FINANCING ECONOMIC GROWTH IN BRAZIL: CHALLENGES AND OPPORTUNITIES

I – INTRODUCTION

The real GDP growth rate of Brazil in the last years was modest, only slightly above that of the population. To justify the results, the official line was to blame the energy crisis and the problems in Argentina. But in truth, as early as 2000 there were already indications that economic activity would enter a cooling-off period in 2001 - regardless of external factors and domestic shocks[1] - that would continue into at least part of 2003. In 2003, the environment will remain confusing as the new administration discovers the restrictions imposed by fiscal responsibility, the heavy debt burden and the difficulty of negotiating with Congress, as well as with dissident factions in its own party.

Considering the legacy inherited from the FHC administration, the degree of freedom granted economic policy continues limited and the responses less than generous. To be precise, the possibility of sustained growth at rates above 4% is scant. If domestic aggregate demand is over stimulated, inflation soars and the balance of payments deteriorates. If inflation is controlled, foreign accounts may be adjusted, but economic activity inhibited. It is not in 2003, therefore, that the Brazilian economy will be able to achieve the dream of sustained growth.

Does this mean the Brazilian economy is condemned to mediocre growth until more favorable forces arise? There are obviously exits, but they go against the reigning theory and render current political efforts deficient. The most oft repeated formula is that there is an urgent need to increase aggregate saving. Having been repeated so frequently, the concept has turned into the master key to renewed economic growth. Indeed, given the current capital-output ratio, the formation of savings does limit the growth of potential output and an increase in aggregate saving is indispensable to renewed growth. Up to this point, the economists agree. However, they disagree as to the motivation and the mechanisms for transforming savings into fixed investments. According to the traditional argument, an increase in aggregate saving is the only necessary

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[1] Contador, C.R., "Economic activity in 2001: what the leading indicators forecast," Seminar on Leading Indicators, IPEA/CEPAL/OECD, Rio de Janeiro, 4-5 December 2000. The text is also available in Seminários DIMAC, no. 44, March 2001, IPEA, Department of Macroeconomic Studies.

condition and an increase in fixed investments is a natural outcome thereof. Any restriction on economic growth is therefore primarily linked to the generation of aggregate savings. Another line of argument is that an increase in savings is a necessary, but not sufficient, condition. Other measures are imperative if savings are to be converted into productive investments. In other words, the emphasis of this second line of argument, which is the one adopted in this article, falls on fixed investment.

The article discusses some of the issues surrounding the savings-investment question. Section II explores the determinants of fixed investment in Brazil. Section III is directed to the conditions prerequisite to the conversion of savings into investments and to new sources of financing. Section IV presents the conclusions.

II – THE DETERMINANTS OF SAVINGS AND INVESTMENT

The traditional approach underlines that economic growth, viewed as a long-term process of sustained growth of potential output, depends on the expansion and efficient utilization of the factors of production. Also important are other elements, such as institutional conditions, the legal system, protection of and respect for property and contracts, stable rules, coherent regulation, a tax structure that does not inhibit the growth of assets, a capacity to absorb new techniques and products, openness to trade and capital movements and, most essential, the kind of economic policy and its credibility. It is not a coincidence that these institutional factors also influence the generation of savings and their channeling into fixed investments.

Table 1 summarizes the evolution and composition of the savings supply, together with the decomposition of investments. On the savings side, the period 1965-74 – the years of the "economic miracle" – is marked by savings rate growth of over 5% of GDP in public savings and 2% in the current account deficit. In the second half of the 1970s, private savings rise as public savings fall, and external savings permit the aggregate savings rate to reach an average 22.4% of GDP. The 1980s bring a public deficit and a need to finance external and internal debts. The formerly positive contribution of the public sector turns into a deficit and drains savings resources. Even so, for average 1981-85, the public deficit is compensated by the arrival of external savings. The 1990s provide a richer experience. On average, savings for the first half of the decade are of domestic origin, with current accounts practically zeroed. Finally, in the second half and the Plano Real, external savings assume important relative values and serve to compensate for public negative saving. Thus, the nearly 20% aggregate saving rate becomes dependent on two imbalances, one fiscal and the other external. External saving, in the form of current account deficits, is the more stable at over 4% of GDP, while the public deficit is marked by fluctuations associated with attempts to adjust the public accounts.

On the side of the decomposition of fixed investment, the striking fact is the drop in the share of public investments. Whereas public investments were slightly above 5% of GDP in the 1980s, in the 1990s they registered a considerable decline. In part, the reduction is due to privatization, which transformed state-owned enterprises into private ones, hence lowered public investment from the accounting standpoint. Although this part of the drop can be estimated, it is best left to other studies. However, another part of the decline in public investments is caused by reduced funds for infrastructure. This is among the arguments emphasized as a reason for the slow growth of potential output, though it is not the only one.

In accepting the argument that the major restriction to more vigorous economic growth is the rate of saving, one runs the risk of accepting overly simplistic solutions. To augment public saving via fiscal policy, just remedy the public deficit and increase public saving – a task not entirely impossible. As to foreign accounts, just raise the current deficit, which will automatically guarantee the entry of external savings. Moreover, given a null or negative public deficit and a rising current account deficit, the overall savings rate may even reach 25% of GDP, a reference mark for Brazil that – imagine – would carry us back, as if by magic, to the economic success of the years 1968-1973.

In this essay, it is contended that efforts to increase aggregate savings may be sterile if not accompanied, or even preceded, by institutional and fiscal changes which are as, or even more, important. Increasing the savings supply is necessary, but not sufficient. Pushing the savings rate to the 25%-of-GDP summit is not enough. It will also be necessary to reproduce the economic reforms established for the financial market by Laws 4595/64 and 4728/65 in order to re-open channels for long-term credit and fixed investment, as well as to encourage the introduction of private assets and make effective use of the opportunities arising from the reform of the pension system and the development of the insurance market. Finally, up to a point, it will be necessary to align the reforms generated in the years prior to the "economic miracle" with profit-sharing mechanisms and mechanisms aimed at reconciling capital and labor.

Table 1
Savings and the formation of fixed investments (% of GDP)

Period	Savings				Investments			
	Private sector	Govern-ment	Domestic sector	Foreign	Private sector	Govern-ment	Total	
							Current	Real
1947-50	...	...	11.9	0.6	...	...	12.5	...
1951-64	...	...	14.0	0.9	...	...	14.9	...
1965-74	13.6	5.2	18.8	2.0	16.3	4.5	20.8	…
1975-80	16.2	2.7	18.9	3.5	19.2	3.2	22.4	23.6
1981-85	19.0	-2.2	16.8	2.8	14.3	5.3	19.6	18.3
1986-90	21.4	0.3	21.7	0.4	17.0	5.1	22.1	17.2
1991-95	17.0	1.8	18.8	0.3	14.4	4.7	19.1	15.1
1996-00	19.1	-3.9	15.2	4.3	17.2	3.9	21.1	19.5
1988	22.8	-4.5	18.3	-1.3	17.8	6.5	24.3	17.0
1989	24.1	-7.3	16.8	-0.2	21.0	5.9	26.9	16.7
1990	16.2	-1.2	15.0	0.5	16.5	5.1	21.6	15.5
1991	15.5	-0.6	14.9	0.3	13.8	5.0	18.8	15.2
1992	17.6	-2.2	15.4	-1.4	13.3	5.6	18.9	14.0
1993	14.2	0.2	14.4	0.0	13.9	5.3	19.2	14.4
1994	13.6	1.3	14.9	0.4	15.3	4.3	19.6	15.3
1995	18.9	-4.8	14.1	2.5	15.5	3.8	19.3	16.6
1996	18.8	-1.0	17.8	3.1	16.3	4.6	20.9	20.2
1997	18.9	-1.6	17.3	4.1	17.0	4.5	21.5	20.4
1998	20.7	-4.0	16.8	4.3	16.7	4.4	21.1	19.8
1999	21.1	-5.6	15.5	4.8	17.2	3.0	20.3	18.1
2000	19.1	-1.9	17.2	4.5	18.8	2.9	21.7	19.1
2001[a]	19.0	- 4.2	14.8	4.6	18.1	1.3	19.4	19.0

Sources : Fundação Getúlio Vargas, Fundação IBGE
[a] Preliminary, **SILCON**/C.R.Contador & Associados

1 – SAVINGS FORMATION

The literature points to five factors as being the main determinants of aggregate saving: the tax structure; interaction with the rest of the world; the relative importance and operation of the financial market; the system through which income and wealth are transferred across generations via the pension system; and GDP growth.[2] These factors can be distributed as variables directly

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[2] See Candido Jr., José Oswaldo, "Poupança doméstica no Brasil: evolução recente e perspectivas", Discussion Text no. 589, IPEA, Brasília, September 1998; Matos Filho, José Coelho and Candido Jr., José Oswaldo, "Poupança privada e sistema financeiro: possibilidades e limitações", Discussion Text no. 488, IPEA, Brasília, June 1997; Barreto de Oliveira, Francisco Eduardo; Beltrão, Kaizô Iwakami and Albuquerque David, Antônio Carlos de, "Previdência, poupança e crescimento econômico: interações e perspectivas", Discussion Text no. 607, Brasília, November 1998. Also see, Ana Claudia and Giambiagi, Fábio, "Aumento do investimento: o desafio de elevar a poupança privada no Brasil", Discussion Text no. 60, BNDES, Rio de Janeiro, December 1997; Pereira, Francisco;

influenced by or corresponding to economic policy instruments (policy factors) or as variables not directly influenced by economic policy (non policy factors).[3] Amongst the policy factors are administration of public savings, tax incentives and exemptions used to encourage household saving, tax policy on corporate profits and the social security/private pension system model. The non policy factors include demographic structure, savings habits, GDP growth and the sensitivity of saving to interest rates, risk and income, all of which are exogenous and therefore cannot be considered policy instruments.
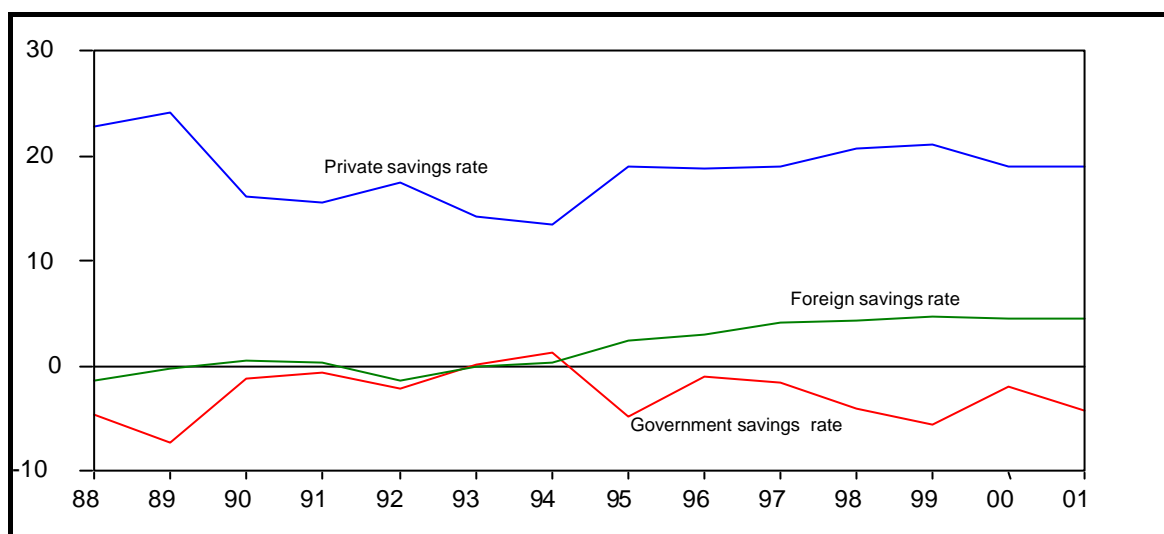
Figure 1 – The savings rate

There is evidence, based on cross-section international data, that an increase in government savings – that is, an improvement in the balance of public accounts – neither raises aggregate savings nor lowers household savings in the same magnitude.[4] Depending on how the improvement in the public sector balance is generated – through taxes, for example – the result may even be a drop in private savings. Furthermore, there is also no guarantee that the policy of generating current account deficits favors the formation of savings. Leaving aside a more complex model, let us test these hypotheses using a regression model for the period 1971-2001, where *spriv* stands for the first difference in the rate of private saving, *spub* for the first difference in the rate of public saving and *sext* for the rate of external saving (current account

Miranda, Rogério Boueri and Silva, Marly Matias, "Os fundos de pensão como geradores de poupança interna", Discussion Text no. 480, IPEA, Brasília, May 1997.

3 Dayal-Gulati, and Thimann, C., "Saving in Southeast Asia and Latin America compared: searching for policy lessons," IMF Working Paper no. 110, International Monetary Fund, Washington, D.C., 1997.

[4] Corbo, Vittorio and Schmidt-Hebbel, Klaus, "Public policies and saving in developing countries," Journal of Development Economics, vol. 36, no. 1, July 1991.

deficit/GDP). This yields the following results, where d is the first difference-operator and the numbers between parentheses are the *t*-statistic.

$$d(spriv) = -0.093 - 0.994 \ d(spub) - 0.473 \ d(sext)$$
$$(-0.26) \quad (-6.76) \quad\quad\quad (-2.07)$$

$$R^2 \text{ adj.} = 0.604 \quad\quad DW = 2.42 \quad\quad SE = 1.97$$

According to this result, which does not take causality between variables into account, each percentage point increase in the rate of public saving lowers the rate of private saving to practically the same degree. That is, all other conditions held constant, <u>a reduction in the public deficit (or an increase in the public sector surplus) does not affect aggregate saving.</u> This affirmation should not be used, however, as an excuse for leniency with regard to the public deficit. Reducing the public deficit has strong merits, for doing so can indirectly relieve the pressure on public indebtedness and its impact on interest rates, as well as serve as an example of integrity and ethics, or even as a credibility symbol for the domestic and foreign communities. Nevertheless, it should not be an end in itself or serve as an excuse for abusive increases in the tax burden.

In turn, an increase in the public deficit (that is, an increase in external saving) also tends to reduce private saving. Each percentage point increase in external saving lowers private saving 0.5 percent. Consequently, this mechanism is not capable of raising private saving in a sustained manner, though it may serve as an important means for increasing the total savings supply. Rearranging the final expression of the regression (and ignoring the constant which is not significantly different from zero), yields the results summarized in Table 2.[5]

Table 2 – Effects of changes on public and external saving

	On private saving	On total saving
Public saving	-1.0	0.0
External saving	-0.5	0.5

The policy of maintaining elevated interest rates is sometimes justified as necessary for stimulating private saving. However, for three reasons, the argument does not hold. First, the supply of private savings is inelastic in the

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5 Adding the rates of external and private saving to both sides of the expression yields:
$$d(spriv) = -1.0 \ d(spub) - 0.5 \ d(sext)$$
$$d(spriv) + d(spub) + d(sext) = d(stot) = \ 0.5 \ d(sext)$$

high interest range, but sensitive to negative real interest rates.[6] Second, high real interest rates increase the weight of internal public debt and decrease public savings. It is even possible that, in the range of excessively high real interest rates, the savings supply curve becomes negative since agents are offered the conditions to maintain the same future consumption, but with less current savings.[7] And third, high interest rates lower fixed investment, the expansion of installed capacity and the potential GDP growth rate, which, in turn, affects the savings rate itself. The empirical findings of Reis,[8] Held and Uthoff,[9] Carrol and Weil,[10] Hausmann *et al.*[11] and Muhleisen[12] show that variations in real GDP anticipate variations in saving; that is, cause and effect flow from the growth of GDP to the formation of savings. Hence, lessened GDP growth, caused by elevated real interest rates, leads to a drop in private saving.

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6 Contador, C.R., "La crisis de los anos 80 y la formación del ahorro en Brasil", III International Conference on Financial Development in Latin America and the Caribbean, Caraballeda, La Guaira, Venezuela, 1-3 March 1985. Inflation would be the principal component for turning real interest rates negative and thus reducing savings according to the argument of Thirlwall, A.P, "Inflation and the savings ratio across countries," Journal of Development Studies, vol. 10, no. 2, January 1974, pp. 154-174. Although interest rates are not differentiated by range, the inelasticity of savings to interest rates is also observed in Giovannini, A., "The interest elasticity of savings in developing countries: the existing evidence", Journal of Developing Economics, vol. 18, August 1985; Gleizer, Daniel Luiz, "Saving and real interest rates in Brazil," Revista de Econometria, Year XI, no. 1, April 1991, pp. 63-92; Gleizer, Daniel Luiz, "Government saving and private saving in Brazil," Revista Brasileira de Economia, vol. 46, no. 3, July/September 1992, pp. 291-318; Masson, Paul R., Tamim Bayoumi and Hossein Samiei, "International evidence on the determinants of private saving", World Bank Economic Review, vol. 12, no. 3, September 1998, pp. 483-502; Schmidt-Hebbel, Klaus, Steven B. Webb and Giancarlo Corsetti, "Household saving in developing countries: first cross-country evidence", World Bank Economic Review, vol. 6, no. 3, September 1993, pp. 529-547; Williamson, Jeffrey G., "Personal saving in developing nations: an intertemporal cross-section from Asia", Economic Record, vol. 44, no. 106, June 1968, pp. 194-209; Reisen, Helmut, Pensions, Savings and Capital Flows: From Ageing to Emerging Markets (OECD, Massachusetts, Edward Elgar Pub., Inc., 2000), p.97.

7 This is the conventional discussion separating the interest effects from the income effects and substitution. See Weber, Warren, "The effect of interest rates in aggregate consumption", American Economic Review, vol. 60, September 1970, pp. 571-600.

8 Reis, Eustáquio *et al.*, "Evidências macroeconômicas: os determinantes da poupança no Brasil, 1975/1995", Proyecto Red de Centros de Investigación, Determinantes del Ahorro Interno en América Latina, Interamerican Development Bank, June 1996.

9 Held, Gunther and Andras Uthoff, "Indicators and determinants of savings for Latin America and the Caribbean", Working Paper 25, CEPAL, April 1995.

10 Carroll, Christopher and David Weil, "Saving and growth: a reinterpretation", Working Paper 4470, National Bureau of Economic Research, September 1993.

11 Haussmann, Ricardo *et al.*, Saving Behavior in Latin America: Overview and Policy Issues, Interamerican Development Bank, December 1996.

12 Muhleisen, Martin, "Improving India's saving performance", Working Paper 97/4, International Monetary Fund, January 1997.

For these reasons, the effect of high interest rates on the aggregate savings supply is, in fact, negative. In other words, the justifications for elevated rates should be sought in the need to attract external funds for financing the current account deficit or controlling aggregate demand.

Complementary reforms, which generally precede an increase in aggregate savings, should also focus on improving the channels whereby savings are transformed into fixed investments. They are associated with two groups of policy measures: those directed to the reform of the financial market (particularly credit and long-term capital mechanisms) and those aimed at the adoption of a tax policy that encourages (or at least does not punish) the formation of corporate and household assets. In the discussion that follows, it will be seen that these measures contain some weak points with respect to the increase in aggregate savings and fixed investments.

2 – THE DEMAND FOR INVESTMENTS

Fixed capital formation is the most visible reflection of the ability and willingness of a society to bet on its own future. However, it should be a collective desire, not that of an isolated sector, whether the private sector or the government. What leads the private sector to invest in new installations and equipment and to hire new workers? Several factors can be listed. First, in the case of an existing firm, an interest in new fixed investments may arise once the current installations reach their utilization limit, as proposed by Koenig.[13] Alternatively, it may be a response to a change in product and/or technology. Figure 2 illustrates the inverse association between the rate of private fixed investment and idle capacity. Measured by the GDP gap, with a one-year lag, the rate of investment increases (decreases) after a drop (rise) in idle capacity.[14]

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[13] Koenig, Evan F., "Capacity utilization and the evolution of manufacturing output: a closer look at the `bounce-back effect", Federal Reserve Bank of Dallas, Research Department, Working Paper 94-02, 1994. Koenig estimates that a peak 83.5% utilization of industrial installed capacity serves to induce new investments in the USA.

[14] Causality tests using the Granger approach were used.. In some cases the results were inconclusive, revealing two-way causality. Here we prefer to adopt the common-sense criterion, with causality simply identified by the lead among variables.
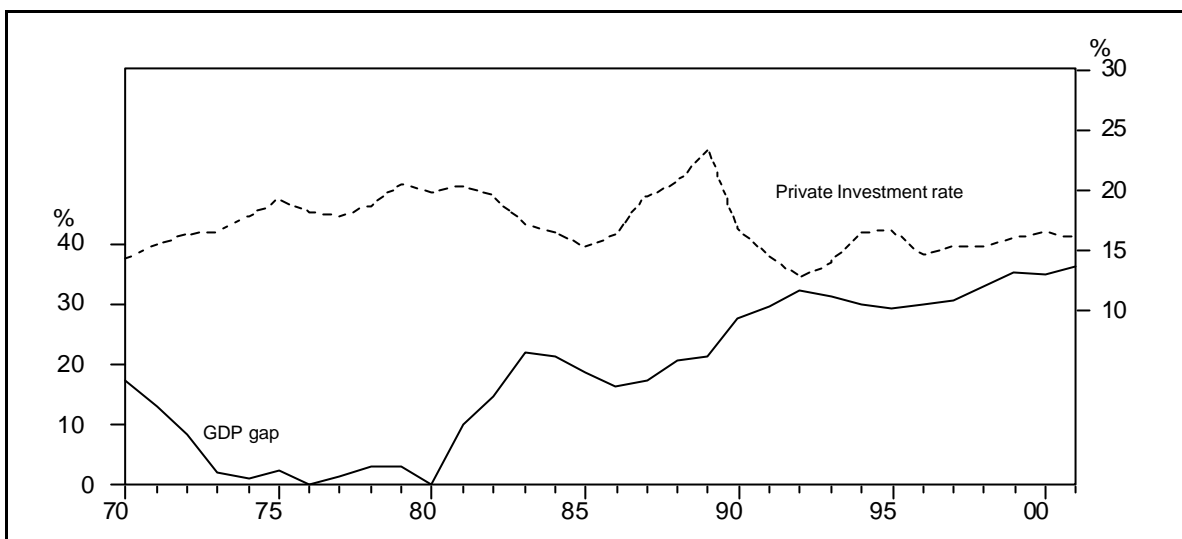
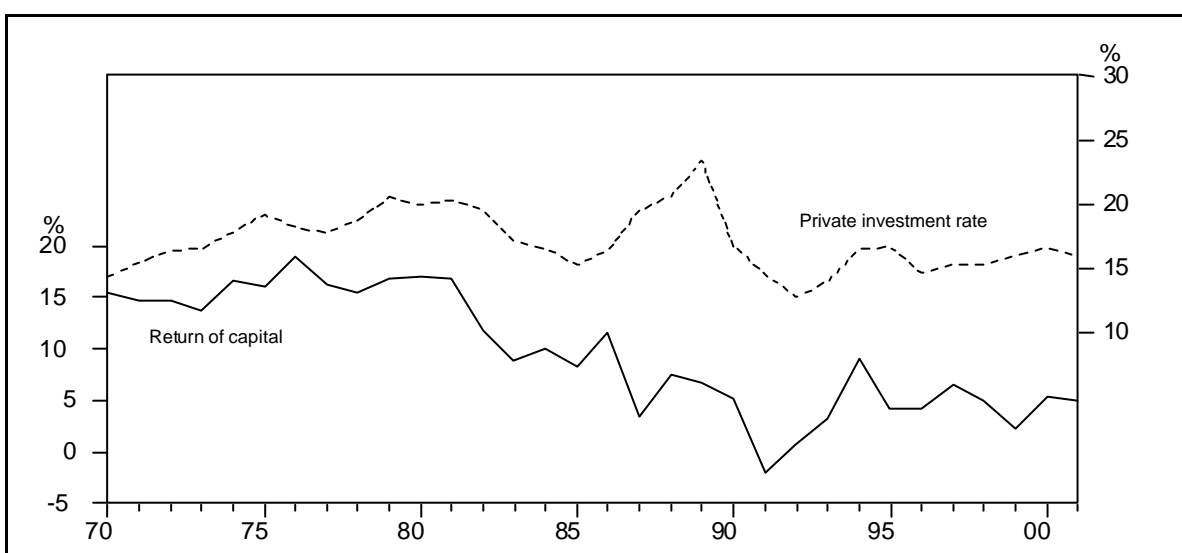Figure 2 – Investment rate and idle capacity (GDP gap)

Figure 3 – Return on capital (net assets) and rate of investment

The second factor that encourages private investment is the return of capital. This is confirmed in Figure 3, which measures profitability first by the rate of return on the net worth of the largest corporations in the annual survey prepared by the Getúlio Vargas Foundation and published in Conjuntura Econômica. Fixed investment and the profitability of capital are positively associated and, once again, with a lagged response. It is also to be expected that corporate taxes would discourage private investment.[15] However, since analysis of this effect would require decomposition of the burden into corporations and households, it is best left for another study. Nonetheless, so as not to

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[15] Evans, Owen, "Tax policy, the interest elasticity of savings and capital accumulation: numerical analysis of the theoretical models", American Economic Review, June 1983.

completely exclude taxes from the empirical analysis, the total tax burden was included in some experiments.
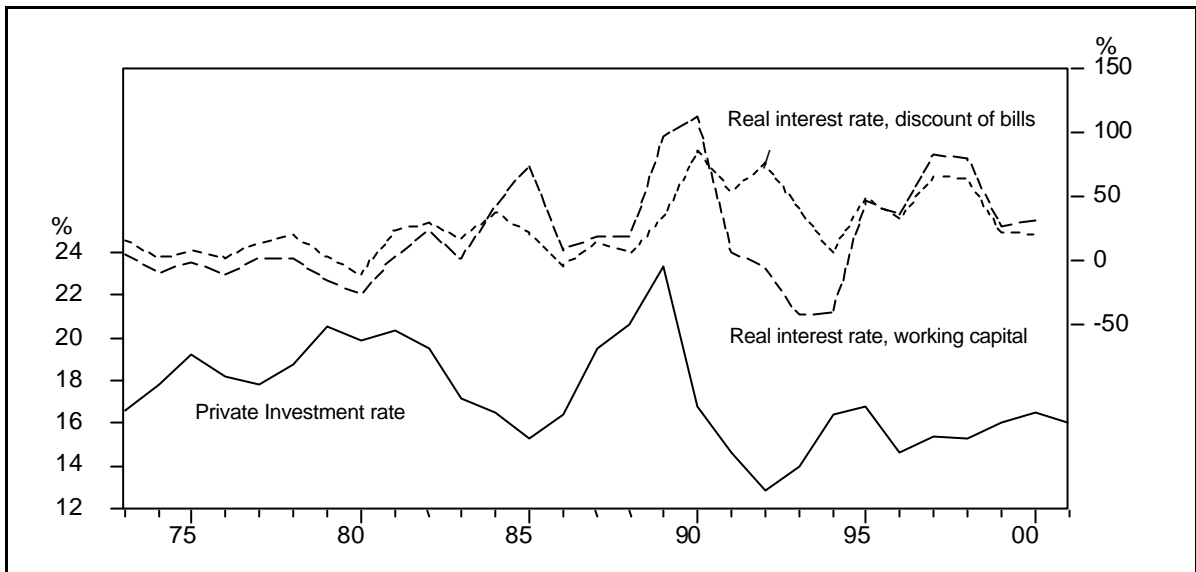

Figure 4 – Private investment and real interest rates

When analyzing real interest rates as an opportunity cost for capital or as a factor that discourages fixed investment, care must be taken. The basic interest rate (the so-called Selic rate) does not serve as a proxy for the cost of capital because of the spread imposed by taxes, intermediation costs and the risk premium. Figure 4 shows the evolution of the investment rate compared to the real interest rate (deflated by the IGP/DI) charged on loans for working capital and on notes receivable. Both correlations are negative and higher at a one-year lag. In the following empirical appraisal, therefore, the discount rate on notes receivable is the best proxy for the cost of capital.

A final factor to be considered when discussing the behavior of the investments tested is whether public and private investments complement or substitute one another. For a given aggregate supply of savings, an increase in public investment necessarily decreases (crowds-out) funds for private investment. Nonetheless, public investments in infrastructure create opportunities for the private sector, and being complementary, raise the return on private capital. In other words, during a given period, increased public investment reduces private investment owing to the savings-investment ratio and crowding out. In the long run, however, public and private investment can prove complementary. Considering the effects distributed over time, it cannot be affirmed that the negative short-term crowding-out effect is either stronger or weaker than the complementary effect. Thus, the long-term impact of public on private investment cannot be defined *a priori*, but is rather an empirical question. If the sign of the parameter is positive, the complementary effect predominates and private investments are stimulated by public investments. If it

is negative, they are substitutes. If the value of the parameter is close to zero, it means that in the long run, private investments are independent of public investments. This empirical test utilizes an Almon third-degree, four-period distributed lag polynomial without restrictions at the extremes, as recommended by Davidson and MacKinnon.[16]

The response of the annual rate of fixed investment (at real prices) to these variables is summarized in Table 3. The rate of fixed investment is explained, in a distributed lag polynomial, by the average rate of capital return (profits over net assets) less the rate of interest, by average idle capacity (real GDP gap) and by the rate of public investment. Residual serial correlation was reduced through first-order autoregressive term. All the variables have the expected sign and are significantly different from zero at the 10% level (at least), with the exception of the tax burden. In terms of significance, the most important variable for explaining the rate of private fixed investment is the rate of return on net assets less cost of capital. The second most important is idle capacity. The real interest rate, which proved not statistically significant when isolated, improved the explanation of the model when included in profitability of capital. Although current public investment reduces private investment, its long-term impact, identified by the sum of the coefficients of the polynomial, is nearly null and not significantly different from zero. This result conflicts with the evidence offered by Cruz and Teixeira that public investment shifts private investment short term but encourages it long term.[17]

Table 3 – Response of private gross investment
Period : 1970-2001

#	Constant	Govnmt invest. rate		GDP gap[a]	Return on Net worth[b]	Real int.rate[c]	Net return on capital[b]	Tax burden[a]	AR(1)	R^2 DW.
		current	long term							
1	16.4321* (.03)	-0.7018 (-1.49)	0.6544 (0.65)	-0.1383* (-2.09)	0.1178 (1.24)	-	-	-	0.6646* (4.04)	0.548 1.72
2	20.0679* (4.62)	-0.7507** (-1.72)	0.3420 (0.30)	-0.1823* (-2.53)	-	-0.0224 (-2.61)	-	-	0.7850* (5.22)	0.631 1.50
3	27.0950* (3.94)	-0.6963** (-1.77)	-0.0634 (-0.06)	-0.1464** (-1.94)	-	-	0.0243* (2.98)	-	0.7884* (5.08)	0.658 1.65
4	26.5124* (3.51)	-0.7080 (-1.64)	-0.0165 (-0.01)	-0.1472** (-1.89)	-	-	0.0244* (2.91)	-0.2251 (-1.09)	0.7877* (4.96)	0.640 1.58

[a] Two-year lag. [b] One-year lag. [c] Real discount rate (deflated by IGP/DI) on notes receivable, one-year lag. AR(1) is the first-order autoregression component. The level of significance is indicated by asterisks: one asterisk, 5%; two asterisks, 10%; no asterisk, significance under 10%.

According to the results of regression #3, each percentage point increase (decrease) in the rate of public investment lowers the rate of private

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[16] Davidson, Russell e James G. MacKinnon, Estimation and Inference in Econometrics (New York, Oxford University Press, 1993), pp. 675-676.

[17] Cruz, Bruno de Oliveira and Joanílio R. Teixeira, "Relação entre investimento público e privado no Brasil: 1947-1990", Revista da CEPAL, April 1999.

investment by approximately 0.7 percentage points (though not significantly different from one); a rise (fall) in the return on PI less real interest rates raises (lowers) the investment by 0.02 percentage points; and each percentage point increase (decrease) in the GDP gap raises (lowers) the rate of investment 0.15 percentage points. Whereas public and private investments are substitutes in the short run, the empirical evidence suggests that they are independent in the long run.

These empirical results point to the following as being prerequisite to channeling investment into productive capacity:

- a prior increase in the return on corporate capital and/or in the cost of capital
- a prior decrease in idle fixed capital and available installations
- a drop in private investment due to public investment during the current period and the impossibility of affirming that the substitution will not be of equal magnitude
- the long-term independence of private investment from public investment (This conclusion rejects the argument that public investments are important for opening the way for and stimulating private investments.)

Since none of the above conditions has been met, what should be expected with regard to the rate of fixed investment in the short run – say, for 2003 and 2004? Or, while idle capacity does not diminish due to the natural depletion generated by aggregate demand, capital returns do not increase and/or interest rates do not drop, what are the prospects for the formation of fixed investments? Forecasts based on leading indicators point to a falling rate of fixed investment in 2002 and early 2003.[18] They therefore throw cold water on promises of intensified growth in 2003 and on the dreams of initiating the new administration with higher employment and short-term sustained economic growth. What remains is a medium- and long-term investment recovery, which will demand a change in economic policy, and basically the implementation of reforms.

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[18] This conclusion is based on a quarterly leading indicator, where the reference variable is the quarterly rate of fixed investment (in real prices) calculated by IBGE and IPEA. The leading indicator is formed of six quarterly input variables and has an average lead of three quarters. The input variables that comprise the leading indicator are: predicted future demand; the current business situation and the predicted business situation in six months, based on surveys by the Fundação Getúlio Vargas; GDP growth rate; real interest rates on notes receivable; and the past variation in the rate of fixed investment. For details on the methodology used, consult Contador, C.R. and C.B. Ferraz, Previsão com Indicadores Antecedentes (Rio, SILCON, 2001), 5th ed.

III – THE REFORMS

As long as the Brazilian economy remains fragile in relation to the entry of foreign capital for financing the current account deficit, the growth of aggregate demand will be at the mercy of turbulence in the international capital market and of the humors, rational or not, of the financial agencies. In an environment where capital is mobile and markets integrated, interest-rate policy assumes fundamental importance as a political instrument in any open economy. The international mobility of investments forces emerging economies to adapt their profit, risk and tax conditions to those of the developed countries.[19] However, in emerging countries, and especially in Latin America, such conditions are at best artificial and momentary, as under the exchange-rate system of Argentina or the generous profit-yielding interest rates of Brazil. Thus arises the sensitivity to the rate of interest. In Brazil, the importance of interest-rate policy is heightened by the need to attract foreign savings to substitute a lack of public savings, as well as by its role as an instrument for managing aggregate demand in a system with inflationary goals.

In the 1950s and 1960s, the rate of fixed investment was under 15% of GDP. Even so, the average rate of economic growth reached 6.4% per year despite a series of political crises and rising inflation. During the last two decades of the twentieth century, the rate of fixed investment approached 18%, but GDP grew at an average of slightly less than 2% per year. The drop in the productivity of capital (or rise in the marginal capital-output ratio) in the 1980s, and unquestionably in the 1990s, has been examined by Simonsen[20] and Contador.[21] Among the explanations for this drop are the instability of economic policy, the increase in the relative price of capital goods, the breaking of rules and contracts, the weakening of the signals emitted by relative prices as a result of inflation, and possibly reduced public investment in infrastructure, as alleged by Ferreira.[22] In addition, there is clearly an international trend, converging to three,[23] to raise the marginal capital-output ratio. Compared to

[19] Buckberg, Elaine, "Emerging stock markets and international asset pricing", The World Bank Economic Review, vol. 9, no. 1, January 1995, pp. 51-74.

[20] Simonsen, Mario H "Poupança e crescimento econômico," Ensaios Econômicos 178, EPGE/FGV, 1991.

[21] Contador, C.R., "The crisis of the 80's and investment in Brazil", Seminar on Management in the 1990s: Transition to the 21st Century, BALAS, Buenos Aires, October 1989.

[22] Ferreira, Pedro Cavalcanti, "The impact of public capital and public investment on economic growth: an empirical investigation", Ensaios Econômicos 228, FGV/EPGE, February 1994.

[23] Feu, Aumara, "Evolução da razão capital-produto no Brasil e nos países da OCDE", Seminários DIMAC no.72, IPEA, Rio, September 2001.

the 1960s, Brazil now needs twice the investment to generate one unit of output.

Fixed capital is the scarce factor in Brazil and has a social cost higher than in more developed countries. For this reason, the existing stock and its increments should be utilized as efficiently as possible. The failure to use currently existing machinery and equipment is senseless. The social cost of idle capital, in terms of labor not employed, production not achieved, taxes not collected, etc., is high and a waste that Brazil cannot afford. Moreover, as shown in the empirical analysis, above- average idle capacity discourages new fixed investment for expanding productive capacity.

This is the main reason for implementing measures and policies that complement capital by raising its productivity. The reforms can be distributed into seven groups, all related to the financial market. The principal role of the financial market is to channel savings to fixed investments via the indirect mechanisms of financial institutions. The direct channels are basically limited to transforming retained earnings into assets within corporations. When no internal investments are made, retained earnings are directed to the financial market and attend to the investment needs of other projects. The development of the financial market generates a series of positive macroeconomic effects:[24] productivity gains at the same level of fixed capital; increased gross fixed capital formation due to stronger incentives to personal saving; lower rate of interest, degree of risk, and opportunity cost of capital; better distribution of income factors owing to the competitive nature of financial intermediation, etc. Under the current conditions of the Brazilian economy, all of these effects are lacking.

The following measures – by no means exhaustive – would contribute to restoring the financial market to its proper role and to leveraging fixed investment.

1. Credit market

It is imperative to restore private sources for medium- and long-term credit. There is evidence that long-term credit leads to productivity gains, but only in the absence of subsidies and intervention in the form of interest rates.[25]

Today, the volume of credit offered to the private sector by the financial system in Brazil is equivalent to 27% of GDP, with slightly under 21% being for corporations and the remaining 6% for personal household credit. In 2001, this signified total credit in the value of R$ 325 billion, with R$ 245 billion for corporations. This total includes operations for financing working capital,

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[24] Contador, C.R., <u>O Mercado de Ativos Financeiros no Brasil</u> (Rio, IBMEC, 1974), chap. 2.

[25] Caprio Jr., Gerard and Ash Demirguc-Kunt, "The role of long-term finance: theory and evidence", <u>The World Bank Research Observer</u>, vol. 13, no. 2, August 1998, pp. 171-189.

commercial leases and other short-term items. Only a small part is directed to medium- and long-term operations. In comparison, in the 1970s, the share of credit to the private sector was over 60% of GDP.

Table 4 - Credit from financial system to private sector, % of GDP

Year	Corporate[a]	Household	Total
1970	33.8	...	33.8
1975	55.2	...	55.2
1980	37.8	4.2	42.0
1985	38.1	5.6	43.7
1990	37.0	1.0	38.1
1995	28.9	2.4	31.3
1996	23.6	2.9	26.5
1997	22.9	3.9	26.8
1998	24.0	3.8	27.8
1999	23.7	4.1	27.8
2000	22.6	5.6	28.2
2001	20.7	6.5	27.2

Sources: Banco Central and IBGE.. [a] Until 1979, includes household

By international standards, the volume of credit in Brazil is low. More developed economies have financial leverage higher than the GDP itself and average terms of maturity of more than five years. In Brazil, most credit transactions mature in less than two years and the exceptions are usually concentrated in the large corporations.

2. Government bond market

The first requirement for the reform of the financial market is the reform of the government bond market. Considered as a percentage of GDP, the public indebtedness of Brazil (approximately 50%) is low compared to other countries. However, it is concentrated in short-term papers, which pressures the interest rates. In addition, the need to turn over the public debt limits the space for private securities. The private securities issued include mainly shares, commercial papers and bonds, which together totaled US$ 10 billion in 2001.

Since investment is a flow, the reform of the financial system should begin at the source of the problem: the public deficit. Zeroing the public deficit is no longer of concern merely to satisfy the IMF or to contribute to the war against inflation.

3. Equity capital and taxes

Traditionally, attracting investment funds through stock issues has been modest in Brazil. In 1999, initial stock issues were valued at only US$ 1.5 billion, compared to US$ 3.6 in bond issues and US$ 4.4 billion in commercial papers. Explanations range from the tradition of closed, family-controlled capital to the distortions created by fiscal legislation and regulation. Fortunately suspended in 2001, the CPMF (a tax on any and all financial transactions) was yet one more obstacle to be overcome by the Brazilian stock market. Even so, a fiscal bias still perturbs financial transactions. The freedom and integration of the international financial markets have led to restructuring of the capitalization mechanisms. The already small Latin American securities market saw its major operations transferred to the New York and Madrid stock exchanges. Internationalization of the exchanges raises the efficiency of the markets but it also destabilizes the capital flow for long-term fixed investment. Domestic capital markets have lost one of their channels for converting savings into investments and have turned to official mechanisms, which are not always efficient and are often characterized by bureaucracy, when not by corruption.

In the case of Brazil, the loss of importance of the stock market as an important source for financing private enterprise has been aggravated by distortions[26] such as double taxation of dividends and the differentiation of ordinary and preferential stock, which allows for control of a company with only 17% of the share capital. The number of companies listed on the Brazilian stock exchanges is diminishing, having dropped from almost 600 in 1986 to the current 470 firms, of which only a third offer shares with liquidity. Not only the CPMF raised the cost of stock transactions in Brazil. The high operational cost itself, caused by limited scale and insufficient information, led various Brazilian companies to shift their operations to the New York Stock Exchange (NYSE). The maintenance costs for offering stock on the Brazilian exchanges include external audits, publications, the annual fees charged by the exchanges, inspection fees, an investor relations department plus a series of indirect costs, for a total ranging from R$ 38 thousand to R$ 4.1 million per year. These costs literally exclude medium-size firms from seeking funds via offering shares on the stock exchange.[27] In contrast, placing shares on the international exchanges through ADRs (American Depositary Receipts) or GDRs (Global Depositary Receipts) is extremely simple and unmarked by the bureaucracy characteristic

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[26] Mello, Pedro Carvalho de, "Domestic capital markets as a complementary source of capital for countries facing borrowing problems", Latin American Shadow Financial Regulatory Committee, submitted at a meeting in Buenos Aires, May 2002.

[27] Ribeiro Neto, Ramon M. and Rubens Famá, "Uma alternativa de crescimento para o mercado de capitais brasileiro – o Novo Mercado", Revista de Administração, vol.37, no.1, January-March 2002, pp .29-38.

of the Brazilian exchanges. In the year 2000, the Brazilian exchanges, aiming to reduce costs and optimize operating resources, agreed to centralize transactions at the São Paulo Stock Exchange. Even so, maintenance costs are still very high in Brazil, which reduces competitive power *vis-à-vis* foreign exchanges.[28]

The tax composition is also perverse in Brazil, based on cumulative taxes that fall more on production than on consumption. The burden is exaggerated and inhibits private investment, as seen in the preceding section. The tax system should be compatible with the long-term allocation of investment resources. The most flagrant distortion is the double taxation of profits (the corporation pays income tax on the profits and when they are distributed as dividends, they are taxed again). The fiscal reform is therefore important to grant more freedom to the capital market and to restore the role of capitalization as a source of investment.[29]

A key reform that should be urgently approved is the new Corporate Law. The current legislation was established in 1976 and has been problematic from the outset. Considering the new requirements for the capitalization of the Brazilian economy and the changes observed in other economies, Law 6.404/1976 is an impediment to the healthy development of the Brazilian capital market.

4. Corporate governance

Stockholders -- especially minority shareholders – are discriminated against under the Brazilian legal and regulatory systems. Fortunately, an interesting project in this regard was launched in December 2000. Called "*Novo Mercado*" (following the example of the *Neue Markt* created in Germany in 1997), it classifies the firms listed according to degree of adherence to the rules of corporate governance, transparency of information and quality of relations between the firm and its stockholders, particularly the minority shareholders.[30]

5. Political interference in the administration of financial institutions

In Brazil, the role of pension funds and other institutional investors has been denigrated by two kinds of measures. First, due to the need to create demand for government bonds (and hence favor the financing of the public

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[28] The difference in scale is substantial. The Nasdaq Exchange has a daily transaction volume of nearly US$ 42 billion; NYSE, US$ 35 billion; London, US$ 13.5 billion, whereas the São Paulo Exchange (Bovespa) registers just over US$ 400 million. Bovespa now has a daily volume lower than Taiwan (US$ 3.5 billion), Korea (US$ 3 billion), Hong Kong (US$ 900 million) and Istanbul (US$ 800 million).

[29] Henry, Peter Blair, "Do stock market liberalizations cause investment booms?", IMF, mimeo, October 1997.

[30] Ribeiro Neto and Famá, *op. cit.*

deficit), regulatory agencies oblige institutional investors to increase the share of these bonds in their compulsory reserves. Since the return on government bonds is low, the profitability of the reserves is affected, as is, in turn, the technical feasibility of institutions honoring their long-term commitments.

The second type of measure is specific to financial institutions with government participation, under government control or subject to public interference. The administration of these institutions is marked by a lack of transparency and decisions that reflect political favoritism, when not by a level of corruption higher than that observed in private institutions. The successive solvency problems of the pension funds of state-owned enterprises, caused by erroneous or fraudulent decisions, underline the importance of eliminating political interference in essentially technical questions.[31]

The opportunities made available to institutional investors with the opening of the private pension plan market, together with the expansion of the insurance market through the offering of numerous products, favor substantial new investments in companies, stocks, real estate, etc. Estimates indicate that by 2010, the volume of new investments in open private pension plans may reach R$ 250 to 300 billion (at 2001 prices), plus an additional R$ 400-470 billion in pension funds (closed private pension plans). This signifies total reserves and assets equivalent to 50% of GDP in 2010, compared to 4% in 1990. An amount of capital of the same magnitude will radically transform the mechanisms for financing projects in Brazil and may eliminate many of the obstacles to fixed capital formation.

6. Profit-sharing and workmen's capitalism

The privatization program has been hailed as one of the factors that have differentiated Brazil from other economies in the search for foreign capital. In fact, privatization did guarantee or contribute to the closing of foreign accounts as long as there were public assets for sale. Among the types of money used in the auctions were public securities with low market value (known as "junk money") in the hands of the financial market. Unfortunately, workmen in general were unable to participate in the auctions despite having FGTS certificates in their power. Allowing them to take part would have been an intelligent way to reconcile capital and labor, to expand the capital market and its institutions and to boost the stock market, in addition to raising the value of

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[31] Such effects can be even more serious under circumstances of macroeconomic fragility. During the recent crisis in Argentina, one of the ingredients was the quality of the assets of the Bank La Nación, which generated the credibility crisis and the disastrous response of the government and the implementation of the "corralito". Additional examples are offered by the junk money in the financial system of Japan.

the assets for sale. Only in 2000, at the end of the privatization program, were workmen given the right to use their FGTS certificates to acquire shares in Petrobras and Cia. Vale do Rio Doce. On the occasion of the privatization of the public utility concessions, the opportunity should not be lost again.

Encouraging workers to share in the profits of corporations – through the privatization program – would have the healthy effect of lessening the prejudice against capital. It would also broaden the base of the stock market itself.

7. Pension plans

The pension plan model is fundamental to the formation of savings. According to the life-cycle model, during the productive phase, individuals direct part of their income to the nonproductive phase (retirement). Therefore, pension plans shift current consumption to the future and increase current savings. Depending on the model, the effect of the income transfer over time can be more or less intense. In the pay-as-you-go model, the contributions of the active population finance the inactive population and the workers of today expect their future retirement to be financed by the contributions of the workers of tomorrow. The income transfer is across generations and is usually public, universal and compulsory. Over time, the maintenance of the system depends on the active population/inactive population ratio, growth of the real wage, growth of the labor force and on the ratio between the average number of years workers contribute and the average number of years the retired receive pensions.[32]

Under the capitalization model, workers contribute to a capitalization fund to finance their own retirement. Income is therefore transferred to the same individual in the same generation. In the capitalization model, contributions can be compulsory or voluntary, managed by public or private entities, open for voluntary adhesion or closed for specific groups (such as pension funds). The combinations vary, according to pension plan systems adopted throughout the world.

Although the studies are still inconclusive from the empirical standpoint, strong evidence points to an increase in savings as the pay-as-you-go model gives way to the capitalization model.[33] In a cross-section analysis between

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[32] With regard to this issue, see the classic texts in Brazil by Kaizô Beltrão and Francisco Barreto de Oliveira. Other texts are Pereira, Miranda e Silva, "Os fundos de pensão como geradores de poupança interna", *op.cit.*; Barreto de Oliveira; Beltrão and David, "Previdência, poupança e crescimento econômico", *op.cit*.

[33] From the theoretical standpoint, the evidence is not conclusive. In the traditional argument, the capitalization system generates an increase in savings. In altruistic models, if the current active population incorporates the welfare of its descendents in its utility function, the result is not clear. If they place the consumption of their descendants at the same value as their own, the change has a null effect and the savings rate will be constant ("Ricardian

countries, Edwards found a negative relation between social-security and private pension plan expenditures, signifying that the greater the importance of the pay-as-you-go system *vis-à-vis* the capitalization system, the lower the rate of saving.[34] Other authors, such as Barro and MacDonald,[35] argue that empirical studies that contend that a change of system increases saving fail to take into account the transfer of assets through inheritance, which would nullify the effect of a change of system.

In the case of Brazil, the direct effect of the pension reform and the adoption of the capitalization mechanism will be to decrease the public deficit. The indirect effect, due to lower interest rates, will be to increase fixed investment.

A critical aspect is the shortage of private assets to form the compulsory reserves of the private pension system – the guaranty assets. Portfolios would naturally tend to be composed mostly of government bonds. This would be convenient for the government, which would have more room for indebtedness, but in the private pension system it would introduce an element of fragility and risk. From this arises the importance of aligning the pension reform and the reactivation of the private capital market.

III – CONCLUSIONS

Sustained economic growth requires more than increased aggregate savings and the elegant discourses of those who govern. It also requires, without a doubt, an increase in the savings supply and other important prerequisites, such as: clear and stable rules that do not prejudice the private sector; lower taxes on profits; civilized rates of interest; better distribution of income; availability of the factors of production; an efficient and diversified financial market; and favorable prospects for the future.

In this essay, the formation of fixed investments has been discussed, as have its determinants. A list of reforms prerequisite to the return of economic growth has been proposed. In the short run, existing restrictions to the formation of fixed investment and other unfavorable conditions are likely to

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equivalence"). If they value the consumption of their descendants at a price higher than their own, in the capitalization system the change may reduce the savings supply.

[34] Edwards, Sebastian, "Why are Latin America's savings rates so low? An international comparative analysis", Annual World Bank Conference on Development in Latin America and the Caribbean, Rio de Janeiro, 1995.

[35] Barro, Robert J. and G.M. MacDonald, "Social security and consumer spending in an international cross section", Journal of Public Economics, vol.11, 1979, pp.275-289. See Feldstein, Martin, "Social security and saving", National Tax Journal, vol.49, no.2, 1966, pp.151-164; and Munnell, A. H., "Private pensions and saving: new evidence", Journal of Political Economy, vol. 84, 1976, pp.1013-1032; Reisen, Helmut, Pensions, Savings and Capital Flows, *op. cit*.

inhibit a return to sustained economic growth: the tax burden, the operation of the financial market, high interest rates and disorganized public accounts. In the long run, the prospect will be rosy if advantage is taken of the opportunities and, above all, if the complementary structural conditions are provided.

After all, nowadays there is more information and technology available for the exploitation of natural resources. The population is growing at a slower rate, thus relieving social pressures. The urban mentality and managerial capacity are reaching the rural sector. Society has incorporated stable prices into its daily routine. Public administrators are being forced to compromise with strategic modern views, while the private sector and society at large have already perceived that they can no longer count on the paternalism of the state to resolve their difficulties. In sum, the basic conditions for a healthy return to economic growth have been fortified. What remains to be done is to strengthen the political will and determination, to streamline public administration, to affirm economic freedom and to implement the reforms outlined in this article.

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