

Schonerwald da Silva, Carlos E.; Vernengo, Matías

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**Foreign Exchange, Interest and the Dynamics of Public Debt
in Latin America**

Carlos E. Schonerwald da Silva
Matías Vernengo

Working Paper No: 2007-02

University of Utah
Department of Economics
1645 East Central Campus Dr., Rm. 308
Salt Lake City, UT 84112-9300
Tel: (801) 581-7481
Fax: (801) 585-5649
<http://www.econ.utah.edu>

Foreign Exchange, Interest and the Dynamics of Public Debt in Latin America

Carlos E. Schonerwald da Silva
Pontificia Universidade Católica do Rio Grande do Sul

Matías Vernengo
University of Utah

Abstract

The relationship between the exchange rate and public debt is intermediated by two mechanisms. On the one hand, exchange rate devaluation implies higher payment on local currency over the debt denominated in foreign currency. On the other hand, the rise of public debt leads a perception of higher default risk, forcing capital outflows and a devaluation of the exchange rate. The present paper develops a simple model where the exchange is crucial to analyze public debt dynamics. The paper also discusses the recent trajectory of the public debt in Latin America. The dynamics of the exchange rate is important for developing countries that do not have strong currencies and have a significant portion of public debt denominated in US dollars (original sin). Also, primary budget surpluses were crucial for the consistent and significant reduction of the public debt-to-GDP ratio. Hence, the economic expansion has created a larger fiscal space for Latin American economies to expand infrastructure and social spending, and reduce unemployment levels.

Keywords: Exchange Rate, Public Debt, Latin America

JEL Codes: F310, H600, O540

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1. Introduction

Public debt, if it is sustainable, might be a regional blessing, we would argue paraphrasing Alexander Hamilton's famous quip. In fact, Latin America has not been able to maintain levels of indebtedness sufficiently high, at least not long-term and domestic denominated debt. This has been dubbed the 'original sin' by Eichengreen and Hausmann (2005). If deficits and growing debt, when sustainable, may boost economic growth and be a blessing, the reverse is also true. In other words, fiscal surpluses and decreasing debt are not necessarily a positive sign.

The notion that deficits and debt are not in themselves good or bad, but should be judged on the merits of the function that they play in the economy is ultimately due to Abba Lerner (1943), who dubbed his views the 'functional finance' approach, in contrast to conventional wisdom based on 'sound finance.' In this view, deficits and debt should be judged by their effects on the economy. In other words, if deficits and debt promote economic growth, and equitable income distribution, they should be seen as positive. It also implies that surpluses and falling debt are as good as the function they play in the economy.

This paper further develops the model presented in Vernengo (2006), to deal with the interaction of exchange rate and public debt dynamics. It is suggested that, under certain conditions, exchange rate appreciation may lead to a reduction of debt, in particular when primary surpluses are the rule. The preoccupation about this policy mix for Latin America is that exchange rate reduces competitiveness and may have important effects on long term growth. Also, permanent primary surpluses, in the presence of significant nominal deficits, imply that the interest rate bill is relatively large, and that transfers to the financial sector, which worsen income distribution, are large.

The model is based on the seminal writings of Lerner (1943), Domar (1944) and Pasinetti (1997), extending the analyses to an open economy, where the exchange rate is vital to the dynamic of the public debt. In this sense, the paper can be seen as an extension of functional finance principles to the open economy. Furthermore, the paper discusses the recent dynamic of the public debt in Latin America based on the model developed. The next section presents the model; the second section discusses the relationship between the model and the Latin American experiences. The final section analyses the effects of the recent exchange rate policy over public debt. In particular, the paper focuses on heterodox alternatives that stabilize the public debt at a given level. The trade off between inflation and unemployment is dealt with in the last section. Although inflationary pressures following exchange rate depreciation are relevant – in particular as a result of relatively high pass-through effects – the paper points out that unemployment problems are fundamental in the case of Latin America.

2. The Model

The relationship between the exchange rate and public debt is essentially mediated by two mechanisms. On the one hand, devaluation implies higher payments on local currency over debt denominated in foreign currency, and the reverse in the case of appreciation. On the other hand, the rise in public debt can increase the perception about the probability of a default and country risks, even if that perception is ultimately

incorrect.¹ An increase in default and country risks may lead to a significant outflow of foreign currency, and as a result to a large devaluation of the exchange rate. The present paper develops a simple model where the exchange rate is crucial to analyze the dynamic of public debt, as well as the recent trajectory of public debt in Latin America.²

The dual relationship between the exchange rate and public debt has some peculiar effects on decisions regarding monetary policy. For example, an increase in the rate of interest affects directly the financial burden of the public debt, and, consequently, raises the nominal deficit and domestic debt. However, with higher interest rates the country will be a magnet for short-term capital, pressuring to a valuation of the local currency, and, as a result, reducing the weight of the public debt denominated in foreign currency. The net effect will depend on the relative forces of the two effects. If the devaluation of the exchange rate leads to a reduction of the burden of the debt higher than the increase caused by the interest rate, thus the initial monetary policy will result in a positive net effect, so the public debt is going to be lower.³

Conventional wisdom about fiscal deficits is that they stimulates the economy in the short run, according to Keynesian approach, but in the long run, given the macroeconomic identity (domestic saving equals to domestic investment plus net foreign investment), a reduction in the domestic saving will diminish either the net formation of capital or foreign investment. In both cases, the growth rate will drop. In a simple way, deficits are good in the short run, but awful in the long run. Usually, in the long run, the negative effect on economic growth can be characterized by decreasing savings, followed by an increase of the interest rate, which in turn leads to a reduction of capital accumulation.⁴

It must be noted that the conventional result may be affected by market imperfections. Diamond (1965) showed that the failure of competitive markets to support optimal intertemporal allocations can stem from two sources: (1) the divergence between the planning horizon of individuals and the horizon of economic activity, evident in economies of overlapping generations, and (2) market imperfections, such as missing markets for the allocation of risks. Gale (1990) shows that, given financial market imperfections, public debt by introducing low risk securities may assist capital formation and economic growth. In that sense, even within the conventional neoclassical model there is some role for deficits and debt to affect growth positively.

The model developed, based on the seminal work of Abba Lerner (1943) and Evsey Domar (1944), suggests that when the monetary authority follows the rule of

¹ The empirical evidence on the effects of public debt and other ‘fundamentals’ on default and country risks shows that the connection is weak. For example, Eichengreen and Mody (2000) argue that observed changes in fundamentals explain only a fraction of the emerging market debt spread over secure assets.

² For an earlier version that dealt with the Brazilian economy see Vernengo (2006).

³ This adds a new twist to the conventional fiscal dominance argument, according to which an increase in the real interest rate makes domestic government debt more attractive and leads to a real appreciation, but if the increase in the real interest rate also increases the probability of default, then the effect may be to lead to a real depreciation. See Blanchard (2005).

⁴ The empirical evidence on the effects of fiscal deficits on the interest rate is that the effects are small. For a recent survey of the American case see Gale and Orszag (2003), who argue that deficits equal to 3 percent of GDP would raise interest rates by between 60 and 180 basis points with a mean of 120. It must be noted that empirical studies seldom discuss causality. However, given that increases in interest rates, which might be influenced by monetary policy, affect debt servicing, it seems reasonable to consider whether causality runs from interest to deficits, rather than the other way round.

interest rate parity, and the public deficit is indexed to the interest rate, the causality between the interest rate and fiscal deficit is reversed. Thus, a higher interest rate causes an increase on the payment of interest over public debt leading to an increase of the nominal deficit. This sort of closure appears as the most relevant in the case of developing countries. The interest rate emerges as being exogenously determined by monetary authority, and monetary aggregates are endogenously determined.

Another important point, according to Lerner and Domar's approach, is that deficits do not necessary result in an expansion of the public debt. Domar (1944) points out that the public debt-to-GDP ratio will raise if and only if the interest rate is higher than the growth rate. Pasinetti (1997) suggests that alternative monetary regimes, where interest rates are held on average at low or high levels, have different effects on the sustainability of the public debt. In other words, the Bretton Woods era which was characterized by relatively low rates of interest was more prone to sustainable debt dynamics, and deficits were ultimately benign, whereas the post-Bretton Woods era is one where debt is more likely to be unsustainable and deficits more harmful.

However, the work of Lerner, Domar and the recent aggiornamento by Pasinetti (1997) emphasize cases in which public debt is completely denominated in local currency. Thus, to understand cases where a significant proportion of public debt is denominated in foreign currency, the explanation of how the dynamics of the exchange rate influences public debt turns out to be crucial. The dynamics of the exchange rate, defined as the domestic price (local currency) of foreign currency (US dollar), is determined by three factors presented in the following equation:

$$(1.) \dot{e} = \sigma(i^* - i) + \theta(\bar{e} - e) + \mu d$$

Dots represent a change in the level, thus, \dot{e} is the change in the exchange rate (up is depreciation and down is appreciation). The primary factor is the traditional interest rate parity condition, according to which if the domestic interest rate, i , is higher than the foreign interest rate, i^* , the exchange rate will appreciate. On the other hand, if the domestic interest rate is below the foreign one depreciation will follow. Equation (1.) also assumes that if the actual exchange rate, e , is lower than the expected exchange rate, \bar{e} , there is a tendency to devaluation. The expected exchange rate is determined by perceptions of economic agents about the long term rate of interest that would be compatible with a sustainable current account.⁵ Finally, the international financial markets perceptions imply, particularly influenced by the risk agencies (e.g. Moody's and Standard and Poors), a devaluation of the exchange rate when the public debt-to-GDP ratio, d , rises.

Initially, we assume that deficits are financed by the issue of new bonds, and that prices are constant. In addition, we assume that public debt, in terms of local and foreign currencies, is indexed to the basic short term rate controlled by the central bank. The primary deficit ($G - T$) is defined as the growth of the public debt (\dot{D}) minus the payment of interest on the outstanding debt. Thus, we have:

⁵ A precise formalization of the determination of \bar{e} is not central to our purposes and beyond the scope of this paper.

$$(2.) \quad (G - T) = \dot{D} - i(D_d + eD_f)$$

D_d is the public debt denominated in local currency and D_f is the share of public debt denominated in foreign currency. The dynamics of the public debt-to-GDP ratio is given by:

$$(3.) \quad \frac{\dot{d}}{d} = \frac{\dot{D}}{D} - g$$

In other words, the rate of growth of the debt-to-GDP ratio is the difference between the rate of growth public debt and the growth rate of GDP, g . Substituting (1.) into (2.) we obtain:

$$(4.) \quad \frac{\dot{d}}{d} = \frac{(G - T) + i(D_d + eD_f)}{D} - g$$

Rearranging equation (4.) we get:

$$(5.) \quad \dot{d} = [i(\delta_d + e\delta_f) - g]d + \tau$$

Where δ_d and δ_f represent the shares of domestic and foreign debt in total public debt, and τ is the primary deficit as a share of GDP.

Equations (1.) and (5.) provide a system of equations that describe the exchange rate and public debt dynamics. The first equation expresses that an increase in public debt leads to a depreciation of the exchange rate. The relation is represented by the upward sloping e -dot curve in Figure 1. The more sensitive the exchange rate is to changes in the public debt-to-GDP ratio the more steep the e -dot curve will be. It is expected that a more open economy, without capital controls, would have a steeper e -dot curve than an economy with capital controls and with a relatively closed capital account, since in the latter case the exchange rate would not be affected by international financial markets perceptions about default and country risks.

<Figure 1 Here>

The second equation suggests that a devaluation of the exchange rate increases public debt, depending on the value of the parameters. Figure 1 illustrates the equilibrium when there is a primary surplus, instead of a deficit. Certain conditions that can be expressed by using the Jacobian below determine the local stability/instability of the system.

$$(6.) \quad J = \begin{bmatrix} -\theta & \mu \\ i\delta_f d & i(\delta_d + e\delta_f) - g \end{bmatrix}$$

If the determinant of the Jacobian is positive and the trace is negative, then the system is a stable node as represented in Figure 1. Stability can also occur in the case of primary

deficits, when the d-dot curve is positive sloped. On the other hand, if the determinant of the Jacobian is negative, then the system is an unstable saddle-path, as depicted in Figure 2.

<Figure 2 Here>

The examination of the Jacobian shows that the system is more prone to instability if the rate of growth of the economy is low, the rate of interest is high, the sensitivity of the exchange rate to country and default risks is high and the share of foreign debt in total public debt is high.⁶ This suggests that economies in which the public sector is heavily indebted in foreign currency and that have opened up the capital account of the balance of payments are more prone to currency crises. Also, it must be noted that crises are possible even in the absence of fiscal laxity, when primary surpluses are substantial.⁷ The model also indicates that currency crises are likely to lead to default, as the exchange rate and the debt-to-GDP ratio move in the northeast direction in Figure 2.

More important for our purposes is to understand the effects of an exogenous change in the domestic interest rate on the exchange rate and the public debt-to-GDP ratio, our endogenous variables. Furthermore, since we have in mind the utilization of the current model as a device to analyze the situation of public debt in Latin America, we analyze how a change on the interest rate affects the dynamic of the exchange rate and the public debt, assuming that governments have substantial primary surpluses. Figure 3 depicts a possible scenario representing the effects of an increase in interest rates.

<Figure 3 Here>

The higher interest rate implies an increase on debt service payments and, consequently, it raises the public debt. However, the appreciation of the exchange rate reduces the total value of the public debt, in local currency, because of the reduction of the public debt denominated in foreign currency. For certain values of the parameters an increase on the interest rate results in an appreciation of the exchange rate and a reduction of the public debt-to-GDP ratio as shown in Figure 3. This scenario suggests a positive relationship between the exchange rate and the public debt-to-GDP ratio. Thus, a reduction of the public debt-to-GDP ratio follows an appreciation of the exchange rate, and the contrary occurs when the exchange rate depreciates. The increase of the interest rate in this case, even though it results in an appreciation of the exchange rate that is prejudicial to the

⁶ Instead of the conventional condition of stability according to which the system is stable if the rate of growth is bigger than the rate of interest we have that the system is unstable if:

$$(7.) \ g < \frac{i\theta(\delta_d + e\delta_f) + i\delta_f\mu d}{\theta}$$

That is, growth has to be smaller than the rate of growth of debt, which now does not depend solely on the rate of interest, but also on the amount of debt denominated in foreign currency, on the exchange rate, and on the risk factor μ .

⁷ For this type of scenario see Taylor (1998).

growth of exports and to the growth of the economy, still has the effect of reducing the burden of debt, but that does not necessarily mean that the economy is less prone to a currency and default crisis.

We must also note that the effects of the primary surplus are not negligible. The combination of high interest rates and substantial primary surpluses seriously affects the distribution of income. Concomitant primary surpluses and nominal deficits indicate that the government is paying the difference to the owners of public bonds.⁸ Public bonds are usually held by banks, corporations and wealthy individuals. Thus, the combination of primary surpluses and nominal deficits represents a significant transference of income from society as a whole to a few privileged groups. The redistributive process turns out to be important because in many cases primary surpluses result from reductions in public spending (Câmara and Vernengo, 2004-5).

The question to be raised is why governments implement a macroeconomic policy mix that involves high transfers from society as a whole to a wealthy minority. The reason is that in an economy that opened up the capital account of the balance of payments domestic interest rates are maintained at higher levels to avoid capital flight and primary surpluses as a target for the fiscal policy are one of the few instruments to maintain a stable public debt-to-GDP ratio. In addition, the high interest rates, as seen above, lead to an appreciated exchange rate which, in turn, helps to stabilize the public debt-to-GDP ratio. Furthermore, in many developing countries the pass-through effect of foreign prices on domestic inflation is relatively high, and exchange rate depreciation translates into significantly higher prices. Thus, central banks that are fundamentally concerned with price stability may use exchange rate appreciation as an important instrument in anti-inflationary policies.

The model that we developed highlights some of the trade offs associated with monetary, fiscal and exchange rate policies. Primary surpluses and appreciated exchange rates allow for lower debt-to-GDP ratios, even in the face of high rates of interest, and are central for maintaining price stability. However, this policy mix has negative impacts on income distribution and economic growth. Further, although the debt-to-GDP ratio is falling, it is not correct to assume that the risk of a currency crisis and default are falling. Low rates of growth and relatively high rates of interest indicate that small changes may lead to an unsustainable debt dynamics. In particular, a small depreciation of the domestic currency may increase public debt denominated in domestic currency by a large amount.

3. The Latin American Case

The model developed in the previous section suggests that there may be significant problems with the current macroeconomic policy mix in several Latin American countries. In particular, we suggest that primary surpluses and decreasing debt are less benign than they might seem. They impose significant costs in terms of forgone growth and worsening income distribution, and may not lead to sustainable debt trajectories in the long run.

⁸ The nominal deficit is the difference between total spending and revenues, while the primary result excludes interest payments. Hence, the difference between the two is composed by interest payments on outstanding debt (Vernengo, 2006).

In the Figure 4 we can see that the public debt of the central government as well as of the non-financial public sector has shown a downward trend since 2003. At the level of the central government, the public debt-to-GDP ratio, dropped from almost 60% to 45%. Regarding the non-financial public sector, the public debt-to-GDP ratio for 2005, calculated as a simple average, came to 48.6% in 2005 in comparison to 55.9% in 2004. There are three factors behind this downward trend: (1) the differential between growth and real interest rate; (2) the large primary surpluses and debt restructurings and; (3) the appreciation of many of the countries' currencies against the dollar (ECLAC, 2006).

<Figure 4 Here>

The region's monetary policy-makers have had to cope with different sorts of challenges than in the past. The abundance of external resources stemming from higher exports and capital inflows has fuelled the appreciation of the countries' currencies. It is important to note that for the most part the expansion of exports has been associated to the expansion of the world economy, in particular the spectacular performance of China. In order to keep the appreciation under control, the countries' central banks intervened in the currency market, buying up foreign exchange in order to rein in their exchange rates. In turn, in an effort to ease the inflationary pressures generated by this strategy, the monetary authorities have had to sterilize the excess liquidity by engaging in open-market operations (ECLAC, 2005, p.14).

The sterilization process created pressure for an ever-increasing interest rate in order to capture the excess liquidity in the financial market via open-market operations, but it was not sufficient to neutralize the massive inflow of capital that arrived in the region after a certain degree of normality was regained in the aftermath of Argentina's crisis in 2001. The nominal interest rates, measured as the simple average of the interest rate in 19 countries, moved down since 2002 as shown in Figure 5. Also, inflation has been relatively volatile, but it has fallen after 2003 and has been fundamentally subdued.

<Figure 5 Here>

In the Figure 6, the comparison of the nominal interest rate between the four biggest countries (in terms of GDP) in Latin American (Brazil, Argentina, Chile, and Mexico) presents sizeable differences among them. Brazil presents an interesting and extreme case of the dangers of the current macroeconomic policy mix in Latin America because its nominal interest rate is the highest one, with the exception of Argentina during its crisis. The result of a very high nominal interest rate and a well low and stable inflation rate is that the Brazilian real interest rate has been the highest in the world.⁹ High rates of interest have significant effects on debt servicing, and on the exchange rate as we will see below.

<Figure 6 Here>

The Latin American and Caribbean region grew by 4.5% in 2005, thereby completing

⁹ For a discussion of the Brazilian case see Vernengo (2006).

three consecutive years of positive growth. Figure 7 shows one the most important determinants of the public debt-to-GDP ratio downward movement in Latin America. A combination of positive growth rate greater than the real interest rate pushed down the public debt-to-GDP ratio. Thus, it is one of the pillars to understand why the public debt-to-GDP had gone down very fast after 2003 in Latin America.

<Figure 7 Here>

Between December 2004 and December 2005, the Latin American and Caribbean region's real effective exchange rate *vis-à-vis* the rest of the world appreciated by 8.3%. Yet, the extra-regional effective rate of exchange appreciated throughout 2005, hence a comparison of the average rates for 2004 and 2005 yields a smaller figure (4.5%). In 2005, the average appreciation of the real effective exchange rate relative to the rest of the world was almost twice as high for South America (10.1% between December 2004 and December 2005) as the average for Central America, the Caribbean and Mexico (6%). In contrast, the aggregate real effective exchange rate for the region *vis-à-vis* the rest of the world showed a slight depreciation (0.8%) in the first four months of 2006 (ECLAC, 2006, p. 4).

The real exchange rate has been appreciating in Latin America since 2003. As already discussed, the pressure for appreciation was mainly caused by the large inflows of capital that re-entered into Latin American after the Argentinean crisis in 2001 and associated with the boom in the global economy since 2002, in particular, the favorable shock to the terms of trade. Figure 8 displays the existence of a relationship between the real exchange rate and the public debt, so when the real exchange rate appreciated after 2003 the public debt-to-GDP ratio went down. Figure 8 seems to indicate that the exchange rate is an important element to understand public debt dynamics when the issue involves developing countries that do not have strong currencies and have debt partly denominated in foreign currency.

<Figure 8 Here>

Note that the exchange rate appreciation that took place since 2003, at least for the region as a whole, is relatively small when compared to the depreciation of the previous years. Figure 9 shows the evolution of the real effective exchange rate for Latin America and also for the big four (Argentina, Brazil, Chile and Mexico). Since 2003 appreciation has been stronger than the average for Latin America in all countries but in Argentina. It is interesting to note that Argentina has also had the most marked expansion since 2003, and the real exchange rate depreciation has certainly played a significant role.

<Figure 9 Here>

The positive macroeconomic situation existing since 2002 provided a fertile ground for the countries of the region to make significant improvements in their fiscal accounts. At the end of 2004, the countries' central governments posted a weighted average primary surplus of 2.2% of GDP, as compared to 1.6% in 2003. Meanwhile, the overall balance, which includes interest payments on the public debt, shows a decrease in the deficit from

–1.8% to –0.9% of GDP (ECLAC, 2005). The primary surplus increased to 2.7% of GDP in 2005, but the overall deficit remains negative owing to higher interest payments on the public debt (Figure 10). Thus, the final variable that we are concerned, primary budget surpluses, presented a consistent and significant result for a reduction on the public debt-to-GDP ratio.

<Figure 10 Here>

A noticeable impact on its labor markets was caused by the region's relatively high rate of economic growth in recent years (ECLAC, 2006). In fact, 2005 was the third year in a row of marked increases in the employment rate. The 2005 rise of 0.5 percentage points takes the rate up to 53.6% of the working-age population. The most relevant fact to bear in mind, however, is that these recent improvements are simply bringing the region's employment rate back to the levels of 1997 (Figure 11). Furthermore, unemployment remains high, with an estimated 18 million people out of work as well as a sizeable percentage of new jobs are in low-paying positions, and the number of short-term employment arrangements in the formal sector is on the rise. Thus, the labor market's reactivation in 2005 has not yet led to any significant rise in real wages, which were up by just 0.5%.

<Figure 11 Here>

Since 2003 gross capital formation has expanded, however, it is slightly above 20% of GDP and is still lower than it had been before the series of financial crises that began in 1997. Arguably, the “present investment coefficients are too low to sustain a fast enough growth rate to fuel job creation in the formal sector at the level needed to help alleviate the delicate social situation existing in Latin America and the Caribbean” ECLAC (2006, p. 14).

It is well known that there is a strong relationship across countries between rates of economic growth and the share of GDP devoted to investment. DeLong and Summers (1991) show that there is a positive correlation between GDP growth and equipment investment, and suggest that causality runs from the latter to the former. The correlation between investment and growth is also strong in Latin America as can be seen in Figure 11. However, this empirical relationship falls short of demonstrating a causal link from investment to growth. They demonstrate correlation more than causality and a simple accelerator model suggests that causality is reversed. That is, firms invest if demand increases in order to maintain capacity utilization at normal levels.¹⁰

Probably more important than investment per se is the constraint on public investment. Aschauer (1989a; 1989b) argues that in the US public investment is much more productive than private investment, and that public investment in infrastructure crowds in private investment. In other words, even though private investment results from growth, public investment may very well promote economic growth. However, the permanent primary surpluses in Latin America imply a reduced fiscal space for governments to expand public investment. The lack of fiscal space for investment in infrastructure does not bode well for the future economic performance in the region.

¹⁰ For a simple explanation of investment behavior using the accelerator see Kalecki (1971).

Increasingly there is a consensus that infrastructure investment represents a serious constraint for long-term sustainable growth. For example, Brazil experienced a severe energy constraint in 2001 that affected industrial production significantly. Figure 12 shows that total infrastructure investment in Brazil had a decline of 2.8% of the GDP in a comparison between the 1980-1985 and 1996-2001 periods. Brazil invested during the period 1980-85 around 5% of its GDP in infrastructure, but it had a sharp decline to 2.3% of GDP during the period 1996-01. The Brazilian story is not atypical. Chile was the only exception that had an increase during the same period. The average performance for Latin America shows a reduction of infrastructure investment of around 1.8% of GDP.

<Figure 12 Here>

The relatively low levels of public investment in infrastructure, and the limit fiscal space to expand public investment, are not the unique dark clouds over the current economic recovery in Latin America. As noted before, the economic recovery has been possible to a great extent to the spectacular Chinese economic growth and the less impressive, but significant recovery in the US after the 2001 recession. However, global imbalances may very well imply a reduced rate of growth of the global economy in the near future. According to a recent report by the Economic Commission for Latin America and the Caribbean:

“While the world economy may succeed in dealing with the threat of inflation and in rectifying existing global imbalances without any steep downturn in its growth rate, these factors are still a source of uncertainty. Some indicators appear to be heralding a period of greater global volatility, and the possibility cannot be ruled out that this may dampen growth somewhat and trigger a reversal in the net direction of some capital flows back toward developed countries” ECLAC, 2006, p. 3).

In that scenario, the lack of fiscal space for expansionary fiscal policies, and the appreciated exchange rate, which reduces international competitiveness, suggests that the economic expansion in the region is more fragile than what is usually assumed. Falling debt-to-GDP ratios were only possible because of the large primary surpluses and the appreciated exchange rate. However, the primary surpluses constrained the ability of the public sector to increase infrastructure investment, imposing severe limits on growth. Also, the appreciation suggests that the economies in Latin America are vulnerable to a sudden slowdown of the world economy. If global imbalances actually lead to even a moderate global recession, and capital outflows, depreciation of Latin American currencies would lead to an increase of debt-to-GDP ratios even with large primary surpluses. Even worse, the contraction of foreign demand will take place in an environment in which domestic demand will not be able to compensate and growth will most likely collapse.

In that situation we would have the negative scenario of growing debt-to-GDP ratios, higher nominal deficits (even with primary surpluses), and a depreciating currency. The possibilities of defaults, in such a case, cannot be ruled out. It should be noted that there is a risk, as is always the case with generalizations, to emphasize the commonalities in the recent Latin American experience. The diversity of experiences in Latin America is great, and there are some important exceptions to our description of the limits to the foreign exchange rate and public debt dynamics we described above. All in all, our analysis of the dynamics of the exchange rate and public debt is that the mix of appreciation and falling debt-to-GDP ratios should not be seen as sustainable in the long run, and that significant risks are still present.

4. Concluding Remarks

The model that we developed based on functional finance ideas suggest that falling debt-to-GDP ratios are not necessarily an indication that the risk of a currency crisis and default are decreasing. Low rates of growth and relatively high rates of interest indicate that small changes may lead to an unsustainable debt dynamics, and in particular, a small depreciation of the domestic currency may increase public debt denominated in domestic currency by a large amount and lead to a currency crisis and an eventual default. The model provides a cautionary tale for the recent Latin American experience.

Large primary surpluses, strong and appreciating exchange rates, and falling debt-to-GDP ratios do not, in our view, imply that Latin America has entered a new era of expansion, and that external crises are a thing of the past. A particular set of circumstances – e.g. the global expansion, the positive shock to the terms of trade, and the incredible global liquidity provided by the large American current account deficits – appears to have put an end to the period of external crises that started with the Mexican Tequila in 1995 and culminated with Argentinean debacle of 2001.

However, the external conditions for the renewed period of international financial stability are flimsy at best. Lower debt-to-GDP ratios, permanent primary surpluses and appreciated exchange rates may in fact make things worse in the case of a reversal of external conditions.

In the same vein, our model suggests that growing debt, primary deficits, and a depreciating currency should not be seen as signs of an impending crisis, in particular, if public investment is creating the basis for the sustainable expansion of domestic demand, including a better distribution of income, and promoting external competitiveness. More spending in infrastructure and social policies may be positive as an instrument to make domestic demand expansion the basis of sustainable economic growth. More depreciated exchange rates might reduce the external vulnerability in the long run. These measures may imply that in the short run primary deficits would be necessary and that debt-to-GDP ratios would increase. But those would be a small price to pay for a strategy of development that provided long run sustainable and equitable growth in Latin America.

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Figure 1 Stable Node

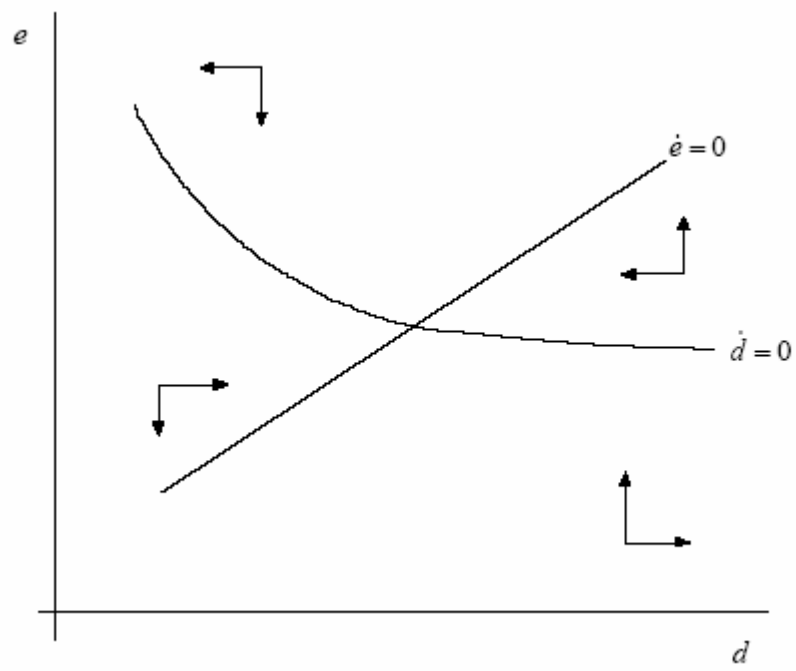


Figure 2 Saddle Path

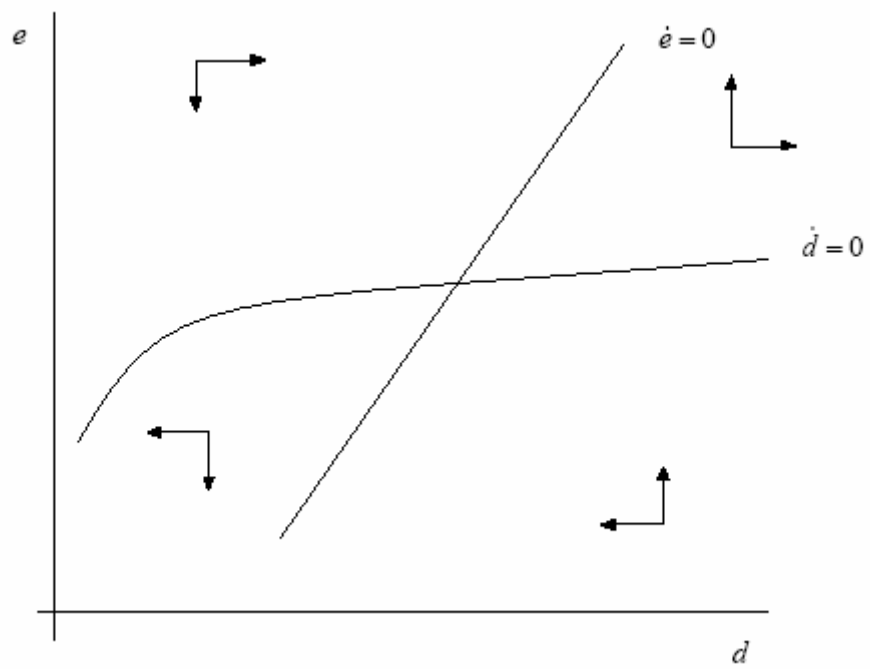


Figure 3 Interest Rate Shock

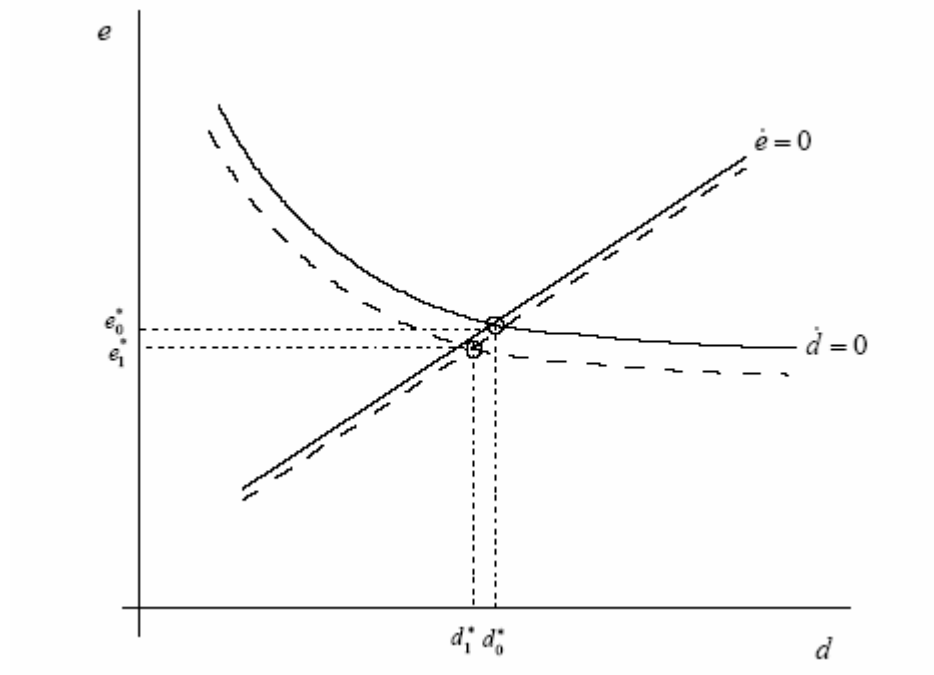


Figure 4

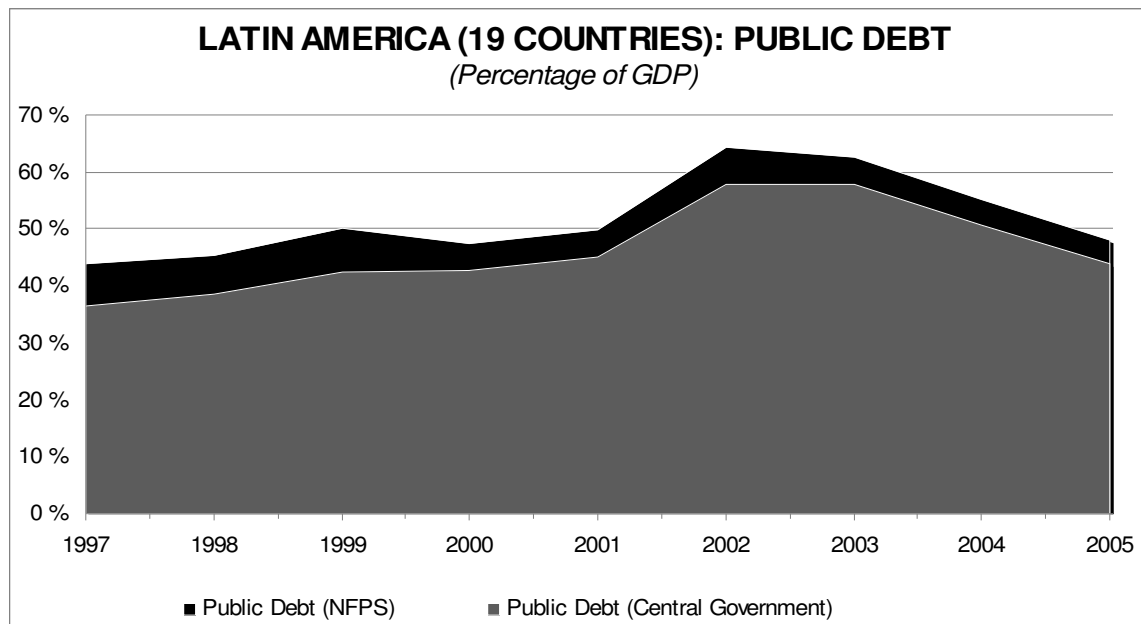


Figure 5

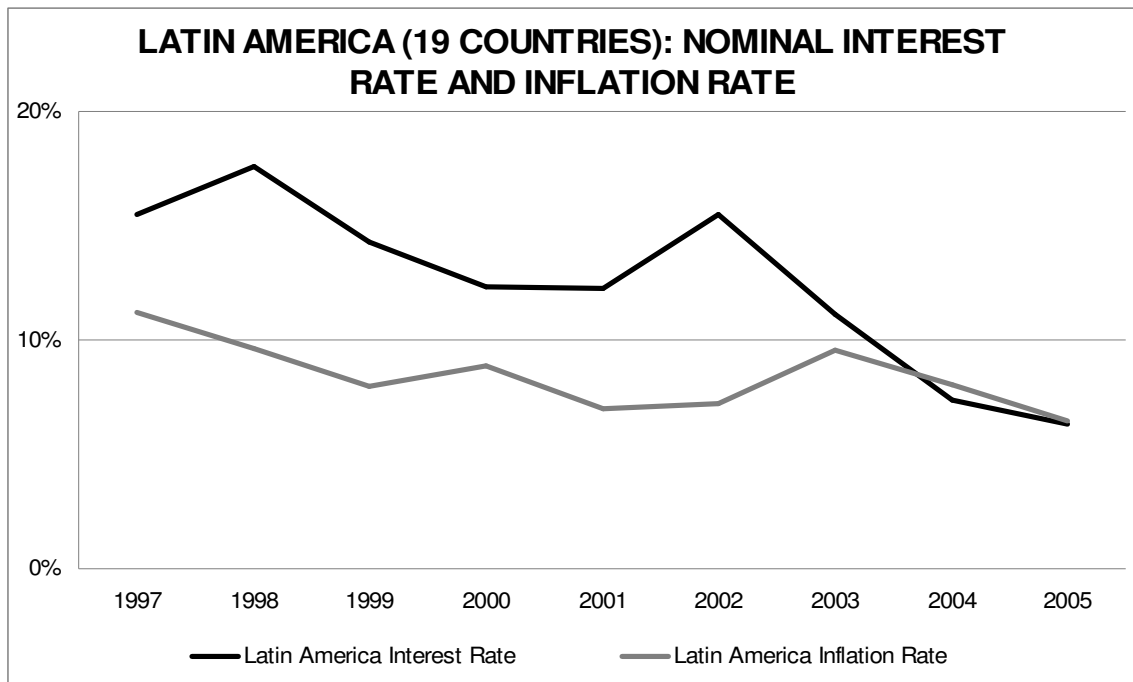


Figure 6

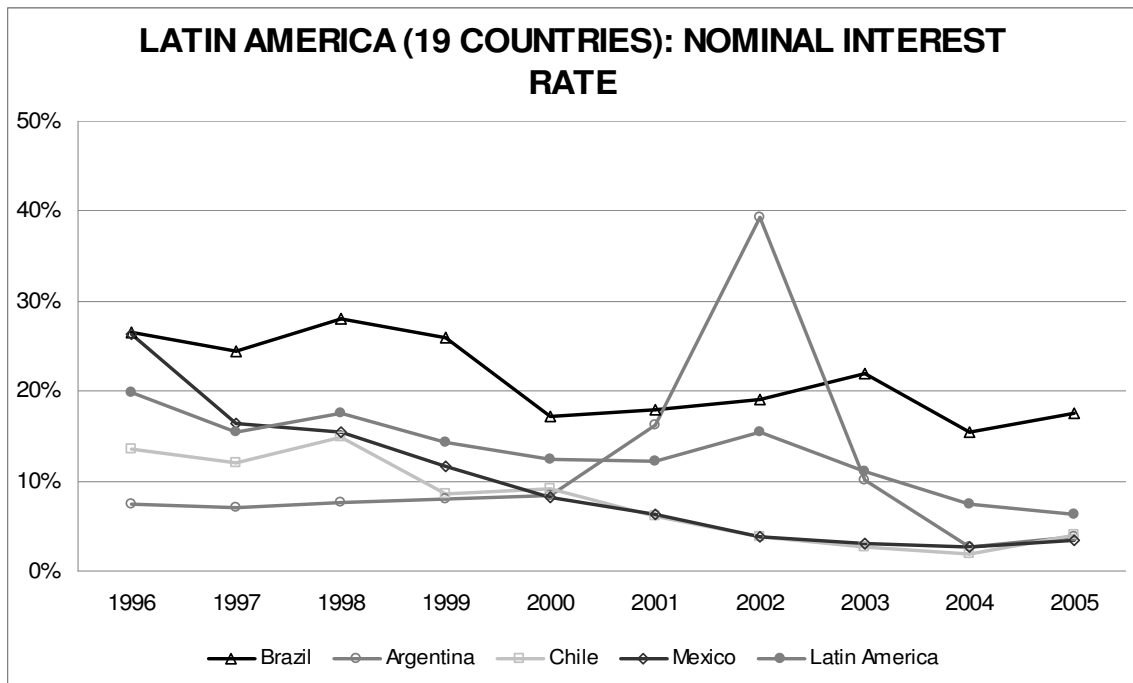


Figure 7

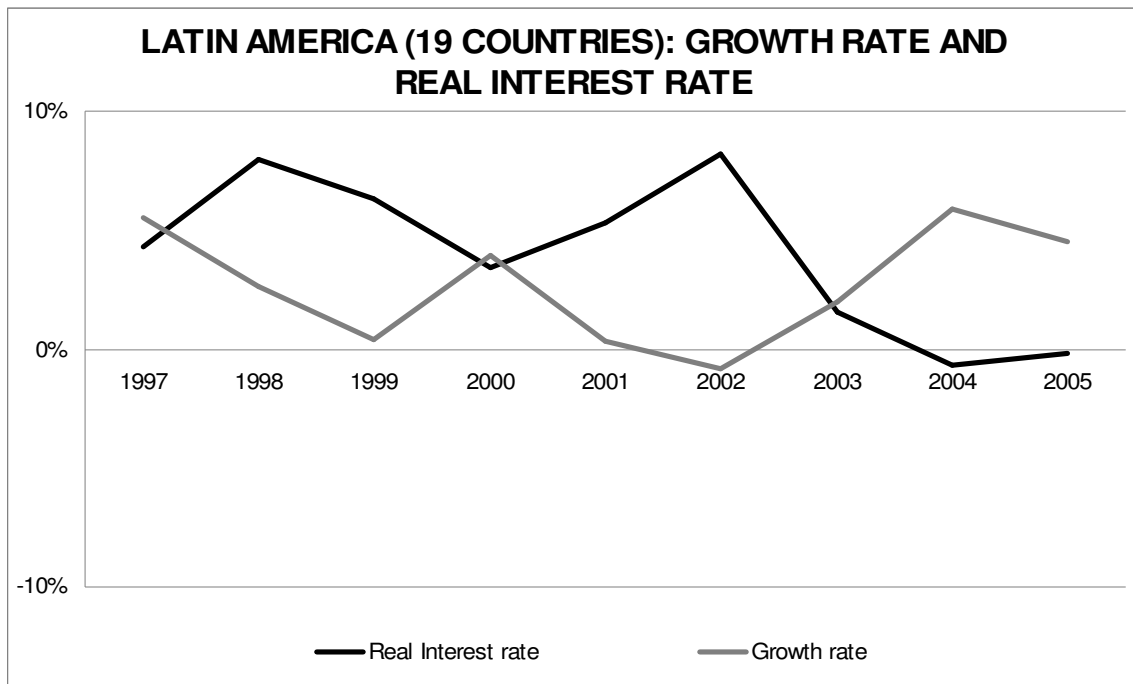


Figure 8

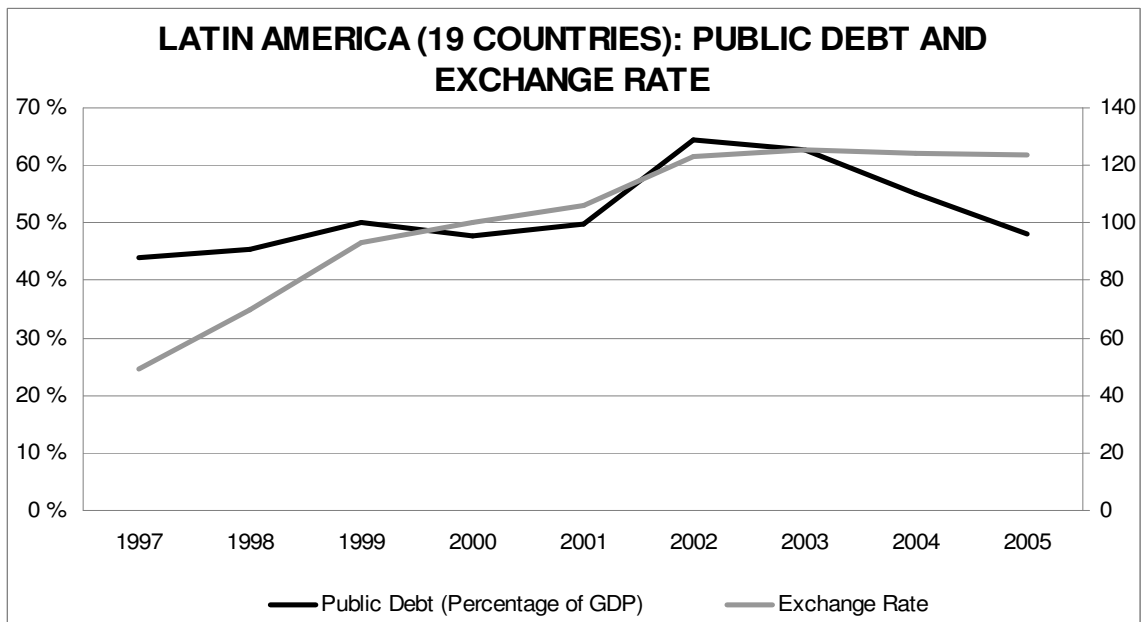


Figure 9

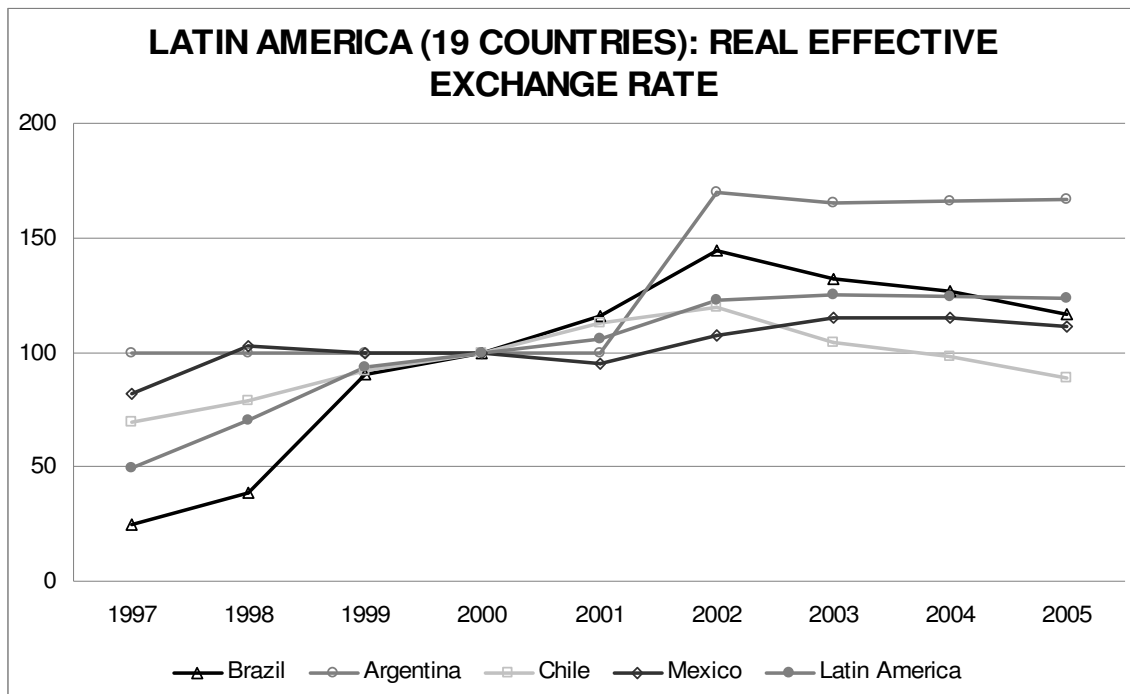


Figure 10

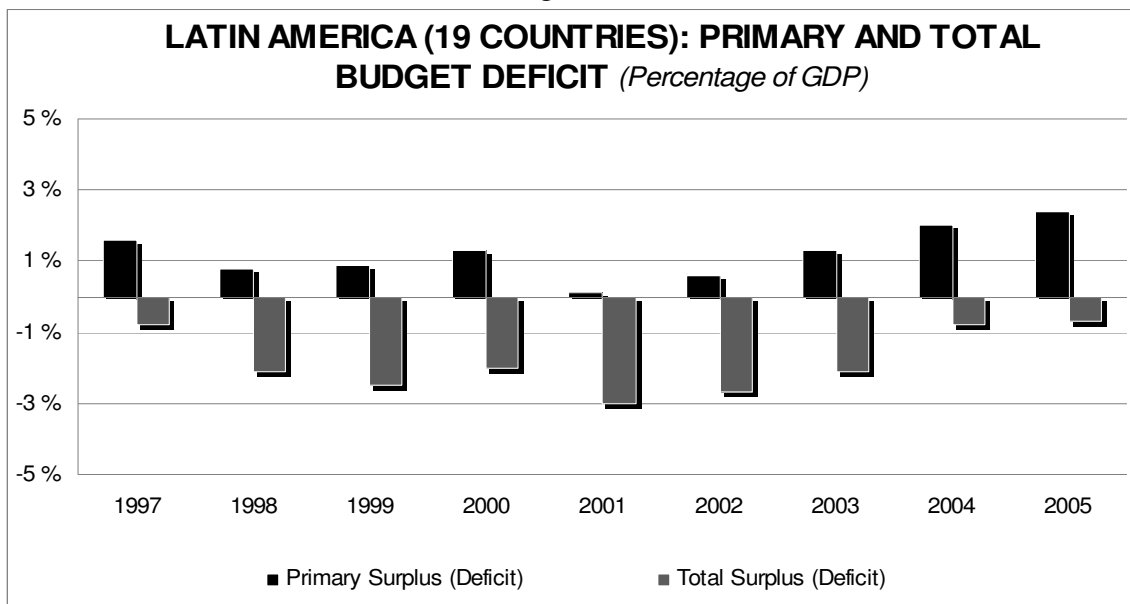


Figure 11

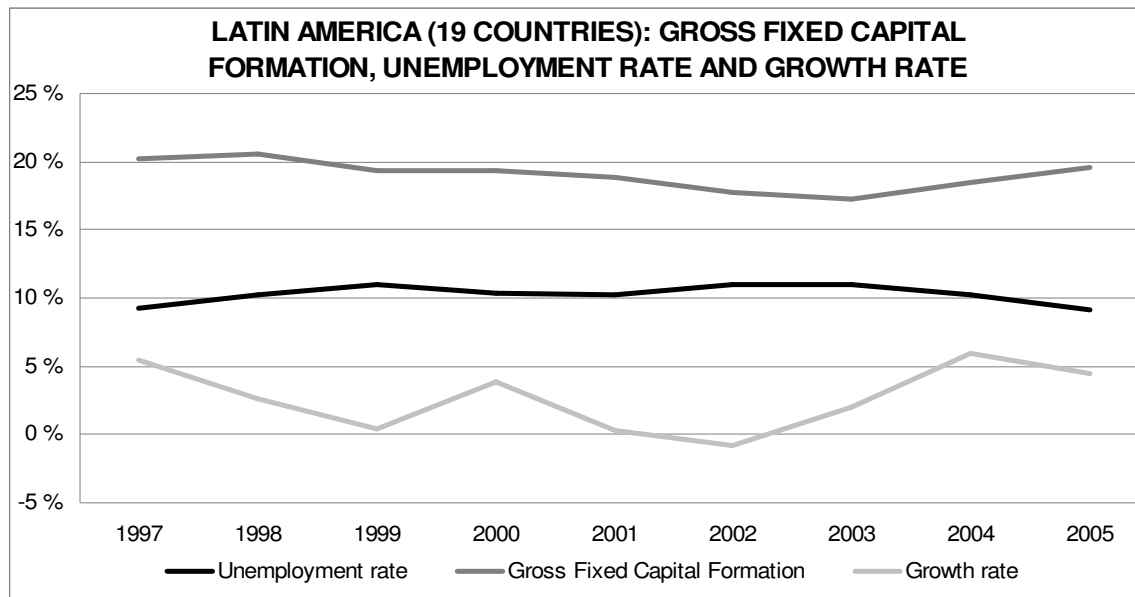


Figure 12

