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The Brazilian development model:
Trade orientation, the 2008 crisis and its influence on the choice of styles[*]

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This essay addresses the issues pertaining to the advancement and to the style of Brazilian economic development in the years to come, in the context of the aftermath of the 2008 crises and the responses and the lessons it entailed. Globalization, the distinguishably superior performance of export promotion over import substitution countries, and very especially the rise of China, are factors that overwhelmed the debates on openness and on trade and industrial policies to support economic development, and this is not to mention the domestic problems created by the resistances to leave behind the canons of self reliance and inflationary ("development oriented") finance. Against the background of the consequences of the first systemic crises of the globalized economy, policy makers in Brazil are facing hard choices as to the next steps in economic development. This essay reviews past developments, crises developments and issues for the future. It is divided into three sections; the first reviews briefly the stabilization and reform record and some of the singular features affecting Brazilian openness during the crucial years of stabilization and redefinition of the Brazilian development model in the 15 years prior to the 2008 crisis. Section 2 chronicles events and policy responses after the global panic produced by the Lehman Brothers demise. Starting from a discussion on the reasons why, for Brazil, some external shocks turn into severe crises while others went almost unnoticed, it provides a detailed analysis of the transmission mechanisms functioning in this crisis, some quite novel, on which we will focus. Thirdly, at the last section, we discuss the way ahead, beyond "exit strategies" from the exceptional measures deployed during the more acute moments of the crisis. In fact, there are cases of

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reversal of atypical measures as much of instances of advancing policy directions that were accelerated during the crisis. Section 3 draws conclusions as to the future of Brazilian development.

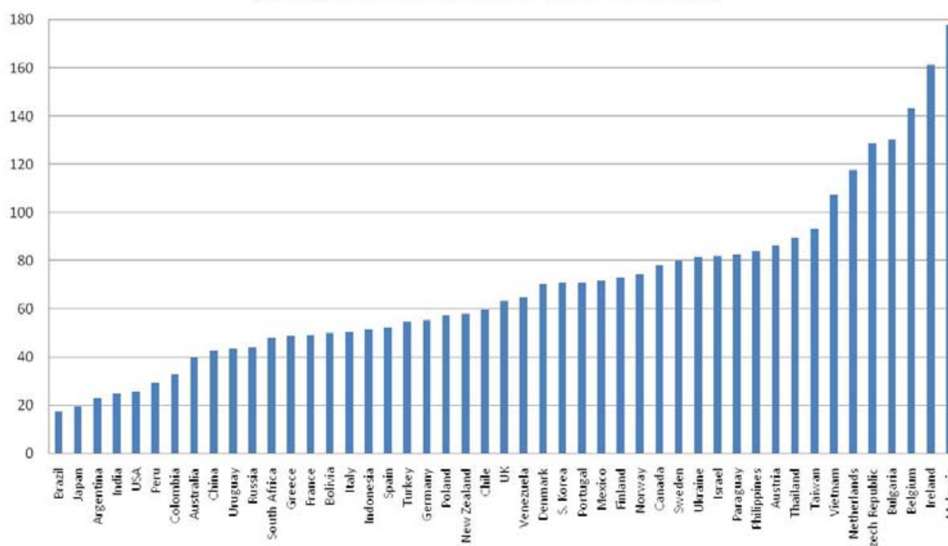
1. Trade orientation of Brazilian development: trends prior to the 2008 crisis

An outward oriented policy stance could have been a natural casualty of a worldwide financial crisis originated at the world's core economy and with aggravating circumstances mostly added at the developed world, especially when it comes to a country with a long tradition in the defense of inward oriented economic growth. "Turning inwards" would not be in dissonance with what was seen from 1929 onwards, a period in which, as put by Carlos Diaz Alejandro, developing nations will never forgive developed economies for the massive betrayal of the Ricardian theories they had always preached. Yet, despite the precipitous fall in international trade in 2008, we did not witness a "disintegration" of the world economy in the sense of a policy reinforced rush to disconnect from the global economy as seen in the 1930s. No such ideas have had any course in Brazil, much to the surprise to a number of observers. It is true that there are isolated signs of protectionism practices and mercantilistic leanings; some complaints about "asymmetries" or anti competitive practices with regards to China in particular, but the magnitude of exchange rate fluctuations seem to belittle the importance of the discussion on differentials in competitiveness, and for that reason also the discussion of more structural ways to develop innovation and comparative advantage. It is as if the capital account, or short term financial factors, at least in times of turmoil, have become a dominant influence over the "factory level" elements traditionally associated to trade and industrial policies. As turmoil appears to be all the more frequent, one wonders what is left to discuss in the field of trade and industrial policies in this brave new world.

As of today, existing indications and tensions in Europe notwithstanding, globalization survived its first truly systemic financial crisis without much damage to its integrity and authorities are keen on having accomplished some relevant advances in the field of global governance. Brazil remains the closest economies in the planet, at least as

far as trade to GDP ratios are concerned, as effectively seen in Chart 1, with a contentious track record of trade liberalization and an extended history of inward oriented industrialization strategies*, and the crisis was relatively mild in Brazil thanks to the domestic market*.

Chart 1: Trade to GDP for selected countries
(Average 1995-2000, opness in constant prices)



Source: Penn World Tables 6.1

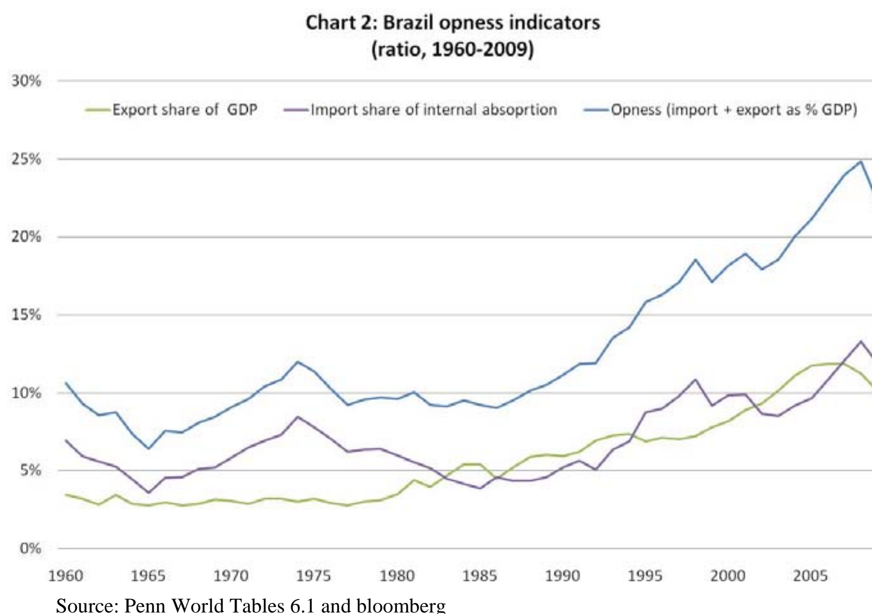
The crisis brought the usual plethora of balance of payments related shocks – collapsing export demand and prices, disappearance of trade credit lines, sudden stop of capital flows, repatriations and dividend remittances – to which the response was a major exchange rate depreciation, some deployment of international reserves to sustain trade flows and some action in the field of derivatives in order to prevent excesses that could further destabilize the currency. An additional impact, to be examined at some more detail below, on Brazilian banks, though not directly related to any of the major plots of the banking stress going on at the Northern Hemisphere, was perhaps the key element in explaining the unusually sharp drop in industrial production and GDP in the last quarter of 2008. If it was not for this accident, the picture of economic growth in Brazil in 2009, where it was near zero, could look much more like aligned to the ones of India and China.

All things considered, no sign of a crisis related backlash towards import substitution, protectionism and other practices of the past could be discernible. This is not to say, however, that the crisis has had no influence on development thinking. In fact, a case could be made that the crisis could be a decisive element in swinging the balance of ideas toward more "Chinese inspired" policies that are congenial to past practices and institutions in Brazil, and whose suitability is very much contested. Before extending the argument, let us take a step back and understand first how firmly Brazil had come to friendlier terms to globalization in the last two decades. There are several good arguments to explain these new attitudes, nearly all related to the hyperinflation experience ending in 1994, which many saw as a clear indication of the exhaustion of the old development model. Indeed, starting from the late 1980s, when defenders of an import substitution strategy could still be found, hyperinflation and policies towards stabilization has had such an overwhelming influence in all spheres of thought, and occupied the minds and imaginations of authorities and economists to such an extent, that it ultimately helped to establish the concept that the extreme inflation was but a clear expression of the collapse of the old inward oriented development model based on "heterodox" (self denominated Keynesian) notions of public finance and heavy protectionism. So much that the design of policies to end hyperinflation turned out into a broad program of reforms affecting every single aspect of the old model and that were deemed essential to stabilization.

The strength of this revisionist thinking was by all means proportional to the fabulous numbers of inflation size and resilience. According to Stanley Fischer *et al* (2002) redefinition of the "high inflation" threshold as 100% at the 12 months rolling basis, Brazil started its high inflation episode in April 1980 and finished it 182 months later in June 1995. In this period, accumulated inflation reach the extraordinary number of 20,759,903,275,651%; this is equivalent to saying that the average *monthly* inflation during these 15 years was nearly 16%. It is hard to argue that intelligent economic life can take place in such conditions, let alone healthy economic growth. This cathartic outcome resulted in vanishing with structuralist and other types of theories congenial to inflation, most of them, if not all, also emphasizing import substitution and self sufficiency. The 1994 monetary reform leading to a successful stabilization – the Real

Plan - marked a major turn towards market driven mechanisms in trade and industrial policies as opposed to anything Brazil had experienced in the past.

A major wave of liberalizing measures followed stabilization, along with ambitious deregulation and privatization programs. Many saw there something like a "fall of the Wall" as reforms processes seemed as profound and far reaching as those seen in Eastern Europe. Yet, macroeconomic instability, most notably affecting exchange rates in a very significant way, prevented price signals produced by the milder structure of protection to have their full impact on productivity and competitiveness. Openness improved, though not in a very flamboyant way, as seen in Chart 2, and despite this progress, Brazil remained with dismal levels of openness as compared to other countries, as seen above in Chart 1.



Source: Penn World Tables 6.1 and bloomberg

The magnitude of real exchange rate variations may have been one explanation to the good yet unimpressive record of productivity and GDP growth, and particularly the indications on the correlation between TFP and openness suggested in Table 1.

Table 1: Labor (LP) and Total factor productivity (TFP) growth estimates and GDP growth, 1985-2007
(average annual growth rates, %)

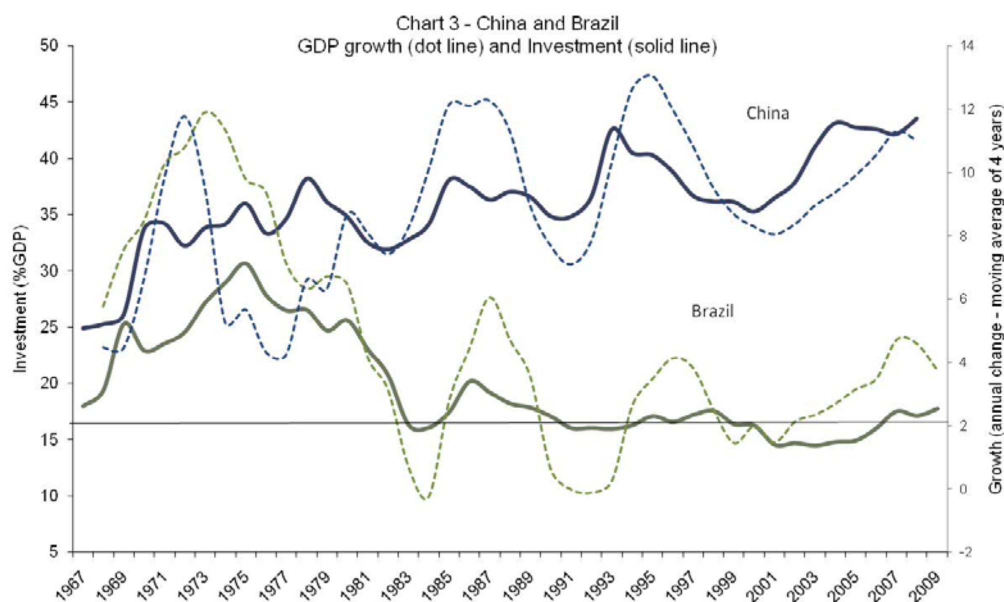
Authors	1985-92	1993-97	1998-02	2003-07	measurement
GDP growth	***2,3***	***4,0***	***1.7***	***3.6***	
Rossi & Ferreira (1999)	-2,49[a]	2,15[a]	-	-	TFP
	1,1[b]	6,21/7,97[c]		-	LP
Ferreira (2001)	-0,48	7,45	-	-	LP
	-1,03	2,0/4,3	-	-	TFP
Pinheiro *et al.* (2001)	-0,7 to 0,65[d]	2,1 to 2,6[d]	-	-	TFP
Bonelli (2002)	-0,68[e]	7,19/8,31[e]	-	-	LP
Our estimate	**-2.3**	**1.6**	**-0.7**	**0.9**	**TFP**
Gomes *et al.*(2003)	-2,0/-2,9[f]	1,0/0,1[f]	-	-	TFP[f]
Souza (2007)	-	1,35/1,69[g]	-0,45/-0,16[g]	0,94/1,67[g]	TFP

(a) 1985-90 and1991-97; (b) 1985-89; (c) 1990-93 and 1994/97; (d) Extreme values on sectoral estimates, 1981-93 and 1994-00; (e) 1985-90, 1990-95 and 1995-00; (f) 1976-1992 and 1992-2000, estimates for TFP and "discounted" TPF, capturing shifts at the technological frontier; (g) Estimates with reference to the national accounts of 1985 and 2000 for 1992Q1-1997Q4, 1998Q1-03Q3 e 2003Q4-06Q4. Sources: J. L. Rossi Jr & P. C. Ferreira (1999); P. C. Ferreira (2001); A. C. Pinheiro, I. Gill, L. Severn & M. Thomas (2001); R. Bonelli (2002); V. Gomes, S. Pessoa & F. Veloso (2003); J. R. C. Souza (2007).

No doubt, crises in 1994, 1997, 1998, 1999, 2001 and 2002, some of which made more serious to a large degree by the incidents and the events of the stabilization process, may have prevented more substantial gains from reforms and from the new policy stance. Promises related to growth and competitiveness, all crucial to open the political gates to large scale reforms, seemed not fulfilled, as it appeared that the reforms program had stopped short of its full implementation or, alternatively, its allegiance to the canons of the so called "Washington Consensus" resulted misdirected. Ultimately, good results in growth and productivity are the elements around which one builds the constituencies supportive of reforms. Or else, reformers are bound to political weakness, as it was indeed the case. Extensive soul searching inquiries were conducted while the leftist administration of president Luis Inacio Lula da Silva came to power in 2003. Its policies, however, did little to settle the issue. Not only no sign of innovation away to conventional macro policies could be seen but also no sign of backlash was perceived in any of the most contentious reform processes associated with the "Washington Consensus" foremost among which privatization and trade liberalization. No further advancements were considered, on the other hand. Reforms came to a halt altogether as if

the country need to heal from the political wounds of the aggressive reforms conducted during the Cardoso years. The maintenance of the policy stance, most notably a 4% to GDP primary surplus, especially in the absence of external shocks, led to an extended period of good macroeconomic performance mostly produced by increased credit and personal consumption. Much welcomed signs of a crowding in phenomenon were visible and pointing to promising new directions as to a new growth composition.

Growth was significantly higher than observed during the Cardoso years: 4,4% on average on 2002-2009, against 1,8% on average for 1995-2001, reflecting very obviously the fact that Cardoso carried the load of fighting hyperinflation and was hit by three external crisis. Worse results nevertheless. Little change could actually be seen in the rates of aggregate investment in the two presidencies: gross fixed capital formation remained under 20% of GDP, as seen in Chart 3, throughout the 1990s and 2000s.



Sources: Penn World Table 6.1 and bloomberg

This has been constantly pointed out as the most important obstacle to sustained high growth, and the contrast to China highlighted in Chart 3 is everything but accidental. During the year of military rule public savings were at its historical high, adding up to private savings so as to sustain investment rates over 25% of GDP. With additional help of “external savings”, i. e. the current account deficits, Brazil lived its “economic

miracle" during these years, and the similarities of the growth model, mechanisms and discourse with contemporary China are remarkable and at the same time puzzling. Average annual GDP growth rates for Brazil in 1967-78 was 9.5%, the very same rate observed to China for 1990-2000. The Brazilian "economic miracle" did not last much. The transition to democracy started in the first half of the 1980s, and was expedited by the deteriorating performance of the economy especially after the hit taken in 1982 with the Mexican and Brazilian moratoria. The first civilian government inaugurated in 1985 when inflation was running at 215% for the calendar year 1984. When President Sarney finished his administration in March 1990, inflation reached an all time high of 83% on that specific month. During these incredible five years of the so called "New Republic" an explosion of social demands all converging to the budget, and finding expression in the new 1988 Constitution, led to a fiscal crisis and to hyperinflation. A rare case of peacetime hyperinflation to which the most visible cause was the inconsistency between social demands expressed in sharply increased government consumption (mostly related to social security, health care, education and social overhead, all summarized by the expression "social debt"), ambitious public investment programs, and society's stiff resistance to raise the tax burden. These mechanisms have been extensively discussed elsewhere (see, for instance, Franco, 1999) and the issue to take note for our purposes was that, after the Real Plan, and new "growth equation" would naturally evolved if private savings and investment made up for the eroded savings and investment capability of the public sector. Budgetary, fiscal, social security and tax reforms, along with extensive internal debt and public banks restructuring, addressed the fiscal crisis and set the stage for a "crowding in" process. Privatization was crucial in transferring investment responsibilities to the private sector in important segments: petrochemicals, steel, mining, telecomm, electricity, among others. To judge from the huge magnitude of investment programs of privatized enterprises, this was by far the more important contribution privatization has made to long term development of the country, much beyond the debt cancelations derived from direct privatization revenues.

The years following the success in stabilization saw developments in all these fields, but to an extension not large enough to produce any significant increase in private savings and investment, as indeed seen in Chart 3. In fact, the continuous difficulty in

improving the fiscal situation maintained the economy on a chronic “crowding out” situation whereby the continuous growth of the private economy was not matched by budgetary improvements to allow a changed aggregate demand composition. Unusually high interest rates – as a matter of fact the highest in the world – offered a clear expression of the problem and represented, unquestionably, a leftover of the hyperinflation years. It was as if Brazil succeeded in ending an infection producing hyperinflation but the antibiotics did not completely eradicated fiscal malpractices that remained in the system, on a much smaller magnitude, yet large enough to produce a classical “crowding out” situation maintaining interest rates at levels that are exceedingly high. No wonder investment ratios are that small in the country with the highest real interest in the world, this being the challenge to address in order to allow private investment to approach levels observed in emerging Asia. Much progress was made, however, the reduce the size of the problem through the years, and many would explain the flamboyant behavior of Brazilian capital markets up to late 2008 as indication of the beginning of a “crowding in” process. Yet, resistances to further improvements in fiscal policies were driving the economy towards overheating and towards renewed inflationary pressures. The Central Bank was indeed initiating a tightening cycle right when the Lehman Brothers event changed everything.

This is the background against which the 2008 crisis and the debates it entailed have to be seen in context.

2. The 2008 crisis: impacts and responses

The 2008 crisis, on a first observation, was an external shock and in this regard very similar to others that took place in several occasions in the past. There are external shocks that turned into crises, understood either as financial distress always accompanied by significant adverse changes in GDP growth, and others that did not; an interesting issue is to investigate factors that leverage the impacts of such events. A recession is a well defined phenomenon as fixed by established methodologies related to the measurement of business cycles. It light of myriad external shocks experienced through the years - 1974, 1979, 1982, 1987, 1989, 1991, 1994, 1997, 1998, 1999, 2001, 2002 and 2008 – it is

interesting to ask when and why they “cause” a recession. In order to answer this and as a prelude to the discussion of the 2008 shock and ensuing recession we ran two equations to offer a summary of past experience, as shown in Table 2. The two first are “PROBIT and LOGIT” equations assessing the factors affecting the probability of a recession for the reference period.

Table 2: Estimation results, model of recession and GDP growth

	Recession dummy		GDP growth
	Probit	Logit	OLS
Global growth	-0,82	-1,49	0,48
	(0,02)	(0,05)	(0,04)
Reserves to external debt	-0,05	-0,09	0,04
	(0,09)	(0,10)	(0,03)
Fiscal deficit	0,38	0,64	0,00
	(0,03)	(0,05)	(0,98)
d (saving ratio)	-0,25	-0,44	0,40
	(0,03)	(0,05)	(0,03)
d (Terms of trade)	0,00	-0,01	0,22
	(0,98)	(0,91)	(0,00)
Constant	1,63	3,03	-0,25
	(0,24)	(0,22)	(0,89)
Number of obs	29	29	29
R-Square	0,49	0,49	0,52

Note: t-statistcs are in parentheses. Recession dummy is a variable for Brazilians recessions as indicated by Fundacao Getulio Vargas

The coefficients reveal a curious “counter-keynesian” result whereby higher fiscal deficits *increase* the likelihood of a recession, though we cannot rule out a two-way causation here. An important point is an increase of one percentage point (p.p.) does not have a huge difference in a range between a fiscal surplus and a deficit of 3%, but a 1 p.p. above deficit of 3% increases in 22% a probability of a new recession[‡]. More importantly, the strongest element reducing the probability of a recession is the ratio of international reserves to external debt, it works like an insurance: when international reserves ratio are low, increasing 1 p.p. of international reserves ratio reduces the probability of a recession in 2% (when we consider a range of international reserves ratio

[‡] See marginal probability in Gujarati (2000), chapter 16.

between 0% and 20%), like in the 1980s, the mix of low reserves ratio and high current account deficit produced were conducive to frequent recessions (at the time designated as "stop and go" policies). Nevertheless, when international reserves ratio is higher than 20%, increasing of 1 p.p. reduces 0.5% the probability of a recession, instead of 2% when international reserves ratio is lower. Another point is when the World is in a recession or growing below the trend (we considered it when the global growth was below 2.5%), an increasing of 1 p.p. of a global growth reduces in 18% the probability of a new Brazilian recession. Considering the World is growing above the trend (higher than 2.5%), the impact of marginal probability is so much lower, an increasing of 1 p.p. of a global growth reduces just 1.3% instead of 18%.

The second equation an ordinary least squares version of the first, though with economic growth as dependent variable. The importance of international reserves in this equation can only be explained if one accepts that instability produced by external shocks has had such an overwhelming, even though *ad hoc* effect on growth that its antidote, reserves, seem to be more important at a first observation than any other long run structural elements. In a less shock prone economy this result would appear exotic, but a shattered emerging economy with a long history of macro instability, it makes every sense.

External shocks are usually thematic, often related to geographies (Mexico, Asia, Russia, etc) or to specific issues (oil, commodities, hedge funds in trouble), and this time around the theme was broad and far reaching: banks. The worldwide deleveraging and risk reduction movements produced sudden stops in almost all types of capital inflows, sharp terms of trade losses, falling external demand, repatriations of portfolio investments and even some disruption in foreign trade mechanisms due to the disappearance of trade lines and sharply increased country risk premia. The direct impact on the exchange rates was brutal: from September onwards, in 45 days the Real lost approximately 45% of its value.

There were indeed some very unusual influences to such a big depreciation of the currency, and the problem was, alas, connected to foreign exchange derivatives. The surprisingly wide dissemination of "toxic" derivatives products affecting balance sheets of non-financial corporations of all sizes multiplied the impacts of the Real depreciation

on Brazilian companies in novel and dangerous ways. In some interesting ways we have here something similar to what happened in the USA in the field of "asymmetry of information": some banks sold highly dangerous products to their clients with little explanation as to implicit risks, or outright misrepresentation, and buyers lacked the skills to discuss the products, the risk management capability or simply acted on trust. This is very much the same template of the selling of structured products based on subprime mortgages in the US, which one could find in Brazil in the field of exchange rate based derivatives.

As the scant evidence available indicates, a few hundred companies were offered to launch far out of the money put options, which they sold to the banks from which they drew their working capital financing from. Thanks to the premium of these options, companies could *reduce the costs of bank financing* in exchange for the puts they sold, though by all means with a very clear underestimation of the risks involved. Notional amounts were huge and potential losses unlimited if the exchange rate depreciated enough to reach the strike prices. If not, it appeared to be only a sophisticated mechanism to reduce the cost of capital.

With the unusually large devaluation taking place from September 2008 onwards, and at a very rapid pace, the disaster materialized and such options reached strike points. Many prime companies entered acute distress, especially in the cases of listed companies, where the size of the exposure had to be made public, with truly devastating effects over those involved: Aracaruz, Votarantim, Sadia, were the outstanding examples of massive value destruction, while a few hundred of other non-public companies in the same situation could quietly negotiate with their creditors. There was no precise account of how many companies and how much was involved in such operations. Some of the largest banks reported some features of their exposures, with numbers varying from US$ 500 Million to US$ 1,5 billion in the three banks reporting on these deals. These disclosures, unquestionably a fraction of the size of the problem, attempted to answer considerable market anxiety on the size and scope of these banks *credit* exposure derived from the liquidation of the options and the financing of the losses. The Aracruz situation had already been revealed, so was the identity of its creditors, and analysts were concerned about the damage that could do to major Brazilian banks. Announcements

were an uncommon display of transparency, but since they referred specifically to deals known as "target forwards" and swaps with "verifiers" (put options at predefined strikes), which were the specific operations under heavy public scrutiny because of the Aracruz affair, they left the sensation that there was *much more sensitive information being withheld than revealed*. Not to mention the fact that, to judge from the information disclosed from the Aracruz case, offshore deals made over the counter by foreign global banks represented the largest part of these operations. The Aracruz situation alone (the equity value of the company was around US$ 9.6 bn in June of 2008) involved losses of approximately US$ 8 Billion and presumed notional amounts between five and ten times this. How exposures of this huge order of magnitude could be entered without appearing in any regulator's radar screen is a very relevant and difficult question to address, and that does not belong to the scope of this essay. Yet, this was one of the key features of the crisis transmission into Brazil.

The fact was that the heavy rush to stop or to hedge these exposures in futures markets for the Real at the derivatives exchange in Brazil (BM&F Bovespa) put an enormous pressure against the Real and forced the Central Bank to act very swiftly in the sale of foreign exchange swaps to feed those willing to endure the losses and close these exposures. The Central Bank reported some US$ 33 billion in sales of such swaps which, given its non-deliverable characteristic, did not affect international reserves. A comparable amount in hard reserves was deployed in a number of ways (outright sales, funding of trade related credit lines, purchase of Brazilian paper, etc.) less to lean against the wind than to reinstate markets for trade financing.

It is quite remarkable that all such actions were directed to help companies remedy the losses produced by an undetected and yet incredibly dangerous dissemination of "toxic" products with a huge potential of destruction. Nothing like this has been seen in other crisis. Yet, by far the strongest and most worrisome aspect of the crisis was felt in some Brazilian banks that were in no way involved with "toxic" derivatives, except perhaps in an indirect way through the heightened public concern on banks. There was little or no direct connection between Brazilian banks at large and events going on in the US and Europe. Nevertheless, the "transmission" of a "risk aversion shock" to Brazil was very concrete and in many respects its impact seemed like what happened a few years

back when Banco Santos failed. This episode involved a small to mid sized bank specialized on wholesale funding from institutional investors on the liability side, and on corporate middle market on the asset side, the exact market niche this bank operated into. When the Central Bank intervened in Banco Santos in 2004 many concerns spread through the wholesale time deposit market producing a major increase in standards and risk aversion on the part of the major players in this market, mostly pension funds. Other middle market banks with similar funding needs as Banco Santos suffered significant losses in their funding producing considerable stress, though for a short period of time. No other casualties occurred in this episode.

During the second half of 2008, and after the Lehman episode very clearly, Brazilian banks found themselves in a situation that resembled the Banco Santos intervention aftermath, and this appeared more serious that the direct impact of the crisis on banks through reductions in trade lines and in all other forms of external funding. Considering the medium sized banks as a group the indications were that they lost nearly half their deposits in the two months following the Lehman Brothers event. Offsetting measures were deployed by the Central Bank in a massive scale and again no casualties resulted from what was legitimately a bank run. One of such measures was the creation of especially insured deposits up to R$ 20 million for every individual investor, though with a limit for receiving bank of up to the larger value between 2 times its capital or the level of deposits in June of 2008, but limited R$ 5 billion per institution. This very exceptional guarantee has not been removed so far, calling for justifiable concerns on moral hazard.

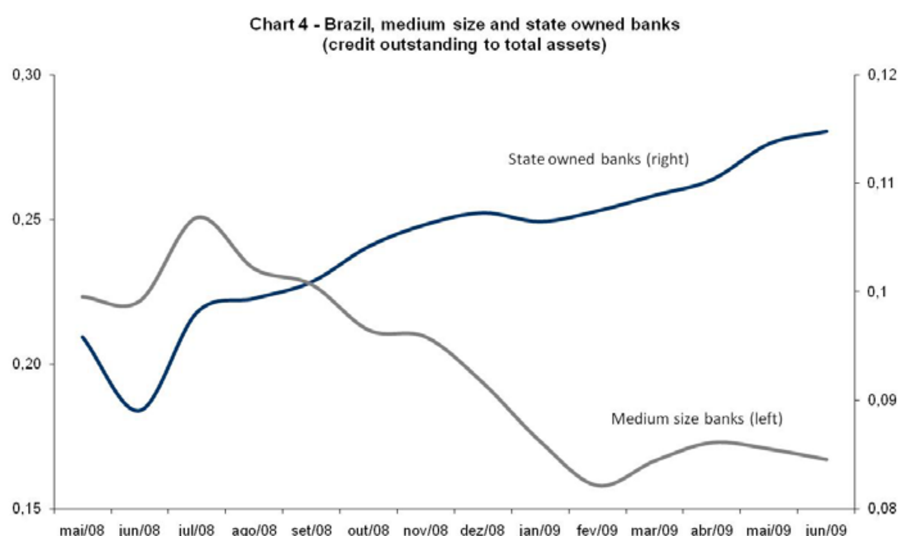
Amongst the factors relevant to explain the system's resilience, it is worth pointing out firstly that Basle ratios have been significantly higher in Brazil than most other countries, which is explained not so much by regulation requirements alone (Basle ratios are 13% of risk weighted capital, and the average for the system is 18%) but by the fact that the absence of limited liability protection to controlling shareholders and directors in the event of intervention and liquidation results in overly conservative banks, with chronic excess capital, little maturity mismatching (transformation), and asset concentration of very short term operations. This feature of Brazilian banking legislation may surely be a new twist in the regulatory issues under discussion in the US[§]. In

[§] As extensively discussed in Franco & Rosman (2010).

addition, 11 middle sized banks amongst the ones most pressured listed their shares in the two years before the crises each one raising their capital by R$ 1,5 Billion on average.

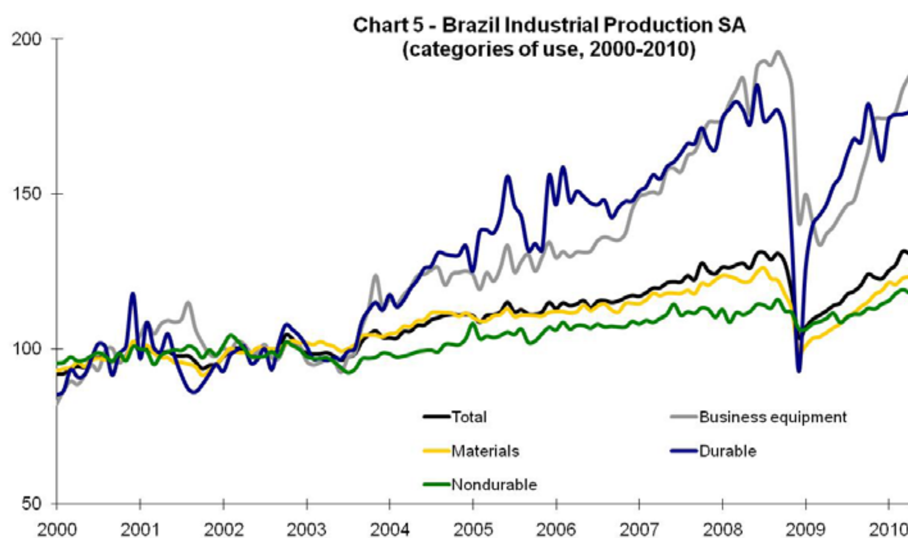
The heavy regulation tradition, combined with the weight of state owned banks, notably Banco do Brasil and Caixa Economica Federal, and the novel function of the FGC (Fundo Garantidor de Créditos, the local equivalent of the US FDIC) increased very considerably the "arms length" intervention capacity of the authorities, and in this particular episode, both federal banks were extremely active in the secondary market of credit portfolios helping very decisively banks in distress to sell their less liquid assets in order to honor redemptions.

Another important prudential resource was the fact that reserve requirements in Brazil are very high compared to any other country. Although this can be hardly justifiable on grounds of the need of monetary policy, as it they serve to provide funding for credit programs of the government, mostly related to agriculture and housing, and should therefore should rightly considered a distortion, it is no less true that they may have an important a "precautionary" function as the requirements can be changed to undertake sharp changes in bank liquidity. Significant reductions in such requirements undertaken during the critical days of the crisis represented some additional R$ 100 Billion in cash to banks (total time deposits are R$ 1,25 trillion in June of 2008). Chart 4 shows how state owned banks maintained the level of new credit, avoiding a worse deterioration in consumption, when private banks were decreasing their new loans.



Source: Brazilian Central Bank

The monetary authorities made their part and avoided any accident in the banking system, which would have been disastrous to the economy. Yet, the acute bank distress had very considerable repercussions in the economy. The credit contraction produced by the banks under distress was particularly strong in the sales cycle of durable goods, most notably vehicles 30% YoY. The paralysis in credit was sharp; it came to a stand still and this was surely the cause of the rarely seen contraction of industrial production observed in the fourth quarter. As seen in Chart 5, industrial production indices display volatility typical of financial data, and the most impressive decreases were associated with durable goods, thus less affected by external demand contraction than by domestic credit paralysis stemming from financial distress.



Sources: IBGE (Brazilian Institute of Geography and Statistics)

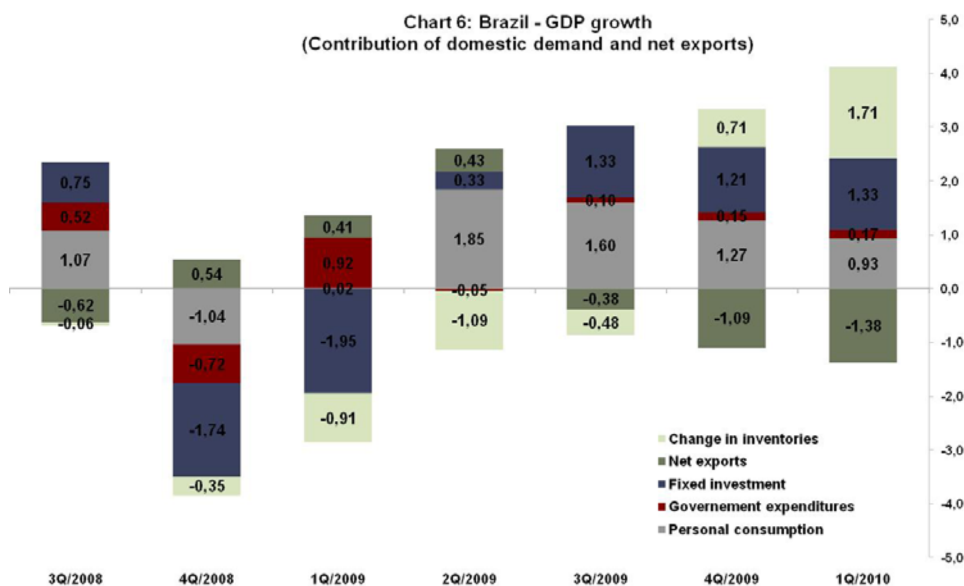
The return to normalcy in the financial system was quick despite the huge depreciation of the Real and its impact of the corporate sector. True that there was little of exchange rate denominated public debt, thus no balance sheet losses to the public sector. Yet, the most important of all differences with respect to previous external shock induced crises was related to the inflationary consequences of external adjustment. Most usually big devaluations were needed to restore external balance, and the working out of inflationary consequences of the exchange rate adjustment was always painful. This time

around, however, the terms of trade loss was so severe that more than offset the impact of the Real depreciation on prices. Wholesale prices fell, bringing down consumer price indices in a moment the Central Bank was right at the beginning of a tightening cycle. To this respect the crisis worked as providing a free ride to monetary policy, as the Central Bank could turn around and pursue aggressive *reductions* of interest rates where one was expecting the opposite before the Lehman Brothers event. This uncommon circumstance allowed monetary policy to help banks and the real sector without this being any departure of inflation targets, or without the Central Bank openly admitting any other influence in the fixing of the interest rate other than the normal course of business in pursuance of the inflation targets routine.

With the rapid normalization of the credit channels affecting the automakers and durable manufacturers, the effects of reduced interest rates, actually the first time Brazil has ever seen one digit nominal interest rates at least since the founding of the Central Bank back in 1965 at least, started to be strongly felt in the ensuing recovery. In fact, in this particular issue, the crisis may have advanced the clock, as the economy reacted beautifully to interest rates closer to civilized rates. Yet, as a by product of the crisis, government increased fiscal spending openly alluding to “anti cyclical policies”, and soon we were again facing “crowding out” symptoms and overheating just as before the Lehman event and possibly in a stronger way.

To complete the picture a few words are necessary on what happened to foreign trade: The fall in export volumes help deepening the contraction in activity, but as shown by growth decomposition methodology (chart 6), falling in import volumes was bigger, and consequently, net export was positive for three quarters after the beginning of the crises. Indeed, the domestic market was much more relevant both to the contraction in IV-2008 and most especially to the recovery in II-2009. In first quarter of 2009, a huge fiscal stimulus reduced the GDP decrease, after that, the restoring of new loans by state owned banks (chart 4) gave impulse to personal consumers and private investment. The massive depreciation of the currency had a strong impact on the trade balance and the current account, and for this particular reason the authorities, especially in the Finance Ministry, seemed not entirely unhappy with developments in the foreign exchange market. Complaints about currency continued overvaluation had been frequent in the

years before the crisis and had prompted policy makers to implement restrictions to capital inflows of certain types through taxation on the moment of entry. These restrictions were instantly removed as the crisis set in.



Source: IBGE National Accounts.

3. The "exit" and the new directions of the development model

The crisis and recovery in Brazil, to judge from the description in the last section, had a somewhat more complex relation with the global financial crisis than one could normally infer from the usual transmission channels. Moreover, different from other countries, it is not exactly right to argue that Brazil deployed very exceptional policy measures unlikely to remain or to be sustainable in normal circumstances. Whereas interest rates in developed countries were set close to zero in quantitative easing schemes to be reversed at some point in the future, in Brazil, they remained at solid 8,75% throughout the crises, this being, alas, the *lowest* nominal interest rates at least since the 1950s. Reserve requirements, even after being substantially reduced, still represented a remarkably high percentage of all deposits (31%) hardly justifiable on monetary policy grounds. Fiscal policy was already on an expansionary tone before the

crisis, but the chance was not missed to climb a few more notches given the alleged need of "anti cyclical" stimuli. The impact of this display of naive Keynesianism is very much a matter discussion; it was not very prudent, especially in light of Brazil delicate track record of broken promises in the fiscal domain, and one can legitimately question whether it was really necessary.

In the first quarter of 2010, thanks to sharply increased private consumption, the economy was overheating again; inflation was displaying worrying signs, capacity utilization and the labor market were stretched and the Central Bank started a new tightening cycle. The return of a crowding out configuration on the back of a heightened fiscal and credit impulse loaded with rhetoric overtones somewhat deviant of orthodox thinking could be explained, on a first approximation, by the political cycle. Election motivated spending sprees can be seen all over the planet, and Brazil should be no exception. Yet, there seemed to be more to it, as the nature and extent of government activism during the crisis and recovery may well be indicative of new directions in economic policy in the coming years. The challenge of increasing investment rates and thus ascertaining sustainable high growth looms large and open, and in emerging markets in general, and in Brazil in particular, one can say that policy paradigms have been significantly affected. While in the decade of reforms emerging markets looked at Washington for recipes, most notably from the multilaterals from which emerged the much vilified "consensus", now all curiosity is directed to China. The continued and flamboyant success in economic growth invites a speculation on how replicable the "Chinese model" might be in other emerging economies. For Brazil, dealing with China as a trading and investment partner has been a rewarding experience, given the complementarities between the two economies, though with the usual commercial tensions. Emulating China is an entirely different proposition. It is an idea that seduces the emerging world not only in view of the legacy of the Bush administration and of the banking crisis, which could do little else to trash what was left of the "Washington Consensus", but, as argued, something to do with the Chinese policy mix. In this particular connection there are many things to observe perhaps the first getting attention of Brazilian was the importance of the accumulation of reserves. There was a time one would diminish the importance of reserves, evoking the New Zealand example of a

country in which a pure float turned unnecessary the holding of expensive international reserves (and the more expensive the higher the interest differential) for if the central bank will not undertake any intervention there should be no reason to hold any foreign currency. Emerging markets hardly ever adopted this wisdom; "fear of floating" is by far the rule with very little exception, as it well known. The crisis has only reinforced in a dramatic way the "mercantilistic" view that current account surpluses and reserve accumulation is the shortest way to prevent external shocks from hurting domestic growth, as indeed suggested by our empirical exercise in Table 2. Yet, the lure of the Chinese examples go well beyond that.

In Brazil, the debate on the next steps in the field of economic development can be said to have been particularly referred to China, or more specifically to some key features of the Chinese policy mix that seem somewhat familiar to the realities of the Brazilian economy. Or it may be outright anti-American, at least if one judges by Brazilian interventions at the G-20 and especially the IMF, and broader lines of foreign policy. It was noted above, in connection to Chart 3, that there are similarities between China and Brazil during "economic miracle" years during the military regime. It is interesting to stretch this analogy a bit further. On the "demand side" one can argue that not only government investment was the key driver to growth but also "financial repression" was essential to mobilize "forced savings" out of the private sector which, in itself, biases demand towards investment in detriment to consumption thus biasing relative prices towards tradables, or towards a "competitive" exchange rate. Up to this point, Brazil in the 1970s and China today look very much alike.

On the "supply side", however, the distinguishing feature of China is the demography, or the excess supply of labor, combined with the deficit in the field of democracy, this latter feature being also important for the "demand side" of the model to the extent that it reduced pressures towards public spending on social security and overhead, which further biases relative prices towards tradables. This was less clearly the case of Brazil in the 1970s.

The effect of demand and supply elements above described is the unusual combinations of low interest rate and high savings (and public investment) and a very "competitive", or undervalued, exchange rate, which is, as put by Eichengreen (2010, p.

11) “an outcome, or a relative price that results from the elements comprising the development strategy, not a policy variable in and of itself”.

In fact, the Chinese “model” outlined above is not at all distant from Arthur Lewis classic 1954 analysis of growth under “unlimited supply of labor”, an analogy that was common in Brazil in the 1970s. In this model, wages at permanently at a “subsistence level” and growth results in a number of paradoxes: capital accumulation does not increase wages but profits, which means increasing inequality (share of profits in GDP) and a rising investment rate (gross fixed capital formation), as capital accumulation does not affect wages so long as surplus labor prevails. Since savings result exclusively from profits, the rising share of profits on GDP implies a rising savings rate, or increased “forced savings”, consistent with a current account surplus.

The actuality of Lewis analysis as applied to China is intriguing, and not at all inconsistent with Easterly (2005) finding of a negative correlation between real exchange rate overvaluation and per capita growth rates. It may be incompatible with Rodrik (2008) contention that undervaluation *promotes* economic growth, to the extent it provides a second best policy that offsets shortcomings in competitiveness and infra-structure deficiencies precluding export performance. The issue is at the very core of the current Brazilian debates, as the currency has been, since the monetary reform in 1994, absent crises, under a constant appreciation trend. In the early years of stabilization, given its exchange rate based character, the problem appeared to be temporary, but the currency experience years later, under Lula, was all the more similar and revealing: the policy mix in Brazil bias the economy toward a stronger currency, which is by no means “Chinese” and, for this particular reason, detrimental do growth. Again, it should be argued that the mix might be a low growth one, *having appreciation as a consequence*, which is entirely different from arguing that the fixing of the exchange rate at overvalued rates was in itself a drag on growth.

If one looks at Brazil having in mind the “demand side” of the Chinese model many common features are to be found. Mechanisms of “financial repression” producing “forced savings”, many of them created in the 1970s, are still in place, though with much less weight than they once had. Several important mechanisms are worth mentioning given the present administration’s declared or revealed intentions of using them more

intensively: public commercial and development banks (sometimes public commercial banks behaving as development banks) growing in importance thanks to acquisitions, heavy capitalizations and expansionary credit policies, public enterprises sponsored pension funds engaged in government programs, tax fed budget funds with "organic" connections with development banks (like FAT/BNDES and FGTS/CEF), reserve requirements and credit "directions" imposed on private banks. All these mechanisms are contentious as they involve conflicts of interests between private shareholders or participants and public endeavors and also because they are ultimately "para-fiscal" activity somehow affecting the public deficit. To that extent, these mechanisms only aggravate a "crowding out" situation that is typical to Brazil and not at all Chinese. The roots of Brazil's difficult fiscal situation, as mentioned in the first section above, is social security, health and education related spending done to an extent unthinkable in China, yet normal for any industrialized Western democracy. Hyperinflation was indeed a demonstration that Brazil could not have public investment in levels compared to the ones seen in China and to have government consumption in the levels of Southern Europe.

Besides, on the "supply side" of the Chinese model, Brazil does not possess any more the demography and the (lack of) democracy that maintains China under the regime of "unlimited supply of labor", with all its implications as regards wages and the exchange rates. Absent these conditions, the exit towards a "Chinese model" regarding public investment is bound to produce a marked deterioration of the fiscal accounts, and the necessity to "crowd out" private spending, most likely investment demand, in order to accommodate government programs and credit of an increased side. Following the recovery from the 2008 crisis, the "Chinese" trends in Brazil are visible in the authorities' articulations on economic policy. The proximity of elections seem to produce spending sprees and rhetoric hostile to US style neoliberalism, a combination that seems to point to the East as paradigm. Yet, the social and economic realities of Brazil do not seem to allow much replication of the Chinese policy mix. In fact, the fiscal limitations would seem to point quite otherwise.

The question of what the competing model should be is not that difficult. Its basic assumption is simple enough: further fiscal restraint would succeed in lowering the cost

of capital, be it because it would soften the deadlock “loose fiscal & tight money”, or because it would most inevitably improve sovereign risk ratings a couple of notches above the “investment grade” status. These are, in essence, the fundamental explanations for the one economic pathology that singles out Brazil as a low investment country: the interest rate. The small period of time Brazil had nominal interest rates below 10%, for the first time in the last 40 years, has offered a glimpse of a new reality as regards borrowing, leveraging, capital markets and equity valuations that captured people’s imagination. In many respects the sensation was as far reaching as the one caused by the end of high inflation, and there is no coincidence in this analogy as both pathologies shared the same origin. Historically, Brazilian companies are extremely averse to any form of indebtedness – exceptions are prime corporations with access to international capital markets – which brings as one forceful implication the fact that capital expenditures are made mostly out of retained earnings. This is actually a micro expression of a low rate of gross fixed capital formation for the aggregate, and a handy way to look at the reason why interest rates are indeed the one important obstacle preventing private investment and saving from reaching levels consistent with high economic growth on a sustainable basis. There is nothing simple about it, in fact is as complex as to say that inflation can be stopped if only the Central Bank stop printing money. Fiscal restraint is counter-intuitive in an economy with substandard growth, especially in politicians’ minds. In fact, they tend to behave just the opposite way, expanding public spending in Keynesian lines and ultimately making things worse.

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