

Strategy for Economic Growth in Brazil: a Post Keynesian Approach⁺

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1. Introduction

This paper proposes a Keynesian strategy for economic policy that aims to achieve higher, stable and sustained economic growth in Brazil. Its main hypothesis is that the current poor growth performance of the Brazilian economy is due to macroeconomic and structural constraints rather than to the lack of microeconomic reforms (labour market, credit market, etc.), as liberal economists in Brazil have suggested.

The paper is divided into four main sections, besides this introduction. The second section briefly discusses the main features of a new economic strategy (based on demand-side and supply-side policies) that aims to overcome the constraints on sustained economic growth. The third section discusses the current economic constraints for a sustained economic growth in Brazil. In the fourth section a simple of the Harrod-Domar growth model is utilized in order to obtain the potential growth rate of the Brazilian economy. Finally, the fifth section presents a new economic policy model for the Brazilian economy, designed to achieve the potential growth rate of the Brazilian economy. This policy should include both demand-side policies, and supply-side policies.

2. Keynesian economic policies: a brief view

2.1 Definition of Keynesian economic policy

Contrary to orthodox economics, for which activist economic policies have no permanent effect on the real variables, such as employment and product, Keynesian policies, in a broader sense, have as main objective the achievement of full employment. In this connection, the meaning of Keynesian policy that we will adopt in this paper is that in which “policy implications arise from the perception of the role of aggregate demand in setting the level of economic activity and the lack of automatic forces leading a market economy to full employment” (Arestis and Sawyer, 1998, p. 181). According to this view, a laissez-faire market economy exhibits normally elements of instability and, importantly, does not create a level of aggregate demand consistent with full employment. As a result, in monetary economies, full employment can only be achieved by accident or through state policies.

Based on the concept of non-neutrality of money and in the principle of effective demand, economic policy – according to the Post Keynesian approach – is able to affect both in the short- and long-run the real variables of the economy. Keynesian policy is related to the implementation of economic policies that intend to increase aggregate demand in order to create a stable environment that stimulate entrepreneurs to make *new* investments. Indeed, employment level and the utilization of productive capacity depend crucially on the determinants of aggregate demand, particularly the entrepreneurs’ investment decisions. In other words, economic policy

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should affect aggregate private investment, as it can create a safe environment that stimulate private agents to make more risky choices than just accumulating liquid assets. So, the ‘good’ policy is that in which economic agents are stimulated to invest in capital assets. The sphere of action of the government should not however overlap with the private sphere; indeed, it should help to create a stable and safe environment for private agents to act.

One should note that the objective of the economic policy in this approach is related to *macroeconomic stability*, a broader concept than just *price stabilization*, as it aims to reduce the uncertainties that are intrinsic to the business world. Government can reduce macroeconomic risks that affect the economy as a whole. Price stability and higher level of product and employment can be, under certain conditions, compatible; for this purpose, government should make use of a broader tool of economic policy than just monetary policy. In order to reach multiple policy objectives – such as economic growth and price stabilization – it is necessary to have a greater co-ordination of macroeconomic policies (fiscal, monetary, exchange rate, and income policies). Government should evaluate the global impacts of the policies on their objectives as a whole, that is Keynesian policies consist of concerted actions in a multiplicity of arenas. In this context, policy co-ordination is essential in order to achieve macroeconomic stability.

2.2. Constraints on economic growth¹

There are many constraints, both from demand-side and from the supply-side, on the achievement of sustained economic growth. This objective on a long-term basis requires that those constraints are somehow sufficiently eased.

Aggregate demand constraint

As we have already stressed, a laissez-faire market economy does not create a level of aggregate demand consistent with full employment. According to effective demand principle, the level of output and employment in an economy is determined primarily by the demand for goods. Low economic growth and high unemployment results from the lack of effective demand; such demand is determined by entrepreneurs’ expectations on future demand, as they decide each period of production what they are going to produce and how many they are going to employ. In other words, the volume of expenditure determines the aggregate demand of an economy, while the level of employment depends on the agents’ expected expenditure². In sum, according to the Post Keynesian approach there is a lack of automatic forces within a market economy working to ensure that the level of aggregate demand is compatible with the full employment of labour and the existing capital stock.

Inflation constraint

Inflationary pressures usually emanate from the real side of the economy. Indeed, the process of moving towards sustained economic growth always involves falling unemployment and most of time rising capacity utilisation which are likely to generate inflationary pressures and a climate of inflationary expectations. The spread of inflation pressures depends on the degree of monopoly of firms, that can allow them to increase the mark-up of prices relative to costs, and the degree of workers organization, as every increase in money-wage rates not offset by productivity

¹ We are following in broader terms the basic structure of the economic constraints for a full employment policy developed by Arestis and Sawyer (1998)

² On Keynes’ principle of effective demand, see among others Davidson (2002, ch 2).

improvements raises production costs. Particularly, if unemployment rates shrink a great deal, it is easier for workers obtain more liberal wage increases.

Post Keynesian economists support that inflation is symptom of a fight over the distribution of current income, as it is the result of attempts of alter the existing distribution of money income among economic agents of the same region, and/or interregionally, and/or internationally. In the Post Keynesian view, there are many and different causes for inflation, and, consequently, there are various types of inflation; for each type of inflation a specific anti-inflationary tool should be used. For instance, *spot or commodity price inflation*, that occurs whenever there is a sudden and unforeseen change in demand or available supply for immediate delivery, can be avoided “if there is some institution that is not motivated by self-interest but which will maintain a ‘buffer stock’ to prevent unforeseen changes from inducing wild spot price movements. A buffer stock is nothing more than some commodity shelf inventory that can be moved into and out of the spot market to buffer the market from disruptions of offsetting the unforeseen changes in spot demand and supply” (Davidson, 1994, p. 158).

Balance of trade constraint

The balance of trade constraint arises when the level of economic activity is constrained to ensure that the level of imports is compatible with the level of exports, as any difference between imports and exports should be covered by borrowing from overseas, what in the long run can increase the external vulnerability of an economy (Paula and Alves, 2000, p. 597).

Developing countries, particularly, can face a structural problem in their balance of payments, due to the effect of what is known as Thirwall’s law³. This law states a link between rate of economic growth and the income-elasticity of imports and exports of an economy; it states that the in the long run demand-side variables play a key role in economic growth through the ‘balance of trade constraint’: a country cannot grow at a rate higher than what is consistent with its balance of trade equilibrium. The low income-elasticity of products of smaller aggregate value exported by developing countries vis-à-vis the greater income-elasticity of products imported from developed countries can generate structural deficits in the balance of payments of the former countries. These increasing deficits can result in a significant constraint for economic growth in developing countries, as the maintenance of a non-exploding deficit requires that the domestic growth rate is maintained below the world growth rate so that imports and exports grow in line with one another.

Capital account constraint

The capital account constraint arises when an economy is vulnerable to the changes in the liquidity conditions and/or changes in the mood of global players in the international financial market, whatever maybe the reason. Indeed, as the experiences of 1990s’ currency crises showed all around the world, under a context of high capital mobility, such crises can occur for reasons not related directly to deficits in the current account’s balance of payment. In other words, economies with small if any current account deficit (over GDP) – a situation in which a country is seen as solvent from the balance of payments’ point of view – can face a sudden stop in the capital inflows due to a shift in the international investors’ expectations. Sunspots, herding behaviour or contagion effect can induce this shift.

Countries with (i) much larger and volatile capital flows in relation to the size of their domestic capital markets and economies; (ii) non-convertible currency; (iii) low level of international reserves, are generally more prone to face capital account constraint. In such

³ See, among other references, Thirwall (2002).

countries volatile capital flows can generate very high volatility on exchange rates. Indeed, there are various economic issues related to excessive volatility of exchange rate, particularly related to the management of exchange rate risk and macroeconomic policy (determination of interest rate and public debt).

Lack of capacity

Lack of capacity can constrain economic growth in the long run in two scenarios. During the upturn, high economic growth can fulfil full productive capacity of an economy, a phenomenon that can result in inflation pressures, as we have already stressed. On the other hand, after a period of prolonged low growth the size of the capital stock may fall short of what would be required to sustain economic growth, due to the uncertainty about the future, generating a low level of 'animal spirits' that affects entrepreneurs' investment decisions. Under these conditions, entrepreneurs' expectations should be stimulated in their decisions related to fixed investments by demand-side economic policies.

2.3. Keynesian economic policies

Post Keynesian policies in order to overcome the constraints on full employment put emphasis on the need of both demand-side and supply-side policies. However, aggregate demand and aggregate supply are not independent, as the current level of demand has direct effect on the future supply potential of the economy; that is in both investment and productive capacity.

Fiscal policy can have a strong impact on the level of economic activity, as it is a powerful tool to stimulate aggregate demand, triggering a multiplier effect on the private income. Fiscal policy should be used to push the economy toward full employment, as it affects directly the private income, and the agents' expectations concerning the future, igniting their optimism. For this purpose, Keynes recommended public expenditure or investment rather than on increasing consumption, because of its stronger multiplier effect. Public investment can create a safe environment that can stimulate investment on fixed capital be undertaken.

Using as a starting point the distinction made by Keynes (1980) between *ordinary budget* (related to ordinary functions of public administration) and *capital budget*, the former should be balanced all times or even in surplus (that would be transferred to capital budget), while the latter one could be transitory unbalanced, although it should be balanced over the long run; that is it should be adjusted according to the fluctuations of the level of aggregate demand. In other words, capital budget must be operated in a contra-cyclical way, preventing high fluctuations in the private investments through the implementation of a long-term fiscal stabilization programme. The pace of public investments should be set according to the need of sustaining aggregate demand, serving to offset exogenous cyclical changes in investment spending (Kregel, 1994-95, p. 265-6).

Monetary policy operated by the management of the interest rate can also have a significant impact on the level of economic activity. The management of interest rate can be used in order to influence the private agents' portfolio in favour of both increases of production (using current productive capacity) and the acquisition of capital goods. The managing of monetary policy can be used to provoke a shift in the relative prices of different assets, from the more liquid to the more illiquid assets, that is leading changes in the portfolio decisions that can affect real variables of the economy (product and employment). Monetary policy acts through the anticipation of expected movements of the rates of interest (Carvalho, 1997, p. 45).

Monetary policy should give clear signal of central bank purposes for the private agents in order to incite them to act according to the objectives of the policy-makers. More clear policy

signals can leave private agents more safe and confident to act. Contrary to what became accepted by orthodox economists, Keynes and Post Keynesian economists defend openness, not secrecy, as a condition for monetary policy to be effective.

In global financial markets, financial market prices – including exchange rate – have been excessively volatile, as they fluctuate according to fads and fashions. Indeed, there is an extensive empirical literature which indicates that the excessive volatility in exchange rates affect negatively some real variables, such as investment and output⁴. Aiming at achieving a stabilizing economic policy for sustained economic growth, national government should adopt an exchange rate policy that aim to prevent excessive volatility in exchange rates. The greater degree of stability of exchange rates would encourage entrepreneurs to engage more freely in international production, investment and trading transactions. This suggests an adjustable peg system with arrangements to avoid high volatility in exchange rate, such as accumulation of foreign reserves so that central bank can make use of dirty float, the use of capital controls by some developing countries, etc. Furthermore, institutional and regulations – such as some sort of capital controls, financial supervision, etc – can be required to ensure that the fragility of the financial system does not spill over into instability within the productive economy.

Supply side policies have to deal with two sorts of issues: problem of inflation, unbalance in overseas current account, and organisation of work⁵.

As we have already stressed, orthodox stabilization policy is only efficient towards the maintenance of a sufficiently high unemployment rate; furthermore, in most cases, it attacks the symptom but not the cause of the inflation, that is such policy does not solve the problem related to the increase of production costs. Therefore, Post Keynesians suggest some kind of incomes policy as part of the required arsenal in a market economy. Incomes policy requires however the generation of some sort of consensus over the distribution of income among the economic agents (government, entrepreneurs and workers). If money-wage rates and gross margins could be somehow controlled, price levels would decline. For this purpose some degree of centralisation and of coordination of pay setting would be required. Furthermore, the success of an economic policy oriented towards the objectives of macroeconomic stabilisation, as we have defined above, can also contribute for the price stabilisation purposes. For instance, if economic policy succeed in reducing the volatility of exchange rate and interest rate, the more stable macroeconomic environment will have positive effect on both economic growth (as investment decisions are stimulated by business environment and macroeconomic policy) and price stabilisation.

The requirement for a broad balance on the overseas current account at full employment implies to overcome somehow the structural problems of balance of payments that some countries face (mainly those that are producers of commodities) as increasing deficits can result in a significant constraint to economic growth, according to Thirwall's law. To overcome the balance of trade constraint public policies (mainly industrial policy) should be adopted in order to create conditions for a country to decrease the income-elasticity of demand for imports and to increase income-elasticity of demand for exports. These efforts should mean the development of an ability to compete in a range of high technology and/or the technological improvement of some current industrial sectors, what should involve both investment in research and development and the formation of linkages between companies to develop the whole production system.

⁴ See, for instance, Guérin and Lachrèche-Révil (2003).

⁵ We refer again to Arestis and Sawyer (1998, pp. 190-1).

3. Constraints for economic growth in Brazil

The period following implementation of the stabilisation plan known as the Real Plan – that is, from July 1994 onwards – was striking for a remarkable reduction in inflation, even after the major devaluation of January 1999. After two years of economic growth (1994-95) resulting from the initial effects of this stabilisation plan based on an exchange rate anchor, GDP evolution disappointed previous expectations of sustainable economic growth after price stabilisation. Furthermore, the trend took a ‘stop-go’ pattern and, as a result, formal unemployment rate has been maintained above 10 percent since 1997 (Table 1).

In fact, the Brazilian economy has suffered the impact of a succession of crises: Mexico in 1995, Asian countries in 1997, Russia in 1998, its own crisis in late 1998 and early 1999⁶ and, more recently, crises in Argentina since late 2001 and again external crises in Brazil in 2002-03. A wide range of factors have contributed to shaping a very unstable macroeconomic context: the perception of external vulnerability deriving from both the still worrying levels of external indicators – although these indicators improved a great deal in 2004 due to the increase of exports and GDP – and the liberalisation of capital account⁷; semi-stagnation in the economy, that has inhibited productive investments; the central bank’s adoption of very high short-term interest rates and the consequent growth in public debt (Table 1). Brazil’s current macroeconomic constraints stem mainly from the period when an exchange rate anchor was adopted (1994-1999) in a context of trade and capital account liberalisation that generated a notable degree of external fragility of the economy and consequently some serious macroeconomic imbalances (for instance, high foreign debt, rapidly growing internal public debt, and so on). Private sector expectations have dropped under the impacts of various external shocks, the weak performance of the Brazilian economy, and the very high rates of interest. As a result rate of investment has been reached levels (around 18-21% of GDP since early 1990s) far below the 1970s ones when investment rate was around 21-23%.

The 1999 switch from an exchange anchor to a floating exchange rate regime plus an inflation target regime brought no significant improvement in the macroeconomic variables (see figures in Table 1), although balance of payments have improved their accounts in 2003-04 due mainly to the increase in the trade balance surplus. One might have expected that adopting a floating exchange regime would ease down the interest rate more quickly in Brazil. Although the rate of interest did decline, it picked up again during 2001, in view of the turbulence on international markets (the Argentina crisis, the effects of 11 September 2001, etc.), and again in 2003 due to the market turbulence in the beginning of Lula da Silva’s government.

⁶ See Paula and Alves, Jr (2000) and Saad-Filho and Morais (2002) for an analysis of the 1998-1999 Brazilian currency crisis.

⁷ Although capital account has been gradually liberalized since early 1990s, more recently it has been more eased.

Table 1. Brazil - some macroeconomic data - 1991/2004

Year	Consumer price index (IPCA)	GDP growth - annual %	Investment rate (percentage of GDP)	Trade balance - US\$ million	Current account - US\$ million	Net public debt-over-GDP	Real average income - Sao Paulo urban region (1985 = 100)	Formal unemployment rate* - Sao Paulo urban region (%)
1991	1.621,00	1.03	18.11	10,58	-1,408	38.1	58.5	6.7
1992	472,7	-0.54	18.42	15,239	6,109	37.1	61.3	8.0
1993	1.119,10	4.92	19.28	13,299	-676	32.6	68.4	7.6
1994	2.477,10	5.85	20.75	10,467	-1,811	30.0	65.9	7.8
1995	916,5	4.22	20.54	-3,466	-18,384	30.6	69.9	8.7
1996	22,4	2.66	19.26	-5,599	-23,502	33.3	71.5	9.2
1997	9,6	3.27	19.86	-6,753	-30,452	34.4	72.4	10.2
1998	5,2	0.13	19.69	-6,575	-33,416	41.7	71.5	10.8
1999	1,7	0.79	18.90	-1,199	-25,335	48.7	65.9	10.5
2000	8,9	4.36	19.29	-698	-24,225	48.8	62.3	10.0
2001	6	1.31	19.47	2,651	-23,215	52.6	56.9	11.6
2002	7,7	1.93	18.32	13,121	-7,637	55.5	51.6	11.4
2003	12,5	0.54	17.78	24,794	4,177	57.2	53.5	12.0
2004	9,3	5.18	19.58	33,693	11,669	51.8	52.3	10

Source: IPEADATA

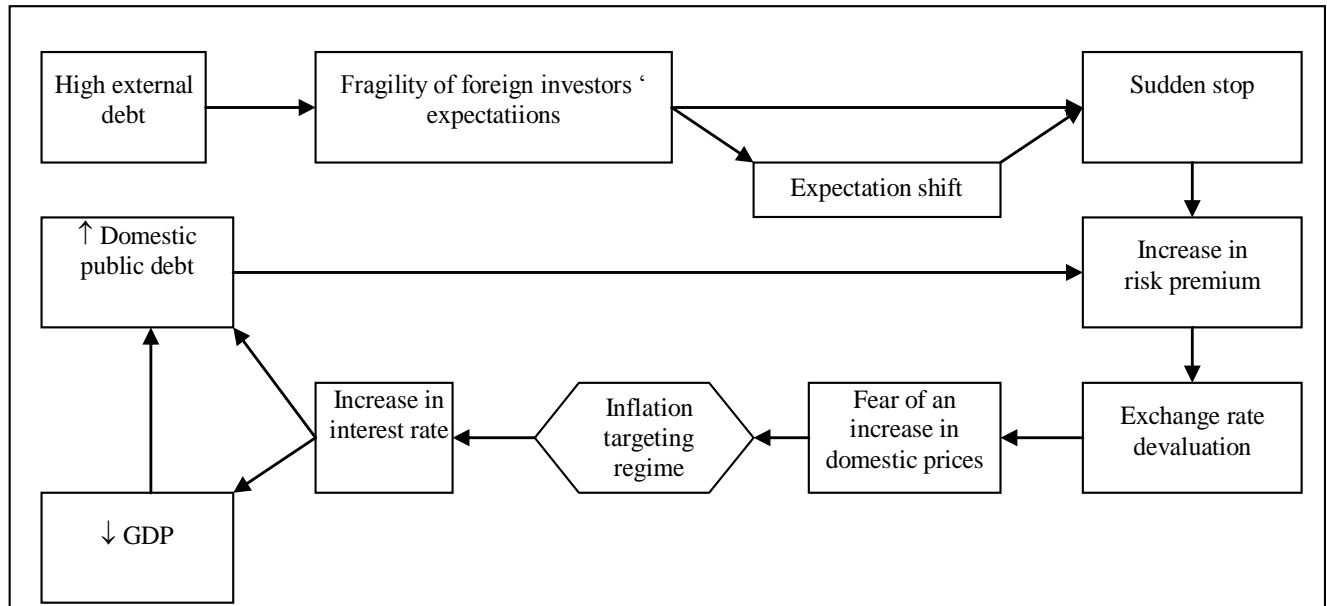
Note: (*) Formal unemployment rate does not include informal unemployment

Indeed, the *modus operandi* of inflation targeting regime plus the adoption of a floating exchange rate regime, under the conditions of high external debt and full opening of capital account, has resulted in sharp instability of nominal exchange rate (Figure 2 and 4). Capital outflows can induce a sharp exchange rate devaluation that can affect domestic prices ('pass through effect') that can jeopardize Central Bank's inflation target. Under these conditions, Central Bank is compelled to increase the interest rate in order to seek to avoid both capital outflow and pass through effect as it affects the aggregate demand. Central Bank reaction to exchange rate movements causes a decline in output and employment, increasing at the same time the volume of public debt.

Therefore, Brazil's very high rates of interest are the result of high country risk⁸ (due to marked external vulnerability and the risk of fiscal insolvency) and of adopting an inflation-targeted regime in a context of various macroeconomic constraints and a high level of internal debt. High interest rates have had two effects: (i) they constrained economic growth, through the price of credit (loan rates) and entrepreneurs' negative expectations; and (ii) they increased public debt, which is formed mainly by indexed bonds or short-term pre-fixed bonds. Indeed, the strong demand for hedges against exchange devaluation and interest rate changes in turbulent periods has influenced Brazil's internal public debt. The Brazilian government has been obliged to offer exchange rate and interest rate hedges to buyers of securities who charge high risk premiums to roll over public debt. As a result, since the end of 1998, more than 50% of the federal domestic securities have been indexed to the overnight rate, while more than 20% have been indexed to foreign exchange. In addition, the ratio net public debt to GDP rose from 34.4% in December 1997 to 53.5% in December 2003; in 2004 this ratio declines due to both economic growth and exchange rate appreciation (Table 1).

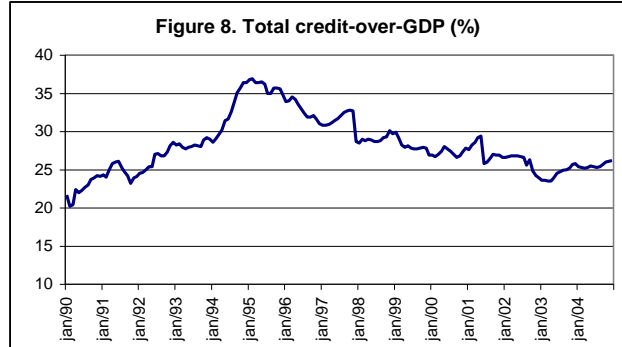
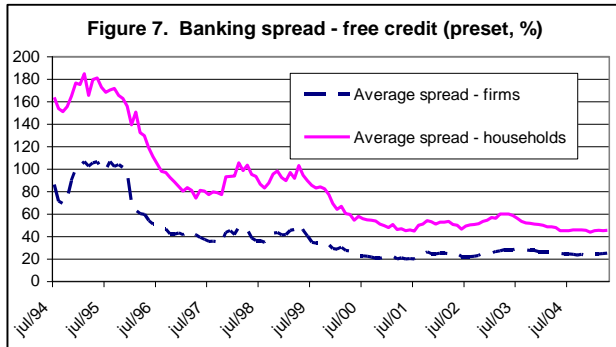
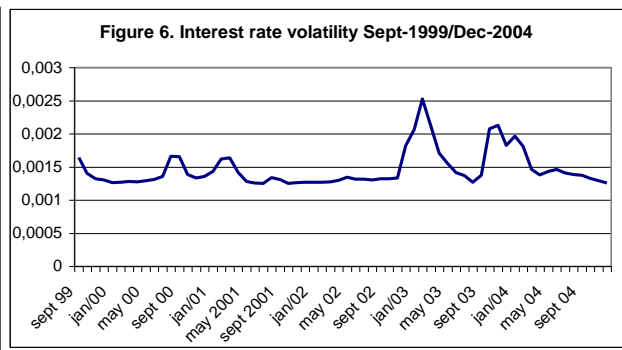
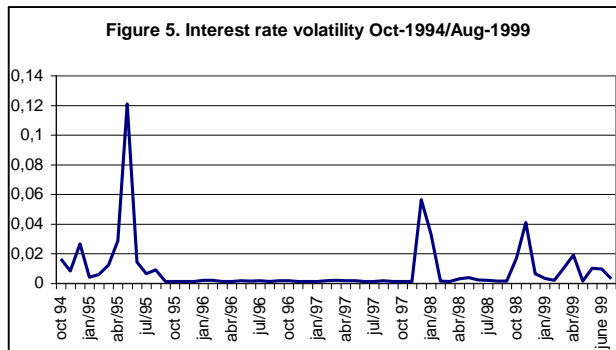
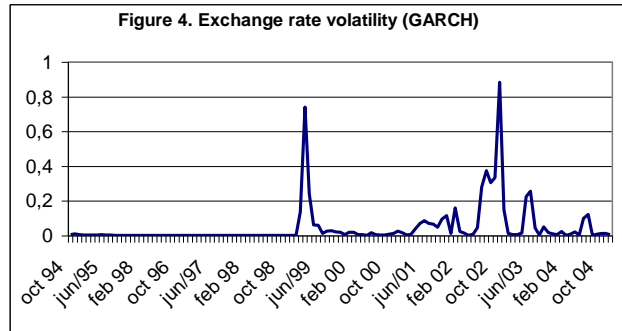
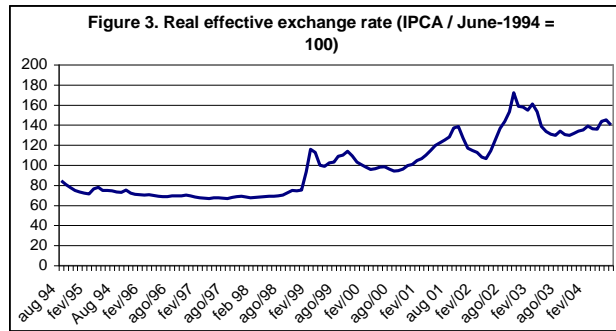
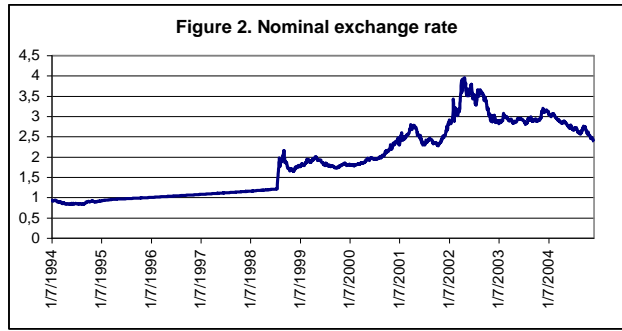
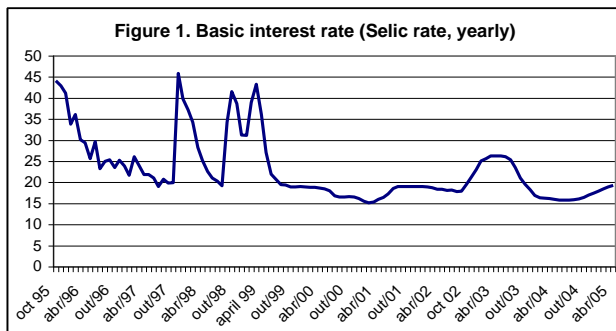
⁸ Bresser-Pereira and Nakano (2002) suggest that the causality between interest rate and country-risk may be inverse: since short-term interest rates have been very high, foreign creditors believe that country-risk is high.

Macroeconomic framework of developing countries with high external indebtedness



The behaviour of the domestic public debt in Brazil has proved particularly vulnerable to changes in the interest or exchange rates. Reducing the public debt depends on reducing the related financial burden by bringing down the interest rate or raising the exchange rate, and/or boosting the primary fiscal surplus. Thus, the Brazilian government has been forced to generate a high primary fiscal surplus (more than 3.5% of GDP), which stands in the way of any anti-cyclical fiscal policy while the fiscal effort itself is partly neutralised by increases in the rates of interest or exchange.

Another reason why economic growth in Brazil has remained above its potential growth is that credit has declined since beginning of 1995 (Figure 8). One of the main factors preventing increased credit in Brazil lies in the very large banking spreads (Figure 7), which explain, at least partly, the high profitability of the banking sector in Brazil (Paula and Alves, Jr, 2003). Although the banking spread has declined in recent years in Brazil, it is still very substantial by international standards: in 2000, annual banking spread was 38.72% in Brazil, while it was 11.96% in Mexico, 2.75% in Argentina, 5.64% in Chile, 2.77% in the U.S., and 3.15% in Euro area (Afanasieff *et al* 2001, p. 7).



Source: IPEADATA and Central Bank of Brazil. Figure 4: authors' calculations.

4. Requirements for the sustained growth of the Brazilian economy

In this section we will use simple version of the Harrod-Domar growth model in order to obtain an estimate of the *warranted growth rate* of the Brazilian economy under the conditions imposed by the current economic policy. As we will see, the warranted growth rate under current economic conditions is no higher than 2.5 % per year. This growth rate is clearly unsatisfactory for an economy in which population growth rate is around 1.8% per year and productivity growth is estimated in 2.6% per year. This means that *warranted growth rate* of the Brazilian economy is lower than the *natural* long-run growth rate. This “disequilibrium” between warranted and natural growth rates of the Brazilian economy is the main cause of the high unemployment rate and of the decreasing of real average income observed recently in Brazil (Table 1).

Let us start with an economy in which firms employ a Leontieff-type technology, being the stock of capital the limiting factor to firms’ production level (cf. Marglin, 1984, ch.5). In this setting, the potential output of this economy is given by:

$$Y = \sigma K \quad ; \quad \sigma \equiv \frac{1}{\nu} \quad (1)$$

Where: ν is the capital-output coefficient, that is the technical coefficient that shows the amount of “capital” that is necessary for the production of one unit of final output..

Taking the time derivative of (1) and supposing a constante depreciation rate equal to δ we arrive at the following expressions:

$$\dot{Y} = \sigma \dot{K} \quad (1a)$$

$$\dot{K} = I - \delta K \quad (2)$$

Where: I is the gross (planned) investment.

We will also suppose that households save a constant share s of share of their income. So, planned savings are given by:

$$S = sY \quad (3)$$

One requirement for a sustained growth of the economy in the long-run is the equality between aggregate output and effective demand. For such is necessary that planned investment be equal to planned saving. Taking for grant the occurrence of this equality, we can substitute (3) in (2) in order to the following expression:

$$\dot{K} = sY - \delta K \quad (4)$$

After substitute (4) in (1a), we got:

$$\dot{Y} = \sigma(sY - \delta K) \quad (5)$$

Finally, after substitute (1) in (5) and dividing both sides of the resulting expression by Y , we arrive at the *fundamental growth equation* of the Harrod-Domar model given by:

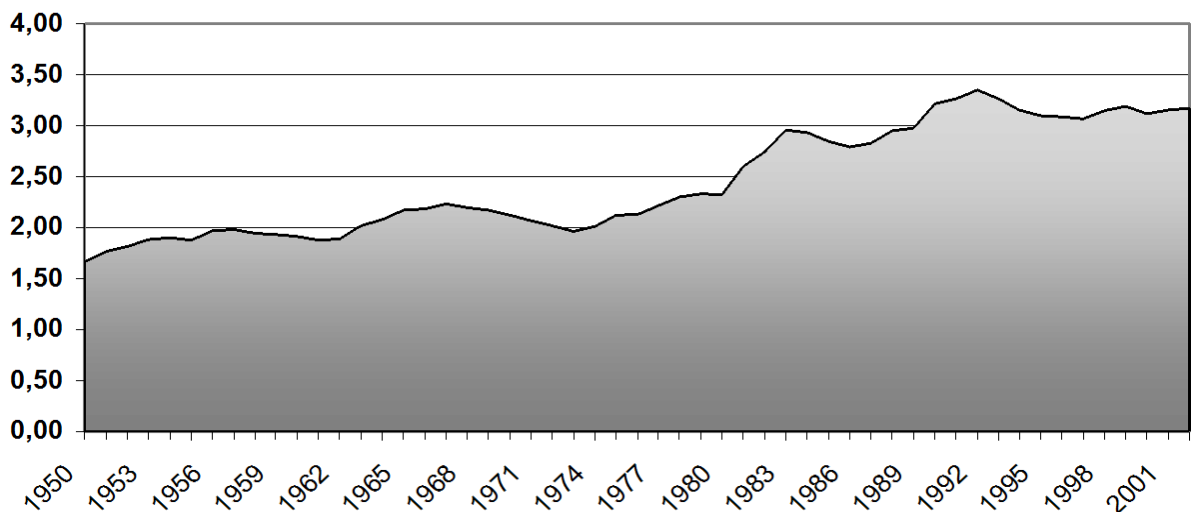
$$g = \frac{\dot{Y}}{Y} = \frac{s}{\nu} - \delta \quad (6)$$

Equation (6) determines the *warranted growth rate*; that is the growth rate of output that - if obtained - will assure the equality between effective demand and aggregate output over time.

In order to use equation (6) to estimate the *warranted growth rate* of the Brazilian economy we must have realistic values for the following parameters: capital-output coefficient, investment and saving rates and depreciation rate of the capital stock.

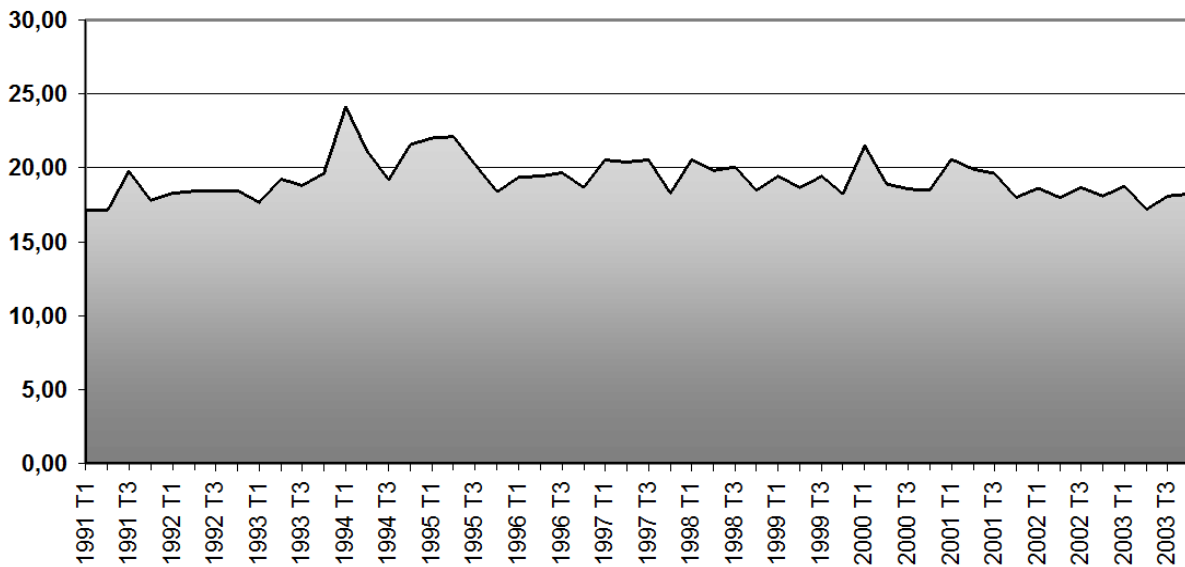
Estimates of the first two variables can be easily obtained at IPEADATA (www.ipeadata.gov.br). Capital-output coefficient shows a clear *upward* trend in the last fifty years as we can see in Figure 9. Such an upward trend makes difficult, if not impossible, the occurrence of a reduction in the capital-output coefficient in the near future. However, taking a simple average of the Capital-Output coefficient in the period 1989-2002 we will arrive at a value equal to 3.16, which can be taken as the *minimum possible value* for this parameter in equation (6).

Figure 9: Capital-Output Coefficient in Brazil (1950-2002)



Investment rate, defined as gross capital formation divided by *GDP*, shows a remarkable stability in the period 1991-2003. This rate, according to IPEADATA, had fluctuated around 19.26% of GDP in this period as we can see in Figure 10. So we will take 19.26% as a plausible estimate for the value of the parameter *s* in equation (6).

Figure 10: Investment Rate in Brazil (1991-2003)



Source: IPEADATA

Unfortunately, we have found no estimates about depreciation rate of the capital stock for the Brazilian economy. So we have no other option than use the values of this parameter for other economies. Romer (2001, p.25) estimates the depreciation rate of the capital stock for U.S. economy as lying between 3 and 4 % per year. So an average estimate for the depreciation rate of the capital stock for US economy is around 3.5% per year. Based on some similarities of the industrial sectors of Brazil and United States, we will use this value as an estimative for the depreciation rate of the capital stock of the Brazilian economy.

Taking $s = 0.1926$, $v = 3.16$ and $\delta = 0.035$ in equation (6) we get $g = 0.025$, that is an *equilibrium growth rate* equal to 2.5% per year. For several reasons, this growth rate is completely unsatisfactory for Brazil. First of all, Brazil grew at an average rate of 7.0% per year in the period between 1930 and 1980. Second, this rate is lower than the *natural growth rate*; that is the required growth rate for full employment of the labour force. Estimating a population growth of 1.8% per year (see IPEADATA) and a productivity growth of 2.6% per year (Table 2), output must grow at a minimum rate of 4.4% per year in order to employ the new workers and those who lost their jobs due to technological progress. An average growth rate lower than 4.4% per year implies that unemployment and/or ‘underemployment’ will increase over time. Last, but not least, this growth rate is clearly insufficient for Brazilian economy to *catch-up* developed economies. Average growth rate of developed countries lies between 2.5 to 3% per year. If Brazilian economy grows at an average rate of 2.5% per year, than income gap between Brazil and developed countries will be constant or will increase in the long-run.

In face of these arguments, we consider an average growth rate of 5% per year a desirable and realistic goal for the Brazilian economic policy⁹. In order to achieve this goal, investment rate – according to equation (6) – must increase to 27% of GDP.

Table 2 – Productivity Growth in Brazil (1950-1997)

Period	Average Growth Rate of Labour Productivity
1950-1955	2,7
1955-1960	2,7
1960-1965	2,5
1965-1970	2,5
1971-1973	5,6
1974-1980	1
1981-1985	0,3
1986-1990	-0,8
1991-1997	7,1
1950-1997	2,62

Source: Franco (1999, p. 150).

5. How to increase the investment rate? An agenda of reform for the Brazilian economy

As we have seen in the last section, average investment rate in the last fifteen years was insufficient to generate a robust growth for the Brazilian economy. This behaviour of investment rate was mainly due to the “economic policy model” adopted by Brazilian policy makers since the beginning of 1990’s. This economic model was characterized by (i) high nominal and real interest rates in order to achieve price stability; (ii) growing liberalization of the capital account in order to integrate Brazil to international capital markets; (iii) overvaluation of domestic currency¹⁰, and (iv) since 1999 an increasing primary fiscal surplus – generated mainly by the reduction of public investment – in order to stabilize public debt/GDP ratio.

This *economic policy model* has only succeeded in achieving a low rate of inflation compared to the period of high inflation; that is before 1994. Indeed, since 1996 inflation rate in Brazil has been lower than 20% per year. However, public debt as a ratio to GDP increased from 30% in 1994 to almost 55% in 2004 and GDP grow at an average rate of 2.4% per year in the period 1995-2004. Price stability is, of course, an important goal of economic policy, but not the only one. A robust economic growth and stability of public debt/GDP ratio are also very important.

In order to achieve a higher investment rate, economic policy model must be changed. Nominal and real interest rates must be reduced for entrepreneurs increase private investment. Primary fiscal surplus must also be reduced. Brazil needs to increase public investment in infrastructure to generate positive externalities for private investment. Nominal and real exchange rates must be kept at competitive levels in order to generate a sustained current account surplus which is required to reduce the amount of external debt and the level of external fragility of Brazilian economy.

⁹ A growth rate higher than the estimated natural growth rate of the Brazilian economy for several years (one decade or so) is possible due to the existence of a high unemployment rate (more or less 10% of the labour force) and, more importantly, due to the existence of a very big informal (and low productivity) sector in Brazil.

¹⁰ Except in the brief period between June of 2002 to June of 2003 due to the exchange rate crisis of the final of Cardoso administration (1994-2002).

The challenge is to make these changes compatible with (i) price stability, and (ii) stabilization or reduction in the level of public debt. Brazil spent almost 15 years fighting against very high inflation rates. The reduction in inflation rates obtained after the Real Plan was a very important achievement and must be maintained. Stabilization in the level of public debt is also important. We simply can not stand with public debt/GDP ratio higher than 50%. With a so higher public debt as a ratio to GDP almost all the efforts of the financial sector was devoted to finance public debt, thereby causing a reduction in the level of banking credit to finance private expenditures. As we saw in section 3, Brazil had a very low credit to GDP ratio. The main reason for this is that banks prefer to buy public bonds, which are very liquid and profitable, rather than to incur in the risks of lend money to private enterprises (Paula and Alves Jr, 2003).

An alternative economic policy model for the Brazilian economy¹¹ should be based on the following principles:

1. Adoption of a *crawling-peg exchange rate regime* in which devaluation rate of domestic currency was set by the Central Bank at a rate equal to the difference between a *target inflation rate* (determined by National Monetary Council – C.M.N) and *average inflation rate* of Brazil's most important trade partners; that are United States, European Union, China, Japan and Argentina.
2. Adoption of *market-based capital controls* in order to increase the autonomy of the Central Bank to set nominal interest rates according to domestic objectives (mainly to promote a robust growth) and to avoid the likelihood of speculative attacks on the Brazilian currency.
3. Reduction of nominal interest rate to a level compatible with a real interest rate of 6.0% per year.
4. Reduction of primary fiscal surplus from current 4.5% of GDP to 3.0% of GDP on average for the period of 10 years. This reduction must be used to increase public investment in the same amount.

The first principle of the “alternative economic policy model” entails the abandonment of the current *Inflation Targeting Regime* (hereafter ITR). As we know, in the ITR, monetary policy is directed only to price stability. For the workings of this system, however, there must be a *floating exchange rate regime*. This exchange rate regime has not worked well in the Brazilian case. First of all, since the adoption of floating, in the beginning of 1999, there was a huge volatility in nominal exchange rate as we saw in section 3. This volatility increases exchange rate risk and the *uncertainty* surrounding investment decisions. Second, this system was not capable to avoid the problem of exchange-rate over-evaluation. For instance, nominal exchange rate between U.S. dollar and Brazilian currency (‘real’) fell from R\$3.50 in June of 2003 to R\$2.20 in December of 2005, an appreciation of almost 37% in 30 months. This huge appreciation in nominal exchange rate can soon reduce sharply current account surplus, thereby increasing the level of Brazilian external debt.

Adoption of a *crawling-peg exchange rate regime* will reduce the *exchange rate risk* – contributing to the increase in the private investment – and will contribute for the maintenance of the nominal exchange rate at competitive levels, provided that the *initial level of the nominal exchange rate* - i.e. the level set in the first day of the new regime - was not over-valued.

Another interesting feature of the *crawling-peg exchange rate regime* is that it will serve as *nominal anchor* for the Brazilian economy, substituting ITR as a device for inflation control. If *Purchasing Power Parity theorem* (thereafter PPP) holds true, than the (effective) domestic rate

¹¹ The ideas shown here were originally proposed by Oreiro et al (2003, ch 4).

of inflation (π)¹² is equal to exchange rate depreciation (Δe) plus international inflation rate (π^*). In the *crawling-peg exchange rate regime*, Central Bank sets the rate of depreciation of domestic currency, maintaining domestic rate inflation in a level near-by the one dictated by PPP.

Accumulated experience during ITR shows that an implicit *target inflation of 8.0%* per year is a realistic goal for economic policy in Brazil. Supposing that international rate of inflation lies between 1.5% to 2.0% per year, Central Bank will set the rate of domestic currency devaluation in 10% per year under the *crawling-peg exchange rate regime*. A competitive level for the initial value of nominal exchange rate under this new regime should be R\$3.20¹³.

The second principle of the 'alternative economic policy model' is the adoption of capital controls. These controls are necessary for two basic reasons. First of all, to increase private investment is necessary a substantial reduction in the level of domestic interest rates. In fact, in the last six years (1999-2004) real interest rates was up to 11% per year. Under the actual open capital account situation of the Brazilian economy, a sharp reduction in interest rates may cause a huge capital outflow, making impossible for the Central Bank to control the nominal exchange rate devaluation. To avoid this result is necessary the implementation of controls over *capital outflows*. The second reason is that control over *nominal exchange rate* may not be sufficient to avoid a substantial appreciation of *real exchange rate* in the presence of huge *capital inflows*. These flows will make the Central Bank to increase the stock of high powered money due to the buying of foreign reserves, which is necessary to sustain the nominal exchange rate at the level determined by monetary authorities. In absence of sterilization, this may produce an excessive increase in aggregate demand that can generate inflationary pressures in the economy and, given the rate of depreciation of nominal exchange rate, real exchange rate appreciation.

We propose the adoption of *market based capital controls*, that is the introduction of income taxes over the yield of foreign investment in Brazilian assets¹⁴. These taxes should be proportional to the length of investment in these assets. For example, a one-year investment in Brazilian assets should be taxed at a rate of 35% over all yields generated by these assets during this period. A two-year investment should be taxed at a much lower rate, for example, 28%. A three-year investment must be taxed at an even lower rate of 19%. The idea is to give to foreign investors a clear and strong incentive to make their investment in Brazilian assets as long as possible in order to create *market incentives for the reduction of capital outflows*.

To reduce capital inflows, it is necessary the introduction of reserve requirements over all capital inflows, except foreign direct investment, as done by Chile in the beginning of 1990s. The idea is to oblige foreign investors to make a deposit of a fixed percentage of the value of their investment in the Brazilian assets at the Central Bank. These deposits will receive a zero yield over all the investment period. This will reduce the ex-ante yield of these assets for foreign investors, *creating market incentive for the reduction of capital inflows*.

After the implementation of the *crawling-peg exchange rate regime* and *market-based capital controls*, it will be possible to reduce the level of domestic interest rates with-out

¹² Effective inflation rate may be different from *target inflation rate*, which is set by National Monetary Council and was a reference for the nominal exchange rate devaluation, due to the occurrence of supply shocks.

¹³ This implies that during the transition from the actual *free floating exchange rate regime* to the *crawling-peg regime* there must be a *nominal exchange rate appreciation* of almost 19%. This will generate a *transitory increase* in the rate of inflation due to *pass-through effect* of exchange rate to prices. To avoid a *permanent increase* in the rate of inflation, it is necessary that *real wages* were reduced in order to make possible a *real exchange rate depreciation*. This means that during the transition from the old to the new exchange rate regime, nominal and real interest rates must be kept at high levels to force *unions* to accept a *reduction in real wage*. Once the new exchange rate regime was implemented and inflation has returned to its prior level, interest rates can be reduced.

¹⁴ This proposal was originally set by Paula et al (2003).

producing an increase in inflation rate and/or a huge capital outflow. The relevant question now is: how much reduction in the level of interest rates is possible in economic terms?

In a regime of fully open capital account, the answer would be very simple: interest rates can be reduced to a level equal to the one dictated by *uncovered interest rate parity*; i.e. international interest rates plus the risk premium required for foreign investors to buy domestic assets plus the expected rate of depreciation of domestic currency.

In the Brazilian case the relevant international interest rates were the interest rates over U.S. government bonds with the same maturity of the Brazilian government bonds¹⁵. This rate is near-by 4.0% per year. The risk premium over Brazilian sovereign bonds was near-by 450 basis points in the beginning of 2005. Supposing the validity of *PPP* in the long-run, the expected rate of domestic currency depreciation must be equal to the difference between domestic and international rate of inflation. For a domestic rate of inflation of 8% and an international rate of inflation of 2%, the expected rate of currency depreciation should be equal to 6%. So, nominal interest rate in Brazil could be reduced from the current 18.25% per year to 14.5% per year without producing a huge capital outflow or an increase in inflation rate. This will imply a real interest rate of 6.5% per year.

With capital controls, however, it will be possible a much higher reduction in the level of interest rates. So, it would be possible to reduce nominal interest rates to 12% per year, generating a real interest rate of 4% per year. However, the high level of public debt as a ratio to GDP may set a *downward limit* to the reduction in the level of nominal and real interest rates. It is true that Brazilian government bonds have a great degree of liquidity since secondary markets were these assets are traded - in Brazil or abroad - are well organized. This means that investors (both domestic and foreign) have a low required rate of return for investment in these assets. But Brazil is not United States or Germany. Investors still have doubts about the *inter-temporal solvency* of Brazilian government. In this case, a very low real interest rate may make impossible for Treasury to roll over the existing debt. Prudence dictates a certain degree of conservatism in the setting of nominal and real interest rate levels by the Central Bank.

This reasoning shows to us that a real interest rate of 6% per year, although still a high level, it is a perfectly realistic value for the Brazilian economy and should be the target of the monetary policy.

Once real interest rates were reduced to 6% per year, it will be possible to reduce the level of primary fiscal surplus. The required level of primary surplus is determined by *government inter-temporal solvency condition*. This condition determines the *minimum level of primary surplus that is compatible with a constant public debt to GDP ratio*. This condition is given by the following equation¹⁶:

$$s = \left[\frac{r - g}{1 + g} \right] b \quad (7)$$

Where: s is the primary surplus as a ratio to GDP, r is the level of real interest rate, g is the growth rate of real GDP, and b is the ratio of public debt to GDP.

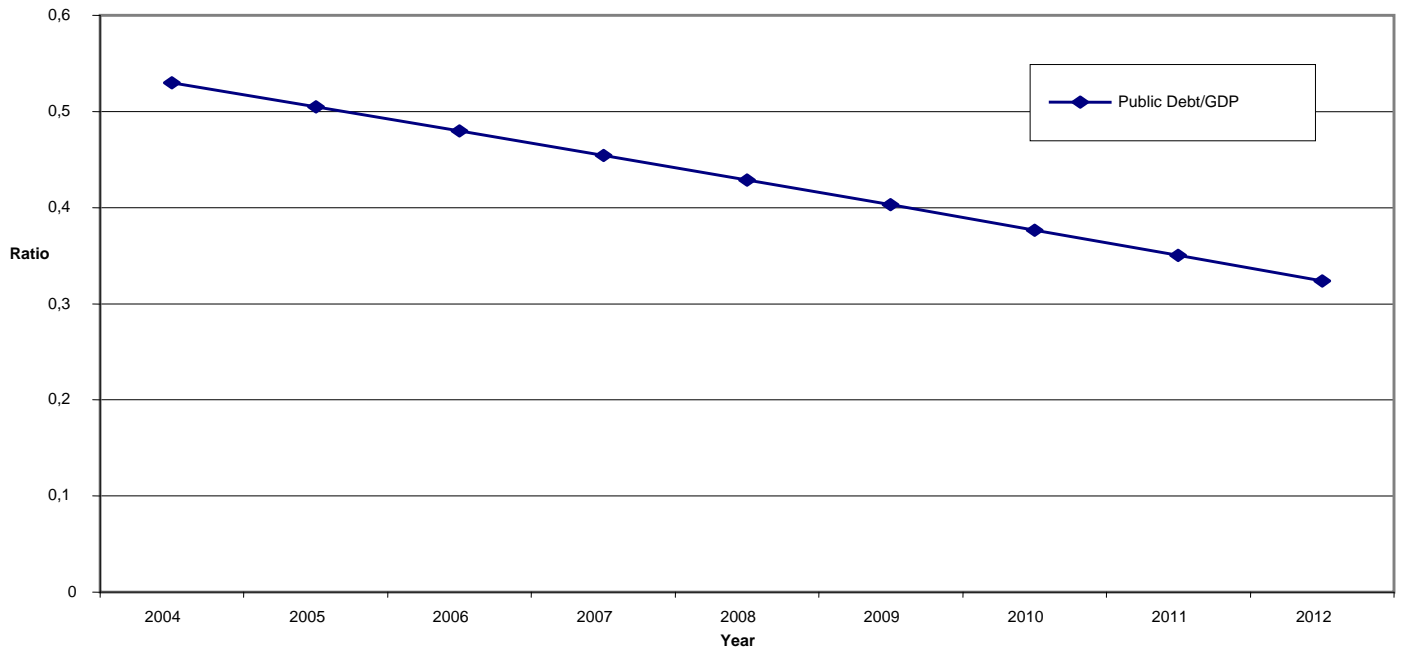
Under the conditions imposed by the current economic policy model, we have $r = 0.11$; $g = 0.025$; $b = 0.53$. So the minimum level of primary fiscal surplus must be 4.4% of GDP. However, a successful implementation of the alternative economic policy model may change the values of these parameters to: $r = 0.06$; $g = 0.05$; $b = 0.53$. In this case the minimum level of primary surplus can be reduced to 0.5 % of GDP.

¹⁵ The average maturity of Brazilian government bonds is near-by 30 months.

¹⁶ See Oreiro (2004a) for a detailed discussion of this condition. A similar – although not identical – condition can be found in Palley (2004).

So the reduction of primary surplus from actual 4.5% of GDP to 3.0% of GDP is not only compatible with the inter-temporal solvency condition, but also with a cumulative reduction of public debt as a ratio to GDP. Under the conditions supposed by the alternative economic policy model, the public debt as a ratio to GDP will be reduced to 32% of GDP in 2012, as we can see in Figure 11¹⁷.

Figure 11 - Expected Dynamics of Public Debt as a Ratio to GDP in Brazil Under the Alternative Economic Policy Model



The reduction of primary surplus is essential for the increase in public investment. We propose that the *entire reduction in primary surplus is used to increase public investment*. In this case, public investment will be increased by 1.5% of GDP. Supposing a one-to-one relation between public and total investment, the average rate of investment will be increased to 20.67% of GDP and potential growth rate will be increased to 3.04% per year.

However, there are good reasons to suppose that an increase in public investment will increase total investment (public *plus* private) at a rate greater than one to one. First of all, as recognized even by Neoclassical Growth Theorists such as Barro (1990), public investment generates *positive externalities* for the private sector. So an increase in public investment will increase profits in the private sector, stimulating entrepreneurs to increase their investment spending. Second, a reduction in the primary fiscal surplus will certainly increase aggregate demand due to the well-known *government spending multiplier*. In a *regime of excess capacity* as the one that characterized the Brazilian economy since the beginning of the 1980s, firms will increase output in order to meet the additional demand for their products. The increase in the

¹⁷ This figure was obtained by the numerical simulation of the equation $b_t = \left[\frac{1+r}{1+g} \right] b_{t-1} - s_t$, taking $s = 0.03$; $r = 0.06$; $g = 0.05$ and $b(0) = 0.53$.

production level will generate also an increase in the degree of capacity utilization, stimulating firms to increase their investment spending in order to make the adjustment between effective and *desired* degree of capacity utilization (cf. Oreiro, 2004b). In other words, the increase in the level of capacity utilization will produce an increase in private investment due to the well-known *accelerator effect*.

So we can assume that an increase in public investment will produce a higher than one-to-one increase in total investment. We do not have a precise estimate of this magnitude, but an 'educated guess' is that an increase in public investment will induce a 1.5 increase in total investment. Under these conditions, an increase in public investment by 1.5% of GDP will increase total investment by 2.25% of GDP. This means that potential growth rate of real GDP will be increase up to 3.3% per year. This effect combined with the positive stimulus over private investment from the reduction in the level of real interest rates and from the elimination of uncertainty due to the exchange rate risk will generate the required increase in the investment rate for a sustained growth of the Brazilian economy at a rate of 5.0% per year.

6. Conclusion

This paper presented a Keynesian strategy of economic policy that aims to achieve higher, stable and sustained economic growth in Brazil. The basic features of this strategy are: (i) adoption of a *crawling-peg exchange rate regime* in which devaluation rate of domestic currency was set by the Central Bank at a rate equal to the difference between a *target inflation rate* and *average inflation rate* of Brazil's most important trade partners; (ii) adoption of *market-based capital controls* in order to increase the autonomy of the Central Bank to set nominal interest rates according to domestic objectives (mainly to promote a robust growth); (iii) reduction of nominal interest rate to a level compatible with a real interest rate of 6.0% per year; (iv) reduction of primary surplus from current 4.5% of GDP to 3.0% of GDP. These elements are fundamental for the required increase in the investment rate of Brazilian economy from current 20% of GDP to 27% of GDP needed for a sustained growth of 5% per year.

References:

- Afanasieff, T.S., P.M. Lhacer and M.I. Nakane (2001). "The determinants of bank interest spread in Brazil". In *Proceedings of XXIX Encontro Nacional de Economia*. ANPEC, Salvador.
- Arestis, P. and Sawyer, M. (1998). "Keynesian economic policies for the new millennium". *The Economic Journal*, v. 108, pp. 181-195.
- Barro, R. (1990). "Government Spending in a Simple Model of Endogenous Growth". *Journal of Political Economy*, v. 98, n. 5, pp. 103-125.
- Belaisch, A. (2003). "Do Brazilian banks compete?". *IMF Working Paper* WP/03/113, Washington.
- Bresser-Pereira, L.C. and Y. Nakano (2002). "Uma estratégia de desenvolvimento com estabilidade". *Brazilian Journal of Political Economy*, v. 3, no. 3, pp. 146-177.
- Carvalho, F. (1997). "Economic policies for monetary economies: Keynes' economic policy proposals for an unemployment-free economy". *Brazilian Journal of Political Economy*, v. 17, n. 4, pp. 31-51.
- Davidson, P. (1994). *Post Keynesian Macroeconomic Theory*. Cheltenham, Edward Elgar.

- _____. (2002). *Financial Markets, Money and the Real World*. Cheltenham, Edward Elgar.
- Franco, G.H.B. (1999). *O Desafio Brasileiro: ensaios sobre desenvolvimento, globalização e moeda*. Editora 34: São Paulo.
- Guérin, J.-L. and Lahrière-Révil, A. (2003). *Exchange rate volatility and investment*. Mimeo.
- Harrod, R. F. (1939). “An Essay in Dynamic Theory”. *Economic Journal*, vol. 49, pp.14-33.
- IMF. Public debt in emerging markets: is it too high? Washington, IMF, 2003.
- IPEADATA. www.ipeadata.gov.br.
- Keynes, J.M. (1973). *The General Theory and After, Part I: Preparation. Collected Writings of John Maynard Keynes*, vol. XIII. London: Macmillan.
- _____. (1980). *Activities 1940-46 Shaping the Post World: Employment and Commodities. Collected Writings of John Maynard Keynes*, vol. XXVII. London: Macmillan.
- Kregel, J. (1994-95). “The viability of economic policy and the priorities of economic policy”. *Journal of Post Keynesian Economics*, v. 17, n. 2, pp. 261-277
- Marglin, S. (1984). *Growth, Distribution and Prices*. Harvard University Press: Harvard.
- Oreiro, J.L. (2004a). “Prêmio de risco endógeno, equilíbrios múltiplos e dinâmica da dívida pública: uma análise teórica do caso brasileiro”. *Revista de Economia Contemporânea*, v. 8, n.1.
- _____. (2004b). “Accumulation regimes, endogenous desired rate of capacity utilization and income distribution”. *Investigación Económica*, v. LXIII, n. 248.
- Oreiro, J. L., Sicsú, J. and Paula, L.F. (2003). “Controle da dívida pública e política fiscal”. In Sicsú et al (ed).
- Palley, T. (2004). “Escaping the debt constraint on growth: a suggested monetary policy for Brazil”. *Brazilian Journal of Political Economy*, v. 24, n.1.
- Paula, L.F. and Alves, Jr., A.J. (2000). “External financial fragility and the 1998-1999 Brazilian currency crisis”. *Journal of Post Keynesian Economics*, v. 22, n. 4, pp. 589-617.
- _____. (2003). “Banking behaviour and the Brazilian economy after the Real Plan: a Post-Keynesian approach”. *BNL Quarterly Review* no. 227, pp. 337-365.
- Paula, L.F., Oreiro, J.L., and Silva, G. (2003). “Fluxo e controle de capitais no Brasil”. In Sicsú et al (ed.).
- Romer, D. (2001). *Advanced Macroeconomics*. McGraw Hill: New York. Second Edition.
- Saad-Filho, A. and Morais, L. (2002). “Neomonetarist dreams and realities: a review of the Brazilian experience”. In P. Davidson (ed.), *A Post Keynesian Perspective on 21st Century Economic Problems*, pp. 29-55. Edward Elgar, Cheltenham.
- Sicsú, J; Oreiro, J.L; Paula L.F. (2003). *Agenda Brasil: Políticas Econômicas para o Crescimento com Estabilidade de Preços*. Manole: Barueri.
- Thirwall, A.P. (2002). *The Nature of Economic Growth*. Cheltenham, UK: Edward Elgar.
- Tobin, J. (2000). “Financial globalisation”. *World Development*, v. 28, n.6, pp. 1101-1104.