

Dollarization and Economic Crisis in Brazil

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ABSTRACT

Recent economic crises in Brazil and most of Latin America have led to widespread debate over the need for and applicability of various forms of economic stability programs; at the heart of this debate lies dollarization – ranging from the simple act of denominating asset and liability prices against the dollar to the extreme case of an outright adoption of the dollar as national currency - as a way of achieving economic stability through better financial management and greater financial integration with the Western world. In this paper the author examines the usefulness of such programs, including currency boards and inflation targeting, and identifies what policies have been pursued in Brazil over the course of its economic and political struggles. What will be concluded is that dollarization has already begun in Brazil, despite its very public pursuit of inflation targeting as a policy choice. An in-depth look at behind-the-scenes policy developments will show that dollarization has arrived not by choice, but through the conditions established by foreign interests which were put in charge of Brazil's financial architecture during the 1990s.

INTRODUCTION

Over the course of the twentieth century few countries had endured the kind of political and economic turmoil as seen in Brazil. For the better part of the last century, the economic landscape of Brazil has been characterized by one recurring theme: persistently high inflation. But despite the inflation, Brazil's economy had performed quite well throughout the decades prior to the oil shocks of the 1970s. This long period of high growth saw annual growth rates of 7.5%¹, but with such growth came the emergence of large current account deficits, high income inequality, and mounting external debts, as are often seen in developing countries experiencing fast growth. The oil shocks of the 1970s sparked the beginning of the huge decline in Brazil's economic stability: higher oil prices caused a spike in inflation rates, constant government intervention (exchange restrictions and distorting taxes) slowed annual growth, and current account deficits were skyrocketing. This setting led to the 1980s, dubbed the "lost decade"² by observers due to runaway inflation, stagnant growth rates and the government's growing inability to achieve economic stability through structural reform.

This “lost decade” would spread into the early 1990s, where hyperinflation was beginning to set in.

By this time, naturally, one begins to wonder just what it would take to regain some stability in a place like Brazil. From an economic policy standpoint, what can be done to possibly control such persistent inflation in such a way as to promote overall stability, consisting of solid growth and fiscal discipline? Various ideas have been discussed among economists over the years, and the more prominent ideas include the extreme cases of dollarization, currency boards, or the less extreme option of inflation targeting. Dollarization is a hotly debated concept, especially in Latin America where the idea of swapping the domestic currency in favour of the US dollar is nothing new. However, there’s a lot more to dollarization than a simple currency swap.

The academic literature defines dollarization as either being partial or “de facto”, where the foreign currency (i.e. US dollar) is used as a partial substitute for domestic assets, or as the more extreme full or “de jure” case where the country fully adopts the US currency, meaning its assets and liabilities become fully denominated in US dollars.³ Its main objective is to bring economic stability through a lowering of transaction costs (one currency instead of two), greater financial integration (with the US), and greater budgetary stability and credibility. But of course this might also leave the nation’s finances under the direction of The Fed, which implies a loss of financial independence, lost seignorage revenues, and the elimination of a lender of last resort role for the domestic central bank.⁴ After the failure of several stability reform programs during the 1980s and 1990s, is it time for Brazil to go ahead and gradually or fully adopt the US currency in its bid to achieve stability once and for all? Well, as I will try to show in this paper, Brazil is in the midst of dollarizing its economy against its own will, against the advice of those who believe dollarization is best applied elsewhere in Latin America. What I will try to show is that dollarization is occurring in Brazil not by way of the above definitions, but rather through coercion, as illustrated by Brazil’s massive obligations to international creditors who arranged for the creation of dollar-denominated debt bonds while at the same time gained strong influence over the operation of Brazil’s financial

hierarchy (a more specific distinction between this type of dollarization and the aforementioned definitions of dollarization will be made in Part I). Given this intrigue over dollarization and its implications for Brazil, I will make its discussion the focal point of my paper.

The central aim of this paper will be to conceptualize dollarization, and to discuss its usefulness and applicability in Brazil with respect to alternative methods of achieving economic stability. Ultimately, I will look at recent data and study historical events in order to determine the extent to which dollarization may have already arrived in Brazil, and whether or not it is even avoidable for tomorrow, despite the very public pursuit of inflation targeting by the Brazilian government.

This paper will be organized over three separate sections of discussion. In the first section, I will seek to explore and conceptualize the phenomenon known as dollarization as well as its main alternatives, notably currency boards and inflation targeting. Plenty of discussion has been made on the existence and application of these policy tools in Latin America, and, given its status as a large, diversified, emerging market economy, Brazil has not been immune to such discussion. Each of these three concepts will be discussed in order, starting with the definitions and characteristics of dollarization, as well as its suitability for the Brazilian economy. I will then briefly define a currency board, referring to the case of Argentina, and conclude by discussing the recent trend of adopting inflation targeting systems and how it has fared in Brazil.

The second section will detail the various stages of Brazil's tumultuous economic history, which has been characterized by ongoing troubles with high inflation, inconsistent growth, spiraling public debts, falling wages, and wildly varying exchange and interest rates. Within this section, I plan on discussing the sweeping economic changes brought to Brazilians as a result of numerous failed stability attempts, while simultaneously discussing how international creditors have been at the root of much economic hardship. To do this, I will provide a detailed analysis of the high growth period that preceded the *Real Plan* of 1994, the volatilities stemming from the *Plan* itself,

as well as the major 1999 financial meltdown and currency devaluation which saw the crawling peg exchange rate system replaced by a floating exchange rate system, along with the pursuit of inflation targeting.

The third section represents a departure of sorts from the mainstream discussion of what has happened and what is currently happening in Brazil with respect to the state of its economy. While the mainstream literature makes it quite clear that dollarization is neither appropriate nor being considered in Brazil, one must consider why this same literature has been so silent when it comes to the role of international creditors and the behind the scenes agenda being pursued in Brazil. By studying the developments under Luis Inácio (Lula) da Silva's presidency, and by investigating some recent economic data, I will try to show just how dollarized the Brazilian economy actually is, regardless of whether or not dollarization was adopted as a policy tool. Therefore the ultimate goal of this section is to see just how far dollarization has progressed within Brazil's economy, and to see precisely what caused it to happen in the first place.

PART I: Dollarization and Other Crisis Remedies

In this section, I will explore the academic literature written on the topic of dollarization as a way of conceptualizing the topic. While dollarization itself is an extreme economic strategy, which many consider an option of last resort, it is also important to explore and conceptualize alternatives used by emerging market countries in their efforts to ward off such economic problems as high inflation, high interest rates, volatile exchange rates, etc. As such, I will briefly explore the concept of a currency board, citing the experiences of Argentina as a case example. I will then focus my attention on inflation targeting, the policy officially adopted in Brazil immediately following the 1999 financial meltdown.

Before proceeding with the academic discussion, however, I believe it is important to first make a useful distinction. The "textbook" definitions of dollarization

are what will be discussed in the first part of this section; each of them implies voluntary choice for currency substitution. But when a country is pressured into issuing debt bonds and having them denominated into a foreign currency (i.e. US dollar), that too is a form of dollarization; in fact, as will be discussed in Part III of this paper, this is precisely what has happened in Brazil, despite its official choice of inflation targeting as an economic strategy. But because this type of dollarization is not usually discussed within the mainstream literature, I believe it is important to first define dollarization as the literature does, since this will help the reader better understand and better appreciate the gravity of the situation in Brazil.

A. Dollarization Conceptualized

In Latin America, where countries have been marred with persistent bouts of inflation and where economic difficulties have been the norm, the debate surrounding the best choice of exchange rate regimes has been a central focus of economists and observers alike for decades. Which is best: fixed exchange rates? Floating? An extreme option (i.e. outright currency substitution)? As a way of bringing an end to high inflation and an eventual return to economic stability, many have suggested that countries should forgo the use of their own domestic currency in favour of adopting the US dollar, or some other stable currency. Dollarization – whether in the form of an outright currency substitution or the gradual use of foreign denominated monetary assets as substitutes for domestic ones, is often perceived as an extreme process in that its effects on the economy are swift, and possibly irreversible. Since the 1970s, the loosening of foreign exchange controls has seen the role of dollarization expand from one of simple store of value to the more specific roles of unit of account and medium of exchange. But from a historical context, however, the loosening of foreign exchange controls has also led to the emergence of a colonial-style banking system in much of the developing world. Often, these “loosenings” were part of a much larger set of policies carried out in developing (and often indebted) countries by way of structural adjustment programs, often at the direction of the IMF or the World Bank, acting on behalf of international financial

interests. By carrying out massive changes to their market forces, the structural adjustment programs, in the words of Chossudovsky (2003b), were part of a:

new form of economic and political domination – a form of ‘market colonialism’ – [which] subordinates people and governments through the seemingly ‘neutral’ interplay of market forces. The Washington-based international bureaucracy has been entrusted by international creditors and multinational corporations with the execution of a global economic design.(...) At no time in history has the ‘free’ market – operating in the world through the instruments of macro-economics – played such an important role in shaping the destiny of sovereign nations.⁵

Owing in large part to the emergence of such market changes, episodes of dollarization in Latin America quickly became more prevalent, as seen with the full or partial adoption of the US dollar in such countries as Bolivia, Uruguay, Peru, and Ecuador beginning as early as the 1970s. While much of the debate in the 1980s centered around pegged exchange rate systems and their influence on controlling inflation, the 1990s, which saw the arrival of massive IMF bail-out programs in Africa, Asia and Latin America, saw a shift of focus towards the idea of dollarization. Berg and Borensztein (2003) offer a glimpse of what consequences can result from such bail-out programs, as they outlined two additional reasons for the aforementioned shift of focus towards dollarization:

First, the inflation problem has abated notably. Second, as the degree of capital mobility and scale of capital flows have increased sharply, so has the apparent frequency and severity of currency crises. And many of the victims of these fierce speculative attacks were maintaining some sort of pegged exchange rate regime.⁶

With these comments, the authors suggest that pegged exchange rate regimes are paramount to speculative attacks, especially when international creditors influence the loosening of market reforms in countries previously operating with a pegged currency. As a result, the authors conclude that: “Only extreme choices – a firm peg such as a currency board or a free float – are viable”.⁷ Before engaging in a more detailed conceptualization of dollarization, it is important to first discuss and compare the pros and cons of fixed versus floating exchange rate regimes.

1. Fixed Vs. Floating Exchange Rate Systems

Palley (2003) outlines two primary advantages associated with the use of fixed exchange rates: “The first is that fixed exchange rates imply reduced uncertainty, and this helps reduce the costs of international trade transactions. The second is that fixed exchange rates discipline monetary authorities, preventing them from pursuing inflationary policies.”⁸ More precisely, the first advantage is explained by the fact that fixed exchange rates will reduce the costs of business transactions since currency exchange risk is eliminated, while costs of exchanging the local currency for the dollar fall. Meanwhile, greater central bank discipline arises since they are not going to print money en masse as a way of escaping economic shocks, as this would increase inflation.⁹ To explain this point, Palley (2003) argues:

[e]xcessive money supply expansion generates inflation that, in turn, gives agents an incentive to shift into currencies(...). Such shifts force the central bank to intervene and buy the currency to protect the exchange rate, thereby reducing the money supply. In this fashion, fixed exchange rates establish an automatic mechanism that prevents central banks from excessive money supply expansion...¹⁰

However, the perceived costs of using fixed exchange rates, according to Palley (2003), include surrendering the central bank’s ability to use the exchange rate as a “shock absorber” to fend off external economic shocks, while “the fixed exchange rate limits the ability to use domestic monetary policy to stabilize the economy.”¹¹ At the same time, the use of fixed exchange rates may lead to an overexpansion of foreign indebtedness if an exchange rate adjustment is too low,¹² and a sudden run on bank deposits under such a system can lead to bank illiquidity or the central bank being forced to drain its reserves.¹³

While pegged exchange rate systems have recently collapsed in Mexico (1994), Thailand and South Korea (1997), Russia (1998), and, as we will later see, Brazil (1999), these events were mostly the result of a lifting of foreign exchange controls as ordered by

the IMF in these same countries. In the case of South Korea, for example, a team of IMF economists had been rushed into the country in November 1997, in the midst of growing economic instability on the eve of a presidential election, with a mandate to negotiate a quick bailout in order to restore economic stability. According to Chossudovsky (2003b), the decision was quickly made to remove “all exchange controls from the currency market with the view to ‘wooing back foreign investors’, but with the inevitable result of enticing further speculative assaults against the won.” Suddenly up for sale was Korea’s entire financial sector (for the measly sum of 5.5 trillion won or US\$3.7 billion), and by December 23 of that year, through much governmental “arm-twisting”, a new government loyal to the IMF Agreement was installed and the Asian Crisis was set to tear into Korea’s finances.¹⁴ The case of Korea is somewhat unique, but the chain of events, notably the lifting of foreign currency exchange controls and the subsequent demise of central banks alongside the sudden arrival of speculative onslaughts (and capital flight), all at the command of the IMF, are highly similar to those which led to crises in Asia in 1997, Russia in 1998, and eventually Brazil in 1999, and exemplify the dangers that can occur when controls are lifted from fixed exchange rate regimes.

Often perceived as a more prudent approach, flexible exchange rates, operating under market forces of supply and demand, have as a main advantage “their ability to insulate and stabilize economic activity. With regards to external shocks, the exchange rate can adjust to maintain trade balance.(...) if export demand declines, the exchange rate can depreciate to lower export prices and restore demand.”¹⁵ As a result, adjustments of the real exchange rate following real economic shocks are much easier to execute, since an active monetary policy can be pursued (i.e. the role of “shock absorber”)¹⁶. For instance, interest rates could be lowered by the central bank during a recession as a way to cause “financial capital to exit, which depreciates the exchange rate and stimulates net exports [to boost growth and end the recession].”¹⁷ These arguments imply that countries using flexible exchange rates are free to set their own monetary policies, independent of the monetary policy choices made in the United States or any other large economy.¹⁸

Among the disadvantages of flexible exchange rates, as described by Palley (2003), are that “flexible exchange rates imply exchange-rate uncertainty that raises the cost of international trade to the extent that firms hedge this uncertainty. The greater the volatility of exchange rates, the greater the uncertainty and cost.”¹⁹ For instance, if speculating investors are moving vast sums of money into countries operating with fully flexible exchange rates, exchange rate volatility coupled with asset market volatility can lead to an appreciation of the exchange rate, leading to declining industrial competitiveness, which can precipitate unwanted bankruptcies as well as unemployment.²⁰ Following Palley’s logic, Corbo (2003) argues that bankruptcies are to be expected in countries whose financial systems are characterized by highly uneven (i.e. dollarized) assets and liabilities.²¹ This final point helps explain why the suitability of floating exchange rate systems has been downplayed recently in Latin America. Now that I have distinguished between fixed and floating exchange rate systems, what precisely sets them apart from dollarization?

In a nutshell, Sachs and Larrain (1999) explain that dollarization is “very much like a pegged exchange rate, only with less room to maneuver”.²² Gone is the shock absorber property of exchange rate depreciation, and in are cuts to wage levels with lots of sporadic unemployment. Also gone is any control over independent monetary policy, which is now enforced by The Fed. This tradeoff between certainty and the surrendering of monetary policy prompted Sachs and Larrain (1999) to strongly declare: “Dollarization does result in certainty – the lack of worry about exchange rate changes – but that certainty comes from strapping the economy into a monetary straitjacket”.²³ But in order to fully differentiate between dollarization and a pegged system, we must first identify and define the various forms of dollarization, show how they are measured, and finally discuss their main benefits and costs.

2. Dollarization Defined (Mainstream Definitions)

Depending on the level of currency substitution, dollarization can take any one of the following forms: *de facto* (partial or unofficial), or *de jure* (full or official)

dollarization. We use the term *de facto* (partial or unofficial) to describe dollarization if individuals or firms in a particular country decide, without any legal obligation, to use some foreign currency, say the dollar, for its financial activities. According to Dean (2003): “De facto dollarization is by private rather than public choice; the latter, where use of the foreign currency is legislated, is called ‘official’ or ‘de jure’ dollarization”.²⁴ Dean further argues that *de facto* dollarization most often appears in countries that have had to cope with high inflation, and/or rapidly depreciating exchange rates. Also, *de facto* dollarization can be used to lessen the damages of a banking crisis, since “losses from a domestic banking collapse can be averted only by holding foreign cash or bank deposits in a foreign bank. In short, de facto dollarization has typically been a response to actual or expected financial turmoil”.²⁵ As Dean further argues, dollarization is initially motivated by asset substitution as a way of preserving value, while “persistent” dollarization is “motivated by sufficient currency substitution that foreign currency is in widespread use as a medium of exchange”.²⁶ The more of this persistence that we see, the more it will cost to return to the domestic currency. The end result is *de jure* dollarization, at which point there is irreversibility.²⁷ Guillermo Calvo (2001) defines *full* dollarization as “a situation in which a country abandons its own currency and adopts another country’s currency...as a means of payment...and unit of account. It is an extreme case of Fix and, by its nature, is fully shielded from BOP [balance of payments] crises”.²⁸ It should be noted, however, as Calvo points out, that it is still possible to have banking and financial sector crises under full dollarization (this point will be further discussed when we look at the pros and cons of dollarization).

3. Dollarization Measures

Measuring the scope of *de facto* dollarization is somewhat difficult owing to the fact that foreign currency use often does not leave a paper trail. Edgar Feige et al. (2003) express a formula which can be used to measure unofficial dollarization, denoted as UDI. The following formula for UDI applies only when asset and currency substitution take place:

$$UDI = \{(FCC + FCD) / EBM\}^{29}$$

Where: UDI = Unofficial Dollarization
 FCC = Foreign Currency (cash) in Circulation outside the banking system
 FCD = Foreign Currency Deposits held within domestic banks
 EBM = Effective Broad Money supply

This formula shows the importance that dollar FCC holdings have when calculating unofficial dollarization in a given country. The work of Feige et al. estimates that some \$580 billion of US currency was in circulation outside of the United States by the end of 2001.³⁰ When studying the amounts of US currency in circulation in Latin America, the authors found that Argentina exhibited the highest per capita holding of US dollars in Latin America (\$1,478 in 1997/98 dollars) while Brazil had the lowest observed amount (\$15).³¹ These results should come as no surprise considering that Argentina had pegged their currency to the US dollar as part of a currency board system in 1991, while Brazil had largely avoided widespread asset or currency substitution during the early 1990s. Feige et al. draw one additional conclusion from Argentina's results that is worth mentioning. Argentina (prior to 2002), they conclude, "represents a classic case of hysteresis, suggesting that once a threshold level of dollarization is attained, it may be maintained, producing what is known as dollarization 'irreversibility'".³² In 2002 Argentina abandoned its currency board arrangement, leading to a reversal from this "hysteria", but nonetheless this statement still suggests that there can exist a point beyond which dollarization may become irreversible in a given country. While no formula exists to prove a particular threshold point, it has been argued that if so much foreign currency is prevalent in an unofficially dollarized country, it may simply be too costly to turn back and rid the economy of all the foreign currency. This is what is meant by hysteresis, or irreversibility. This is one of the costs of dollarization, which along with certain benefits, will be the focus of the next section.

4. Benefits and Costs of Dollarization

Throughout the academic literature, several recurring benefits of dollarization are discussed. Among them, in no particular order, are the following:

(i) *Lower Transaction Costs and Greater Financial Integration:*

Theoretically, the adoption of a foreign currency (i.e. US dollar) allows economic agents to avoid the costs of exchanging their domestic currency for dollars and also lessens their need to guard themselves against foreign exchange risks. These savings can translate into more efficient international trade while facilitating foreign investment into the country. In addition to the goods market, dollarization can also bring about closer financial integration, especially when foreign financial institutions are given a similar level of priority as domestic ones.³³ The perceived elimination of currency risk will allow the domestic financial institutions to integrate its activities more closely to the US and the rest of the world. In reality, however, one must question whether it is possible for currency devaluations to occur in dollarized economies. Depending on the degree to which a given country may be dollarized, a currency devaluation cannot necessarily be excluded, especially when the IMF, World Bank, or any other international creditors are present when economic policies are being set for the given countries. As I will later argue in the case of Brazil, IMF structural reform packages often require currency devaluations (by declaring the local currency overvalued) as part of a strategy of debt servicing through financial market liberalization. Such dollarized Latin American countries as Argentina and Ecuador have not been immune to devaluations in recent years.

(ii) *Lower Inflation and Interest Rates:*

The country adopting the dollar is expected to face inflation and interest rates similar to those seen in the US. As such, Salvatore (2001) explains: “This encourages savings and investments (both domestic and foreign) and stimulates the nation’s

growth”.³⁴ Commodity arbitrage is believed to be at the root of the inflation similarities, because dollarization will prevent the price of internationally traded goods from exceeding US prices by more than the costs of transportation and possible trade barriers that might be in place. Related to this point is the perceived elimination of the risk of sharp exchange rate adjustments in the dollarized country, which will not only bring about better capital movement, but also lower costs of servicing public debt while achieving greater economic growth.³⁵

(iii) *Greater Budgetary Discipline and Credibility:*

Dollarization, according to Salvatore (2001): “Fosters budgetary discipline, whereby fiscal deficits must be financed by higher taxes rather than by the less transparent method of printing money”.³⁶ Therefore, surrendering the central bank’s ability to print money in favour of adopting the dollar may be most welcome in countries whose central banks have been troublesome in the past. Credibility would certainly ensue, since, in the words of Berg and Borensztein (2003):

Dollarization holds the promise of a steadier market sentiment, as the elimination of exchange rate risk would tend to limit the incidence and magnitude of crisis and contagion episodes(...). Dollarization would signal more than the adoption of a foreign currency; it may be perceived as an irreversible institutional change toward low inflation, fiscal responsibility, and transparency.³⁷

As one can expect, the literature points out to several costs a country can expect to incur through dollarization. Among them, in no particular order, are:

(i) *Loss of Monetary Policy Independence:*

A country that dollarizes is a country that surrenders its ability to fight economic shocks through monetary or exchange rate policies. For instance, a recession, whether serious or moderate, could not be eliminated through an expansionary monetary policy nor a currency depreciation since the given country no longer has a domestic currency. This country would be faced with the same monetary and exchange rate policies being

conducted in the US, regardless of how fitting these same policies might or might not be in the dollarized country. It would take a great deal of foresight and coordination for the dollarized economy to cope with such foreign-controlled policies. Countries that choose to dollarize typically do so to achieve economic stability, but ironically, the act of dollarizing may bring about greater harm if they cannot fight domestic or foreign-induced economic episodes through their own set of policies. But in countries like Brazil where dollarization is occurring as a byproduct of IMF conditionalities, all controls to the central bank are conceded to foreign creditors, giving them unobstructed authority to initiate their conditions as they see fit. To this effect, Chossudovsky (2003b) notes that:

The agreement signed between the government and the IMF prevents the funding of government expenditure and the provision of credit by the Central Bank through money creation...the IMF, on behalf of the creditors, is in a position virtually to paralyze the financing of real economic development. Incapable of using domestic monetary policy to mobilize its internal resources, the country becomes increasingly dependent on international sources of funding which has the added consequence of increasing the level of external indebtedness.³⁸

Of further consequence to the loss of monetary policy independence (as a condition of the IMF) is the fact that interest rates become freely determined by foreign commercial banks, leading to rigged hikes to nominal interest rates by creditors which, combined with forced currency devaluations, lead to the further dollarization of both domestic prices and the growing external debts. Such central bank deregulation, Chossudovsky (2003b) notes:

leads to the influx of 'hot money' attracted by artificially high interest rates. The commercial banks are no longer in a position to provide credit to the real economy at reasonable rates. This policy...leads to the collapse of credit to both agriculture and domestic industry.³⁹

Needless to say, the loss of monetary policy independence can have a devastating effect on a country's ability to mobilize its internal resources in order to improve real economic development, as the implied invasion of foreign creditors will ultimately descend the country's economy into a downward spiral complete with high interest rates, a devalued currency, and growing dollarization of prices and foreign debts (the specific

consequences of lost monetary policy independence in Brazil will be discussed in Part III).

(ii) *Loss of Seignorage Revenues:*

A country that dollarizes would surrender its ability to generate profits from the act of issuing its own domestic currency as legal tender. Briefly, monetary authorities earn revenues from issuing currency, which is a non-interest-bearing debt. Other revenues are generated through the individual banks' legal reserve requirements of this non-interest-bearing debt as well. These seignorage revenues are important since they allow monetary authorities to purchase assets (i.e. foreign reserves, loans to banks) or to finance fiscal deficits.⁴⁰ The costs attributed to lost seignorage can be calculated two ways: as a "stock" cost and as a "flow" cost. According to Salvatore (2001): "The stock cost of dollarization is the cost of obtaining sufficient dollars to replace the domestic currency in circulation", whereas "the flow cost of dollarization...is the loss of interest on the central bank's holdings of foreign bonds or other interest-earning assets in the dollarizing country".⁴¹

Berg and Borensztein (2003) estimated that in Argentina, the stock cost of dollarization involved the redemption of roughly \$15 billion in domestic currency held outside its central bank, while the flow cost of dollarization was in the neighbourhood of \$1 billion per year, or 0.35% of GDP between the years 1993-98.⁴²

(iii) *Loss of Lender of Last Resort Function:*

The central bank in a dollarized country cannot be relied upon to bail out any of its domestic banks or any other financial institutions which may be on the brink of collapse due to sudden shocks. This implies that the central bank's role of "lender of last resort" is therefore relinquished upon dollarizing. Central banks would no longer be able to provide short-term loans to banks in need, nor would they be able to guard themselves against any sudden runs on bank deposits. Should citizens suddenly lose confidence in

their financial system, the authorities would not be able to ensure full coverage of domestic deposits. Because the ability to print money has been taken away through dollarization, so has the ability of the central bank to act as a lender of last resort. Only if the central bank had initially held large liquid dollar or foreign currency assets in preparation for such sudden crises could serious problems be avoided.⁴³

5. When to Dollarize?

When a country is debating the merits of dollarizing, it must certainly consider the issue of timing. After all, the decision to dollarize may be an irreversible one, or one that could be very costly to reverse. In this section I shall discuss the arguments of Barry Eichengreen (2002) surrounding the timing behind dollarization.

In his paper, Eichengreen argues that the choice of *when* to dollarize really depends on where the given country is situated in terms of its reforms and its preparedness. Specifically, he outlines two separate views of sequencing of dollarization with other existing reforms in a given country. His first view argues that dollarization must first wait on the completion of complementary reforms. Specifically, he argues that the banking system should be strong enough to not expose its weakened lender of last resort role, that the term of public debt be lengthened to avoid exposing the government to a funding crisis in the absence of monetary policy, negotiations be made to secure commercial or intergovernmental credit lines as a precaution for a crisis, that the labour market be reformed such that the absence of exchange rate mechanisms don't leave the country without a way of coping with shocks, and, finally, that the economy be restructured in such a way as to "ensure that cyclical fluctuations and appropriate monetary conditions coincide with those in the United States".⁴⁴ His second view argues that such reforms mustn't necessarily be put into place beforehand, since "the very act of dollarizing will produce the changes needed to smooth the operation of the new regime". He argues that labour unions, when realizing the need for labour market flexibility under the absence of traditional adjustment mechanisms, will make concessions that will lead to proper labour market reforms. He also argues that dollarization:

will strengthen the financial sector by eliminating currency mismatches in the banking system and enabling more domestic borrowers to fund long-term investment projects.(...) will improve the fiscal balance by bringing domestic interest rates down to U.S. levels.(...) will lead to the synchronization of business cycles by bringing interest rates into line with those...in the United States and encouraging more transactions between the two countries.⁴⁵

Clearly the first view emphasizes the irreversibility characteristic of dollarization. Eichengreen concludes that: "Having brought down inflation, balanced the budget, and strengthened the financial system, not just locking the door to the central bank...but effectively throwing away the key...is seen as a way of preventing the government from reverting to its old bad ways".⁴⁶ This leads to financial credibility, an overall enhancement of investment, as well as economic growth. It is under these arguments that Eichengreen recommends dollarization in a country like Argentina. The second view is certainly swifter, but far less certain in its results. Eichengreen only recommends this approach to countries who have long suffered from unsustainable economic and political problems, because "with the adoption of the dollar, inflation will come down at a stroke, and other policies will have to be brought into line with the hard-money constraint".⁴⁷ He uses these arguments to support dollarization in a country like Ecuador. As we shall see in the next part of this paper, Brazil did not exactly fall into the first of Eichengreen's views, especially since Brazil managed to reduce inflation quite rapidly during the 1990s. Because of this, there was really no need to dollarize at the time. Also, with respect to Eichengreen's second view, Brazil's monetary authorities, despite having to endure bouts of exchange rate volatilities, still had the confidence of its citizens and was in no need of any extreme measures like dollarization. Admittedly, however, Eichengreen doesn't actually go so far as to endorse dollarization outright. He acknowledges that neither theory nor evidence are able to confirm that dollarization will eliminate fiscal problems, nor will it necessarily lead to predicted labour or financial market reforms. Because dollarization is still a fairly recent phenomenon, it is difficult to observe whether either of his views have been respected in reality, particularly in Ecuador. He alludes to this difficulty by commenting that: "Dollarization by countries in the throes of a crisis is a high-stakes gamble".⁴⁸

6. Candidates for Dollarization

Needless to say, dollarization isn't suitable for all countries that are experiencing economic difficulties. The academic literature has made it clear that dollarization isn't necessarily the right choice, regardless of the economic or political climate in a given country. In this section, I will discuss some of the conditions that might justify dollarization.

No country should elect to dollarize if the costs of doing so outweigh the benefits. Salvatore (2001) points out that while the costs are easy to measure, the benefits are much more difficult and "depend crucially on how much the nation also restructures its financial sector and integrates it with that of the U.S. and the world economy".⁴⁹ He suggests that a strong candidate for dollarization is a country which possesses a small, open economy to whom "the U.S. is the dominant economic partner and which has a history of poor monetary performance, and hence...poor economic-policy credibility".⁵⁰ Such countries typically have less power to conduct effective monetary or exchange rate policy on their own, and often face higher interest rates than those observed in the US. Sachs and Larrain (1999) agree with this by suggesting that "U.S. monetary policy might be a good fit" in such countries.⁵¹ Sachs and Larrain also mention that a country with very flexible labour markets (where domestic wage cuts can be done without causing labour market strife) and a central bank which has lost all credibility in its ability to maintain currency stability would also fit the profile of a dollarization candidate.

In the Latin American context, Salvatore (2001) suggests that dollarization would be a good fit in some of the smaller countries, particularly Panama, Ecuador and El Salvador (countries where dollarization already exists), Guatemala, Honduras, Nicaragua, and Costa Rica. However, he says it is much more difficult to prescribe dollarization on larger countries. Argentina, he points out, had performed quite well with its currency board (peso pegged versus U.S. dollar starting in 1991) until the Brazilian devaluation of 1999, which caused Argentina to lose a significant part of its competitiveness versus

Brazil and plunged it into deep recession. Dollarizing at that point would certainly attract investment and possibly lead to growth, but it would do nothing to restore international competitiveness versus Brazil. Essentially, Argentina would be good to dollarize if and only if Brazil did the same, and given Brazil's size in terms of population and its position in international trade, this is highly unlikely to occur.⁵² In all, Corbo (2003) sums it best:

In countries with poor records of monetary stability resulting in widespread currency substitution(...). An exchange rate adjustment could have substantial economic costs(...) for that type of country, the benefits of adopting a rigid exchange system could outweigh the costs involved. In contrast, in countries that have built a reputation for financial prudence, the benefits of exchange rate flexibility and of having the option to use monetary policy... could be an important asset.⁵³

7. Is Dollarization Suitable For Brazil?

Before assessing its suitability in Brazil, it is important to first discuss some features common to Latin America that might not support dollarization. Rojas-Suarez (2003) describes two features of the region that would endorse more flexibility in the exchange rate regimes. The first such feature is that:

The region is subject to large terms-of-trade shocks that are partly explained in some countries by a dependence on commodity exports(...) as such, a large terms-of-trade shock requires an adjustment in relative prices, implying a reduction in the price of nontradable goods relative to the price of tradable goods; namely, a depreciation of the real exchange rate.⁵⁴

Rojas-Suarez argues that dollarization would not prevent this adjustment from taking place, but it could exacerbate problems elsewhere. Specifically, since exchange rates are unable to adjust, the adjustments would occur through contractions to output growth and employment as well as likely reductions in real wages. As the relative prices of nontradable goods fall, so will the real revenues of producers, reducing their ability to service their debts. Alternatively, she argues, a flexible exchange rate system will allow nominal depreciations of the exchange rates so as to adjust relative prices in response to such terms-of-trade shocks. This system could "compensate for the loss of

competitiveness, mitigating the negative impact on output and employment. This is the well-known 'shock absorber' advantage of flexible exchange rates".⁵⁵ The second feature is the ongoing "stock problem", a vulnerability of sorts such that a large stock of debt as well as a weak banking system characterize several Latin American countries. If such a country were to be under a fixed exchange rate arrangement (not fully dollarized):

Speculators would perceive a 'one-side bet' when pressures on the exchange rate develop. The bet is that governments will eventually choose to abandon the fixed exchange rate rather than defend the parity.(...) because the defense would aggravate existing large stock of debt. As a result, speculators exacerbate the attack on the exchange rate when governments attempt to defend the parity.⁵⁶

Under dollarization, she argues, no such bets would be possible, and the country would be unable to deal with such stock problems. A sudden shock, whether foreign or domestic, expected or unexpected, such that the government's ability to service its debt is reduced, will cause investors to "assume that the government cannot adjust the exchange rate to generate additional real resources. This increased default risk will also translate quickly into domestic real interest rates that, in turn, exacerbate the debt problem".⁵⁷ As we will later see, the susceptibility to speculative attacks as described by Rojas-Suarez will play an important role in explaining the degree and cause of dollarization in Brazil.

In the Brazilian context, some academics would recommend some sort of closely managed flexible-rate exchange system. Calvo (2001) argues in favour of a system where:

explicit, implicit, or even potential foreign exchange intervention play a central role.(...) the larger the degree of liability dollarization and lack of credibility, the greater will be the attractiveness of dollarization. On the other hand, the more adamant are nominal rigidities, the more attractive may be to have some degree of exchange rate flexibility.⁵⁸

Williamson (2003) argues that Brazil is not a compelling case for dollarization given its large economy as well as its less-than-open and highly diversified trade patterns. More specifically, he argues that Brazil is in a good position to develop its own financial

markets, having already stabilized inflation, and has very little liability dollarization compared to other Latin American countries. Overall, Williamson concludes: “There is not much of an economic case for dollarization, while politically there is no constituency for it. I judge it inconceivable that Brazil will dollarize”.⁵⁹ This reasoning is consistent with the arguments of Sachs and Larrain (1999), Salvatore (2001), Calvo (2001), and Rojas-Suarez (2003) described earlier with regards to candidates for dollarization.

Now that I have examined the features of dollarization and its place in Latin America, I will now shift our focus towards an alternative of dollarization: the currency board.

B. Currency Boards

As we saw earlier, fixed exchange rate systems are vulnerable to speculative attacks, and conflicts in domestic monetary policy can raise doubts over the authorities’ abilities in defending the fixed exchange rate. Distrust can set in especially when expected (or required) depreciations to the exchange rate lead to a speculative onslaught of central bank reserves, spikes in the levels of unemployment or even increases in the costs of public debts when denominated in the domestic currency. But is it possible to combine the elements of a fixed and flexible exchange rate system? Adjustable peg systems seem to combine credibility with flexibility, but the consensus choice is either to fully fix or fully float the currency. Another popular option, according to Corbo (2003), is to introduce controls on capital flows. But, he argued that: “Given lower communication and information costs and advances in information technology, the world is an even more integrated market...capital controls are very difficult to implement and...are only temporarily effective”.⁶⁰ The best way to implement credibility within a fixed exchange rate system, Corbo argues, is by adopting a *currency board* system.

A currency board, such as the one adopted in Argentina in 1991, allows for the free circulation of the domestic currency alongside the dollar. However, as Salvatore (2001) explains: “The national central bank relinquishes control over the nation’s money

supply and its ability to conduct an independent monetary policy”.⁶¹ If this also implies that the country adopting a currency board cannot put into place some regulations to prevent speculative currency transactions, then the threat of a financial crisis will always remain in the event of sudden (or mandated) devaluations of the country’s currency versus the dollar. In the absence of such regulations, the emergence of (domestic) currency risk “forces the nation to pay a significant interest-rate premium on its international borrowing. This is the reason why Argentina began to consider full or official dollarization at the beginning of 1999.(...) when Brazil sharply devalued its currency”.⁶² Other differences between a currency board and full dollarization are that a currency board allows for an exit from the pegged exchange rate system (under extreme conditions) and it also allows the country to preserve some of its seignorage revenues since its currency is still circulated. Presumably, a currency board does have certain prerequisites; among them, as identified by Corbo (2003), are: “A country needs sufficient foreign reserves to finance the short-term monetary liabilities of the monetary system, or it will not be credible”, while the “financial system must...be able to survive without a lender of last resort”, and finally: “Wage flexibility and labour mobility must also be sufficiently great to facilitate real exchange rate changes, when a change in macroeconomic fundamentals makes a real depreciation necessary”.⁶³

To cite a brief example, Argentina’s experiences with a currency board were rather tumultuous. In line with market reforms being introduced into Argentina and much of Latin America through the “Washington Consensus”, the *Convertibility Law* of 1991 saw the pegging of Argentina’s peso with the US dollar at a one-to-one parity. Under this law the central bank held an amount of foreign reserves at least equal to the number of pesos in circulation, but regulations to control against speculative currency transactions were notably absent. As expected, Argentina’s high inflation was reduced and its average rate of growth during much of the 1990s was a strong 4.1% per year.⁶⁴ However, with the levels of dollar-denominated debt rising steadily throughout the 1990s (60% of credit was dollar-denominated by the year 2000), Fanelli (2003) points out that “the fiscal deficit and the stock of the external debt experienced an upward trend. In such a context, Argentina faced difficulties in meeting its external obligations. Ultimately, at

the end of 2000, the country was forced to resort to the IMF".⁶⁵ A major problem for Argentina was that its "convertibility" system had a floor under its foreign reserve cover but no ceiling, forcing the central bank to sterilize (offset) significant changes in its foreign reserves. Hanke (2003) illustrates some of these problems:

In virtually every month of its existence, the central bank under the convertibility system sterilized or offset changes in its foreign reserves, and in most months after 1994, these powers were used aggressively. For example, foreign reserves fell by 12 billion dollars over the course of 2001, and 122 percent of those foreign reserve outflows were offset by increases in the central bank's net domestic assets.⁶⁶

Similar problems had also occurred following the Mexican *tequila* crisis of 1995, Brazil's economic collapse and devaluation in 1999, and Argentina's IMF bail-out in 2000-01. Then-president Carlos Menem's refusal in 1999 to fully dollarize Argentina led to widespread confidence problems, and eventually, under new president Eduardo Duhalde, the decision was made to abandon the convertibility system entirely and "pesofy" the economy (float the peso) on February 12, 2002, breaking the one-to-one parity that had existed between the peso and the dollar.⁶⁷ Hanke describes the ensuing chaos in Argentina's banking sector:

Dollar reserves were seized from banks and converted into pesos at the rate of 1.4 pesos per dollar. Bank loans made in dollars were converted into pesos at one peso per dollar(...). Argentines have seen their savings disappear as the peso-dollar exchange rate has depreciated roughly 70 percent since the beginning of the year [2002].⁶⁸

Having now described dollarization and currency boards, I will now focus our attention on yet another alternative, inflation targeting, which was ultimately adopted in Brazil following its economic collapse and major currency devaluation in 1999.

C. Inflation Targeting

The deep financial crises which affected several emerging market economies in Latin America and East Asia during the 1990s has led to the emergence of inflation

targeting as an alternative to the volatile exchange rate systems we've discussed thus far. Across the world, such countries as Brazil, Chile, the Czech Republic, Poland, and South Africa have recently adopted inflation targeting.

1. Inflation Targeting Defined

Inflation targeting consists of pegging the domestic currency to a basket of goods. By pegging against a basket of tradable goods, inflation targeting mostly resembles fixed exchange rates, but pegging against a basket of non-tradable goods means that inflation targeting mostly resembles flexible exchange rates.⁶⁹ While inflation targeting is usually performed in tandem with flexible exchange rates, one must not confuse one for the other. Conceptually, Frederic Mishkin (2000) summarizes inflation targeting as a monetary policy strategy that consists of five elements: (i) "The public announcement of medium-term numerical targets for inflation..."; (ii) "Commitment to price stability as the primary goal of monetary policy..."; (iii) "An information-inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding the setting of policy instruments..."; (iv) "Increased transparency of the monetary-policy strategy through communication with the public and the market about the plans...and decisions of the monetary authorities...", and (v) "increased accountability of the central bank for attaining its inflation objectives...".⁷⁰ Evidently, successful inflation targeting requires institutional commitment, clarity and credibility, but with or without these, it is still open to certain outside vulnerabilities. To stress this point, Calvo (2001) adds:

Pegging to a basket does not shield the economy from large fluctuations in the real exchange rate, or insulate the EM [emerging market] from U.S. monetary policy.(...) inflation targeting is also subject to distortions generated by imperfect credibility, much like it happens under not fully credible pegged exchange rates.⁷¹

2. Benefits and Costs of Inflation Targeting

Inflation targeting, unlike a fixed exchange rate system, allows monetary policy to

deal with shocks to the domestic economy. Mishkin (2000) describes the key advantages. Among them, he argues that inflation targeting can be successful even if a solid relationship between money and inflation does not fully exist, since the strategy places a higher priority on the use of information rather than on the relations between the two. Also, inflation targeting is often perceived as transparent and is generally well understood by the general public when properly executed. Thirdly, inflation targeting possesses a great deal of accountability since it requires the use of numerical targets (i.e. inflation bands), which can “reduce the likelihood that the central bank will fall into the time-inconsistency trap”, and finally: “Inflation targeting has the advantage of focusing the political debate on what a central bank can do in the long-run...rather than what it cannot do through monetary policy”.⁷²

Of course, certain difficulties can arise under inflation targeting. Among them, Mishkin (2000) feels that inflation targeting can be “too rigid...allows too much discretion...has the potential to increase output instability, and that it will lower economic growth”.⁷³ With respect to emerging market (EM) economies (i.e. Brazil), he argues that inflation targeting can be difficult to control, thus causing weak central bank accountability; also, he believes that: “Inflation targeting cannot prevent fiscal dominance, and that the exchange-rate flexibility required by inflation targeting might cause financial instability”.⁷⁴ Furthermore, in countries where inflation is being reduced from very high levels (i.e. hyperinflation), central banks are much more prone to making errors in setting their targets, with every missed target negatively affecting its credibility. Also, EMs often have a higher incidence of government-controlled prices on goods used within the baskets, meaning that a high degree of coordination is required between monetary and fiscal authorities when reaching for particular price index targets. In addition, inflation targeting cannot guarantee fiscal discipline since it does not prevent the government from pursuing its own irresponsible fiscal policies (i.e. massive spending).

3. Brazil's Experience with Inflation Targeting

After abandoning the crawling-peg exchange rate system in January 1999, Brazil's central bank officially adopted inflation targeting as its monetary policy framework in June of that same year. It should be noted, however, that by that date, Brazil had already allowed its currency to float, just after its currency was devalued by nearly 50% in the wake of the Sao Paulo stock market collapse of January 13. The first announced targets were set at 8% for 1999 and 6% for 2000, each operating with a 2% band; by December 1999, 12-month inflation was 8.9% and by December 2000 it was exactly 6% (see Figure 1 at end of paper for inflation levels since 1995), meaning initial targets were attained within two years.⁷⁵

I will describe Brazil's experiences with inflation targeting in greater detail later in Part II. Before doing so, however, I will first cover the main historical moments that shaped Brazil's economic struggles leading up to the economic collapse, massive devaluation, and policy changes of 1999.

PART II: Brazil: A History of Economic and Political Crisis

In this section, I will discuss Brazil's tumultuous economic history, marked by high and often rampant inflation, occasional pockets of high growth, spiraling public debts, falling wages, and several failed political attempts at restoring and preserving economic stability. For the better part of the 20th century, as we shall see, Brazilians have dealt with inflation with great resilience, especially when one considers the sweeping economic changes brought to their lives as a result of numerous failed stability attempts. For this discussion, I will outline some of these failed attempts and discuss the role they played in worsening Brazil's economic stability. Specifically, I will analyze the period that preceded the *Real Plan* of 1994, the key shortcomings of the *Plan* itself, as well as the 1999 devaluation which was the product of an economic meltdown and its ramifications.

A. Before the *Real Plan*

Statistics provided by the World Bank (2004) show that Brazil enjoyed a period of strong postwar growth during the 1950-73 years, with annual GDP growth rates hovering around 7.5%, better than the majority of developing countries at the time. However, a recurring theme that characterized Brazil in the 20th century was persistently high levels of inflation (during these same years, the average CPI inflation rate was 29.3%). To Brazilians, however, dealing with high inflation while enjoying periods of high growth became a fixture of everyday life. High inflation was occurring alongside high current account deficits (US\$354 million during these years), a large buildup of external debt (17.6% of GDP), as well as significant problems with income distribution.⁷⁶ Throughout the postwar era, Brazil was a country which was able to live with inflation through its adherence to a rather complex system of indexation to labour wages, exchange rates, and to commodity prices. Commenting on the features of this system, Dornbusch (1997) adds:

The system was perfected during the military regime in the late 1960s to center on ex post inflation with infrequent readjustment.(...) indexation adjustments to wages were made annually, so that price shocks would be substantially diluted rather than quickly turned into a price-wage spiral.(...) there was a built-in real depreciation effect. As a result, external balance problems were never significant.⁷⁷

While the Brazilian growth strategy seemed to be working sustainably, things would take a much nastier turn for the worse during the 1970s.

The oil shocks of 1973 and 1979 were particularly devastating to oil importing countries such as Brazil. When the newly increased oil prices were finally factored into the domestic market through the indexation system, annual inflation soared from an average of 40% in the mid-1970s to 98% in 1982. Also, indexation adjustments suddenly occurred twice annually (instead of once) which further increased inflation. To make matters worse, rising inflation prevented the Brazilian government from financing its deficits. Brazil was now faced with the task of carrying out vicious wage and exchange

rate indexations; with oil price increases translating into wage increases, higher rounds of inflation were inevitable.⁷⁸ Subsequent inflation depressed real wages, which led to more frequent annual wage increases, which led to further rounds of inflation, further wage increases, etc. Any inflationary stability Brazil ever had was now long gone, and a new era of inflationary disarray was underway.

Despite this turn of events, however, Brazilians were still unfazed by inflation. In describing this situation, Manuel da Fonseca (1998) notes: "Inflationary pressures came to be seen as something normal – maybe unavoidable – by Brazilian society and, in particular, by the country's politicians.(...) they perceive the existence of a trade off between price stability and rapid growth".⁷⁹ He also describes a combination of factors which led to worsening inflationary problems during the 1980s: (i) higher oil prices from the 1970s caused significant trade and current account deficits in Brazil, forcing the government to adopt swift changes to create sudden trade surpluses in order to finance expensive oil imports (larger government deficits and higher inflation would follow); (ii) Third World exclusion from international financial markets led the Brazilian government to finance more of its own deficits, resulting in growing government debt because of a general lack of availability of long-term capital, and (iii):

loose monetary and fiscal policies, coupled with the measures adopted to generate trade surpluses had pushed inflation to above 200 per cent a year.(...) interest rates were high in real terms...and there was widespread indexation of wages and prices.⁸⁰

The World Bank (2004) described the 1980s as the "lost decade" for Brazil, but the same could easily be said about most developing countries in general. Their data for Brazil shows that average CPI inflation (annual) for the years 1981-94 was an astounding 507.2% while GDP growth had slowed to 1.9%, down from 6.8% during the 1974-80 years and 7.5% during the 1950-73 years. Furthermore, the current account deficit worsened to US\$2,716 million during the years 1981-94, far worse than the deficit of US\$354 million from the years 1950-73; external debt as a ratio of GDP for the years 1981-94 was 27.3%, up from 17.6% from the years 1950-73.⁸¹ To a very large extent,

the growing accumulation of external debts in Brazil and much of the developing world contributed heavily to the sudden debt crisis of the 1980s. In fact, while citing World Bank data, Chossudovsky (2003b) highlights that total external debt (long-term) among developing countries increased from US\$62 billion in 1970, to US\$481 billion in 1980, to as much as US\$1.5 trillion in 1990.⁸² Combining these mounting debts with falling commodity prices and subsequent declines in export values during the 1980s, developing countries, including Brazil, “had become net exporters of capital in favor of the rich countries. The flow of actual debt servicing was in excess of the new inflows of capital...”⁸³ Ultimately, the debt crisis of the 1980s in much of the developing world would be characterized by the need to devote larger and larger shares of export revenues for debt servicing, further exacerbating the crisis.

Needless to say, the Brazilian government was poised to pursue aggressive stabilization programs to get themselves out of this growing crisis. Sweeping political change began to arrive in 1985 with the installation of a new civilian government led by José Sarney, ending 21 years of military rule by João Figueiredo. Suddenly, more people and institutions began lobbying the new government for their share of revenues and benefits, leading to further increases in government spending and worsening deficits, not to mention further increases to inflation.

But around this time, however, economists in Brazil began to realize that existing fiscal and monetary policies, particularly the system of compulsory indexation, were utterly useless in fighting inflation. They saw the need to curb inflation’s inertial component, and the best way of doing this, they believed, was to adopt a set of unconventional and untested ideas as part of a new stabilization strategy known as “heterodoxy.” According to Dornbusch (1997), heterodoxy was “not only to control demand, but, more important, to coordinate a stop to wage and price increases, which feed on one another”.⁸⁴ This was obviously a strategy that carried tremendous risks, both economic and political. In 1986, the *Cruzado Plan* was introduced as Brazil’s first unorthodox stabilization program. While highly secretive, the *Cruzado Plan* sought to impose “by surprise” the following shocks: (i) introduce the *cruzado* as the new currency,

while removing three zeros from values under the previous currency (*cruzeiro*); (ii) freeze all prices and exchange rates from February 27, 1986; (iii) convert any old contracts and payments to the new currency, and (iv) convert all wages into *cruzados* based on the real average wages from the previous six months.⁸⁵ The plan was to eliminate inflation overnight since the bulk of Brazil's inflation was not caused by money creation, but rather by growing wages and prices. While initially successful in reducing inflation, the freezing of prices and the exchange rate, as well as the sudden economic disequilibria caused by excessive demand, would later bring falling exports, a sharp rise in imports, growing trade deficits, and eventually a new devaluation of the *cruzado*, spawning a new wave of inflation.⁸⁶ Simply put, these failed attempts highlight the failures of expansionist policies in achieving economic stability in Brazil. After the collapse of the *Cruzado Plan* and other failed heterodox programs (i.e. the 1987 *Bresser Plan* with its wage and price freezes and more currency devaluations, the 1990 *Collor Plan* with huge spending cuts, tax hikes, structural reforms, privatization of public enterprises, freezing of regular savings accounts, as well as the 1991 *Collor II Plan* of more unsuccessful wage and price freezes),⁸⁷ annual inflation in Brazil had reached 1,037% in 1988 and 1,782% in 1989.⁸⁸

Sadly, as described by Weyland (2002), those who fared the worst from such failed heterodox programs were Brazil's poorest citizens:

Renewed inflation and governmental austerity measures, such as budget cuts and increases in public sector prices, eliminated the significant income gains that the less well-to-do had made initially. By the late 1980s, these disadvantaged sectors were worse off than before the adoption of heterodox programs...⁸⁹

But, if we take a glimpse into the hidden agenda behind the *Collor Plan* and the political landscape in Brazil in 1990, we will see firsthand just how serious Brazil's financial situation had become. The 1990 *Collor Plan* sought to increase privatization, liberalize trade, float the exchange rate, and slash thousands of federal jobs in an effort to eliminate a US\$31 billion budget deficit. Also, savings accounts were frozen in an effort to control inflation, but ultimately the measures stunted economic growth while

producing massive unemployment. As Chossudovsky (2003b) notes: “The hidden agenda of Plan Collor consisted in curtailing public expenditure and cutting wages so as to release the money required to service the external and internal debts.”⁹⁰ The IMF, meanwhile, was prepared to endorse the *Plan* by offering a US\$2 billion stand-by loan (on behalf of 22 foreign commercial banks), but later rescinded after Brazil’s chief debt negotiator, Mr. Jorio Dauster, insisted that Brazil only make debt payments based on its ability to pay. The Brazilian government, Chossudovsky (2003b) adds:

was caught in a vicious circle: the granting of ‘fresh money’ from the IMF needed to repay the commercial banks was being blocked by the advisory group representing those same commercial banks – an impossible situation. The government had satisfied all the conditions laid down by the IMF, yet Brazil was still on the blacklist.⁹¹

By May 1991 a more IMF-friendly economic team was appointed in Brazil: Marcilio Marques Moreira, a close friend of the IMF’s Michel Camdessus, was appointed minister of finance, and Pedro Malan, advisor for the Inter-American Development Bank, replaced Jorio Dauster as chief debt negotiator. Soon after, the IMF returned to Brazil with demands for stronger changes “to allow a larger share of state revenues to be redirected towards servicing the debt with the commercial banks. Yet, several clauses of the 1988 Constitution stood in the way of achieving these objectives.”⁹² Changes to the Constitution as required by the IMF included the lifting of a job-security clause for federal civil servants (in order to allow for massive layoffs), as well as a lifting of clauses pertaining to the state pension plan and the privatization of state enterprises, all as a way of achieving new budgetary targets. By late 1991, Mr. Camdessus had given his approval to a new US\$2 billion agreement that would set Brazil off into “a far more destructive set of economic reforms.”⁹³

By mid-1992 political scandal was beginning to exacerbate the already difficult economic situation in Brazil. President Fernando Collor de Mello, fighting off impeachment threats related to charges that he was personally involved in the extortion of public funds, was also working out a deal with international creditors, well out of the public eye. From June to September 1992, finance minister Moreira, pressured by an

instable Sao Paulo stock exchange and capital flight, reaffirmed the relationship of the Brazilian government with IMF and commercial creditors by agreeing on a “restructuring formula” for the US\$44 billion owed to these creditors. As a matter of convenience, Chossudovsky (2003b) notes that the agreement “was disclosed shortly before Collor’s impeachment...on 29 September 1992. It was a sell-out: Brazil’s burden of debt servicing would increase substantially as a result of the deal.”⁹⁴ The economic fallout was crippling: in addition to the impoverishment caused by the initial *Collor Plan*, unemployment was rising, real wages were falling, social programs were slashed, currency devaluations (the *cruzeiro*) were imposed, privatization of state enterprises was ongoing, and inflation was running rampant. Furthermore, Chossudovsky (2003b) notes: “A hike in real interest rates imposed on Brazil in 1991 by the IMF had contributed to fuelling the internal debt, as well as attracting large amounts of ‘hot’ and ‘dirty’ money into Brazil’s banking system.”⁹⁵

It was now painfully clear that the IMF’s hidden agenda was beginning to emerge, and Brazil’s economic (and debt) crisis was coming full circle by the early 1990s. The main priority, as set out by the IMF’s conditions, was not only to collect on debts, but also to keep Brazil deeply indebted into the future.

B. The Emergence of Fernando Cardoso and The *Real Plan* of 1994

Following the impeachment of President Collor in 1992, Mr. Itamar Franco was inaugurated as president of Brazil. Franco wanted to introduce economic reforms which he felt would be popular among Brazilians (i.e. increased real wages, lower utility prices, less privatization), but his ideas would generate no support from creditors given Brazil’s commitments to IMF agreements. As a show of force, the IMF refused to endorse any of Franco’s first three nominated finance ministers. By this time, Brazil was unable to meet its quarterly deficit targets and was subsequently blacklisted by the IMF. By May 1993, after the firing of Franco’s third finance minister, the IMF made its return, this time demanding the usual constitutional reform and continuity of its agenda in Brazil.⁹⁶ So despite Franco’s best efforts amid IMF opposition, economic problems continued to

worsen in Brazil under his presidency. Monthly inflation in Brazil went from the 22-25% range in 1992 to 33.9% by August 1993, and the population, now expecting further shock stability plans, was growing increasingly uncertain about the state of their economy.⁹⁷

Newly appointed finance minister Fernando Henrique Cardoso represented a continuation of the Brazilian debt saga. Even though he was a leftist intellect, he would ultimately support the neo-liberal agenda set forth by the IMF in his duties as finance minister. While President Collor entrusted (not by choice) Cardoso with the power to make economic policy decisions for Brazil, “the finance minister understood that passage of the IMF reforms would require the manipulation of civil society.(...) Public opinion was led to believe that the proposed deindexation of wages was the only means ‘of combating inflation.’”⁹⁸ As a result, Cardoso, with the approval of the IMF, was set to introduce radical reforms. By June 1993, massive budget cuts (50%) to education, health, and regional development were introduced. Real wages had declined by 31%, saving the government US\$11 billion.⁹⁹ Continuing with the comprehensive stability initiative, Cardoso then embarked the Brazilian economy into a daring “gradual shock” approach to achieve stability. In the words of Weyland (2002): “A ‘gradual shock’ promised to end accelerating inflation and thus boost the minister’s chances in the upcoming presidential election.(...) it also threatened to unleash...hyperinflation.(...) Cardoso typically shunned safety and pursued the riskier course of action”.¹⁰⁰ The first step of this process that would later be known as the *Plano Real (Real Plan)*, sought to alleviate the state’s fiscal problems by allowing the state to retain more of the funds previously transferred to states and municipalities, a step dubbed the *Emergency Social Fund*.¹⁰¹ However, this fund was merely part of a much larger requirement for “a massive release of state financial resources in favor of the creditors”¹⁰², meaning that this fund served no other purpose than to redirect state revenues toward debt servicing. The next step of the plan sought to accelerate indexation through the use of a carefully planned indicator for economic valuation: the *Unidade Real de Valores (URV)*. The URV unit was pegged to the dollar at a one-to-one parity and adjusted daily. Furthermore, Weyland (2002) adds:

The URV served to eliminate distortions in the relative price system that indexation had created.(...) the government urged economic actors to adopt the URV, which minimized lags in readjustment and thus ended distortions in the relative price system.¹⁰³

By the time economic agents had become accustomed to converting their prices into the new URV and price stability had been achieved, the government was ready to end the daily readjustments by transforming the URV into a new currency. On July 1, 1994, the *real* was born. In its beginning, the *real* was pegged to the US dollar and new government reductions in trade barriers quickly minimized inflation. Monthly inflation fell from 47.7% in June to 6.1% in July and 2.8% by August.¹⁰⁴ For the first time in recent memory, the newfound stability of exchange rates and gradual dollarization of prices, as seen through the successful implementation of the URV, were working to stabilize prices in Brazil. Unsurprisingly, the early success of the *Real Plan* saw Cardoso ride a wave of popularity (especially with creditors) that led him to victory in the presidential elections of 1994, where he defeated Luis Inácio (Lula) da Silva, a socialist critic of Cardoso's neoliberal stabilization programs. Ultimately, however, Cardoso's tenure would ensure a continuation of the neoliberal agenda where, in the words of Chossudovsky (2003b):

a *de facto* 'parallel government' reporting regularly to Washington has developed. Under the presidency of...Cardoso...creditors are in control of the state bureaucracy and of its politicians. The state is bankrupt and its assets are being impounded under the privatization program.¹⁰⁵

At the same time, other critical developments were taking place. Firstly, the exchange rate had actually appreciated, and by September 1994 the rate had risen by 15% relative to where it was on July 1st, while at the same time Brazil's price index was up by 31%, leading many to speculate that the new currency was already overvalued in its first year of existence (particularly creditors as they seek to impose devaluations).¹⁰⁶ Such overvaluation triggered fears of exchange rate unsustainability and a growing inability to service external debts. In his essay, Gustavo Franco (2000) argues that this early appreciation should come as no surprise. Through hypothetical modeling as illustrated in Figure 2, he concluded that, from a starting point "A" (equilibrium of high inflation with

a certain exchange rate - i.e. fixed parity – reflecting Brazil's conditions on July 1, 1994), we would observe the following:

because the price level does not change as quickly as the exchange rate, the economy actually moves rapidly to point 'B' [lower or zero inflation], where the real exchange rate is so low (depreciated) or the trade (current-account) surplus is so high that, in the absence of capital flights previously triggered by high inflation, there is a sizable external surplus, a strong pressure toward appreciation.(...) economy should find its way toward the new equilibrium at C, where the exchange rate has appreciated considerably in real terms, wages are higher, and the trade balance is lower [than at 'A'].¹⁰⁷

Franco describes the initial stage of the *Real Plan* as arriving at the equilibrium denoted by "C". Dornbusch (1997) confirms Franco's early predictions of higher real wages, real income, as well as lower levels of poverty. He stated that real wages saw massive increases early on as a result of new wage policies as well as the real appreciation; overall real income for the poorest half of Brazilians increased by 35% between 1993 and 1995.¹⁰⁸ With respect to real wages, Dornbusch stated that real minimum wages increased significantly, leading to an average increase in real labour income for the bottom 10% of Brazilian workers to double between 1993 and 1995. At the same time: "The ratio of those in the top 10 percent wage to that of those in the bottom 10 percent declined from 72 to 49".¹⁰⁹ Improvements to poverty were also observed since:

The real wage gains and increased employment moved almost 13 million people over the poverty line during the first years of the plan.(...) between 1990 and 1995, the total number of poor declined from 42 million to only 30.4 million, and the fraction of poor, from 30 percent to only 21 percent.¹¹⁰

Naturally, one must wonder at this point how long these trends might last.

An underlying problem of Brazil's sudden economic recovery was that its current account deficits were continuously rising. The sudden focus on trade liberalization made a depreciation of the *real* almost a certainty if exports were to increase, especially since exports were so heavily relied upon for debt servicing. While the 1991-1993 current account average was positive (US\$ 1.4 billion), the exchange rate appreciation stemming

from the early stage of the *Real Plan* saw the sudden appearance of a current account deficit (\$US 1.7 billion or 0.3% of GDP).¹¹¹ A new debate quickly emerged: while it might seem normal to have slight current account deficits as part of achieving stability, it is next to impossible for a country to initiate trade reform simultaneously with efforts to maintain stability. On the one hand, trade reform requires a devaluation to maintain trade surpluses, but on the other hand, stabilization policy (i.e. deflation) requires or sometimes produces exchange rate appreciations. What did Brazilian policymakers decide? As it turns out, they wanted to pursue both programs in 1994 because, as Franco (2000) explains:

Policymakers had difficulties segregating stabilization from reforms. Hyperinflation and fiscal disarray, on the one hand, and the accumulation of distortions in trade and industrial policies, on the other, seemed to be different halves of the same process of policy deterioration.(...) policymakers were convinced that stabilization and trade reform would benefit one another by creating a powerful inducement for change...¹¹²

Therefore a “big push” strategy was adopted, and the *Real Plan* took effect on July 1, 1994 with an adjustable exchange-rate system that would face both stabilization and trade reform challenges. As we saw, the initial success pointed to the achievement of initial stabilization, but to which extent could the exchange rate flexibility allow for the needed depreciation for trade reform to thrive? Given the sudden emergence of current account deficits, it became evident that the *Real Plan*’s next step would have to place a certain level of priority on trade reform in order to maintain a steady flow of revenues to service the debts as required by foreign creditors.

As a second phase, the *Real Plan* would see a departure from the flexible (with daily adjustments) exchange system in favour of a “crawling-band” system, characterized by flexible exchange rates operating within predefined upper and lower limit bands. By September 1994 when the exchange rate reached a low (appreciated) level of R\$0.83, followed by a rapid depreciation after the Mexican crisis at the end of 1994, the central bank established its initial exchange rate bands: a floor of R\$0.83 to avoid excessive appreciation and a ceiling of R\$0.86 to prevent a level of depreciation that could threaten

stabilization. By March 1995 these bands changed to R\$0.88 and R\$0.93; in fact, these bands would change virtually every year until the end of 1998 when the whole system was set to implode. By the end of 1998, the bands had inflated to R\$1.12 and R\$1.22.¹¹³ Clearly, pressures to depreciate the *real* grew quickly in the years following the introduction of the *Real Plan*. At issue yet again is the oft-ignored relationship between Brazil's external debts and its exchange rates. As mentioned earlier, the neoliberal agenda being pursued within the *Real Plan* implied the need (from creditors) to keep the currency devalued as a way of maintaining a steady flow of export revenues in order to service its foreign debts. Combining this with the crippling cuts in public spending as well as the setting of high interest rates, it should come as no surprise that, in the words of Chossudovsky (2003b):

The 'restructuring' of Brazil's external debt – together with the adoption of the so-called 'Real Plan' – had been imposed by the New York Banking Committee. This 'economic stabilization' program had contributed to the swelling of Brazil's internal debt from 60 billion dollars in 1994, to more than 350 billion in 1998...¹¹⁴

During these years, however, international troubles were becoming increasingly problematic for Brazil. The Asian crisis of October 1997 and the Russian moratorium of August 1998 took a heavy toll on Brazil's already large external constraints. Franco (2000) argues that the Russian moratorium caused so much turbulence that Brazil's standing in international financial markets had become weakened to the point where another IMF agreement became inevitable. According to Franco (2000), the new precautionary IMF agreement was meant to "prevent a major devaluation in Brazil and thus stop contagion of other Latin American countries with good records of market-oriented reforms. The IMF would coordinate the program, which was...up to US\$ 41.5 billion".¹¹⁵ The Russian crisis, Franco argues, led to a moratorium of sorts where:

it launched a worldwide reassessment of investment in emerging markets by all classes of international investors and financial institutions. This had a deep impact on Brazil in view of Brazil's 30 to 45 percent share in emerging-market portfolios...¹¹⁶

Unsurprisingly, the IMF sponsored a decision to pass the buck by shifting the burden of Russia's crisis to countries who could not afford it, causing devastating effects to emerging market countries' holdings of Brady (debt) bonds. As described by Franco (2000): "Burden sharing had become burden shifting, and countries far away from Russia...were obliged to pay an unduly high price for problems that were not theirs".¹¹⁷ Realistically, however, the US\$41.5 billion loan and the burden of the Russian crisis in Brazil did little other than enhance the financing of capital flight, setting the stage for an unprecedented financial meltdown in January 1999. Unlike the IMF bailout agreements in Asia after the 1997-98 Asian crisis, Brazil's US\$41.5 billion package was launched in November 1998, two months *prior* to the major financial collapse. While the plan was officially meant to assume a preventive role, it did little else than exacerbate a speculative onslaught, as witnessed by the sudden departure of central bank reserves to the tune of US\$400 million per day. Such capital flight would continue, and eventually, by January 1999, central bank reserves had shrunk to US\$27 billion.¹¹⁸ The timing of this operation implied that it was nothing less than a coordinated raid on Brazil's central bank reserves: first came the November 1998 agreement, then came a predictable period of exchange rate stability during which speculators were able to snap up some US\$20 billion, knowing very well that a devaluation was in the works. Ultimately, the decision was made in January 1999 to allow for a massive currency devaluation (the *real* had lost nearly half of its value), which quickly led to the crash of the Sao Paulo stock exchange on "Black Wednesday" (January 13th).¹¹⁹ The *Real Plan* was officially dead, the currency was floating, an unthinkable devaluation had just taken place, and interest rates had spiked, as illustrated in Figure 3. Shortly thereafter, alternatives to the *Real Plan* were being considered. One such alternative consisted of floating the *real*, which of course left the door open to further speculative attacks, especially if foreign creditors were the ones designing their own exchange controls. In regards to this proposal, Franco (2000) points out that:

Floating could lead to an uncontrolled Asian-style mega devaluation, the consequences of which for inflation and for neighboring countries would be totally unpredictable.(...) very few, if any, observers proposed floating, except for the future, after things had calmed down.¹²⁰

President Cardoso would later announce that Brazil would adopt a complicated “endogenous diagonal band” system, a decision which prompted the resignation of then-central bank governor Gustavo Franco (Note: the same Gustavo Franco whose essay I have made reference to), who opposed policy changes. This new band system would eventually collapse within 48 hours, and newly appointed governor Francisco Lopes, a professor, lasted two weeks on the job before being dismissed. On March 8, 1999, he would be replaced by Mr. Arminio Fraga Neto, a former advisor to American speculator George Soros, a move that would not only further entrench Wall Street’s influence in Brazil’s central bank, but also confirm a continuation of capital flight out of Brazil. In the meantime: “Under the new IMF ploy signed in February 1999, capital flight was to continue unabated.(...) following the financial meltdown of January 13th, capital outflows were running at 200 to 300 million dollars a day.”¹²¹

C. Beyond the 1999 Devaluation: Inflation Targeting

On January 6, 1999, a moratorium on debt payments owed to the federal government had been announced and the subsequent devaluation had left its mark on the economy as witnessed by the financial collapse of January 13th. With the arrival of Arminio Fraga came the move to allow the *real* to float. Since Brazil was new to the idea of a floating currency, nobody knew for sure what the economic impacts would be, and nobody knew if the worse was yet to come.

1. Macroeconomic Effects of Devaluation

In his paper, Victor Bulmer-Thomas (1999) describes some of the macroeconomic effects of Brazil’s sudden devaluation. He explains that in theory, a devaluation typically brings change to relative prices: on the one hand, tradable goods (i.e. exportable or import-competing products) gain while on the other hand non-tradable goods (i.e. non-exports) will suffer. Therefore, firms are more likely to devote more resources towards the production of tradable goods by switching away from non-tradable goods. Another byproduct of such a devaluation, he argues, is: “The rise in nominal

interest rates needed both to compensate for higher inflation and to reduce domestic expenditure¹²², which can make the servicing of public sector debts that much more difficult.

In Brazil, the devaluation brought with it inflation, reaching monthly levels of 4% by February 1999 as illustrated in Figure 1; the central bank's response was a dramatic hike in the interest rates, and as seen in Figure 3, these rates reached annual levels near 50% in conjunction with a new policy commitment: inflation targeting¹²³ (to be discussed later in this section). With regards to trade, the plan was to allow exports to increase with considerable reductions in imports such that the trade deficit would be replaced by a trade surplus within the first few years, thus allowing Brazil's current account deficit and external debts to fade away (current account balance movements charted in Figure 4). Increased exports of such goods as soybeans, coffee, and sugar were expected, as were increases in the domestic production of cotton and wheat, and even steel and automobile parts to alleviate imports.¹²⁴ By 1999 public sector deficits had been rising steadily, due in large part to the Cardoso administration's policy of issuing massive internal debts at varying rates of interest in order to cover the public sector deficit. Servicing these internal public debts was very difficult with the increasing interest rates which accompanied the devaluation because most of these debts were tied to varying rates of interest while the rest was dollar-linked.¹²⁵ Under these precarious conditions came the announcement in June 1999 that inflation targeting was being adopted as an official monetary policy strategy. We shall now examine Brazil's early experiences (i.e. with public debts, current accounts) under this new policy initiative.

2. Brazil's Experiences with Inflation Targeting

As mentioned in Part I, after Brazil had allowed its currency to float following the economic collapse and subsequent devaluation, the first announced inflation targets were set at 8% for 1999 and 6% for 2000, each operating with a 2% band; by December 1999, 12-month inflation was 8.9% and by December 2000 it was exactly 6%, meaning initial targets had been attained within two years. But how successful was this inflation

targeting with respect to debts, the exchange rate, and the current account? According to Giavazzi, Goldfajn, and Herrera (2005), by 2002 the inflation targeting strategy began showing signs of strain: with a presidential campaign looming, Brazil was experiencing a dramatic slowdown in capital flows (roughly 6% of GDP) as well as an exchange rate depreciation nearing 50% (See Figure 5 for exchange rate movements after the year 2000). These shifts resulted in an overall increase in the share of public debt as a ratio of GDP: “The ratio of net public debt to GDP jumped, in a few months, from 0.54 to 0.63”, and, with respect to our focus on dollarization, “after two years (1999-2000) of continuous reduction, the proportion of dollar-linked debt increased again in 2001”.¹²⁶ In the section that follows, I will examine Brazil’s experiences with inflation targeting as they relate to public debt, the exchange rate, as well as the current account. To do this, I will rely upon the analysis presented within the work of Pastore and Pinotti (2005).

Brazil’s public debt was very large when inflation targeting began in 1999; so large, in fact, that the public debt to GDP ratio had almost doubled between the mid-1990s and 1999, climbing continuously since the onset of the *Real Plan*. By the end of 2003, this ratio was nearly 58%.¹²⁷ Historically, the authors argue, Brazil has always relied on artificial means to control their public debt, especially through the use of above normal interest rates. It wasn’t until 1998 that primary fiscal surpluses were being observed in Brazil, and this turnaround was due in large part to the government’s strong commitment to restructure the debts of its states and municipalities, mainly through the new *Law on Fiscal Responsibility*, which featured:

limits for expenditure on personnel, annual fiscal targets and ceilings on the public debt, rules requiring the compensation of any new permanent expenditures and any reduction in tax revenues, and rules to control public finances in electoral years.(...) most important innovation was the prohibition of the federal government from financing state and local governments beyond the yearly legal transfers.¹²⁸

Furthermore, primary surpluses were on the rise due to a growth of revenues. While the revenues of existing federal taxes saw little growth between the years 1997-2003, the bulk of new revenues came from new taxes that required no sharing of revenues

with the states. Overall, “total tax receipts rose from 26 to 36 percent of GDP between 1998 and 2003”.¹²⁹ However, despite these new revenues, the government would be forced to initiate several difficult expenditure-cutting moves in order to maintain its commitment of achieving primary fiscal surpluses (and thus servicing its debts). For example, cuts were made to public sector workers’ payroll, and readjustments of the minimum wage levels were made such that they would remain below the rates of inflation.¹³⁰ Therefore, Brazil’s ability in maintaining public fiscal surpluses would come at a significant cost to consumers, who have been forced to endure higher taxes as well as shrinking minimum wages.

With strong exchange rate depreciations occurring during the initial stages of the inflation targeting regime, many believed that Brazil would not be able to achieve price stability anytime soon. However, as Pastore and Pinotti (2005) point out, the pass-through of exchange rate depreciation to consumer prices in Brazil was very low during and after the initial transition phase where the currency was allowed to float, thus enabling the central bank to achieve its inflation targets until 2001. However, with hefty depreciations in 2001 (roughly 40% from January to October) and 2002 (roughly 60% between January and October), combined with an economic slump illustrated by GDP figures in Figure 6 and rising interest rates for 2001 (See Figure3), not even a low pass-through effect could prevent inflation from exceeding its annual target for 2002. These massive depreciations led to a quick expansion of economic activity due in large part to higher production of tradable goods. As a result of these events in 2002, the central bank was forced to increase its inflation targets from 6% to 8%. Ordinarily, such a move to announce new bands rather than raising interest rates and jeopardizing growth would garner extra credibility to the central bank, but in this case the need for such credibility is rather meaningless considering the 2002 appointment of Wall Street speculator George Soros as head of Brazil’s central bank. As I argued in Part I, successful inflation targeting requires both credibility and flexibility, but with Wall Street creditors holding positions of influence within Brazil’s central bank, neither of these requirements remain an issue. Eventually, in the buildup leading up to the 2002 presidential elections, things kept getting worse. The interest rates on Brazilian dollar-denominated debt were rising

sharply (Figure 3), the exchange rate continued to depreciate (Figure 5), and inflation was heating up (Figure 1). With the election of “Lula” as president in October 2002 came a commitment to target high primary surpluses, which, according to Blanchard (2005):

convinced financial markets [creditors] that the fiscal outlook was better than they had feared. This in turn led to a decrease in the perceived probability of default, an appreciation of the real, and a decrease in inflation. In many ways, 2003 looked like 2002 in reverse.¹³¹

So after October 2002 the exchange rate actually began to appreciate (Figure 5), and soon thereafter came the announcement of a US\$30 billion IMF agreement which was, according to Giavazzi, Goldfajn, and Herrera (2005): “Conditional on Brazil maintaining ‘responsible policies’ in the next few years: fiscal primary surpluses, inflation targeting, a floating exchange regime and respect of contracts, including the public debt”.¹³² Interest rates were then raised (Selic went from 18% to 25% by December), meaning that the conditions were set yet again for the financing of further capital flight, spiraling debts, and further privatization of state enterprises in Brazil. Altogether, Giavazzi, Goldfajn, and Herrera (2005) confirm newly elected President Lula’s loyalty to IMF conditions by commenting that he:

delivered on his promises: the new government maintained the floating exchange regime and inflation targeting, made clear that public debt would be honored, and increased the primary surplus by a half percent of GDP. Far from falling into a vicious circle, the economy rapidly stabilized.¹³³

I will describe more of the policies which were enacted after Lula’s election in Part III of this paper. Now that we have seen how Brazil’s inflation targeting regime has fared in generating public fiscal surpluses given the volatility of exchange rates, how has Brazil fared in its pursuit of generating a current account surplus?

The combination of flexible exchange rates and inflation targeting have proved beneficial not only for controlling inflation, but also for the adjustment of the current account. The continuously depreciating exchange rates of the years 2001 and most of 2002 (See Figure 5), as mandated by the foreign creditors, happened to be conducive to

the stimulation of output of tradable goods, since a current account surplus had been achieved by 2003 (Figure 4) for the first time since the introduction of the *Real Plan* in 1994. Considering the relatively low pass-through of the exchange rate to consumer prices in Brazil during these years, many consider shocks to nominal exchange rates to be roughly equivalent to shocks to the real exchange rates. In their paper, Pastore and Pinotti (2005) argue that a positive correlation is observable when comparing Brazil's current account balances with its real exchange rate (versus the dollar). They claim that:

A significant portion of Brazil's exports are in commodities...whose prices are approximately fixed in dollars, and domestic prices in reals, instantaneously almost fully adjust to the exchange rate depreciation, producing a strong expenditure-switching effect. The evidence of this effect appears clearly in the higher pass-through to wholesale prices...than to consumer prices...and also in the current account response to the real exchange rate.¹³⁴

While it may then be tempting to propose that the central bank adopt a system of depreciated exchange rate targets as a way of ensuring steady stimulus to the production of tradable goods, a number of theoretical problems may persist in doing so. Firstly, the use of any type of exchange rate targets might undermine the central bank's ability to execute monetary policy, making it difficult to combat sudden shocks. However, in the case of Brazil, this point loses its relevance considering that exchange rate depreciations (like the central bank's decisions) are mandated by foreign creditors, and any gains to the current account would surely be earmarked for debt servicing, adding to the already rampant levels of capital flight. Secondly, it will artificially create a demand for dollar-denominated bonds, creating serious mismatches between government assets and liabilities and contributing to the growth of dollarization (to be discussed more in Part III). Thirdly, real interest rates would be used more heavily to defend unwanted changes to the exchange rates, opening the doors to wild shifts in output. Furthermore, what happened in Brazil, Pastore and Pinotti (2005) argue, was that the current account surpluses achieved in 2002 were also the result of a reduction in consumption. They argue that there exists an inverse correlation between current account balances and consumption, "demonstrating that contracting absorption, or better, contracting consumption, contributed to the adjustment in the current accounts".¹³⁵ But not only did

depreciating exchange rates lead to lower consumption, but so did the rising burden of taxes (the 26 to 36% of GDP between 1996 and 2002 referred to earlier) by reducing consumers' disposable income. Altogether, it would be unwise to propose that a central bank adopt a set of depreciated exchange rate targets for the reasons just explained. The failure of the *Real Plan* shows precisely what can go wrong when an overvalued currency is maintained, but the latter arguments show precisely what harm can be done if an artificially undervalued currency is maintained. An undervalued currency, the authors conclude:

has its own costs: to encourage production of tradable goods, the country has to tolerate reduced consumption.(...) the country will be reducing its overall savings, and to the extent that this undervaluation leads to current account surpluses, it will be exporting capital [i.e. capital flight].¹³⁶

Having now documented the key events that have shaped Brazil's endless pursuit of economic stability, I will now focus attention on what has occurred under the Lula administration. Returning to the discussion of dollarization and its place in Brazil, the third and final section of this paper will continue to examine the influence foreign creditors have had in Brazil and how their policies have contributed to dollarization in Brazil. As I mentioned at the beginning of this paper, we will quickly learn that dollarization has entered Brazil in ways not outlined by mainstream definitions.

PART III: Under Lula: Has Dollarization Already Arrived?

While mainstream academic literature points out that dollarization has been denounced as a policy tool for Brazil, one must wonder if things are different "behind the scenes". In this section I will outline what changes, if any, have come to Brazil's economic situation since Luis Inácio (Lula) da Silva was elected President in 2002. In doing so, I will be returning to the discussion on dollarization by investigating and discussing some recent literature and economic data which show just how dollarized the Brazilian economy actually is, regardless of whether or not dollarization is even to

Brazil's benefit. From this I will be able to draw some conclusions as to whether or not dollarization has actually become a way of life in Brazil, as it may be inevitable given its obligations to foreign creditors.

A. Dollarization Through Financial Integration

In their paper, Rochon and Vernengo (2003) argue that dollarization is “part of a more general movement towards greater financial openness(...). The process was intensified by the deregulation of financial markets in several underdeveloped countries during the 1990s”.¹³⁷ This statement is in line with what was discussed in much of the previous section; it was in the early 1990s that US financial interests became heavily involved in the process of financial deregulation in Brazil, particularly through massive, condition-laden IMF bailout packages, ultimately setting the stage for financial ruin through mandated constitutional reform, devaluations, and capital flight. As a consequence of the heavy conditions attached to these loans, debt servicing would become a priority, meaning the privatization of state assets, massive cuts to public spending, and capital flight would become prevalent. A major problem, as we are about to find out, is that these consequences will contribute greatly to increasing dollarization in Brazil, owing especially to the growth of dollar-denominated debts. Worst of all, this creates a hopeless dependency between Brazil's finances and foreign creditors holding dollar-denominated debts. In sum, the authors conclude: “To the extent that investment is financed through bank loans, the path to higher growth may go through American multinational corporations that enjoy existing ties with American banks”.¹³⁸ With the election of Lula as president, will these trends continue?

B. Lula's Presidency: Behind the Scenes Dollarization?

As mentioned in Part II, Brazil's economy was in a tailspin in the months leading up to the presidential election of October 2002. Under the campaign banner “Another World is Possible”, Luis Ignácio (Lula) da Silva was elected. This victory represented a shift of sorts since Lula, representing the Workers Party (*Partido dos Trabalhadores* - or

PT), ran a campaign filled with promises for political change and an anti-neoliberal, anti-free-market, anti-globalization economic agenda.¹³⁹ However, what has often been ignored in the literature is that the incoming Lula administration would not bring any such change at all; in fact, as we are about to see, the worst that free market reforms have brought to Brazil were still to come. As Chossudovsky (2003a) argues: “Ironically, while applauding Lula’s victory, nobody...seemed to have noticed that President Luis Ignácio [Lula] da Silva’s PT government had already handed over the reigns of macro-economic reform to Wall Street and the IMF”.¹⁴⁰ A little background information is perhaps necessary at this point.

Immediately after assuming his role as President, Lula appointed Mr. Henrique de Campos Meirelles, a well-known Wall Street financier, as head of the Banco Central do Brasil (central bank). Also, Lula appointed Mr. Antonio Palocci, a former manager of J.P. Morgan, as Minister of Finance, and Mr. Casio Casseb Lima, formerly of Citigroup in Brazil, as head of Banco do Brasil, the country’s largest State commercial bank. As a result, “The country is in financial straightjacket. The three key finance/banking positions in Lula’s administration are held by Wall Street appointees”.¹⁴¹ Opposite to his campaign promises, Lula and his administration seemed poised to:

maintain the policy framework of his predecessor [President Fernando Henrique Cardoso]: tight monetary policy, generalized austerity measures, high interest rates and a deregulated foreign exchange regime. The latter encourages speculative attacks against the Brazilian Real and capital flight, resulting in a spiraling foreign debt.¹⁴²

These appointments illustrate not only the continuity of both Lula and Cardoso’s policies, but also the visibly disproportionate presence of American banks and creditors (as alluded to by Rochon and Vernengo (2003) in the previous section) in Brazil. Lula had also promised that Brazil’s future would consist of policies that would steer the country in a far different direction than the one seen in Argentina, where a currency board arrangement had led to harsh economic ruin. But with the selection of Meirelles as head of the central bank, that promise would also be broken. Meirelles was a known supporter of Argentina’s former Finance Minister, Domingo Cavallo, who launched what was

supposed to be a stabilization plan in Argentina in the late 1990s. Specifically, Meirelles supported Cavallo's view that stabilization could be achieved through control of the money supply and government finances, but, as Chossudovsky (2003a) points out: "The so-called 'control of the money supply'...essentially means freezing the supply of credit to local businesses, leading to the collapse of productive activity...[resulting in] a string of bankruptcies, leading to mass poverty and unemployment", leading him to conclude that:

Cavallo was the architect of 'dollarization' [in Argentina]. Acting on behalf of Wall Street, he was responsible for pegging the Peso to the US dollar in a colonial style currency board arrangement, which resulted in a spiraling external debt and the eventual breakdown of the entire monetary system.¹⁴³

It became clear that Lula was not the least bit interested in honouring the non-neoliberal reforms he had campaigned for.

C. Just How Dollarized is Brazil?

The financial reforms that would eventually pave the way for financial market dollarization in Brazil began as far back as the early 1990s, when Meirelles, then a board member of the American Chamber of Commerce, began lobbying the Brazilian government to amend its young constitution, which had been ratified in 1988. He was seeking amendments that would allow the country to open itself up to foreign banks, mainly because "Constitutional reform was central to Wall Street's financial design. It was required to carry through the process of economic and financial deregulation".¹⁴⁴ After initial opposition from President Fernando Collor de Melo (1990), certain financial reforms were gradually put through by Fernando Henrique Cardoso, then Finance Minister under President Itamar Franco, as seen by massive spending cuts in education and health in 1993. Meirelles, who by that time was head of Latin American operations for BankBoston (now Boston Fleet), continued to lobby for constitutional reform, which he would eventually receive once Cardoso took office as President in 1994. So by the time the *Real Plan* was ready to be launched in 1994, Brazil's capital markets were

opened up to the world, and any restrictions that were previously in place to limit the market share of international banks was gone.¹⁴⁵ It was now open season for Wall Street's creditors to take control and dollarize Brazil's finances.

Loans granted by the IMF, while symbolically viewed as aid packages to help the recipient deal with its debts and kick start economic growth, often end up initiating financial capital flight on a massive scale. The massive loan package created for Brazil after the October 1998 elections (where Cardoso was reelected) was for a dollar amount exactly equal to the amount of Brazilian foreign currency reserves that had vanished prior to the January 1999 financial collapse (US\$30 billion). Chossudovsky (2003a) specifies that:

The amount considered by the IMF (30 billion dollars) is exactly equal to the money 'taken out' of the country...in the form of capital flight. But the central bank will not be able to use the IMF loan to replenish its hard currency reserves. The bail-out money...is intended to enable Brazil to meet current debt servicing obligations, i.e. to reimburse the speculators. The bailout money will never enter Brazil.¹⁴⁶

The next substantial IMF loan, in September 2002 (US\$31.4 billion), followed similar logic, but unleashed yet another disturbing trend: "The IMF loan is granted on condition the Central Bank retains a deregulated foreign exchange market coupled with domestic interest rates at very high levels".¹⁴⁷ These particular conditions, which were conducive to further US banking influence with the maintenance of high interest rates, were largely responsible for the broadening of already massive external debts that have characterized Lula's administration thus far.

By 2002 Brazil's real foreign debt was roughly US\$500 billion, along with US\$335 billion in public debt (both foreign and domestic), and the only thing that was keeping Brazil from a complete default was dollarization. According to an article published by the *Executive Intelligence Review* (2002), Brazil had already begun the dangerous trend of issuing dollar-denominated bonds in order to address its swelling public debts. A large part of these dollar-denominated debts were issued during President

Cardoso's second term, in order to appease foreigners who held *real*-denominated bonds while the exchange rate for the *real* was in the midst of wild depreciations. Overall, by 2002, roughly 45% of Brazil's debt bonds were dollarized, and subsequent depreciations to the *real* against the US dollar brought with them increases to the *real*-denominated size of the government's debt.¹⁴⁸ The following statement from the same article summarizes the plight of Brazil's debts under such conditions:

The Brazilian currency has come under speculative assault by its own creditors, and has plummeted from 1.12 reals to the dollar back in early 1998, to about 3.88 to the dollar, as of this writing [2002].(...) that devaluation has driven up Brazil's total government obligations, as measured in reals.¹⁴⁹

This of course leads us back to a point made in the last paragraph: these same speculators have managed to drive up the interest rates paid by the Brazilian government on these dollarized debts. For most of 2002, the SELIC short-term annual interest rate was hovering in the neighbourhood of 25%¹⁵⁰, as illustrated in Figure 3. Figures 3, 5, and 7 illustrate some of the effects that Wall Street speculators have been having on the Brazilian economy. For instance, Figure 3 shows that Brazil's SELIC rate continues to hover between 15-20% (annual rates), while Figure 5 shows that the *real*-US dollar exchange rate continues to hover around \$2.00 - \$2.50 (*reals* per US dollar), while Figure 7 shows how the level of net foreign debt has not faded recently, despite it representing a declining share of net GDP. These trends confirm two things: firstly, Brazil has been well on its way towards dollarization for years now; secondly, since the IMF and Wall Street creditors aren't leaving anytime soon, neither will the heavy burden caused by Brazil's outrageous foreign, dollar-denominated debts. Chossudovsky (2003a) concludes with the bold prediction that:

A currency board arrangement, similar to that of Argentina [prior to 2002] could be imposed. What this means is that the US dollar would become Brazil's proxy currency.(...) the country loses its economic sovereignty. Its central bank is defunct. As in the case of Argentina, monetary policy would be decided by the US Federal Reserve System.¹⁵¹

The information discussed within this section clearly indicate that Brazil is on a continuous path towards an advanced state of dollarization – perhaps eventual “full” or *de jure* dollarization. The more these trends of growing dollar-denominated debts, high interest rates and currency devaluations continue, the more likely that dollarization will remain a permanent fixture of the Brazilian economy in the years to come.

CONCLUSION

As I stated at the beginning of this paper, my goal was to provide a detailed analysis of the dollarization phenomenon and to investigate how it has made its way into the Brazilian economy throughout its troubled economic past. Part I of this paper sought to conceptualize dollarization, where I distinguished between the partial and full definitions of dollarization, whose main purposes are to dampen the effects of rampant inflation and restore economic stability into whichever country that adopts the dollar as medium of exchange and unit of account. The perceived theoretical benefits of dollarization include a reduction in the costs of foreign trade and better integration of the country’s financial sector with that of the United States (assuming we are dealing with the US dollar) which implies greater budgetary credibility and financial discipline. However, while there is no definitive measure of the concept, there is a point at which dollarization becomes irreversible, and often lost in the discussion on the merits of dollarization is its harmful byproducts. While losses in seignorage revenues are to be expected, the more crippling effects of dollarization begin to appear through the country’s loss of monetary policy independence. By dollarizing, the country simply concedes any ability to conduct its own monetary policy, and, in the signing of IMF-sponsored loan agreements, these countries then become the prey of speculators through the controversial policies of US-appointed officials who are suddenly appointed to key positions within the country’s financial architecture. Ironically, a country that chooses not to dollarize (i.e. Brazil) can find itself dollarized through mounting external debts brought on through their compliance to its debt relief aid programs. Part I also describes how the literature considers dollarization to be largely inappropriate for a country like

Brazil, given the size of its economy and the importance of trade in generating economic growth. I then described in relative detail two recent alternatives to dollarization that have been discussed and even pursued in Latin America in recent years. Specifically, we saw that a currency board operation like the one used in Argentina (until 2002) had led to increasing economic instability compounded by the large influence of international creditors in setting economic policies. Inflation targeting, which was officially adopted in Brazil following the massive devaluation of 1999, has certainly cooled inflation but, as we later saw in Part III, it had failed miserably to stabilize the economy, as witnessed by the negative effects that stemmed from the economic agenda pursued by Wall Street creditors.

Part II sought to provide a detailed chronology of the events and simultaneous outside influences which shaped Brazil's past economic struggles, characterized by staggering levels of debt and inflation. The postwar period of high yet stable inflation and solid growth quickly turned into a debt crisis following the oil shocks of the 1970s. Across the developing world, the rising debt crisis of the 1980s gave way to a controversial era of debt rescheduling and debt conversion programs put forward by international creditors, often combined with condition-laden macroeconomic policies enforced through IMF or World Bank loan agreements. Because the money from these loans went directly towards debt servicing and not into investment projects, these loans did little to benefit the real economy of these "recipient" countries. Among the conditions established within these loans, several developing countries like Brazil were forced to devote larger and larger shares of export revenues towards debt servicing, and through the "financial engineering and the careful art of debt rescheduling...debt is swapped for equity and 'new' money is 'lent' to nations on the verge of bankruptcy to enable them to pay off their interest arrears on 'old' debts so as to temporarily avert default, and so on."¹⁵² This "financial engineering" sought to enforce several key IMF conditionalities designed to favour debt servicing, including strict governmental compliance with implementing needed reforms (i.e. constitutional reforms to allow for massive job cuts and curtailed public spending), full deregulation of the country's banking sector (relinquishing powers of central and commercial banks to foreign

creditors), as well as the deregulation of capital movements (lifting safeguards against speculative currency exchanges to allow for speculative raids on central bank reserves through coordinated interest rate hikes and currency devaluations). Throughout the years several of the world's largest banks have acted both as creditors and speculators through their involvement in financing these debt loans. As Chossudovsky (2003b) notes:

In context of the Asian crisis [and to Brazil], they directly contributed (through their speculative assaults) to destabilizing national currencies thereby boosting the volume of dollar denominated debts. In the wake of the crisis, they reappeared as creditors with a view to collecting the debts which they themselves contributed to creating through the manipulation of currency markets.¹⁵³

This statement also shows how they contributed to the dollarizing process in the developing world through the dollar-denominated debts they introduced and whose values they subsequently inflated. The very people who are issuing dollar-denominated debts are the ones orchestrating speculative assaults against their central banks, further inflating the size and value of these same debts. The series of events described in such "financial engineering" of debtor countries has been well documented in the debt crises of the 1980s and beyond. As outlined in Part II, we began to see the emergence of these trends in Brazil, especially through the launching of the *Collor Plan* of 1990, where the push for privatization of state assets and massive cuts to federal jobs and spending was part of the IMF's hidden agenda in trying to release more funds into the servicing of Brazil's massive debts from the 1980s. Soon after the failure of this and other heterodox stability programs in the early 1990s, a more IMF-friendly economic team was installed, who were leaning towards a push for constitutional reform designed to free up yet more resources to pay off (or finance more) debts.

Furthermore, the 1990s in Brazil saw the continuation of "financial engineering" as evidenced by: (i) more privatization, job and public spending cuts, and currency devaluations through the US\$44 billion IMF loan after the impeachment of President Collor; (ii) the appointment of Henrique Cardoso as finance minister (and eventually president) who supported and initiated IMF-sponsored cuts to spending on education and health as well as the "gradual shock" approach of freezing prices and the exchange rate to

rid inflation; (iii) the launching of the *Real Plan* whose “big push” strategy of creating an overvalued currency (*real*) reduced inflation but led to eventual devaluations and capital flight while pursuing IMF-mandated trade reforms to further target debt servicing; (iv) the 1998 Russian crisis which saw the implementation of a US\$41.5 billion IMF loan that further enhanced capital flight and a speculative onslaught in which central bank reserves were reduced to only US\$27 billion, setting up the Sao Paulo stock market crash of January 1999, and (v) the 1999 decision to float the currency and the nomination of Wall Street creditors to operate Brazil’s central and commercial banks. These trends would ultimately continue right through 2002 in the lead up to that year’s presidential elections.

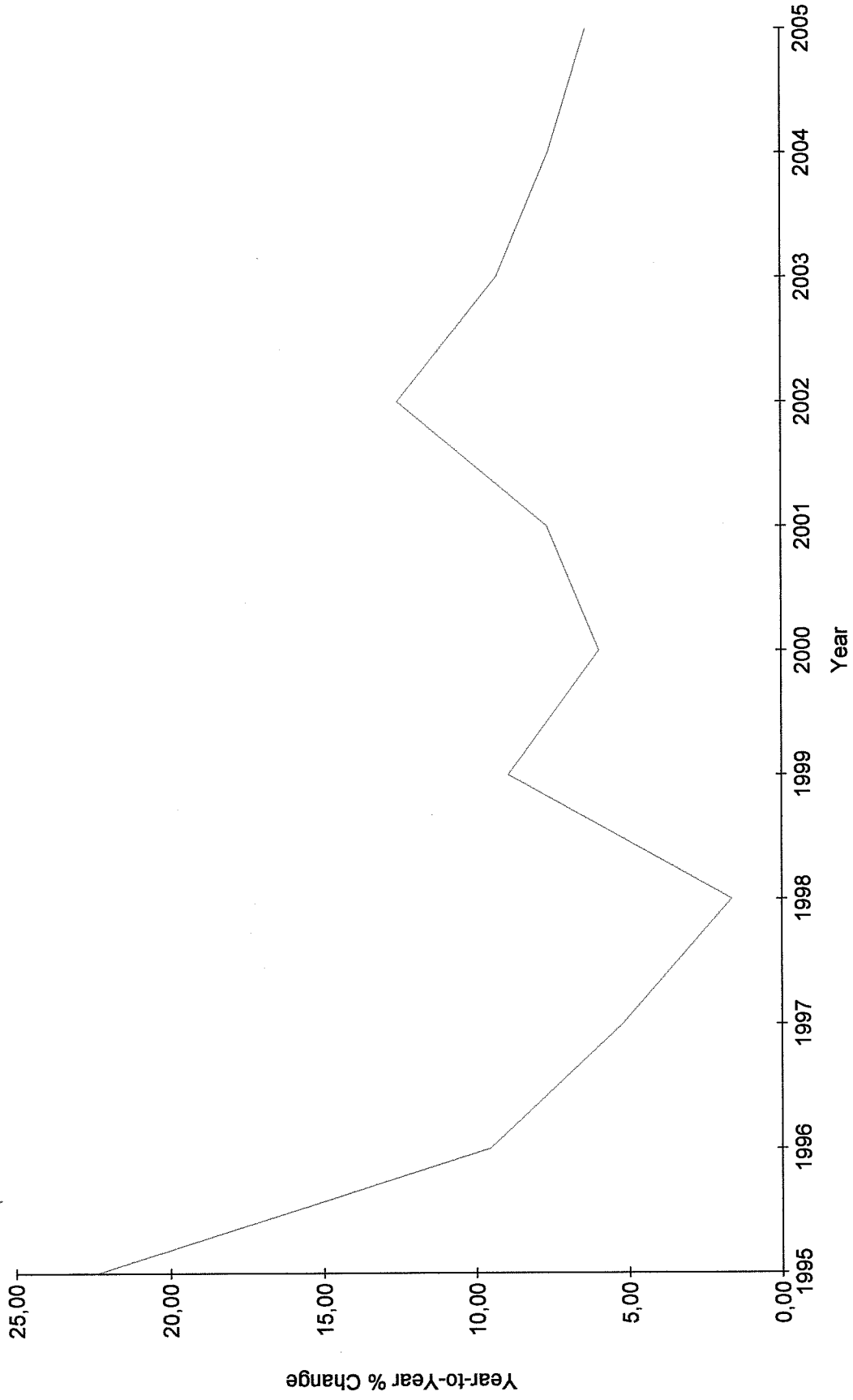
Part III began with Rochon and Vernengo’s (2003) prediction that the sudden openness of Brazil’s financial sector could pave the way for a greater and more *disproportionate* presence of international financial interests in Brazil. My description of the events that transpired between 1999 and the elections of 2002 in which Lula became president illustrate just how disproportionate things had already become in Brazil, with regards to the appointments of Wall Street players to key positions within Brazil’s financial hierarchy and their role in deepening foreign debts while ensuring capital flight. Despite his campaign for anti-neoliberal change, Lula’s administration managed to keep the status quo and continued down the road of mandated privatization and capital flight through rampant dollar-denominated debt creation along with high interest rates (Figure 3) and a depreciated currency (Figure 5), all to the benefit of the very creditors who have been calling all the shots. What we discover is that we are able to observe the existence of speculated or coerced dollarization, primarily in the form of dollar-denominated debt combined with forced devaluations and high interest rates. This dollarization of foreign debt is certainly different than the partial or full definitions of dollarization I defined in Part I; dollarization in Brazil was not chosen, nor will it benefit its citizens as foreign debts, interest rates, and depreciations continue to mount. On the whole, there is no doubt that Brazil has already become dollarized, and the extent to which it has become so was the focus of my final section of analysis.

Altogether, what we have observed during the last couple decades in Brazil is a situation where orchestrated currency devaluations, high interest rates, and wide issuing of dollar-denominated debts have become the norm, all at the watch of Wall Street creditors who happen to be the ones appointed to run Brazil's financial sector. Starting as far back as the *Real Plan* of 1994, Brazil's currency has never been stable, and the overall economic situation has only been held in check through massive increases to Brazil's external debt. One possibility for the future is that Brazil may flirt with the idea of adopting a currency board system similar to the one previously used in Argentina, owing to the increased presence of the US dollar in Brazil's financial system by way of dollar-denominated, high-interest debt bonds. As Chossudovsky (2003a) concludes: "Unless the present course of monetary policy is reversed, the tendency in Brazil is towards the 'Argentina scenario', with devastating economic and social consequences."¹⁵⁴ A quick glance at the data illustrated in Figures 1,3,4,5,6,7 show no reversal of these trends in sight. However, the literature fails to mention any inkling of interest that Brazil may have in pursuing a currency board. Given the tumultuous experiences Argentina had with such an arrangement, it would be unlikely that Brazil would jump into such an arrangement any time soon. All in all, economic and financial crisis, and the subsequent arrival of dollarization, have all become rampant in Brazil, and the issue of irreversibility quickly emerges as a topic for future debate. The shortcomings are clear: Brazil has become dollarized against its own will, its debts are beyond reach, and the dollars keep arriving courtesy of those pretending to help.

FIGURE 1

Broad Inflation Rate (IPCA)

IPCA % Change (Year-to-Year)

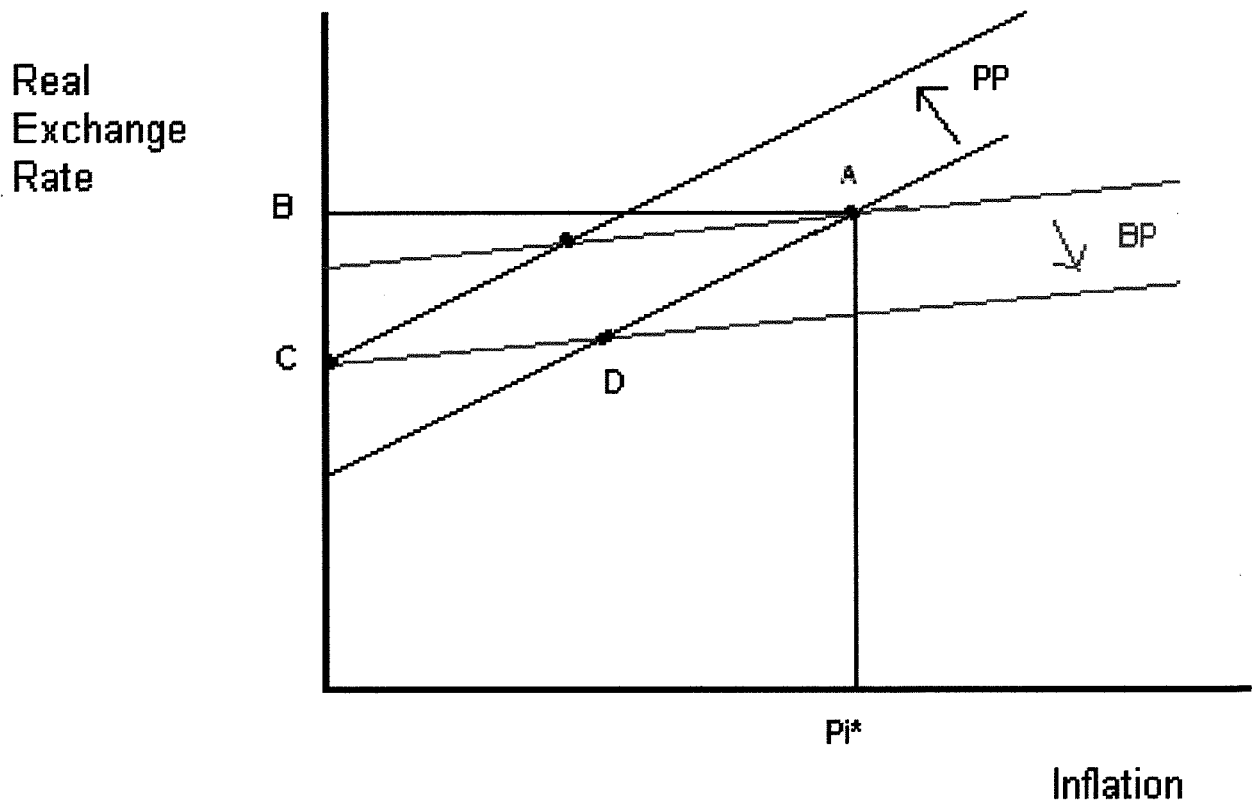


Note: December used except in 2005 (October)

Source: Banco Central do Brasil

<http://www.bcb.gov.br/?INDICATORS>

Figure 2 **The Mechanics of Stabilization**



Source: Franco (2000), "The Real Plan and the Exchange Rate", p.24

Actual SELIC Interest Rate
(% annual) 1996-2005

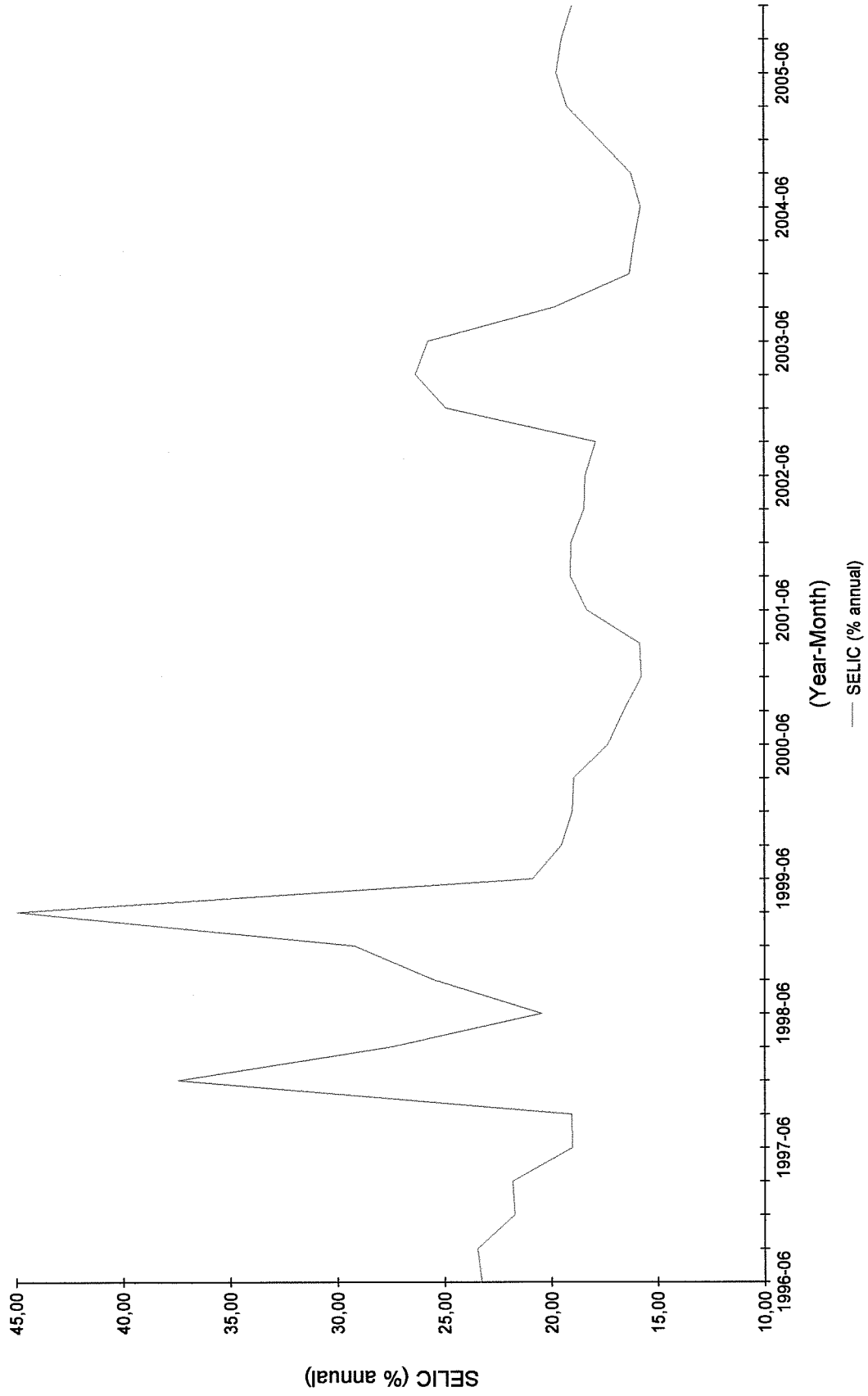
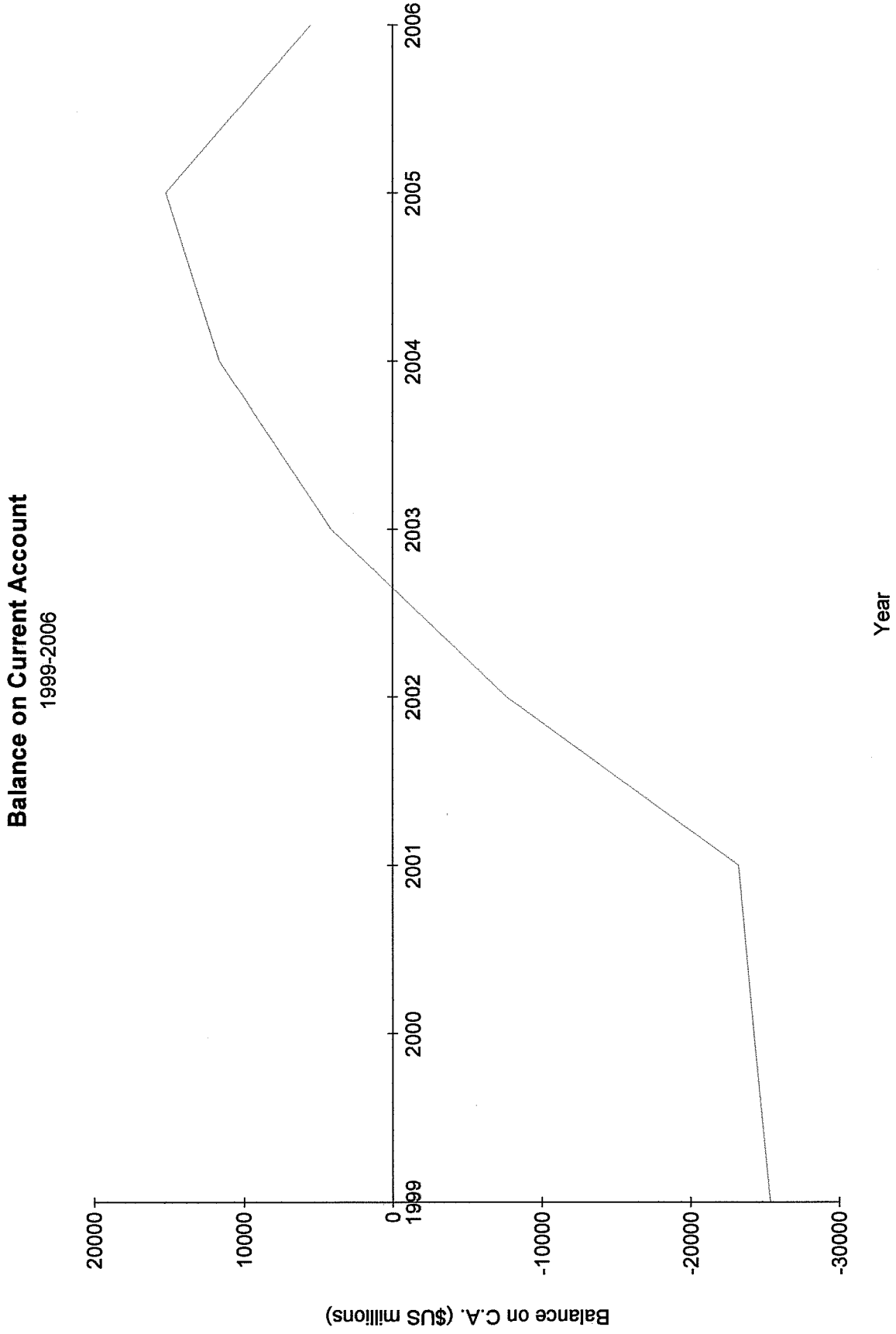


FIGURE 3

FIGURE 4

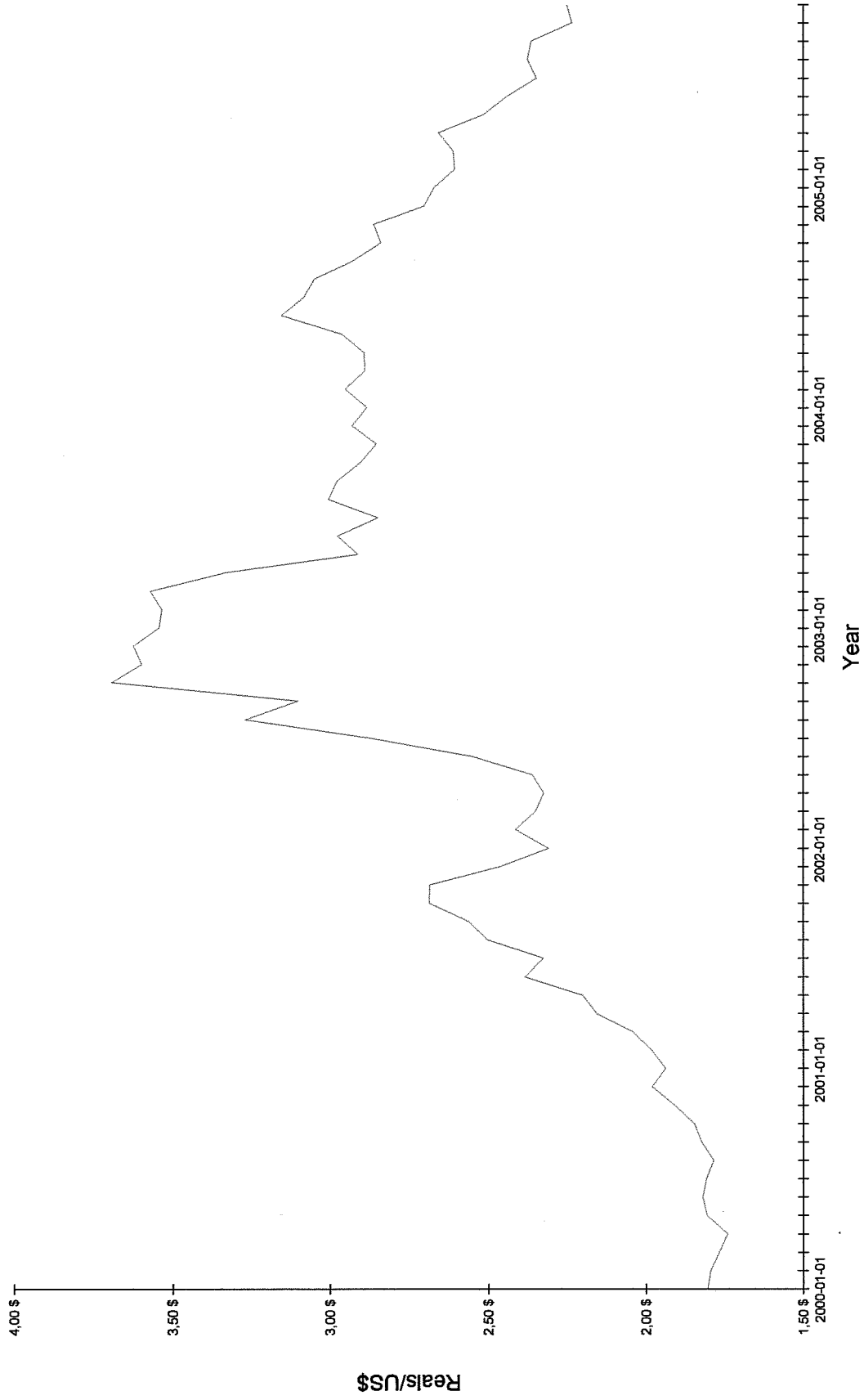


Note: 2005 and 2006 are BCB estimates

Source: Banco Central do Brasil

<http://www.bcb.gov.br/?INDICATORS>

Exchange Rate (reals per US \$)
January 2000 - November 2005

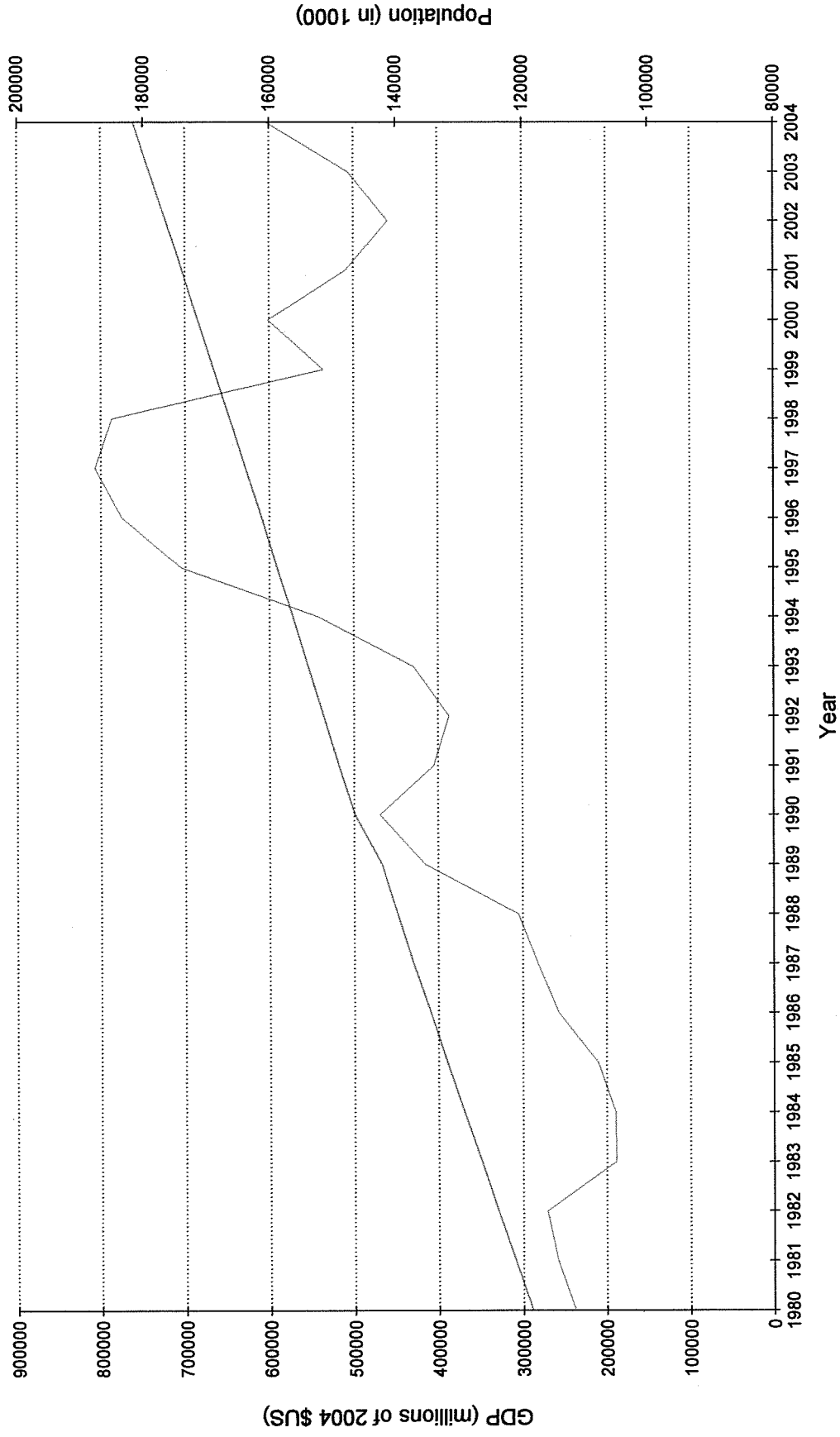


Source: Federal Reserve Statistical Release (Nov.21, 2005)

http://www.federalreserve.gov/releases/H10/hist/det_bz.htm

FIGURE 6

Gross Domestic Product and Population 1980 - 2004



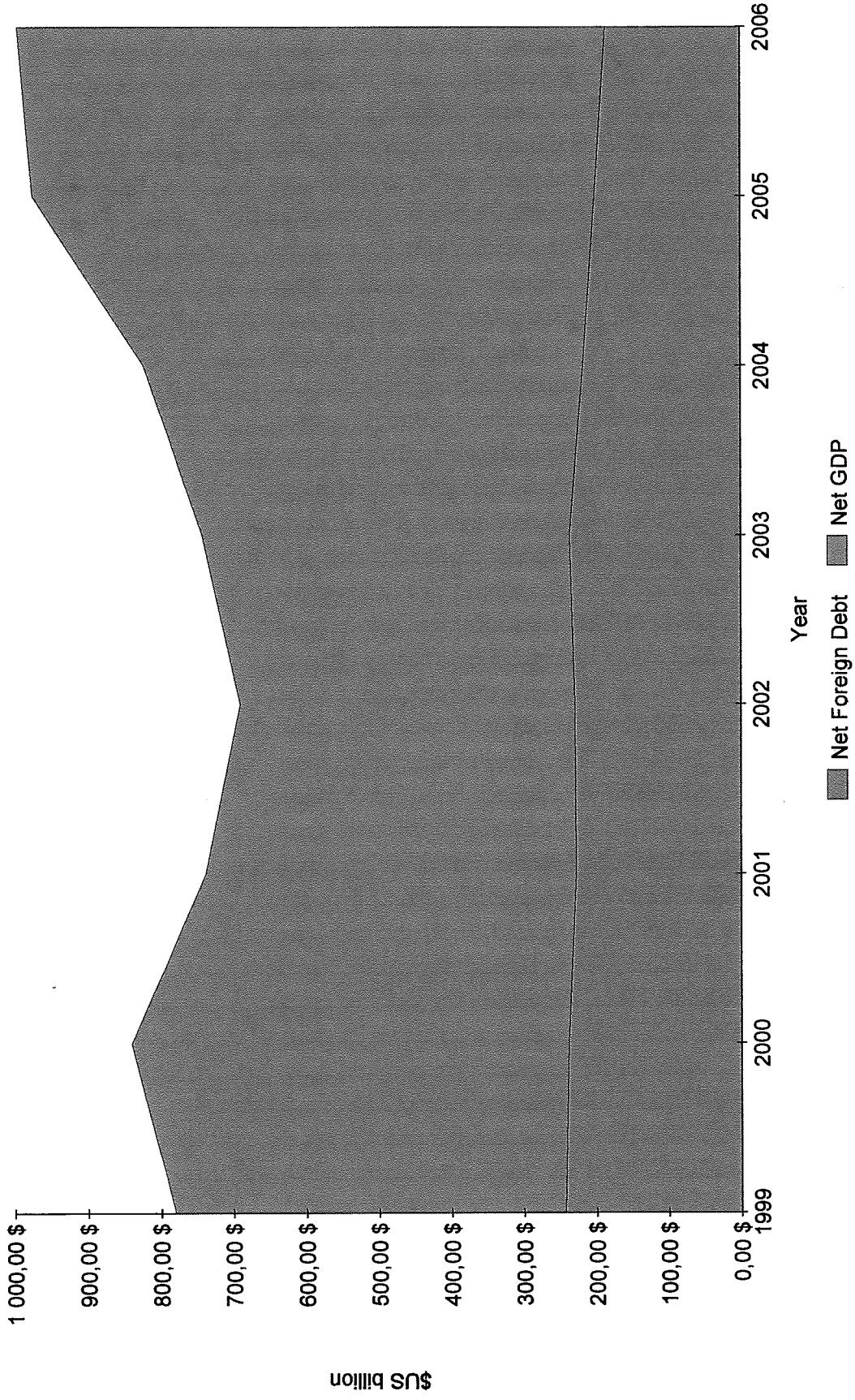
Source: Banco Central do Brasil

<http://www.bcb.gov.br/?INDICATORS>



FIGURE 7

Net Foreign Debt and Net GDP 1999-2006



Note: 2005 and 2006 are estimated values

Source: Banco Central do Brasil

<http://www.bcb.gov.br/?INDICATORS>

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