposite phenomenon can be observed. Although we cannot show exactly to what extent these factors influenced private capital formation, we can at least point out that the price of capital goods (including domestic capital goods) and their availability have a very close relation to the rate of investment, and that the increase in profits brought about by inflation was not a decisive factor in private capital formation in Brazil.

We must also note the fact that, except during periods when external factors created exceptionally favourable conditions, private investment has stagnated. This is especially evident until the middle 1950's. We can point out two causes for this: namely, the redistribution of income by inflation and the industrialization policy of the Brazilian government. As we mentioned before, the income redistribution effect due to inflation was especially evident until the middle of the 1950's. We do not have appropriate income distribution data, but to give one example: In 1952, 55% of the industrial workers of Guanabara were making less than the minimum wage. In 1954 this figure increased to 66%.[1] Also, if we consider the fact that agricultural labourers do not come under the minimum wage law, we can understand the stimulus for a high degree of concentration of income. Although the share of wages increases somewhat in the latter 1950's, if we consider this increase together with the extremely low level of agricultural wages, we can see that a more rapid rise of inflation during this period would have increased the population whose income is below average level.

If we suppose now that private investment is influenced by the current level of consumption, we may point out some important possibilities which might be deduced from the inequality in the distribution of income. These are: (1) Since much of the population lives at the

1 "Reajustamentos Salariais," *Desenvolvimento & Conjuntura*, ano VI, no. 2, fevereiro de 1962, p. 79.

subsistence level or below it, the market for basic consumer goods is restricted. (2) There is a market for high-class luxury goods. (3) As a result of (1) and (2), the stimulus to invest in basic consumer goods is weak, while the production of luxury goods is stimulated. When we consider the fact that the growth of the food-processing and textile industries is far behind the growth of the industrial sector as a whole, and the fact that ownership of durable consumer goods, such as cars, is very widespread, there will be no difficulty in seeing that the above-mentioned possibilities are already realized in Brazil. At any rate, we cannot deny that changes in the income structure or demand structure due to inflation have hampered private investment in industries which produce basic consumer goods.

A fact which must be noted in relation to industrialization policy is the important role played by commercial policy and foreign exchange policy. These policies provided for very strict regulation of imports of high-class consumer and luxury goods. As a result, domestically, investment in the industries which produce them has been stimulated. In general, postwar investment has been concentrated in the consumer goods industries. For that reason, capital goods industries have had difficulties in expanding, and such infrastructural fields as electric power and transportation are far behind in their development. Thus investment in the consumer goods industries has gradually run into difficulties. These difficulties are especially evident when there has been a decrease in the capacity to import. From about 1952–1953, this problem became very serious. Then, after 1955 the continuous decrease in the purchasing power of exports led to the government plan which aimed at increasing investment in capital industries. This plan provided for investment primarily by the government. Towards the end of the 1950's an increase in private capital formation was encouraged both by the planned development of capital goods industries and by the progress in the development of the infrastructure.

V

The foregoing considerations of the experience of the Brazilian economy give us some suggestions concerning the relationship between economic development and inflation. Although we have not had enough appropriate data in this analysis, we can draw the following general conclusions.

First, concerning the relationship between inflation and the saving rate : inflation in the 1950's in Brazil brought about a redistribution of income which was favourable to the upper-income groups as a whole. Nonetheless there was no striking increase in the rate of private saving. This may be explained partially by various phenomena. For example, the high-income groups in Brazil have inherited certain traditional consumption habits as had *fazendeiro*, and furthermore they have been very susceptible to the demonstration effect. Although we unfortunately did not have data on profits in the various industries, we were able to point out that if the income redistribution effect is beneficial mainly to merchants and traditional entrepreneurs, this redistribution will create more consumption and cause a decrease in the private saving rate. This presents a number of important problems for the argument which stress the forced savings effect of inflation.

The second conclusion is related to the idea that inflation, by increasing profits, causes an increase in investment. The Brazilian experience shows us the following facts about this contention : (1) Chronic inflation itself does not necessarily stimulate an increase in the capital formation rate. (2) Real profits are at least partially the basis for investment decisions. (3) However, even if inflation does stimulate investment slightly, investment basically depends upon the capacity to import.

Third, private investment has had to confront obstacles which inflation itself has created. In Brazil inflation has stimulated investment in real estate not only by the affluent classes, but also by the professionals and people in the middle classes. Moreover, the inflation caused income redistribution which was unfavourable to the lower-income classes and has hampered increases in their demand for basic consumer goods. This explains to some extent the stagnation in private investment. Again, inflation, together with the trade and foreign exchange policies, stimulated consumer goods industries, especially for high-class consumer goods. On the other hand, since the development of capital goods industries was slow, investment in consumer goods industries has also finally run into difficulty. This was the primary reason for the stagnation in private investment during the latter half of the 1950's.

After drawing these conclusions, we cannot but deny the contention that the effect of inflation on the Brazilian economic development has been a positive one. However, as K. E. Boulding has pointed out, the relation between inflation and economic development can never be answered exactly, even by the most vigorous empirical analysis.[1] More-

1 K. E. Boulding, "Some Reflections on Inflation and Economic Development," *Contribuições à Análise do Desenvolvimento Econômico*, Rio de Janeiro, Editôra AGIR, 1957, p. 61.

over, the available statistical data for making this analysis has been extremely limited. For that reason we cannot deny that there are a number of limitations upon our conclusions. Nonetheless, perhaps we can say that our analysis has at least made clear the importance of cultural and institutional obstacles to economic development.

Those who argue that inflation has a positive effect upon economic development are assuming that, in general, industrialization is the basic means of economic development. In other words, they intend to attain the economic structure of the highly developed countries through industrialization. For this purpose, more rapid capital formation in the industrial sector, more industrial labour, and more advanced technology are needed. If this were all that such theorists required, we would not disagree, but on the other hand, they are also assuming the existence of appropriate institutions, customs, and behaviour. In Brazil the consumption behaviour and investment decisions of the affluent classes still reflect traditional forms of behaviour. Because of the stagnation of demand created by the low level of productivity and income, especially in the agricultural sector, there is not sufficient incentive for private industrial investment. The structure of the capital market has not reached the stage where it can function to channel voluntary savings into productive industry, especially into industrial investment. Therefore, the only means left to satisfy the demand of industry for funds is through increasing the amount of currency. Inflation has hampered the development of the capital market, just as the outdated and inappropriate high interest regulations. No one admits that the goal of removing all cultural and institutional obstacles to economic development can be reached through inflation. In Brazil it seems that inflation is actually hampering these necessary changes.