

# WHY ECONOMIC PERFORMANCE HAS DIFFERED BETWEEN BRAZIL AND CHINA? A COMPARATIVE ANALYSIS OF BRAZILIAN AND CHINESE MACROECONOMIC POLICY

Fernando Ferrari-Filho<sup>\*</sup>

UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL  
AND RESEARCHER AT CNPQ, BRAZIL

Anthony Spanakos<sup>\*\*</sup>

ASSOCIATE PROFESSOR AT MONTCLAIR STATE UNIVERSITY, USA

## Abstract:

This paper addresses a specific question: why has China grown so rapidly and Brazil not? To answer this question, it (i) establishes the basis for comparison between China and Brazil by contextualizing these countries within the BRICs concept, and (ii) presents a comparative analysis of Brazilian and Chinese reforms focusing *only* on the issue of macroeconomic policy, especially the monetary and exchange rate regimes, and its effect on growth.

**Keywords:** China, Brazil, economic policy, economic growth.

**JEL Classification:** E44, F43.

## INTRODUCTION

In October 2003, a Goldman and Sachs' report (Wilson and Purushothaman, 2003) argued that global convergence trends augured well for certain large emerging markets and that these would soon displace traditional European economies and, in one case, even Japan and the United States, in terms of market size by the year 2050. These countries, namely Brazil, Russia, India, and China (known by the acronym BRICs), were likely to offer some of the best investment opportunities in the coming decades. The team continued to 'dream' of BRICs over the next few years, producing a number of papers (for instance, O'Neill, Wiison, Purushothaman, and Stupnystka, 2005) which reinforced their original argument through new favorable data. In 2007, O'Neill published *Brics and Beyond*, a full-length book which collected essays that analyzed the trajectories of the BRICs countries, and other possible markets. In the introduction, O'Neill wrote that since the original paper on the BRICs countries was written,

---

\* ferrari@ufrgs.br \*\* spanakos@gmail.com

the equity markets in the BRICs countries had expanded tremendously and that Goldman and Sachs continues to be bullish about them.

Brazilians, on the other hand, who have heard that their country is the country of the future for more than half a century, are likely to ask what sort of impossible dream Goldman and Sachs is selling. After all, regardless of equity market growth, between 2000 and 2007 Brazil averaged only 3.4% economic growth. Goldman and Sachs' Paulo Leme was sanguine about this, writing "Brazil has underperformed not only relative to our expectations but also compared with all the other BRICs. Since 2003, real GDP growth rates in China, India and Russia have averaged 10.2%, 8.0% and 6.9%, in each case far exceeding our estimates of their long-term potential (4.9%, 5.8% and 3.5%, respectively)" (Leme, 2007). Leme expected Brazil to reach a target 5.0% economic growth, given the success of macroeconomic stabilization programs, though he believed that the second Lula da Silva government would be unlikely to carry out the reforms necessary to allow for an acceleration of economic growth.

This paper aims to answer a very basic question asked by not only Brazilians, but people in other developing countries where liberal reform agendas were oversold, namely: why has China grown so rapidly and Brazil not. To answer this question, the paper is divided in four sections. Section 1 establishes the basis for comparison between China and Brazil by contextualizing these countries within the BRICs concept. An interesting point of divergence among the BRICs is in the area of economic growth and reforms: the BRIC countries which pursued liberal reforms more aggressively and holistically (Russia and Brazil in the 1990s) grew far slower than those who were more heterodox (China since the 1980s, and India in the 1990s). This is counter-intuitive since conventional wisdom holds that China and India's growth have largely been the result of freeing up their economies. Section 2 aims at a partial explanation by surveying the results of a generation of Washington Consensus era growth. Something approaching a consensus now exists over the lack of effectiveness of universally applicable holistic reform programs. Section 3, given the agnosticism about total liberal packages and the puzzle of why incomplete reformers grew better, presents a comparative analysis of Brazilian and Chinese reforms focusing on the issue of macroeconomic policy, especially monetary and exchange rate regimes, and its effect on economic growth<sup>1</sup>. That is, the inflation targeting and flexible exchange

---

<sup>1</sup> It is important to mention that this paper aims to explain the difference in economic growth performance in Brazil and China by analyzing and comparing *only* the macroeconomic policy that has been implemented in the Brazilian and Chinese economies since the 1990s. It does not mean, however, that some economic reforms, such as, tax reform, labor reform and social security reform and labor costs and productivity are not relevant to explain the growth rates in Brazil and China.

rate regime used by the Brazilian government, since 1999, has contributed to slow start-stop growth and has been relatively high inflation, while the more managed approaches favored by China have done the reverse. Finally, the paper concludes that, in the light of Chinese experience, contracyclical economic policies and capital controls can assure sustainable economic growth to the developing countries.

## 1. DIFFERENCES AND SIMILARITIES AMONG THE BRICS COUNTRIES

The appeal of the concept of BRICs countries to international businessmen is straightforward: these four countries possess sufficient market size and ability to influence and be influenced by the international economy to make them attractive sites for investment. Once proposed as a group, the concept of BRICs was quickly adopted by economists and investment banks (O'Neill Wilson, Purushothaman, and Stupnystka, 2005; O'Neill, 2007). It has resonance with other social scientists who have long distinguished important developing countries from smaller and less important peers (Chase, Hill and Kennedy 2000; Armijo, 2007).

In many aspects, such as historical legacies, culture, and regime type, to name but a few, there is little to bind the BRIC countries. In the area of economic policy reform, however, there are certain important similarities though they produce varied results. This analysis of economic policy reform can be considered an interesting case of most similar analysis (Gerring, 2007, Chapter 5). Most similar case analysis approaches offer significant leverage because they are well positioned to explore causal mechanisms that may be obscured in studies with high numbers of cases ('large N studies', George and Bennett, 2005). This is particularly important because of the indeterminacy that 'large N studies' (see the next section) show in terms of liberalization and growth in general.

All four countries had economies where state intervention was considerable up until the 1980s (Brazil and China) or 1990s (Russia and India) and all have moved considerably in favor of freeing market actors and reducing the role of the state. The governments in each of these countries entered the post-World War II period, with a very clear awareness of a need to catch up and with a belief that governments should either actively fill market gaps or that they should wholesale collectivize productive activity. Post-War policies involved state-led growth through ambitious multi-year industrialization plans with considerable variety in degrees of success. All pursued policies that were decidedly inward in orientation and Brazil, India and China, displayed little interest in trade, save traditional sectors which were increasingly disadvantaged by macroeconomic policies. The Soviet Union economy, while more global in orientation, understood its trade profile as part of a larger context of Communist solidarity and its trade was determined by political

motivations more so than by traditional concerns of price, productivity and quality. Thus, while the Soviet Union was engaged in trade, it did so through the Council of Mutual Economic Assistance, a relatively closed association.

In addition to being relatively closed economies, credit had been cheaply provided through the extensive presence of government in credit markets. Public development banks (Brazil, India, and China) or government monopolies in banking (USSR) directed low cost capital to sectors favored by government plans. While planning was more significant and effective in the USSR and India than in China<sup>2</sup> and Brazil, in all cases, private financial markets were 'repressed' (Beim and Calomiris, 2000). The rise in global interest rates, sharp fall in oil prices and global consumption in the early 1980s exposed many structural weaknesses in the models pursued by all four countries. Particularly, varying mixtures of increased indebtedness to external creditors, rising inflation, food and goods shortages, and persistent fiscal deficits plagued Brazil, the USSR, and India, while China suffered from rising inflation, and heavy state and quasi-state debt. A perception that domestic market processes had been exhausted, inability to access viable external credit markets, and external shocks lead to crises in the four countries encouraged all of these governments to pursue reform (Brazil 1980s, 1990s, 1998-9, and 2002-3; USSR 1980s; Russia 1991-1999; India 1990-2; and China 1981, and 1989-1992, the latter being more domestic in orientation). Overwhelmingly, the reforms prescribed by economists and policy makers involved liberalization, such as labor, financial, capital, and foreign exchange markets.

The BRICs countries differed in the speed, pace, and content of the reforms that they implemented, as well as the amount of pressure they endured from international financial institutions and trading partners. Nevertheless, all moved towards liberalizing their economies to degrees unknown by any of those countries for most of the twentieth century. Importantly, all moved towards transforming state-owned enterprises into private or mixed partnerships whose performance would be determined by market rather than political conditions, increasing the role of domestic and foreign (China to a lesser extent) participation in capital markets, flexibilizing labor contracts and rights, and welcoming foreign and domestic private investment, particularly in industries once considered sensitive or part of national security (again, China to a much lesser extent).

Given these similarities, what is telling is the stark difference in economic growth over the last decade. More specifically, given that the explanation of the growth of China and India is normally understood as the result of liberalization, it

---

<sup>2</sup> For a compelling comparison of planning in the USSR and China, see Hui, 2005.

is important to address why liberalization did not have the same effect in Brazil and Russia (in the 1990s)<sup>3</sup>.

Before turning a focused comparison on differences between Brazilian and Chinese reforms, it is worth reviewing the literature on reforms and economic growth to see if this literature provides an answer, or at least some clues, as to why Brazil is not just another BRIC in the wall.

## 2. ECONOMIC REFORMS AND ECONOMIC GROWTH

The trend to liberalize in the 1980s was thought to be the remedy to the problems of stagflation. Stagflation was a problem in developed countries but it was devastating in developing countries where growth shocks were more pronounced, inflation rates were much higher, citizens had fewer savings, and governments had currencies which were ineffective stores of value. The need to resume economic growth was, thus, more pressing in developing countries but the usual small-scale reforms seemed inadequate to solve egregious levels of price instability, deteriorating currency value, and slow or negative growth. In short, developing countries faced graver problems and had fewer policy instruments available to address those problems.

Policy makers centered in Washington and many US-trained technocrats in developing countries believed that structural reforms were needed, reforms that would liberalize markets and rationalizing the state activity. The assumption was that this would reduce inflation and allow growth to return. Though it has been severely vilified in retrospect, the Washington Consensus was primarily an attempt to show the consensus among economists about the need to correct structural weaknesses and restore growth (Williamson, November 2002). Certain commonalities existed among the many countries and regions in the world which had been hit hard by the rise in oil prices, the global recession in the early 1980s, and its aftermath. These conditions included high or hyper-inflation, overvalued exchange rates, excessive indebtedness (often incurred in a foreign currency), rigid labor markets, inefficient tax collecting agencies, and lack of credibility of monetary policy makers, among others. Many reformers believed that state intervention in markets had distorted incentives creating conditions of moral hazard,

---

<sup>3</sup> Ferrari Filho and Paula (2006) show the remarkable difference in economic growth performance of the more liberal and holistic reformers (Brazil and Russia under Yeltsin) and the more heterodox reformers (China, India, and Russia under Putin). Even if the Russian case is not considered due to its heavy dependence on petroleum and natural gas prices, the contrast between Brazil and India and China is stark.

crowding out private actors, and prioritizing employment over productivity. At the same time, a remarkable consensus emerged among economists that favored positions held by classical economists—such as that inflation is primarily a monetary phenomenon (Blustein, 2003). The increased consensus around liberal ideas, the rise of a scientific and mathematical approach to economics, the collapse of command economies in Europe, and the liberalization of China reinforced an impression of technical infallibility to economic theory (Guilhot, 2005). Economists and policy makers spoke of getting the (macroeconomic) ‘fundamentals’ correct or getting prices ‘right.’ In such an environment, the Washington Consensus quickly moved from ten policies which emerge from a sum of cumulative wisdom of the discipline of economics to a complete set of rules to be followed closely and in tandem<sup>4</sup>. Not without some credibility did supporters and critics call it the “Ten Commandments.”

Problems emerged relatively rapidly because although economists ‘knew’ that these prescriptions were correct, evidence was weak and, sometimes, contradictory. Stallings and Peres (2000) found that some reforms had positive effects on growth and inequality, whereas others did not. This led to debates about the importance of sequencing, with authors arguing that certain reforms needed to be done before others. Political scientists and political economists pointed to the absence of attention to institutions and argued that rule of law, a competent judiciary, governability, and other issues were necessary for economic transitions (Haggard and Webb, 1994). Such institutional reforms were considered ‘complementary’ and part of a ‘second generation’. These reforms were more difficult because they involved more political maneuvering and implementing governments required more political support in order to sustain such changes. Finally, another debate emerged, based largely on comparative analyses of the experiences of the People’s Republic of China and the former Soviet Union Bloc countries, about the virtue of ‘shock therapy’ versus gradual reform (Nolan, 1995; Aslund, 2002; Hui, 2005).

Interestingly, most proponents in the various debates believed that reforms were good, necessary, and applicable in all cases. The problem lay in timing, political will, or passing additional reforms to make the first set work more efficiently. The crisis in Asia in 1997 began to chip away at that perspective. For instance, Rodrik (1998) led the charge against blind support of liberalism and globalization arguing that particular policy approaches might work better than a dogmatic set of policies. Particularly challenging to liberals, though somewhat overstated, was the importance played by capital controls in the Malaysian re-

---

<sup>4</sup> This does not mean that countries indeed followed all ten. In fact, most countries emphasized only a few policies though there were less dedicated efforts to complete the list.

sponse and recovery (Haggard, 2000). This sparked a debate among economists (Larrain, 2000) about the virtue or dangers of capital controls but discussions of holistic problems with the Washington Consensus were largely muted, though it was clear that problems abounded. The collapse of Argentina in 2001 was particularly traumatic because the stylized impression was that Argentina had been a 'poster child' of the Washington Consensus and if it—and its convertibility system—was dead and buried, so should 'neoliberalism' (Blustein, 2006).

Stiglitz (2002) unleashed a number of critiques of the Washington Consensus which were particularly important given his position as former Chief Economist at the World Bank. Thus, he suggested a number of reforms, a 'post-Washington Consensus,' which were more likely to produce sustainable and equitable development. In a reflective piece, Williamson (November 2002) replied by recognizing that on certain policies he may have overstated the amount of consensus among economists, but he largely stood by the ten principles he initially laid out. What is rather remarkable is that not only Williamson, but many of his critics, believed that there is a particular set of reforms will bring about growth although evidence increasingly suggested otherwise. They disagreed on which reforms and the pace and sequencing, but there is a considerable amount of faith in reform agendas writ large. Particularly exemplary of such faith-based economics can be found in Williamson's reflections on the Washington Consensus ten years later (see, for instance, Rodríguez, 2006).

And yet, the path to growth does not seem to be paved with one set of reform policies. In a series of articles, Easterly shows that stabilization and adjustment programs and economic reforms do not effect growth and the income of developing countries in 2000 is remarkably correlated (0.87) with their 1960 income (see review in Sindzingre, 2005). Hausmann and Rodrik (2005) find that despite being "a star reformer" El Salvador was not a "star performer" and Hausmann, Rodrik, and Velasco (2005), in a comparative analysis of El Salvador, Brazil, and the Dominican Republic, show how implementing certain 'correct' reforms could actually be harmful. In their study of reforms in Latin America, Stallings and Peres (2000) found that reforms lacked perfect complementarity, and that financial liberalization often had negative effects. Similarly, using a larger data set, Eichengreen and Leblang (2002) and Rodrik (1998) show that it is difficult to establish a robust relationship between financial liberalization and economic growth performance for developed and, especially, emerging countries. Examining all regions from 1975-2000, Rodríguez (2006) argues that the data correlating openness and economic growth is very inconclusive.

This is not to say that reforms have no effect on growth, only that the relationship is more complex than conventional wisdom suggests. What is increasingly evident is that 'large N time series studies' of economic growth provide little

support for liberal agendas producing growth. In the case of the BRIC countries, the evidence is somewhat mixed. China's remarkable growth over the last quarter of a century is, no doubt, partially due to liberalizing its markets and shedding a very sclerotic economic structure. At the same time, the Chinese state has been far too involved in production, regulation and planning to discount state developmentalist approaches (Onis and Senses, 2005). Similarly, Russian growth has occurred during periods of reversal of liberalization and the reclaiming of planning on the part of the state (Ferdinand, 2007). Of course, most of this has consisted of a recovery of income to pre-collapse times and has occurred during a phenomenal boom in petroleum and natural gas prices which makes it more difficult to assess the role of the state in generating growth. Similarly, although Indian growth was weak in per capita terms for most of the pre-reform years, and has been robust since "there is no statistically valid break in the series in 1991, implying that, so far, on a trend basis, GDP has continued to grow since 1991-2 at the same rate as it did during the previous decade-at 5.7% per year" (Nagaraj quoted in Adams, 2002). In the case of Brazil, reforms appeared piecemeal during the late 1980s and early 1990s. It was not until the presidency of Fernando Henrique Cardoso (FHC) (1994-2002) that comprehensive reform agenda was proposed and largely implemented (Spanakos, 2004). Hyperinflation was eliminated and inflation was brought under control, though the country remained susceptible to external shocks. While this constituted a clear and palpable improvement, post-stabilization growth has been weak. The divergence of growth outcomes is not surprising given that academic literature has not found a significant improvement of total liberal packages on economic growth and has found some individual reforms to be negative.

The next section of this paper aims to look in a more focused manner at two cases of macroeconomic policy reform within the developing world, Brazil and China, which show vastly different policy approaches and results. The aim here is to explore in greater depth the policies pursued by these two countries to uncover differences which may provide causal mechanisms that explain divergence in economic growth outcomes.

### **3. MACROECONOMIC POLICY AND ECONOMIC PERFORMANCE: THE EXPERIENCE OF BRAZIL AND CHINA**

Given the above discussion, it is suggested that the menu of liberalization did not produce the growth that was expected while less liberalized systems grew more robustly. The argument is a bit more precise than this as liberalization is not bad *per se* but reforms in certain areas do introduce aspects which weaken growth sustainability. This section will argue that selective macroeconomic policies explain the difference in growth performance between the Brazilian and Chinese economies. This revives the debate over exchange rate regimes (floating



*vis-à-vis* managed) and capital controls in emerging markets, a debate which intensified given exchange rate and financial crises in Mexico (1994-5), East Asia (1997), Russia (1998), Brazil (1998-9) and Argentina (2001-02)<sup>5</sup>.

The main outcome of this debate is that, according to the conventional view, implementing a free-floating exchange rate regime and ample capital mobility, even when backed by responsible or credible economic policy –in line with Washington Consensus prescriptions<sup>6</sup>–, leaves emerging countries prone to the humors and short-term logic of capital accumulation. The conventional argument on the difficulties facing such countries is to attribute the volatility of foreign financing to the irresponsible economic policies they adopt (Caramazza and Aziz, 1998)<sup>7</sup>. The heterodox view, meanwhile, regards floating exchange rate and high capital mobility as a destabilizing combination of factors that intensify exchange rate crises in emerging countries. While Brazilian policy implementation was not without fault, the argument presented here, through comparative analysis, supports a more heterodox position.

Support for post-Keynesian positions might be surprising given the certainty with which mainstream economists and international financial institutions, such as the International Monetary Fund (IMF), consider liberalization of capital accounts. They endorsed largely unregulated capital markets, capital mobility, and a perfectly flexible exchange rate (IMF, 2002<sup>8</sup>). Under such a regime, domestic financial assets (securities) are regarded as perfect substitutes for international

---

<sup>5</sup> These exchange rate and financial crises yielded a consensus among academics and policy makers as to the need to restructure the international monetary system as an indispensable condition for the world economy, and particularly the emerging economies, to see a return to periods of expansion and economic prosperity. While there is a consensus that the international monetary system needs restructuring, the same cannot yet be said with regard to the mechanisms proposed to mitigate and/or put an end to instability in world exchange and financial markets. On this point, Elchengreen (1999, Chapters 6 and 7), Eatwell and Taylor (2000), Davidson (1994, Chapter 16, and 2002, Chapter 14) and Isard (2005, Chapters 7 and 8) offer a summary of the main options for restructuring the international monetary system.

<sup>6</sup> The neoliberal measures advocated for emerging countries by the Washington Consensus are as follows: (i) reduction or elimination of tariff barriers; (ii) free capital mobility, whether for foreign investment or for convertible currency transactions; (iii) fiscal discipline; (iv) tax reform; (v) financial deregulation; and (vi) privatizations.

<sup>7</sup> It is important to add that the conventional theory argues that a responsible economic policy is based on flexible exchange rate, capital mobility and inflation targeting regime.

<sup>8</sup> In fact, one of the areas which concerned the IMF considerably about Argentina was its convertibility plan (Blustein, 2006).

securities, and thus effective monetary policy is defined by parity between domestic and international interest rates, i.e. monetary expansion brings down domestic interest rates to levels below the international rate, leading to capital flight and consequent exchange rate devaluation, whose beneficial effects on current transactions come to generate an expansion in aggregate demand, which raises domestic interest rates until equilibrium is re-established in the balance of payments; symmetrical effects are produced by restrictive monetary policy.

Economists from this liberal position argue that a flexible exchange rate regime with capital account convertibility is fundamental for emerging countries to absorb the capital inflow and respond to the changing productive capacity in these economies (Edwards and Savastano, 2000; Edison, Levine, Ricci and Slok, 2002; Fischer, 1998; Obstfeld and Rogoff, 1995). Accordingly, the benefits of a flexible exchange rate and unregulated capital flows for an emerging market is that these policies (i) reduce the sources of external vulnerability, and (ii) increase the autonomy of monetary policy. Similarly, financial liberalization (i) allocates efficiently savings (domestic and foreign), (ii) disciplines macroeconomic policies, and (iii) improves the economic growth performance.

Set against this is the perceived need to preserve the autonomy of emerging countries' fiscal and, more importantly, monetary policy. This has reinforced the opinion of heterodox economists and some policy makers of the necessity of introducing capital controls and an exchange rate regime that prevents excessive exchange rate fluctuations. They argue that such policy autonomy is fundamental to assuring sustainable economic growth and harmonious social development. This is particularly important given that developing countries suffer from more volatility than developed countries and this contributes to recessions of longer duration (Hausmann, Pritchett, and Rodrik, 2004). Heterodox approaches insist on the need of an exchange rate regime that can prevent excessive exchange rate fluctuations and external vulnerability.

### *3.1. Brazil: macroeconomic instability and economic growth a la stop-and-go*

In 1994, Brazil implemented the *Real Plan*, an exchange-rate based stabilization plan designed to reduce inflation without producing a negative shock to growth. The *Real Plan* differed from Argentina's Convertibility Plan in that it adopted a more flexible exchange rate anchor. At the launch of the Brazilian program in July of 1994, the government's commitment was to maintain an exchange rate ceiling of one-to-one parity with the dollar. Moreover, the relationship between changes in the monetary base and foreign reserve movements was not explicitly stated, allowing some discretionary leeway. After the Mexican crisis in early 1995,

the exchange rate policy was reviewed and, in the context of a crawling exchange rate range, the nominal rate began to undergo gradual devaluation.

The *Real* Plan was successful in reducing inflation from quadruple to single digits, due to the combination of exchange rate appreciation, high interest rates and a huge reduction in import taxes<sup>9</sup>. However, the expansion of demand, which had emerged from the fiscal side, and the overvalued exchange rate created immediate difficulties for Brazil's external sector where in 1994 the trade balance was around USD 10.4 billion in surplus and the current account was in balance, and from 1995 to 1998 the trade balance accumulated a deficit of around USD 22.3 billion and the current account registered a deficit around USD 105.6 billion. As a result of this external imbalance, the Brazilian economy suffered many speculative attacks on the *real*, a "mix of a 'contagious crisis' arising out of the effects on Brazil of the [Mexican crisis], East Asian and Russian crises and an outbreak of speculative activity triggered by market operators who perceived evident macroeconomic imbalances in Brazil" (Ferrari Filho and Paula, 2003).

The macroeconomic position of the government was further aggravated during the 1998 presidential electoral campaign. Given the political constraints of being a candidate for reelection, FHC was loathe to weaken the currency regime and was forced to defend the *real*. This necessitated the Brazilian Central Bank (BCB) raising interest rates and selling dollar reserves (Spanakos and Renno, 2006). Despite offers of support and efforts to lend credibility to Brazilian policy makers from the IMF, capital continued to flow out of the country and foreign reserves fell rapidly during the course of the campaign and even after the reelection of president FHC. Finally, in January 1999, under the circumstances of macroeconomic imbalances and uncertainties about the *Real* Plan's future, the FHC government changed the exchange rate and allowed the *real* to float. The government had battled to protect the exchange regime at considerable cost in terms of reserves and growth, but now believed that by floating the currency, it would be less vulnerable to future speculative attacks.

But, given the history of inflation and the low appetite for risk among investors, the new floating regime was tested to see where the new range of the *real* would be. This pressure on the exchange rate led to the adoption of a set of economic policies based on an inflation targeting regime (IT) and primary fiscal surplus. Since 1999, these three principles have been considered fundamental to Brazilian macroeconomic policy.

---

<sup>9</sup> In August 1994, the Brazilian government reduced tariffs on imports of more than 4,000 products, to a maximum of 20 percent.

Growth during the 1980s and 1990s had been low and volatile, but the expectation was that once inflation had been eliminated, Brazil could resume the high levels of growth it experienced from the post War period until the Debt Crisis. Yet, since beginning of the 21<sup>st</sup> century, the Brazilian economy continues to display patterns of low and volatile growth. Moreover, since the *Real* Plan the GDP growth rate has been low and has had a 'stop-and-go' pattern: between 1995 and 2007, the average GDP growth was 2.9%. This low economic growth can be explained by (i) the external vulnerability (from 1995 to 2003) due to the process of financial liberalization<sup>10</sup>, (ii) the high real interest rates (the average nominal interest rate, between 1995 and 2007, was around 22.9% per year), (iii) a recessive fiscal policy (maintenance of primary surpluses to reduce debt, especially since 1999), and (iv) an exchange rate appreciation (from 1995 to 1998 and again since 2003)<sup>11</sup>.

Under the IT regime, monetary policy is taken as the main instrument of macroeconomic policy. That is, the focus of monetary policy is on price stability, along with three objectives: credibility (the framework should command trust); flexibility (the framework should allow monetary policy to react optimally to unanticipated shocks); and legitimacy (the framework should attract public and parliamentary support). Credibility is recognized as paramount in the conduct of monetary policy to avoid problems associated with time-inconsistency. Moreover, monetary policy is viewed as the most direct determinant of inflation, so much so that in the long run the inflation rate is the only macroeconomic variable that monetary policy can affect. Finally, it is argued that monetary policy cannot affect economic activity, for example output or employment, in the long run. The results, however, suggest otherwise. Table 2 (annex) shows a consistently high interest rate and a sharp instability of the nominal exchange rate. For example from 2000 to 2007, the average nominal basic interest rate was 17.5% per year, and the exchange rate movement was quite unstable –from 2000 to 2003 it was devaluated and, since 2003, it has been appreciated.

Monetary authorities have operated with a clear and heavy preference for maintaining low inflation. Given this priority, the BCB has maintained high interest rates which discourage monetary expansion and are recessionary in nature. Rising interest rate punishes firms, by reducing their access to credit, and workers, who lose their jobs when firms face difficulties, but reward *rentiers* and specula-

---

<sup>10</sup> The financial liberalisation included both facilitation to outward transactions (elimination of the limits that residents can convert real in foreign currencies, with the end of the CC5 accounts) and inward transactions (fiscal incentives to foreign investors to buy domestic public securities).

<sup>11</sup> All average rates were calculated by the authors according to the data of Table 2.

tors, who hold public securities. Ironically, the expansion of Brazilian debt markets signaled in the Goldman and Sachs reports cited above has been consistent with a decline in output and employment, and, at the same time, increased the volume of public debt.

In terms of fiscal policy, inflation targeting regimes view do not view fiscal policy as a powerful macroeconomic instrument (in any case, it is hostage to the slow and uncertain legislative process), instead "monetary policy moves first and dominates, forcing fiscal policy to align with monetary policy" (Mishkin, 2000). Since implementing the IT regime, the Brazilian government has maintained high target goals for primary surplus (between 3.75% and 4.25% of GDP during the period of 2000 to 2007), in order to guarantee the service of outstanding public debt. Despite the very significant fiscal constraint in this period, net public debt as a percentage of GDP is still high. Primary fiscal surplus has contributed to lowering debt, but the external vulnerability which was exposed in 2002-2003 led to an explosion of debt. Therefore, while fiscal surplus may be a medicine with long term value, it may have contributed to the conditions which increased short and medium term debt stock, which further emphasizes the point about volatility of growth associated with the Brazilian government's adoption of the IT regime.

As Table 2 (annex) shows, since the end of 2003, the nominal exchange rate has been appreciated trending towards overvaluing, basically due to both increase of the trade surplus and capital flows. The growth of trade surplus is a result of an increasing of world demand for Brazilian products and an increase in commodity prices (mineral and agricultural) while capital flows have been attracted by high yield differentials between domestic and foreign bonds. Under these conditions, there has been a reduction of external indebtedness, an improvement of the indicators of external vulnerability and foreign reserves have increased from USD 33.0 billion in 2000 to almost USD 181.0 billion in 2007. However, there is a great deal of concern about the future of the trade balance and current account performances. This is due essentially to two reasons: (i) continuous real exchange rate appreciation can reduce the growth rate of exports, and (ii) the possible reduction in the volume of the international trade, mainly commodities, if a decline in the economic growth of USA and China were to materialize<sup>12</sup>.

Despite the better international conditions and the growth of exports, from 2002 to 2007, GDP maintained the same 'stop-and-go' pattern it has displayed

---

<sup>12</sup> Brazilian exports are still very much concentrated on agricultural and mineral commodities, such as soy, steel and iron, natural resources, and technological low-intensive industrial products, while there is an important presence in its import contents of products that rely extensively on technology.

since stabilization, and if not since the early 1980s. Both the average growth rate and the volatility of growth are insufficient for the needs of the Brazilian population, augur poorly for investment, and are not competitive when compared with those of other large emerging countries over the same period.

To conclude, the Brazilian economic performance, from 2000 to 2007, shows the following characteristics: (i) despite the fact that inflation rate was kept under control, its average rate was relatively high at 7.0% per year on average since the introduction of the IT regime; (ii) the annual nominal interest rate was around 17.5%, while the average real interest rate was around 9.8% per year; and (iii) the average annual growth rate of GDP was only 3.4%. Thus, even without comparative analysis, there are reasons to reconsider the appropriateness of the IT regime for Brazil.

### *3.2. China: economic growth with managed exchange rate and restricted capital inflows*

Annual average rate of GDP for China between 1995 and 2007 was a blistering 9.6%. This high growth rate is largely due to the growth of the export sector<sup>13</sup> and is fueled by investment. Expansion of investment in China is very obviously a result of the (i) open-door policy initiated in the 1980s, and (ii) of state participation in bank credit and low interest rates<sup>14</sup>.

Economic openness in Chinese economy was gradual and there were three phases in attracting capital flows (Shengman, 1999). Between 1980 to 1986 was a period of "mutual learning" where Chinese authorities and population and foreign investors learned from each other. Foreign direct investment (FDI) ventures in China started in the 1980s when the Special Economic Zones were created and, at the same time, economic policies were implemented<sup>15</sup>. The second phase (1987-1991) was one of "getting ready," during which laws and regulations were created and measures were adopted to attract foreign investment to different economic sectors and geographic locations. Finally, since 1992, there has been the "rapid increase" phased, characterized by the rapid transformation in

---

<sup>13</sup> In the 1980s, the China's share in the world trade was around 0.8% while in the 2000s it was almost 8.0%.

<sup>14</sup> According to OECD (2005), the relation banking credit/GDP, under a bank-based system dominated by state-owned banks, has been almost double compared to OECD area.

<sup>15</sup> In the beginning, foreign direct investment (FDI) was highly regulated, but in the 1990s were introduced some changes to encourage FDI, such as effective tariffs on imports were reduced, the public corporations were modernized and the exchange rate regime change.

Chinese economy (from a planned economy to a market economy). During this period, China benefited from a shift in global allocation of private investment towards emerging markets. According to Paula (2007, p.27), “[m]ajor changes in the functioning of the economy were introduced in the 1990s, such as encouragement of foreign investment, reduction of effective tariffs on imported inputs, the modernization of public corporations, the abolition of multiple exchange rates, and the introduction of convertibility for current account transactions”.

China has been the principal recipient of foreign capital flows in recent years among emerging markets. Such capital inflows can cause several macroeconomic effects, such as, expanding the domestic money supply and putting pressure on the domestic prices and the exchange rate. However, this has not happened for the period under study here<sup>16</sup>. From 1997 to 2007, the average inflation rate was 0.91% per year. China did suffer from a short period of high inflation in the mid-1990s (more specifically in 1995 and 1996, when the average inflation rate was 8.5% per year), but since 1997 China has experienced periods of deflation (1998, 1999, 2001 and 2002) and low inflation rates, excepting 2004<sup>17</sup>. In other words, inflation rates have been under control and moderate despite the tremendous capital inflows that the Chinese economy has had to accommodate over the past decade and a half. This has been possible because of flexible monetary policy and fiscal austerity enjoyed by the Chinese monetary authorities, particularly the Popular Bank of China (PBC), the Chinese central bank.

The PBC has managed the domestic money supply in order to absorb the capital inflows and soften their effect on macroeconomic indicators. During the 1990s, it applied credit restrictions to financial institutions, while in the 2000s monetary policy was more flexible –according to Table 3 (annex), the average interest rate was 3.0% per year, from 1998 to 2007. This means that the average real interest rate (average nominal interest rate divided by average inflation rate) from 1998 to 2007 was 2.1% per year. Moreover, China has shielded the domestic financial system from these capital inflows because there are (i) limitations on the entry of foreign banks in the financial market, and (ii) convertibility restrictions on the foreign currency transactions of domestic financial institutions.

During the Chinese transition from a closed to an open economy, the exchange rate regime has changed several times and has been the main instrument of economic policy. After a long period of centralized and fixed exchange rate regimes, in the 1990s, the exchange rate was devalued and a managed floating exchange rate regime was adopted. The *yuan* has been *de facto* ‘fixed’

---

<sup>16</sup> Prices have increased since 2007.

<sup>17</sup> All average rates were calculated by the authors according to the data of Table 3.

to the US dollar since the end of the 1990s (Table 3, in annex, shows that relative stability of the exchange rate from 1995 to 2007). Since then, PBC's intervention to maintain a stable exchange rate has been significant largely due to capital control mechanisms on both inflows and outflows<sup>18</sup>. In 2005, the Chinese monetary authorities revaluated the exchange rate against the dollar of 2.1%. Moreover, they introduced a system in which the exchange rate would be determined by a basket of currencies. In other words, the PBC has acted as a *market maker* in the foreign exchange market.

As mentioned above, the management of the exchange rate has been possible due to the existence of capital controls on both inflows and outflows. According to Zhao (2006), capital controls in China have the following objectives: (i) it helps direct external savings to desired uses; (ii) it keeps monetary policy independent of the influence of international developments, under a context of a managed exchange rate regime; (iii) it prevents firms and financial institutions from taking excessive external risks; (iv) it maintains balance of payments equilibrium and keeps exchange rate stability; and (v) it insulates the economy from foreign financial crises.

With a stable exchange rate, increasing trade surplus and inflows of FDI<sup>19</sup>, China has accumulated an impressive amount of international reserves (from USD 186.3 billion in 2000 to USD 1.53 trillion in 2007). As a consequence of the continuous trade surplus, the expressive accumulation of international reserves, the capital controls mechanisms and a low level of external debt, external vulnerability is low. This was evident by the insulation of the Chinese economy during the numerous emerging market crises since 1995, but especially during the Asian Crisis.

Chinese fiscal policy has complemented monetary policy with a careful eye to maintain policymaking autonomy and limit external vulnerabilities. As public companies shifted towards mixed and private concerns, the government acquired considerable state and quasi-state debt. It did this through by increasingly shaving the government deficit with a tendency towards balance. As a result of 'conservative' fiscal policy and growing state revenues, fiscal deficit has been

---

<sup>18</sup> Capital controls in China has been used to keep monetary policy independent, to prevent firms and financial institutions from taking external risks, to maintain balance of payments equilibrium and keep exchange rate and to avoid the economy from foreign financial and exchange rate crises.

<sup>19</sup> It is important to add that FDI has been attracted by the long-term growth perspective of Chinese economy.



relatively stable<sup>20</sup> and the domestic debt has been under control. All of this helps to explain the limited vulnerability of the Chinese economy to the fits and starts more typical among emerging markets, particularly Brazil. They also have contributed to an environment in which robust sustainable growth was possible.

## CONCLUSION

This comparative study of Brazilian and Chinese macroeconomic policies and outcomes aims to address the puzzle of why the Brazilian economy, despite considerable liberal reforms, has not produced stable and robust growth. It has done this by comparing Brazil to peers in the BRICs group, gleaned information from recent research on the relationship between reforms and growth, and by a focused comparative case study with China. The paper agrees with the finding in the literature that broad liberal reform agendas do not necessarily produce stable and robust economic growth. It does find that certain policies do seem to have more of an effect in limiting external vulnerability and in producing growth, particularly policies that allow government's to maintain autonomy of macroeconomic policies. This confirms Ferrari Filho and Paula (2006) who find that economic performance of BRICs countries is the result of the exchange rate regime, capital account convertibility and fiscal and monetary regimes adopted in each country.

This suggests the necessity of (i) ensuring that monetary policy has a significant positive impact on the level of economic activity, (ii) directing financial markets toward financing development rather than *rentier*-like behavior, and (iii) creating efficient anti-speculation mechanisms to control (or regulate) movements of capital in order to prevent monetary and exchange rate crises and augment the autonomy of domestic decision-makers. Exploring the last issue, the main difference among Brazil and China is that, paraphrasing and adapting Stiglitz (2002), financial liberalization and capital mobility in the Brazilian economy in the 1990s were at the center of its currency crisis, while China, due to their measures of capital controls, could manage monetary and fiscal policies pro-economic growth. Interestingly enough, in a panel survey of 49 developing countries between 1970-1995, Gastanaga, Nugent and Pashamova (1998) find that most policy reforms did not have much of an effect on attracting FDI, though capital controls were associated with an increase in FDI and the most important factor was economic growth.

---

<sup>20</sup> From 1995 to 1998, the fiscal deficit was around 1.3% of GDP; from 1999 to 2002, it increased to 2.4% of GDP; from 2003 to 2006, it dropped; and in 2007 it increased to 2.6% of GDP.

Uninterrupted and robust economic growth is the goal of all policy makers, especially in the developing world. Although academic literature has yet to produce clear causal relationships which explain the necessary components for such growth and how to bolster these components, empirical analysis of peer country performance gives valuable signals to policy makers. It may be difficult to say exactly why, with academic certainty, China has grown so robustly and consistently. But when Brazil is compared against China, a strong case may be made for why growth may be weak and interrupted.

Summing up, China's case shows how gradual and careful management of capital account and contracyclical economic policies can reduce the external vulnerability and assure sustainable economic growth, while Brazil's case, on the other hand, shows how the adoption of a more liberal and orthodox economic policy, in terms of exchange rate and financial liberalization and capital account convertibility, has resulted in higher exchange rate volatility, higher interest rates, and a poor economic growth. Table 1, adapted from Paula (2007), shows a comparative synthesis of the analysis of the macroeconomic policy of Brazil and China.

Table 1. Exchange rate regime and capital account convertibility of Brazil and China

Country	Exchange rate regime	Monetary policy regime	Capital account convertibility	Exchange rate volatility
Brazil	From 1995 to 1998: semi-fixed Since 1999: Floating, with dirty floating	From 1995 to 1998: cyclical monetary policy Since 1999: Inflation targeting	High	High
China	Pegged exchange rate	Contra-cyclical monetary policy	Partial, with many restrictions	Very low

Source: Author's elaboration based on Paula (2007).

## REFERENCES

- Adams, J. (2002), "India's Economic Growth: How Fast? How Wide? How Deep?", *India Review*, 1 (2), April.
- Armijo, L. E. (2007), "The BRICs Countries (Brazil, Russia, India, and China) as Analytical Category: Mirage or Insight?", *Asian Perspective*, 31 (4), Winter.
- Aslund, A. (2002), *Building Capitalism: the Transformation of the Former Soviet Bloc*, Cambridge University Press, Cambridge.
- Asian Development Bank (2008), <http://www.adb.org> (access in January).

- Beim, D. O.; Calomiris, C. W. (2000), *Emerging Financial Markets*, McGraw Hill, New, York.
- Blustein, P. (2003), *The Chastening: Inside the Crisis that Rocked the International Financial System and Humbled the IMF*, Public Affairs, New York.
- (2006), *And the Money Kept Rolling in (And Out): Wall Street, the IMF, And the Bankrupting of Argentina*, Public Affairs, New York.
- Brazilian Central Bank (2008), <http://www.bcb.gov.br> (access in January).
- Caramazza, F.; Aziz, J. (1998), *Fixed or flexible? Getting the Exchange Rate Right in the 1990s*, International Monetary Fund, Washington D.C.
- Chase, R. S.; Hill, E. B.; Kennedy, P. (2000), *Pivotal States*, W. W. Norton, New York.
- Davidson, P. (1994), *Post Keynesian Macroeconomic Theory*, Aldershot, Edward Elgar.
- (2002), *Financial Markets, Money and the Real World*. Cheltenham, Edward Elgar.
- Eatwell, J.; Taylor, L. (2000), *Global Finance Risk: the Case of International Regulation*, New York, New Press.
- Edison, H.; Levine, R.; Ricci, L.; Slok, T. (2002), "International financial integration and economic growth", *Journal of International Money and Finance*, 21, 749-776.
- Edwards, S.; Savastano, M. (2000), "Exchange rate in emerging economies: what do we know? What do we need to know?", Krueger, A. (ed.), *Economic Policy Reform: The Second Stage*, University of Chicago Press, 453-510, Chicago.
- Eichengreen, B. (1999), *Toward a New International Finance Architecture: a Practical Post Asia Agenda*, Institute for International Economics, Washington D.C.
- Eichengreen, B.; Leblang, D. (2002). "Capital account liberalization and growth: was Mahathir right?", *NBER Working Paper Series No. 9247*, December.
- Ferdinand, P. (2007), "Russia and China: converging responses to globalization", *International Affairs*, 83 (4), 655-680.
- Ferrari Filho, F.; Paula, L. F. (2003), "The legacy of the *Real Plan* and an alternative agenda for the Brazilian economy", *Investigación Económica*, 244, 57-92.
- (2006), "Regime cambial, conversibilidade da conta de capital e performance econômica: a experiência recente de Brasil, Rússia, Índia e China", Sicsú, J.; Ferrari Filho, F. (eds.), *Câmbio e Controles de Capitais: Avallando a Eficiência de Modelos Macroeconômicos*, Editora Campus, 184-221, Rio de Janeiro.

- Fischer, S. (1998), "Capital-account liberalization and the role of the IMF", *Essays in International Finance*, 207, 1-10.
- Gastanaga, V. M.; Nugent, J.B.; Pashamova, B. (1998), "Host Country Reforms and FDI Inflows: How Much Difference Do They Make?", *World Development*, 26 (7).
- George, A. L.; Bennett, A. (2005), *Case Studies and Theory Development in the Social Sciences*, Cambridge, MIT Press.
- Gerring, J. (2007), *Case Study Research: Principles and Practices*, Cambridge University Press, New York.
- Guilhot, N. (2005), *The Democracy Makers: Human Rights and the Politics of Global Order*, Columbia University Press, New York.
- Haggard, S.; Webb, S. B. (1994), *Voting for Reform: Democracy, Political Liberalization and Economic Reform*, World Bank, Washington D.C..
- (2000), *The Political Economy of the Asian Financial Crisis*, International Institute of Economics, Washington D.C.
- Hausmann, R.; Pritchett, L.; Rodrik, D. (2004), "Growth Accelerations", *NBER Working Paper No. 10566*, Washington D.C., National Bureau of Economic Research, June, <http://www.nber.org/papers/w10566>.
- Hausmann, R.; Rodrik, D. (2005), "Self-Discovery in a Development Strategy for El Salvador", *Journal of the Latin American and Caribbean Economics Association*, 6 (1), Fall.
- Hausmann, R.; Rodrik, D.; Velasco, A. (2005), "Growth Diagnostics", March, <http://ksghome.harvard.edu/~rhausma/new/growthdiag.pdf> (access in January, 2008).
- Hui, Q. (2005), "Command versus Planned Economy: 'Dispensability' of the Economic Systems of Central and Eastern Europe and of Pre-reform China", *The Chinese Economy*, 38 (4), 23-60, July-August.
- Instituto Brasileiro de Geografia e Estatística (2008), <http://www.ibge.gov.br> (access in January).
- Instituto de Pesquisa Económica Aplicada (2008), <http://www.ipeadata.gov.br> (access in January).
- International Monetary Fund (2002), *World Economic Outlook*, September, <http://www.imf.org> (access in January, 2008).
- (2007), *World Economic Database*, October, <http://www.imf.org> (access in 11/2007).

- (2008), *Data and Statistics*, <http://www.imf.org> (access in January, 2008).
- Isard, P. (2005), *Globalization and the International Financial System: What's Wrong and What Can Be Done*, Cambridge University Press, Cambridge.
- Larraín, F. B. (ed.) (2000), *Capital Flows, Capital Controls, and Currency Crises: Latin America in the 1990s*, Ann Arbor, The University of Michigan Press.
- Leme, P. (2007), "The 'B' in BRICs: Unlocking Brazil's Growth Potential", *BRICs and Beyond*, Goldman and Sachs, November 23, 75-84.
- Mishkin, F. S. (2000), "What Should Central Banks Do?", *Federal Reserve Bank of St. Louis Review*, 82 (6), 1-13.
- Nolan, P. (1995), *China's Rise, Russia's Fall: Politics, Economics and Planning in the Transition from Stalinism*, Basingstroke, Palgrave Macmillan.
- Obstfeld, M.; Rogoff, K. (1995), "The mirage of fixed exchange rates", *Journal of Economic Perspectives*, 9, 73-96, Fall.
- O'Neill, J. (2007), "Introduction: BRICs and Beyond", *BRICs and Beyond*, Goldman and Sachs, November 23, 5-6.
- O'Neill, J.; Wilson, D.; Purushothaman, R.; Stupnystka, A. (2005), "How Solid are the BRICs", *Global Economic Paper No. 134*, 1<sup>st</sup> December.
- Onis, Z.; Senses, F. (2005), "Rethinking the Emerging Post-Washington Consensus", *Development and Change*, 36 (2), 263-290.
- Organization for Economic Co-operation and Development (2005), *Economic Surveys*, September, <http://www.oecd.org> (access in January, 2008).
- (2008), *Data and Statistics*, <http://www.oecd.org> (access in January).
- Paula, L. F. (2007), *Financial Liberalisation, Exchange rate Regime and Economic Performance in BRICs Countries*, <http://paginas.terra.com.br/educacao/luizfpaula/index.htm>.
- Rodrik, D. (1998), "Who needs capital-account convertibility?", *Essays in International Finance*, 207, 55-65.
- Rodríguez, F. (2006), "Does One Size fit All In Policy Reform? Cross-National Evidence and its Implications for Latin America", September 1, [http://frrodriguez.web.wesleyan.edu/docs/academic\\_english/One\\_Size.pdf](http://frrodriguez.web.wesleyan.edu/docs/academic_english/One_Size.pdf) (access in January, 2008).

- Shengman, Z. (1999), "Capital flows to East Asia", Feldstein, M. (ed.), *International Capital Flows*, University of Chicago Press, 177-181, Chicago.
- Sindzingre, A. (2005), "Reforms, Structure or Institutions? Assessing the determinants of growth in low-income countries", *Third World Quarterly*, 26 (2), 281-305.
- Spanakos, A.P. (2004), "Reforming Brazil: A preliminary assessment", Font, M.; Spanakos A.P.; Bordin, C. (eds.), *Reforming Brazil*, Lanham, Lexington Books, 11-25.
- Spanakos, A. P.; Rennó Jr., L. R. (2006), "Elections and Economic Turbulence in Brazil: Candidates, Voters, and Investors", *Latin American Politics and Society*, 48 (2), 1-26.
- Stallings, B.; Peres, W. (2000), *Growth, Employment and Equity: The Impact of the Economic Reforms in Latin America and the Caribbean*, Washington D.C., The Brookings Institution.
- Stiglitz, J. (2002), *Globalization and its Discontents*, W.W. Norton, New York.
- Williamson, J. (1990), "What Does Washington Mean by Policy Reform?" *Latin American Adjustment: How Much Has Happened?* Washington, D.C., Institute for International Economics.
- (2002), "Did the Washington Consensus Fail?" Speech at the *Center for Strategic & International Studies*, November 6.
- <http://www.iie.com/publications/papers/paper.cfm?ResearchId=488> (accessed in February, 2008).
- Wison, D.; Purushothaman, R. (2003), "Dreaming with BRICs: the Path to 2050", *Global Economics Paper 134*, New York, Goldman and Sachs, October.
- Zhao, M.(2006), "External liberalization and the evolution of China's exchange system", *The World Bank Beijing Office*, <http://siteresources.worldbank.org>, (access in January, 2008).

## ANNEX

Table 2. Some Macroeconomic Indicators of Brazilian Economy

<i>Macroeconomic Indicators/Year</i>	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
IPCA (%)	22.41	9.56	5.22	1.66	8.94	5.97	7.67	12.53	9.30	7.60	5.69	3.14	4.46
GDP growth (%)	4.22	2.15	3.38	0.04	0.25	4.3	1.3	2.7	1.2	5.7	3.2	3.7	5.4
Interest rate (Selic), average (%)	54.5	27.5	25.0	29.4	26.1	17.6	17.5	19.1	23.3	16.2	19.1	15.3	12.0
Exchange rate, average (R\$/USD)	0.92	1.00	1.08	1.16	1.81	1.83	2.35	2.93	3.08	2.92	2.43	2.17	1.92
Trade balance (USD billion)	-3.5	-5.6	-6.8	-6.6	-1.2	-0.7	2.6	13.1	24.8	33.6	44.7	46.5	40.0
Current account (USD billion)	-18.4	-23.5	-30.5	-33.4	-25.3	-24.2	-23.2	-7.6	4.2	11.7	14.0	13.6	1.5
Foreign reserves (USD billion)	51.8	60.1	52.2	44.6	36.3	33.0	35.9	37.8	49.3	52.9	53.8	85.8	180.3
Fiscal surplus/GDP (%)	0.24	-0.09	-0.88	0.01	3.2	3.5	3.6	3.9	4.3	4.6	4.8	4.3	4.0
Net public debt/GDP (%)	29.1	29.6	30.4	35.4	44.5	45.5	48.4	50.5	52.4	47.0	46.5	44.7	43.0
Investment rate (% of GDP)	18.3	16.9	17.4	17.0	15.7	16.8	17.0	16.4	15.3	16.1	16.0	16.5	17.5

Source: IBGE, IPEADATA and BCB.

Table 3. Some Macroeconomic Indicators of Chinese Economy

<i>Macroeconomic Indicators/Year</i>	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
CPI (inflation) (%)	10.1	7.0	0.4	-1.0	-0.9	0.9	-0.1	-0.6	2.7	3.2	1.4	2.0	2.1
GDP growth (%)	10.9	10.0	9.3	7.8	7.6	8.4	8.3	9.1	10.0	10.1	10.4	10.7	11.7
Average interest rate (%)	n.a.	n.a.	n.a.	6.85	3.66	2.6	2.5	2.1	2.6	2.8	1.8	2.5	2.8
Average exchange rate (Yuan/USD)	8.35	8.31	8.29	8.28	8.28	8.28	8.28	8.28	8.28	8.28	8.19	7.96	7.76
Trade balance (USD billion)	18.05	19.54	46.22	16.61	35.98	34.47	34.02	44.17	44.65	58.98	134.2	217.8	315.4
Current account (USD billion)	1.6	7.2	37.0	31.5	21.1	20.5	17.4	35.4	45.9	68.7	160.8	164.2	156.0
Foreign reserves (USD trillion)	0.075	0.107	0.143	0.149	0.158	0.168	0.216	0.291	0.408	0.614	0.822	1.068	1.53
Fiscal surplus/GDP (%)	-1.4	-1.2	-1.1	-1.5	-2.2	-2.5	-2.3	-2.6	-2.2	-1.3	-1.9	-1.7	-2.6
Net public debt/GDP (%)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	17.7	18.9	19.2	18.5	17.9	17.3	18.1
Investment rate (% of GDP)	n.a.	n.a.	n.a.	n.a.	n.a.	34.1	34.4	36.3	39.4	40.7	42.1	41.6	44.7

Source: ADB, OECD and IMF.