China Development Bank's Strategy and its implications for Brazil

Albert Keidel[1] and Leonardo Burlamaqui[2]

Paper prepared for the MINDS Conference on the Present and Future of Development Financial Institutions – Rio de Janeiro, July 28-29, 2014.

[1] Adjunct Professor, Georgetown University, D.C.Non-resident Senior Fellow at the Atlantic Council of the United States.
[2] Associate Professor, University of the State of Rio de Janeiro. Research Scholar at the Levy Institute, NY.

Contents

Executive Summary

China Development Bank (CDB) is an example of a well-functioning government-owned development bank. Many development banks in other countries perform poorly. CDB shows that a government bank like CDB is a critical component of economic development success. The important issue is not whether a poor country with a weak tax base should have a development bank. In important ways, all growing economies need a government development bank. What matters is whether the development bank is effective or not.

A number of academic studies have purported to prove that government-owned banks, including development banks, are associated with slower growth. Careful examination shows these studies' general conclusions are not consistent with their statistical results. The right lesson about growth and government banks is that some do and some don't associate with faster growth. The focus should be on what causes the difference between good and bad development banks. CDB proves that a government-owned development bank can be extraordinarily effective, and it offers examples of how this can be accomplished.

In considering CDB's strategy, it is important to emphasize that it is not just CDB's strategy that matters. CDB is part of a broader governance strategy shaping the overall financial system so that CDB is effective. Because of this combination of CDB and its enabling environment, the overall financial system – including its private sector – is more efficient and more profitable than it would be without CDB and the other policies that support CDB's operations.

By itself, CDB's effective strategy has been to combine a wide range of techniques and instruments, in an enabling financial environment, to support highly productive public and other long-term investments that would otherwise go unfunded. This is the essence of overall financial efficiency – directing funds saved in many parts of the economy to their most productive and beneficial uses. Private-sector financial systems by themselves are inefficient, because they neglect public investments and fail to accomplish this optimal intermediation result.

The implications for Brazil are these: CDB is proof that development banks can be critical contributor to rapid growth. Recent IMF reviews of the Brazilian economy and its prospects paint a pessimistic picture – essentially a picture of development failure, with per-capita GDP growth for the long-term of roughly 2½ percent. Brazil must find additional ways to raise its investment share in GDP and within investment the share that goes for public-goods investment like infrastructure. If Brazil reforms its financial system, including BNDES, in the direction of capabilities enjoyed by CDB, Brazil could accelerate growth, reduce instabilities, and enhance both productivity and profits in the private sector. CDB is a successful demonstration of development finance, including specific techniques and a broad enabling financial environment. It shows Brazil possible directions that future reforms can take to enhance BNDES' development significance and the efficiency of Brazil's overall financial system.

The major challenge to a Brazilian attempt to introduce lessons from CDB's success would be the initial implications for and resistance from Brazil's private financial sector. Private financial institutions would see a greatly enlarged BNDES and related appropriate financial reforms as potentially threatening. In fact, however, a successful expansion and reorientation of BNDES and Brazil's other government-owned banks would generate a more profitable Brazil for the private financial sector in just a few years because of the implications for rapid growth and increased financial activity across the board.

***

1- Introduction: A snapshot of the Chinese Banking System

The 1980s had very little market-based finance and left China's public and commercial finances deep in red ink for the 1990s to have to deal with. The 1980s and early 1990s were a time of crude post-command-system fiscal and financial reform in which state enterprises were extracted from the national budget and China's four major state commercial banks were created out of the one large single state bank that in Mao Zedong's last decade had been merely a disbursing department in the Ministry of Finance. As a result, even after these early reforms, the operational distinctions between banks, budgets and enterprises were blurred, and the differences between loans, profits and state assistance to enterprises had only gradually begun to take shape.

However, these apparently crude financial shortcomings in the 1980s and early 1990s were in many ways fit for the China's development stage at that point. They allowed the economy to grow and reduce poverty despite the system's blaring shortcomings. For example, China's price system wasn't suitable for reasonable market-based management decisions – either in the financial sector or in industrial and commercial sectors. Many urban enterprises, all effectively owned by the state, had surplus and low-productivity workers at a time when China had no effective labor market to reallocate workers according to market principles. A great deal of urban infrastructure, including roads, schools and healthcare facilities were financed by state enterprises under direction from a combination of relevant central and local authorities. Rural markets had become increasingly independent of the planned system, and inflation from rural competition, expanding rural productivity and rural demand placed increasingly severe pressures on urban household finances.

Under such circumstances, an amalgamated financial design combining public and private operations kept some control over what could have been, and sometimes became, highly disruptive and damaging social tensions and conflict. The Tiananmen demonstrations of 1989 were the most powerful example of the fundamental disequilibrium in China's economy as it traveled the difficult transition road between Maoism and the State-sponsored-market - oriented developmental strategy under Deng.

In banking terms, the 1980s and early 1990s didn't differentiate between state-owned commercial banking and development banking. There were no formal development banks, so each of the four major state-owned commercial banks was in fact a development bank as well, making loans for strategic public projects, propping up the finances of state firms with excess labor, subsidizing product prices lower than unit costs, or sustaining production of products that didn't sell.

The hangover from this 1980s amalgam of bank, budget and enterprise financing was a huge accumulation of non-performing loans on the books of state-owned banks, matched by a correspondingly large accumulation of bank debt on the books of state enterprises. The largest number of these loans were called *bogaidai* (a Chinese acronym for "budget disbursements converted to bank loans") because in the early 1980s when state firms were separated from inclusion in government budgets, they still needed money. They got it in the form of bank "loans" which many firms had no intentions, or means, of ever repaying.

The framework of China's current financial system was initiated in the early 1990s as a conscious program for eliminating the *bogaidai* loans from balance sheets of both banks and enterprises. The process of establishing a legal basis for these reforms gathered momentum with the passage by the National People's Congress (NPC) of a central bank law, a commercial bank law and a company law. China in the mid-1990s created so-called policy banks, for agriculture, foreign trade and domestic infrastructure, as a way of relieving commercial banks of the burden of making government policy-directed loans – which continued on a large scale nevertheless (Keidel:2007, p.1). As for financial regulation, the Chinese system is lean and quite straightforward. The financial sector is regulated by the People's Bank of China (PBOC), China's central bank[3], and/or three commissions: the regulatory commissions for banking, securities and insurance.

The banking sector falls under the supervision of the People's Bank of China and the China Banking Regulatory Commission (Cousin: 2011, p.21). The China Banking Regulatory Commission (CBRC) was established in March 2003 with the aim of increasing the independence of the central bank and, especially, making the regulatory function of financial institutions more robust. The CBRC is the supervisor of financial institutions *under the leadership of the State Council*, which is China's executive. It turned out to be a key player in the guidance of the financial system through reform and recapitalization in the latter 1990s and, even more, in preventing China's financial system from diving into the kind of "casino capitalism" that had been thriving in the US and all over Europe since the eighties[4]. Lardy affirms this very clearly:

> "Most obviously, since China's financial regulatory agencies had steadfastly refused to permit the creation of complex derivative products in the domestic market and severely limited financial institutions' exposure to foreign sources of these products, Chinese financial institutions had little exposure to toxic financial assets" (2011, Locations 452-454).

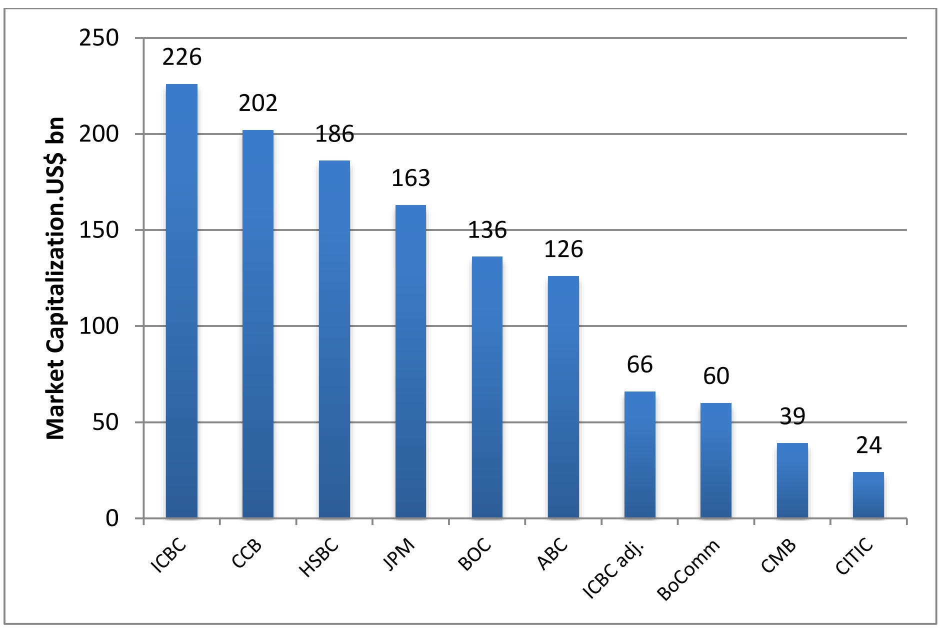
[3] Founded in 1948.

[4] When the savings-and-loan fiasco erupted in the US.

In fact, when in the summer of 2008, a small group of foreign "financial experts" headed to China to give financial advice, Wang Qishan, the vice-premier in charge of China's financial sector, quickly made it clear that China had little to learn from the visitors about its financial system. His message concisely: "You have your way. We have our way. And our way is right!" (Mc Gregor: 2010, Kindle Locations 51-52).In the same vein, Chen Yuan, the celebrated chair of China's Development Bank was clearly thinking along these lines when he declared, in July 2009, "[We] should not bring that American stuff and use it in China. Rather, we should develop around our own needs and build our own banking system" (Yuan quoted by Walter and Howie: 2012, 27).

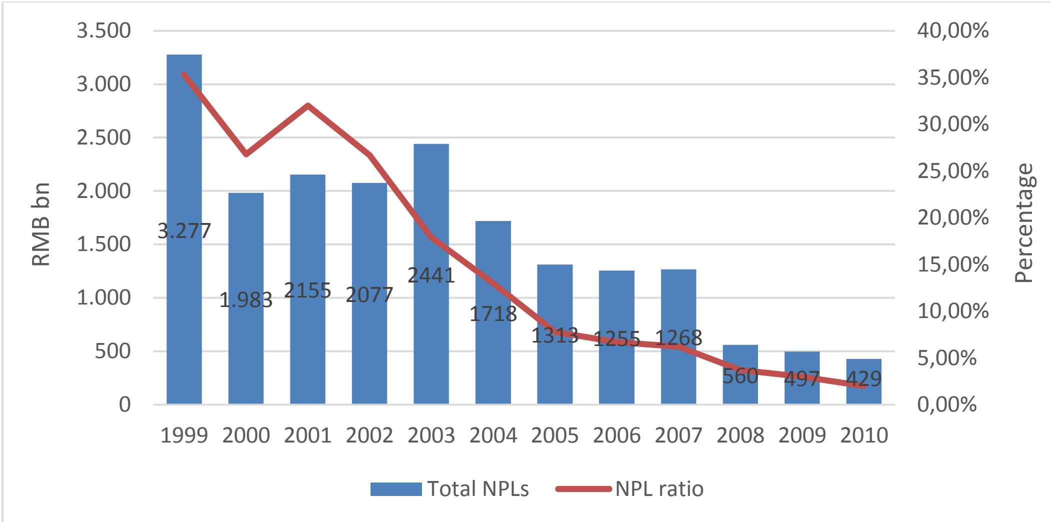
They had a point. If we look at Chinese Banks's capitalization and non-performing loans at the height of the crisis (compared to JP Morgan), the data speak for themselves:

Table **1**- Chinese Bank's Capitalization Compared with J P Morgan (JPM) in 2010



Source: Walter and Howie, Location 1069

Table **2** – Non-Performing Loans of Top Chinese Banks: 1999-2010



Source: Walter and Howie, Location 1114

Notwithstanding, this institutional design was the result of a learning process and major reforms in the urban economy's state sector finances. If we step back and reset to 1997, the reality we meet is that China had launched the enterprise finance and banking reforms it had put off because of the 1989 Tiananmen crisis. To outside observers, it might seem that the July 1997 Asian Financial Crisis (AFC) hit the Chinese banking system hard. However, beginning in the winter before the crisis broke out, China had already begun closing or selling off state enterprises and warehousing non-performing loans. The immediate results were an apparent decline in asset quality and a spike in their non-performing loans. By 1998, more than half of all the loans issued by the Industrial & Commercial Bank of China, the country's biggest lender, were unrecoverable, and for the whole banking system, 45% of loans made before 2000 were declared bad (Cousin: 2011, p 9).

In essence, the party apparatus in Beijing, in tandem with its Central Organization Department, had seized the power to hire and fire senior executives in banks and other state enterprises no matter where they were in the country (McGregor: 2010, Location 1001). To most observers, the government's regulatory system remained intact on the surface. The local banks and regional regulatory authorities were outwardly undisturbed. However, the Politburo had created a *parallel policy toolkit*, 'a powerful yet mostly invisible party body for monitoring financial institutions and their executives'.

These actions were bold and the results quickly showed up. Between 2000 and 2003[5], the government's (more properly, its new regulatory compact) "moved"[6] over US$ 400 billion away from the "Big 4" balance sheets in order to clean them (Walter and Howie: 2012: 5). Largely mimicking the Resolution Trust Corporation of the U.S. savings-and-loan experience in the eighties, the equivalent of four "bad banks", were created, one for each of the Big 4 state banks, to which the bad loans were then transferred. It then recapitalized each bank, allowing them to write off the bad loans and raised nearly US$50 billion of new capital, largely taken from foreign reserves, and by listing their shares in Hong Kong and Shanghai in 2005 and 2006 (Walter and Howie: 2012, 5-6)[7].

Summing up, catastrophic prognoses about the demise of Chinese banks in the mid-nineties never materialized. What did emerge was a strong public financial system whose mission was funding for development. In that vein, the first fact to register when looking at the contemporary Chinese financial sector is that the state and policy banks are the biggest players by a large margin:

TABLE **3** - Relative holdings of financial assets in China, FY2010 (RMB trillion)

RMB trillion	**2006**	**2007**	**2008**	**2009**	**2010**	**US$ trillion 2010**
PBOC	12,86	16,91	20,70	22,75	25,93	3,9
Public Banks	43,95	52,6	62,39	79,51	95,3	14,4
Securities companies*	1,6	4,98	1,19	2,03	1,97	0,3
Insurance companies*	1,97	2,9	3,34	4,06	5,05	0,8
∑	60,38	77,39	87,62	108,35	128,25	19,4

Note: *Includes brokerages and fund management companies. Source: Walter and Howie table 5: Location 806.

Among these players, the most strategic is China's Development Bank (CDB). CDB grew out of a natural need during China's 1990s decade – China's period of most difficult and in

[5] 2003 marks the beginning of the Jintao/Jiabao leadership.

[6] More precisely, provided the conditions for them to write-off their non-performing loans.

[7] The book does not extend the description into what precisely happened in that episode from a "balance sheet perspective", but what seemed to have happened was that the Central bank bought bonds from the "treasury", issuing money at the same time. The banks "sold" their bad loans to the central bank and with the money infused by the treasury, recapitalized and "cleaned" their balance sheets. Note that all the players are public entities, and all of them coordinated by the Communist Party. That means it is a "closed circuit" where there are not hazard decisions nor "friendly fire": no one gets cut off by "market forces", "bond vigilantes" or "bets" by their Citibank or Goldman-like advisor-investment bank against loans or project's ability to generate cash-flow.

many ways most dramatic structural reforms. The need emerged from the unfinished reforms of the previous decade, the 1980s.

2. The Emergence and Maturing of the China Development Bank

"In one decade, CDB has become the financial enabler of both China's global expansion and domestic boom" (Sanderson and Forsythe: 2013, introduction). With that strong statement, the authors of a recent book on CDB begin their analysis of what claim to be "the core of China's state capitalism"… "A system of government-controlled banks and companies that many development countries see as an alternative to a more free market-focused system" (Ibid).

China's cabinet, the State Council, with confirmation by the national legislature, created the China Development Bank in 1994 as part of the same major program of banking and state enterprise reforms meant to clean up the *bogaidai* loans and make sure they never happened again. CDB was part of China's most ambitious and difficult reform effort – what turned out to be more than a ten-year successful program to privatize most state firms, consolidate local governments through major layoffs, write off all bank *bogaidai* loans, recapitalize the banks to clean up those and other bad loans, and separate banks' public policy loans from banks' commercial business.

As mentioned above, the four government commercial banks' non-performing loans were warehoused in government-owned asset management companies eventually bailed out with central bank asset absorption. All but the largest state firms were sold to domestic investors, employees and former managers. By 2005, in addition to government layoffs, more than 50 million state-enterprise jobs had disappeared. Social unrest was widespread, but a combination of media coverage of obvious state enterprise dysfunction and strong but well managed crowd and violence control avoided the tragedies of 1989 at Tiananmen.

For the first few years after its founding in 1994, CDB's scale of operations was small, as it established its institutional structure and trained up its staff with pilot projects. CDB was joined by two more specialized development banks, an export-import bank and an agricultural development bank. Together, they symbolized, in principle, a separation of public policy lending from commercial bank lending. Ultimately, however, because the necessary volume of public policy lending is so large, government-owned commercial banks have continued to make public policy loans as well, but the CDB became the lead bank in this regard. Other commercial banks often lent to projects already supported by CDB, as CDB's participation reassured them that their loans would perform adequately. As we will see below, this pattern of commercial banks, supplementing finance for public projects similar to ways that American commercial banks invest in public projects in the United States.

More useful, perhaps, than CDB's own lending is its ability to leverage additional much larger volumes of funding from other banks and from non-financial companies as well. China spends on the order of 45-to-50 percent of GDP for fixed-asset investment projects. Two thirds of this comes not from banks or the government budgets but from retained gross earnings of for-profit firms and other enterprises. Only 15 percent, roughly, of fixed-asset investment comes from banks. Based on CDB's annual report, its annual net new lending has been roughly 2 percent of GDP since the financial crisis, or only roughly 4 percent of fixed asset investment. That is quite modest when compared to the two-thirds from retained earnings and 10 percent or so from other banks. But this small scale belies CDB's influence over both public project investments and the scale and timing of counter-cyclical investments in times of growth slump or investment overheating.

CDB thus derives its greatest economic influence from its role as a catalyst for larger volumes of investment from other sources. For one thing, other government-controlled banks supplement CDB's lending, as mentioned above. Hence, rather than considering CDB only, our analysis needs to focus on the development role of government-owned banks overall. CDB's annual report mentions that it is fully responsible for 40 percent of government policy lending. That means that 60 percent of bank policy lending comes from other banks.[8] We will see in the next section that CDB supports local government off-budget projects, and in so doing helps encourage other banks to make similar loans. In addition, the timing of CDB initiatives signals the government's economic policy intentions to other banks, making them more comfortable following a compatible lending pattern.

A review of investment funding growth by source over several decades shows the stimulus leadership role of the banking sector, led by government banks – themselves led by CDB after the latter 1990s. For example, when government needed to stimulate growth on various occasions – in 1990-91 (after Tiananmen), in 1998 (after the Asian Financial Crisis), in 2003 (to counter the SARS epidemic), and in 2009 (after the financial crisis) – it started with surges in budget outlays and government bank loans. Of these two, the budget outlay portions were quite small. As a consequence of the relatively quick scaling up of loan initiatives, in each case, much larger investment flows from gross retained earnings followed in subsequent years if not immediately.

Conversely, when China needed to fight inflationary overheating in 1988-89, 1993-96, 2004 and 2010-2011, it began with contractions in budget and government bank lending, which in a year or less were followed by contractions in much larger volumes of lending from enterprise gross retained earnings. In both cases, relatively small-scale counter-cyclical bank

---

[8] This figure squares with CDB's 4-percent share of fixed asset investment lending compared to total bank fixed asset lending's 15-percent share because not all fixed asset bank lending is for policy-guided public projects.

lending patterns were able to modulate the whole volume of fixed-asset investment lending. With CDB in turn playing a catalytic role for all government banking, CDB's leverage over national investment trends is substantial.

Because of this catalytic role, government banking and CDB have also played a role in the gradual increase in China's rate of fixed capital formation as a share of GDP, from 25 percent in 1990 to 46 percent in 2012. This has been an enormous policy success. China did this by carrying out strongly counter-cyclical investment adjustments, led by CDB and other government banks. As already mentioned, when the economy slumped for one of many reasons, CDB stimulated across-the-board investment. When it threatened to overheat, CDB helped lead the way in slowing investment. But while the investment expansion in a slow-growth period significantly increased the share of investment in GDP, investment slowing in a period of overall rapid growth rarely lowered investment's share in GDP by much. Many developing economies desperately need to increase their shares of investment in GDP. Good government banking like that of CDB and its sister banks is arguably the best way to do so.

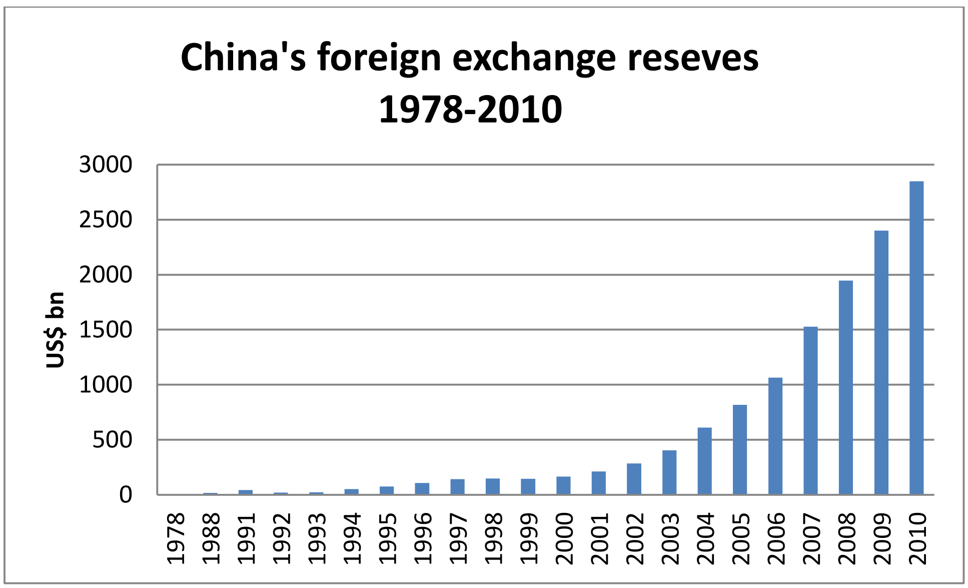
As a final comment on the impact of higher investment rates on productivity, it is important to realize that the commonly used growth accounting frameworks, with their roots in Solow (1956), are flawed. They are neat and tidy in assigning sources of growth to certain factor inputs year by year. But they generally assume that the impact of a year's investment surge occurs only in that year. This is implausible, especially for infrastructure investment but also for industrial investments with considerable learning-by-doing productivity gains from those investments, gains realized also in subsequent time periods. In addition, the stimulus from sustained domestic national demand strength for productivity gains is substantial. Significant increases in domestic demand are the purview of investment.

Typical growth accounting exercises thus understate the growth causality and productivity impact of investment. In China, CDB and other government banking investments emphasize strategic investment in sectors that draw on underutilized resources and that enhance productivity for subsequent years. This pattern goes a long way to explaining what standard growth accounting characterizes as a somewhat mysterious additional source of growth: total factor productivity (TFP). The structural failings of standard growth accounting, however, make it clear that it is investment that generates much of this unexplained productivity, by spreading its benefits into the years past where the Solow equations consider it as an input. This realization that strong investment has additional benefits supporting China's growth success compared to what seems obvious from growth accounting leads to placing even more importance on the strategic investment success of CDB, its sibling agencies, and their overall operating environment.

3- CDB's Global Strategy

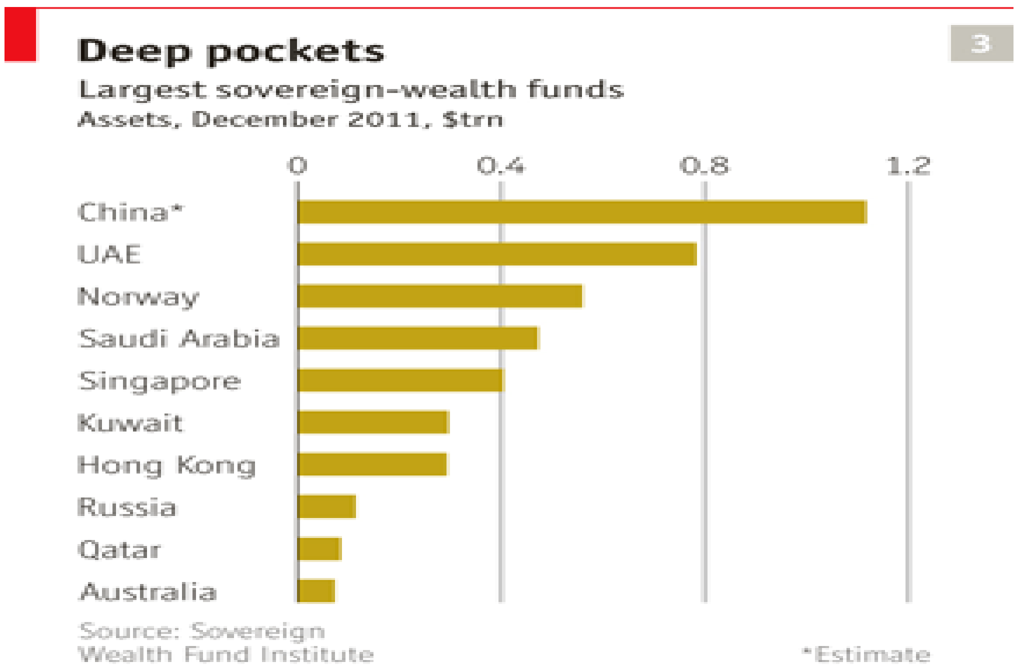
The fact that China has amassed more than U$ 3 Trillion in foreign reserves already places the country in a very special position in the global financial landscape. Having between 50 and 60% of those reserves in US Treasuries gives the *appearance* that China is the U.S Government's banker. This conclusion, however, is a misinterpretation of the source of China's reserves, which clearly has been the United States' credit creation, which began in the 1990s, continued with liberalized leverage before the crisis and finally, even after the crisis, carried on with the Fed's QE1, QE2 and QE3 sequences. Today, and not surprisingly, China's Sovereign Wealth Fund (SWF) is the world's biggest (See Table 7 below), based on more than two decades of U.S. credit-based liquidity creation. What is more, by a relevant IMF standard for gauging the scale of a country's reserves, China's are a modest share of its total money supply, comparable to India's. It is modest especially compared to some of its Asian neighbors, like Malaysia and Singapore.

Table **4**- China's foreign exchange reserves



Source: China's statistical yearbook/ 2010. http://www.chinability.com/Reserves.htm

Table 5- Largest Sovereign Wealth Funds



Furthermore, China's policy banks are crucial players as well in managing China's U.S.-demand-driven foreign exchange earnings. By carrying out the goals of the state, China's banks, and especially CDB among them, are helping further China's goal of securing energy supplies through various foreign loans. CDB's foreign-exchange-denominated assets now exceed those of the World Bank. Since much of the proceeds of the loans are used to buy Chinese goods and services, from Huawei phones to CITIC-built railroads, China wins twice, and CDB helps foster another Chinese goal, pushing its top companies to "go out" (Sanderson and Forsythe: 2012,p. 131).

3.1- Africa: Funding infrastructure and Chinese direct investment

Aided by Chinese demand for its exports and raw materials, Africa has experienced its best decade and a half of economic growth since independence from colonialism[9]. CDB is at the core of that "reversal of fortunes" by helping to change failed development policies by stimulating manufacturing and building the infrastructure that most African countries require to climb the developmental ladder (Sanderson and Forsythe, p 86). CIC (China's sovereign wealth fund) is another big player on those endeavors. Let's examine a few of China's "strategic" inroads in the continent.

[9] For a broader analysis and discussion of China's strategy for Africa, see Carmody and Owusu in Leão, Pinto and Acioly (eds): 2011.

The establishment of five special economic zones, promised by President Hu Jintao in 2006 and shortly after, are in place - Nigeria, Mauritius, Egypt, Algeria, Ethiopia and Zambia. The creation, in 2007, of the China-Africa Development Fund (CADF) as a private equity arm of CDB is meant to "boost investment in Africa by Chinese firms and offshore to Africa some of China's manufacturing. The fund itself says its model is "investment + loan". In February 2012, the fund signed an agreement with Xinjiang Goldwind Science & Technology, a wind turbine manufacturer, to develop the African market. In 2010, CDB had given the company a $ 6 billion credit line for international expansion (Sanderson and Forsythe: pp. 98-99). It also formed a venture with carmaker Chery Auto, to set up factories in Africa.

A national phone and Internet network in Ethiopia built by ZTE and Huawei in agreement with the local state-owned provider and Chinese help service it. A $ 3 billion loan to Ghana, the biggest loan in the country's history, which will allow for contracts for a host of Chinese contractors just after Ghana starts to tap new offshore oil fields. In addition, leather, glass and cement factories on the outskirts of Addis Ababa. The idea here is to promote regional integration. According to Chi Jianxin, the head of the fund, "the manufacturing industry should not be confined to its local market; it should integrate or incorporate a regional dimension in terms of marketing base".

Finally, In July 2012, while the US was showing the first signs of a more consistent recovery – yet to be confirmed – and Europe was diving deeper in the "Eurozone crisis," President Hu Jintao pledged $ 20 billion in new loans to Africa for infrastructure and manufacturing, and with much fewer strings attached than the WB and the IMF had done before. In an interview with Sanderson and Forsythe in Beijing, in 2012, Stiglitz stated that: "I think China has learned from the mistakes at the World Bank and the IMF, and I think the conditionalities often were counterproductive and were an important ingredient in the deindustrialization," (2012,p. 103).

Summing up, in Africa China already is a major player with whom it will be extremely difficult to compete, especially on the availability of finance. Additionally, in different global regions, the state-led model of financial governance shows up with distinctive features as well.

3.2- Reducing uncertainty: Loans-for-Oil Worldwide

A loan-for-oil deal generally combines a loan agreement and an oil-sale agreement that involves two countries' state-owned banks and oil companies. Let's start with Venezuela. According to the same authors, "CDB's loans to Venezuela amount to about $ 1,400 for every man, woman, and child in the country, dwarfing those of any other institution. What's more, they add, the scores of Chinese companies coming into Venezuela are almost without exception big recipients of CDB loans, with at least ten Chinese companies having secured more than $ 96 billion in combined loans or lines of credit from CDB to finance their global expansion and operations inside of China (2012, p 128).

The head of the Inter-American Development Bank, Luis Moreno, was blunt when commenting on that strategy: CDB has been "very savvy" in the way it set up its loans with Venezuela. The repayment guarantees are codified in Venezuelan law. "To my knowledge, he adds, the Chinese are the only ones doing this". "I don't know of any other development bank that can do the kinds of things they are doing because it is both development and it is strategic for China (Moreno quoted in Sanderson and Forsythe: 2012.p 131).

Table **6**: CDB and contracts in Venezuela

Company	**Contract purpose**	**Amount ($M)**	**CDB Customer?**
Sinohydro Group	Power plans	295	Yes
China CAMC Engineering Co.	Infrastructure, Agriculture	1677	Yes
XCMG Construction Machinery Co.	Construction Equipment	761	Yes
China Railway Group	Railroads	7500	Yes
CNTIC Trading Co.	Medical supplies	927	No
Second China Railway Construction Bureau Group Co.	Railroads	392,8	No

Source: Sanderson and Forsythe, location 3320.

Venezuela may be their hub, but CDB's operations are expanding everywhere. In 2009, Petrobrás secured a $ 10 billion loan from the bank as part of its global fundraising efforts to help pay for the development of offshore oil deposits. The 10-year loan has an interest rate of LIBOR plus 2.8 percent and is tied to shipments of 150,000 barrels of oil a day in the first year of repayment and in following years 200,000 barrels a day to a subsidiary of Sinopec (Sanderson and Forsythe: 2012.p 136). And there is one more thing: The loan has a stipulation that Brazil will spend $ 3 billion to buy Chinese oil equipment.

In fact, Chinese lending in Latin America is continuously gaining momentum. It has taken off from almost nothing prior to 2008 to the point where, in 2010, its loan commitments were more than those of the World Bank, Inter-American Development Bank, and the US Export-Import Bank combined (Gallagher et alii: 2012, p. 5). CDB seems confident about the soundness of its oil-for-loans program – so confident that it lent Ecuador, in 2010, $ 1 billion in a four-year loan at 6 percent interest, two years after the Country defaulted on $ 3.2 billion of bonds. Chinese lending to Venezuela and Ecuador is filling in for the sovereign debt markets. "Chinese financing is often the 'lender of last resort.' It is not a cheap one, but due to the concern the international financial community has over Venezuela and Ecuador, and the large risk premiums they would charge, Chinese lending is an attractive option" (Tissot quoted by Gallagher et alii: 2012, p. 8).

The loan-for-oil model seems to be broader. It's being used around the globe, "from Russia, to Ghana, to Brazil, as a means for China to secure energy supplies and for its state-owned infrastructure companies to win contracts". In sum, Chinese banks maintain some oversight over their loans by attaching either purchase requirements or oil sale agreements. Most Chinese loans require the borrowers to use a portion for Chinese technology or construction companies (Gallagher et alii: 2012, p. 17).

In other words, there are "strings attached". The big difference in relation to the "international agencies" seems to be that the money is secured by winning business for Chinese companies, rather than setting policy conditions on the borrowing country (Sanderson and Forsythe: 2012, p. 139).

3.3- Funding Chinese Global Players

China's 12th five-year plan for 2011 to 2015 was launched in March 2011. The plan highlights the importance of the "magic seven" industries: (1) energy saving and environmental protection, (2) next-generation information technology, (3) biotechnology, (4) high-end manufacturing, (5) new energy, (6) new materials and (7) clean-energy vehicles. The plan's objective is to "shape" those industries in order to raise their share from 3 percent to 15 percent of the economy by 2020[10]. No wonder that, way before the Plan's announcement, China's banks were already pouring out money in order to fund the long-term projects that are supposed to turn that scenario into reality.

In fact, Chinese companies have started to win first place in global markets. Huawei has overtaken Sweden's Ericsson to become the world's largest telecoms-equipment-maker. Huawei is becoming an increasingly powerful global player, capable of going head-to-head with the best in intensely competitive markets. It follows Haier, which is already the leading white-goods-maker; now Lenovo is challenging Hewlett-Packard as the world's biggest PC-maker. Much more will follow (The Economist/ Leader: August 2012). The article also raises a key issue from the perspective of "western competitors": "Western governments are also

[10] For a thorough analysis of the plan, see "China 2030 - Building a Modern, Harmonious, and Creative High-Income Society". The World Bank and Development Research Center of the State Council, the People's Republic of China, 2012.

suspicious of the subsidies, low-interest loans and generous export credits lavished on favored champions". The article is right. The financial arsenal behind China's emerging global players is formidable and should not be downplayed at all (although China is not alone in supporting its national brands).

Take environment. In 2010, China invested some $ 51.1 billion into clean energy, the largest investment by any country in the world. However, in 2006, four years before that record, two Chinese companies were already on the list of top-ten solar cell producers. In 2010, six made the list, according to a BNEF report[11]. Among them is Yingli, founded in 1998, and one of the biggest beneficiaries of CDB loans in the solar industry, borrowing at least $ 1.7 billion in dollar-denominated loans from CDB from 2008 through early 2012[12]. In 2009, Yingli opened offices in New York and San Francisco; by the year's end, it held 27 percent of the California market. China simply took over (or leapfrogged). *In 2011, the country supplied some 72 percent of global crystalline-silicon module production, the most popular type of solar module that converts light to energy.* (Sanderson and Forsythe: p. 150, my emphasis.). A clear and stunning case of Leapfrogging.

In fact, 2010 saw an explosion of loans to renewable energy, mostly from CDB. The bank lent $ 14.7 billion to clean energy and other energy-saving projects. The European Investment Bank lent € 8 billion for clean energy projects in 2010, BNDES lent $ 3.16 billion and the US Federal Financing Bank $ 2.12 billion. In all, since 2010, CDB – alone- has made available at least $ 47.3 billion in credit lines to support Chinese solar and wind companies (BNEF: October, 2011).

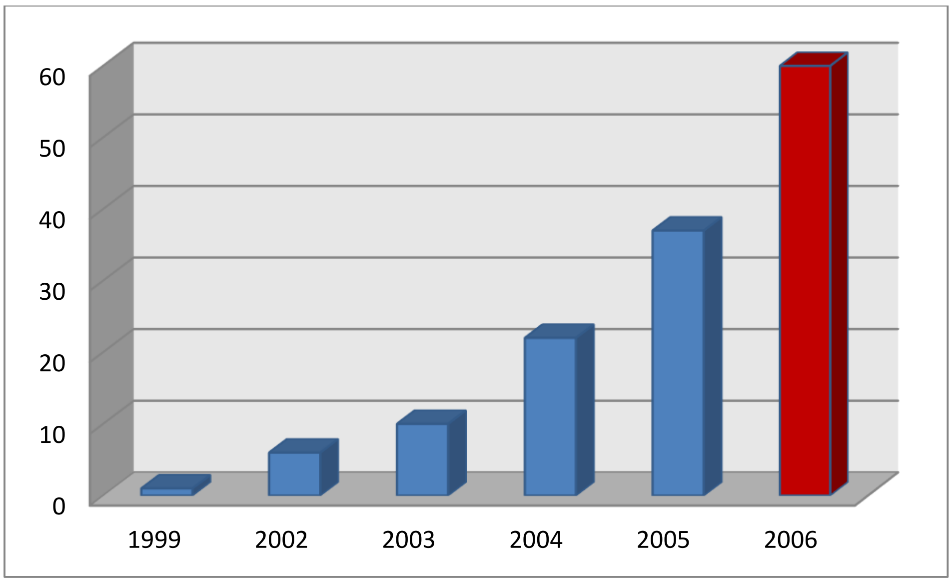
Let's return to telecom and, in particular, to Huawei. A private firm founded in 1987 with just 21,000 Yuan, a bit more than $5,000 at the time, Huawei at first struggled to win customers even in China. Last year (2012), as mentioned, it surpassed Ericsson to become the world's largest telecoms-equipment-maker. Now, it is a $32-billion business empire with 140,000 employees, and customers in 140 countries and 65% of its revenue coming from outside China. In Europe it is involved in over half of the superfast 4G telecoms networks that have been announced, and it has become a strong competitor in mobile phones, In Africa, Huawei's cheap but effective equipment helped make the continent's mobile-telecoms revolution possible (The Economist, "Huawei: The Company that Spooked the World: August 2012).

---

[11] BNEF: Bloomberg New Energy Finance.

[12] When fiscal deficits were ballooning and the credit for long term projects from private finance were basically frozen in most of the "North".

How did this happened? No full answer is readily available here, but public funding and, ultimately, China's entrepreneurial state were key players in backing up that success. On December 27, 2004, in Beijing, Huawei and CDB signed a $ 10 billion agreement for overseas markets, the first of many CDB credit lines to its customers across the developing world that would allow it to gain significant market share. It also was the beginning of CDB's support of Chinese firms to "go global." In April 2005, Huawei and CDB signed a risk-sharing "win-win" agreement and also agreed to share information on clients and projects after the loan had been dispensed. In December 2005, Vodafone Group, then the world's largest mobile phone company, named Huawei its first Chinese-approved supplier of network equipment. Huawei's road to global domination had begun[13] (Sanderson and Forsythe, p. 160).Table **7**: Huawei's Overseas Sales after CDB Loan



Source: Sanderson and Forsythe, p. 162

Sanderson and Forsythe provide us with a sharp explanation of the big picture: "...it is the volume of CDB lines of credit— the security that financing is available if needed— that gives Chinese new-energy companies a leg up over their global competitors, allowing them to focus on increasing their scale above all else and spawning trade litigation in the United States

[13] At that point, a high official of Alcatel-Lucent remembers telling his boss, the Chairman, that "We won't die at the hands of Huawei; if we die, it will be at the hands of China Development Bank."

and Europe… More crucially, though, they provide the guarantee that makes commercial banks feel safer lending to the companies, thus bringing in billions of Yuan of more loans" To which they aptly add: "The United States simply does not have a government-owned bank of equivalent scale or assets" (p.153).

From a macrofinancial perspective, those are precisely the features and intricacies of that public financial governance model that Brazil has to dissect in order *address it*[14] from a policy and institutional design perspective. As a competitor as well as a collaborator.

4- The Efficiency of, and Unwarranted Opposition to, Government-owned Banks

One of the more serious and pervasive instances of market- failure is the strong tendency for those who initially succeed economically in a free-market environment to use the fruits of their success to gain political influence, and alter the rules of their markets, in ways that benefit them but also increase market inefficiencies and social injustices. An important part of this process of market rules alteration is the development of theories and the promotion, by lobby groups, of research results that justify their inefficiency-fostering changes to the rules. This process has been especially clear in the decades leading up to, and continuing after, the 2008-09 global financial crisis. Not only regarding financial industry opposition to government banking but also to distortions in the market-based theory of finance and to the promotion of research incorrectly indicating that government banks, and especially development banks, are by their nature, inefficient and detrimental for rapid growth.

This is a widespread misrepresentation of the contribution that public development banks can make to rapid GDP growth and hence economic transformation. In order properly understand how China's strategic use of CDB provides lessons for other countries; we need to point out how CDB's experiences contradict these misconceived negative generalizations about government-owned banks.

The clearest examples of influential opposition to government-owned banks, and development banks in particular, are in writings and citations of World Bank and IMF reports and promoted authors – apparently reflecting the strong influence of advanced countries' financial industries on international institutions' leadership and policies. This is not to say that individual authors and researchers don't believe their theories and conclusions. We are sure they do. However, international and other institutions have clearance and vetting procedures that tend to *promote* studies compatible with the controlling opinions of their boards of directors. Contrary research doesn't receive the same endorsement, if it receives any at all. In the World Bank and IMF, advanced global financial nations screen and select the institutions' leadership and have veto-wielding influence. What is more, in individual poorer countries,

[14] What should we learn? What's transferable? How can we compete? Where there's room for collaboration?

economic elites and controlling economic interests influence the use of veto powers their governments have over what official IMF, World Bank and other international country reports do and don't reach the public eye.

From staff papers to Article IV reports, FSAPs and FSSAPs, the dominant if not universal sentiment is that development banks hurt growth and become politicized in ways that undermine financial system efficiency. However, a more balanced and less ideological analysis, contradicts such gross generalizations. Even though these reports cite empirical research that they say supports their positions, it turns out that the empirical research cited does *not* succeed in backing up the broad claims the research makes. CDB's example promoting growth and poverty reduction is the strongest evidence in the final step of alternative analysis showing the broader failure of widespread mainstream research to reflect the real-world growth-promoting potential of well-run government banking systems.

One representative strand of this line of research uses data on growth and government banking for a large number of countries (eventually close to a hundred countries) worldwide beginning in 1960 and leading up to the recent past. A well-known example in that stand is the paper by La Porta (2000) eventually published as La Porta (2002). These kinds of exercises calculate the *average* relationship between the scale of government banking and GDP growth. This average performance is then interpreted as characterizing the performance of *all* government banking systems. It is used to reject the hypothesis that government banking can promote growth and financial sector development.

The flaw in these interpretations of results based on average performance is that not all government banking systems – not all development banks – are characterized individually by this average figure. There is instead, of course, a distribution of countries' performances around the average measured impact of government banking on growth. Some countries are in the tail of this distribution where well-executed government banking correlates strongly with faster growth. At the other end of the distribution are countries with poorly executed government banking systems and poor growth records – a strong negative correlation between government banking and growth.

The critical research question is not what the average worldwide relationship is between government banking and growth. The critical questions are: What accounts for the differences in how efficiently different countries' government-owned banking systems execute their functions? What kind of *institutional landscape* explains why some government-owned banking systems are associated with more rapid growth while others are not? Which are the conditions contributing to make Governments "part of the problem" and which ones turn them into "part of the solution" (Evans: 1995, Kholi: 2004, Weiss: 2003)? We can immediately come up with a host of answers to this question linked to corruption, bureaucratic ineptitude and the politicization of how government-owned banks, especially in poorly functioning democracies, reward political loyalties rather than economic and business effectiveness. It is also likely that successful government banking requires a certain design and a certain strategy. If a country can build such a well-designed system and use it well, rapid growth will follow. The success of such a system has nothing to do with what the *average* performance of all government development banks in the world might be – given how the performance of so many development banks is so terrible.

This is where China and CDB's experiences become so relevant. China is clearly out on the high-growth end of the distribution tail. How did it get there? Analysis summarized in the concluding section below helps give some answers. But one thing is sure, calculating *average* performance of a whole class of financial institutions and then condemning the performance of each and every individual financial institution in that class because of the group average is no way to investigate the potential for government banking to contribute to the world's serious problems of persistently low growth and abysmal poverty level trends (abysmal, that is, if we exclude China's enormous contribution to improved measures of global poverty). No country's policy makers should ignore the strong development potential of good government banking because of these kinds of research conclusions. Instead they should seek out successful examples, analyze them, and apply the results of the analysis to their own country's government banking needs.

One might ask: If, however, the average performance is *so* poor that even the better end of the distribution tail is inferior, isn't that an overall negative assessment of government banking? Referring again to La Porta (2000 and 2002), we can answer this question. These types of studies used a 1960-95 data set of all countries in the world for which there are adequate data. But this introduces an identification problem: How should one distinguish the different statistical contributions of rich and poor countries – the difference between countries that already had highly advanced economies in 1960 and the many other countries which in 1960 had never experienced industrialization, or countries that had at that time only recently achieved independence from colonial status? Might government banking be less detrimental for the poorer countries? La Porta (2002) divided its 1960-95 data set into two groups, rich and poor in 1960. The result emerged that for the poor countries, the average influence of government banking levels in 1970 on growth over the 1960-1995 period was not significantly different from zero, even at the 10-percent significance level. In other words, the average performance with respect to growth was inconclusively neutral – a zero result. It is clear that the "good" development banking end of the performance distribution, led by CDB, is strongly in positive territory, because the average midpoint is basically at zero impact. This confirms the importance, not of the group-wide average contribution, but of what it is that explains why in some countries government banking is associated with superior growth performance. China and CDB are exhibit-A in understanding how good government-owned banking promotes development success.

Summing-up, the point to highlight here is that when policy makers consider increasing the scale of government banking, especially development banking, they need to expect and be ready to counter political opposition from vested private financial sector interests. This opposition will use, as part of its criticisms, various theories and empirical studies allegedly showing that government-owned banks are inefficient in intermediating the country's savings and harmful to its GDP growth prospects. For example, a key World Bank review of development finance in 2002 relied heavily on the pre-publication version of La Porta et al.'s research (La Porta 2000), in which the design of its regressions resulted in a non-zero average for even poor countries. This result was eliminated in the 2002 revision, resulting in the inconclusive result reported above.

But even more importantly, both theoretically deductive and globally empirical conclusions – about the efficiency of liberalized and competitive private banking – fall apart when the inadequacy of investment levels in public-goods projects is included in the exercise. Private financial sectors fail miserably in providing adequate finance for public goods' investments in developing countries with limited budget resources. And as just explained, the empirical studies usually marshalled have fundamental flaws in evaluating the potential of a particular country's government banking for promoting rapid and healthy development.

5- Implications for Brazil

If the previous sections were successful in their line of reasoning, the reader by now should recognize two key outcomes: a) Finance affects all economic spheres and is a crucial "lever" for economic development and structural transformation. That's the main point of the "Schumpeter-Keynes-Minsky" approach, which embeds our discussion[15]. b) China is building a quite robust and comprehensive strategy within a *state-led model of globally oriented financial governance*, and CDB is one of the strategic players in that institutional arrangement. Holding them together immediately leads to the question: what are the implications of this emerging *financial Behemoth* for Brazil?

A comprehensive analysis of opportunities and challenges brought by China's emergence was carried out by Accioly, Pinto and Cintra (IPEA 2011: chapter 8). Their main point is stated very clearly: "to give up the future for the sake of the present could turn to be extremely dangerous" (Accioly, Pinto and Cintra: 2011, p 348). We couldn't agree more. The problem from the perspective of China's state-led model of financial governance, is that there is nothing in the Brazilian landscape that resembles the availability of funding, institutional coordination

[15] For a more theoretically oriented discussion of Finance, development and China as an "Entrepreneurial State", see Burlamaqui 1914.

and *entrepreneurialism* we see in the Chinese public financial system. Regardless of the scale of BNDES and CDB, if we include an appreciation of the policy and institutional environment supporting CDB (summarized in the recommendations section below) we start to get the picture. Acknowledging CDB's global strategy and its multiple sources of funding from the other Chinese banks, worsens the challenge of adjusting BNDES operations to give them effectiveness comparable to CDB's.

A way to see the unfolding of this bottleneck is to look into the regressive specialization of Brazilian trade with China. Despite the jump of Brazilian exports to China from a little over U$ 1 billion in 2000 to more than 30 billion in 2010 (Accioly, Pinto and Cintra: 2011, p 317), its "quality" or technological content is very low: commodities and low-tech manufactures. On top of that, China became Brazil's number one export destination. The other side of the argument is that Chinese *imports* are flooding Brazilian markets, and medium- and high-technology content imports are increasing their percentage in Brazil's import's basket: from 16% in 2000 to 44% in 2009 (Accioly, Pinto and Cintra: 2011, p 323). The resulting threat is not only de-industrialization – which will occur in some sectors for sure – but the loss of technological capabilities which equals to mortgaging the Country's future.

This clearly doesn't point to a successful upgrading of Brazilian competitiveness, rather the opposite. It suggests that Brazil is dangerously close to, if not already in, a "technological trap". In that sense, while China is clearly leapfrogging its major partners in the sense of designing, and achieving, a long term strategy of structural change and social inclusiveness[16], Brazil is falling behind.

What has to be done? Or more appropriately what *can* be done? That's precisely the "10 trillion dollar question" for Brazil. There are no easy answers, and to produce a comprehensive solution is obviously beyond the scope of this study. What the paper can do, by way of a conclusion, is to provide some elements that, in our opinion, should frame the discussion on how to properly *address* the question. The late Antonio Castro, a household name on the studies about development and the role of state in Brazil – and a friend and a deep intellectual influence for one of the authors – used to say that China's ascendancy was a "tectonic movement" for the global economy (Castro: 2011p 99-100). He was right.

China is the Asian developmental model – consistent with Minsky's model – on steroids. By now, China has showed it has the institutional, financial, and strategic capabilities to compete with, and even outcompete, everybody else – it is already "number 2" in total GDP, and that happened in less than three decades[17]. She has "History and geography" (wars and revolutions)

[16] Slow inclusiveness if looked from a 30-year's perspective, very rapid if seen from what happened in the last decade – especially during the crisis. See Lardy: 2011, chapters 1 and 2.

[17] Although the country is following the lead of Japan, South Korea, Taiwan and Singapore, its speed and scope has no historical precedents.

shaping the challenges coming from both internal and external fronts and pushing it to move fast. It's acquiring the technological capabilities to move from "made in china" towards "created in china" (Castro: ibid). It has become a heavyweight global player, and it has a domestic market of – potentially – 1.3 billion *consumers*. In one sentence: China's ascent raised the bar. It inaugurated a whole "new game" in terms of building strategies and capabilities for economic performance and competitiveness in developing countries, even low-income countries.

In that sense, to the question "how should a country like Brazil face competition with China", the quick answer should be: avoid it when it would be pointless. Brazil should do its best to search/discover/ build the ways and sectors in which *collaboration and integration* could replace competition. That is the line of reasoning of the IMF's most recent Article IV report for Brazil (IMF 2013) makes it clear how dire the prospects are for Brazil's economy if it continues on its current policy path. The problems going forward are depressing: moderately high inflation too easily worsened by faster growth, consumption growth crowding out investment, a seriously low rate of domestic saving and investment in GDP, pro-cyclical public and corporate saving and investment, low productivity growth (if any), diminished demand responsiveness to credit expansion, increasingly cautious bank lending, worsening performance of housing loans, credit growth tilted toward consumer credit at the expense of corporate loans, a steadily widening external deficit, and likely per-capita GDP growth for the foreseeable future lower than previously thought at around 2½ percent (IMF 2013). This is a terrible prognosis. It basically describes development failure.

And yet the IMF report has no real suggestions about what Brazil could do to change its economic outlook. It seems to be saying that this is just the way things have to be. To do something about it, the report mentioned casually, Brazil would have to undertake vaguely referenced structural reforms, including reduction of pensions and public-sector consumption (without mentioning the political and social implications), increased infrastructure investment (without saying how to pay for it), reasserted primacy of inflation-targeting monetary policy, and continued budget surpluses needed to decrease the public debt.

These suggestions are not helpful. They themselves are results and say little about means. Some of the recommendations give off a strong scent of austerity as a solution to accumulated debt and weak investment incentives. How can this possibly work? History has shown – from World War II after the Great Depression, to U.S. President Clinton's rapid debt pay down, to China's huge tax revenue increases as a result of deficit-funded stimulus (Keidel 2013) – that the best way to reduce debt as a share of GDP is rapid growth, because tax revenues are buoyant. Why is this fundamental piece of good economics nowhere in the report? The IMF report doesn't seem to be able to break out of the thought pattern that faster growth is too inflationary. It is stuck with faulty supply-side growth accounting models that don't consider the utility of credit-based government investment spending that would increase overall demand. Its bottom line seems to be that, unfortunately, Brazil just can't save enough to invest enough to attain rapid growth. What a shame. There is, of course, no mention of government-owned banks as the key to finding a way out of this abysmal forecast.

To be fair, the IMF doesn't have a free hand when it comes to its Article IV reports and their overall assessments of member countries' economic status and policies. IMF member countries can censor Article IV reports or, if they feel it necessary, refuse to let the IMF make the reports public. Hence, the report's bland description of Brazil's dismal shape and even worse outlook most likely reflects more what government economic officials are comfortable admitting than what the IMF's experts and officials actually think. We don't know what the IMF is telling the government privately. It is highly unlikely, though, that the IMF is pressing Brazil to expand dramatically the operations of government-owned banks as the best solution to its predicaments. Instead, they recommend the opposite, that government banks shift in the direction of supporting private sector finance. The IMF isn't pointing to China's policies as lessons for other countries to emulate. After all, praise for China's economic success without criticizing its methods puts other counties' performances in a bad light. Dominant leadership attitudes in both the IMF and World Bank appear to acknowledge China's success but not the economic institutions and policies that delivered that success – most especially government banking.

Brazil has, of course, initiated its "Logistics Investment Program" (LIP), first announced in 2012. Its core programs include highways, rail, ports, airports and high-speed rail, with total spending over 30 years of just over US$120 billion, and with accelerated investment in the first five years (Figueiredo 2013). But even with the accelerated investment in the first five years, the annual spending only amounts to 0.6 percent of GDP. The scale is just too small. This may be in part because it is being financed by foreign funding in the form of long-term concessions in public-private-partnership (PPP) contracts. This is an expensive way to develop infrastructure. By one estimate, Brazil needs 3 percent of GDP a year just to maintain its existing infrastructure (McKenna 2012). Without strong domestic funding of public-goods projects such as infrastructure, these PPP efforts by themselves are inadequate for the task at hand, include inflexible long-term contractual arrangements, and draw excessively on foreign funding.

Government banking on an appropriate scale, along the lines of CDB's and China's supporting investment strategy, promises a way to increase investment's share in GDP without serious inflation perils. The critical strategic concept is to use government banking's policy lending in a quasi-fiscal fashion to increase public investment and with it household and corporate profits by funding projects that mobilize underutilized labor resources and bring to the market previously poorly accessible productive capacity through transport and communications. It is not a tautology to emphasize that for this to work, it must be done well. The strategy must quash crony government banking.

One key target, as in China, would have to be modern urban infrastructure, because rapidly expanding modern job opportunities are critical for speedy income, investment and consumption growth. The public investment program would have to be large enough and well enough designed so that it had a counter-cyclical effect – something that Brazil's budget-funded infrastructure cannot accomplish (IMF 2013) but which appropriately independent government banks can.

Brazil's government banks and BNDES in particular, can be more effective if Brazil implements reforms responding further to the universal challenges met by China's supporting environment for CDB sketched out earlier in this paper. Brazil's appropriate solutions aren't the same as China's; Brazil needs to further explore and improve on its own solutions to these same challenges, which together point in the direction of an optimized national financial system – correcting for shortcomings of over-reliance on foreign funds, liberalized private systems and underutilized potential for growth and poverty reduction through skillful use of government-owned banks.

This whole approach should fit roughly into the framework of analysis introduced below – that there are good and bad governance systems for public banking. Brazil's government banking already makes positive contributions to Brazilian development and growth. It needs to do more. Brazil needs to move its system strongly in the direction of better and larger-scale government banking like what works so well in China. With an effective government banking system, built around an effective development bank (BNDES), Brazil then needs to scale up its government banking operations dramatically. The goal must be major expansion of the whole volume of government banking and with it even larger consequent investments funded by private banks and corporate gross earnings. The first step, further improving the effectiveness of its government banking operations, requires additional efforts in directions like those suggested in the following paragraphs.

Table 8 – Public and Private Investment* in Brazil and China

% of GDP	Brazil Investment*			China Investment*		
	Public	Private	Total	Public	Private	Total
2004	1.3	14.8	16.1	29.7	11.0	40.7
2005	1.6	14.3	15.9	27.5	12.6	40.1
2006	1.9	14.6	16.4	23.2	17.4	40.7
2007	1.7	15.7	17.4	20.5	18.6	39.1
2008	2.2	17.0	19.1	21.0	19.8	40.8
2009	2.1	15.9	18.1	23.4	22.6	46.0
2010	2.4	17.1	19.5	22.1	23.7	45.7
2011	2.2	17.1	19.3	22.2	23.4	45.6
2012	2.4	15.7	18.1	21.6	25.3	46.8

Sources: World Bank 2014 and author calculations
*Investment refers to gross fixed capital formation.
[file: Brazil-China macro data comparison 1a - 2014-06-04.xlsx] Table 8

The direction of potential improvements in Brazil's investment situation is suggested by Table 8, which shows the extremely low share of Brazil's GDP committed to public investment – between 2 and 3 percent in recent years. The comparison with China is stark. Brazil is unlikely to be able to come close to China's performance anytime in the foreseeable future, but significant movement in that direction is clearly highly desirable. Note that even China's *private* sector investment also shows a significantly greater effort than Brazil's in the years since the financial crisis. This of course reflects the stimulus and demand-stabilizing effect of government-owned development banking, as already mentioned.

It is also important to emphasize that these topic areas are suggested from authors who claim expertise on comparative development, but not specifically on comparative development banking. Brazil's governance and financial systems are complex and full of already on-going initiatives. The areas of interest sketched below cannot begin to pinpoint areas for immediate specific proposals. They are meant only as the initial foundations of a bridge between China's experience and Brazil's current situation.

Looking forward, the challenges are plenty, but some sizable opportunities are also in sight. Among the industries/sectors, that Brazil has a chance, commodities and food are the easiest candidates, and are being exploited. On the food side, there are great prospects for exports because of the rapid growth in Chinese consumption – basically as fast as GDP growth itself. We need to note that Chinese "rebalancing policies" supposedly underway are not a *secret* to accelerating growth wages/income as described by some analysts (Accioly, Pinto and Cintra: 2011, Lardy: 2011, Pettis: 2013). It is counterintuitive, but China's low share of consumption in GDP has meant a high share of investment and, with it, rapid growth. These were Gerschenkronian times of heavy industry build-up.

Now, China's best policy mix for continued rapid consumption expansion is maintenance of a high share of investment in GDP along with raising wages. And *because* of higher real wages and a higher propensity to consume, a high and sustained growth rate will result (rebalanced to be sure, but high as the most simple Keynesian model would show). In that sense, it is probably useful to remind the reader that a high- productivity-high consumption economy *is* a high- growth one. In fact, this positive-sum system is precisely the result of both Keynes and Schumpeter's analyses.

On the commodities front, Brazil's Pre-Salt Program ***potentially*** is a unique opportunity for technological upgrading and spill-over effects for many other sectors and should generate – over time- a sizable stream of revenue for the Brazilian state which could become a strategic source of funding for "competitiveness policies" (Kregel: 2009)[18].

From an "economic ideology" perspective, Brazil has some advantages as well. Policymaking in the country is quite pragmatic, there is, ample, space for discussion, proposals and implementation of industrial policy, comprehensive financial regulation, management of capital flows and other still largely "forbidden measures" in most of the other large economies around. Furthermore, our domestic market is a quite big one (for both consumer and capital goods). This means that if the economy grows at a 4 to 6% annual rate, Brazil could, at the same time, produce for the domestic market, export *and absorb a hefty basket of imported goods* (that's precisely what China does in a much larger scale – the scale of a 10-12% growth rate – and what South Korea, Taiwan and Singapore did not so long ago). Fiscal revenue would obviously grow accordingly and generate another potential source of funding. Finally, Brazil doesn't need to become protectionist. It needs to become much more strategic from a "state capacity and policymaking capabilities" point of view.

However, and far from downplaying their importance, those are *not* the core economic problems we face. Let us suggest that, from the Schumpeter-Keynes-Minsky lenses, they are twofold: a) ***Vision***. Brazil doesn't have a clear ***vision*** for designing its long term development plus international competitiveness agenda, b) ***Finance-Investment.*** More precisely, the lack of both supply and demand for long term funding. It seems worth repeating a thought we just touched upon: there is nothing in the Brazilian landscape that resembles the availability of funding, institutional coordination and *entrepreneurialism* we see in the Chinese public financial system. It almost goes without saying that this holds even more truth for the vast majority of Brazilian corporations and for the private financial system.

Since the late eighties, it has not been usual for Brazil to grow at 4-6% annually and specially to maintain that pace. Why? The "exchange rate/interest rate debate" can partially explain it by introducing demand instabilities from external influences. But that is about the past, not about now. Now, Brazil's combination of a relatively open capital account and a

[18] However, the way the whole program has been managed would have to go through a radical change. The way we have it right now points towards a fifteen year regression in terms of industrial policy rather than a strategic industrial upgrading tied to a cluster selective innovation policies.

failure to use exchange-rate market intervention to prevent currency appreciation has brought on severe Dutch disease symptoms that are crippling for the success of exports requiring a higher-skilled and better-paid manufacturing workforce.

Let's look at the even more serious domestic Achilles heel of the matter. It's common knowledge that Brazil has a low investment/GDP ratio. Analyzing that from the perspective of government run finance that we are considering, what the country lacks is not "savings", but finance, more precisely, long term funding availability *and* a clear and comprehensive innovation strategy (which means an entrepreneurial state to begin with).

Brazil has neither. BNDES which provides the bulk of long term funding for development has a loan portfolio of roughly US$ 220 billion, but includes development projects, architectural renovation for landmark buildings, movies, art and culture and what more one can think of. It doesn't do innovation – or does very little of it. Compare that with the US$ 900 billion loan portfolio of CDB, which is just one of China's sources of long term funding for development and innovation (although the most strategic funder as we tried to show). To use Antonio Castro's expression, in a "Sino centric world", Brazil has no long-term vision for a (robust) competitiveness strategy, no animal spirits (which mean scarce innovation). No long term funding availability, low investment, low growth. End of story.

In that sense, Brazil needs a thorough restructuring of its incentives' structure for funding innovation and development, including the private and the public financial systems. Furthermore, the public financial system dedicated to innovation (the best example is FINEP) should expand and become much bigger. To give just one idea, the planning ministry in coordination with science and technology agencies, universities and the patent office could establish *public* venture capital agencies[19] - with private and public banks' advice, but public control (The U.S provides the best example here: the Department of Defense and Energy, the Army, the Navy and the CIA all have them. See Block and Keller: 2011, Weiss: 2014). That would vastly expand the "supply of funding". Easier said than done for sure, but it's an area to reflect upon.

To act on the "demand side" for long-term funding let us indicate two areas. The first is the "other Achilles heel" of Brazil's economy: infrastructure. The country lost 600.000 tons of soybeans exports contracts to....China due to "infrastructure gridlock" (Aprosoja: 23/3/2013). The delays - 57 days in Paranaguá and up to 32 days in Santos ports - and the general obsolescence[20] of roads, railways and ports were the main causes. A program of overall infrastructure renewal is urgent. It could create the opportunity for a burst of technological

[19] Or public-private partnerships, although that seems to be a more complex institutional successfully design.
[20] Physical, logistic and administrative.

innovation and creative imitation – look at China. Not addressing the issue will cost the country dearly: the loss of areas where we have an established competitive advantage[21]. Chinese banks and corporations could be invited to become partners - minor partners – and Brazilian corporations should be in business to face the challenge – and reap the profits[22].

The second area that we want to mention refers to "designing the future". A broad, but strategically conceived, Brazil- China partnership for establishing cooperation initiatives (instead of free-trade agreements) in the areas of Biotech/Biomedical/Bio-fuels. An initiative like that could provide a host of opportunities for technological upgrading and monopolization of market opportunities – the goal of Schumpeterian competition – as well as for strategic collaboration. This is what was implied in Antonio Castro's response to the Chinese challenge as well. In his words: "It only makes sense to reinforce areas and sectors in which we [Brazil] *can upgrade faster than them* [the Chinese]… for others, the strategy has to be to redirect or to disappear (2011: p.99, our italics)[23]. The *smart* use of the Amazon's, the most diverse and largely unexplored flora in the world, has the potential to create a unique competitive advantage for Brazil, and this is a feasible goal. Singapore's Biomedical Sciences Initiative, currently under way is already showing the path (Pereira: 2008).

Properly coordinated and subjected to bilateral cooperation, the exploitation of these science-based sectors could turn into a major – and difficult to imitate - cluster of radical innovations, maybe one or two general purpose technologies, and a host of productivity-enhancing investments. However, in order to achieve that sort of endeavor, a few *additional* "institutional pre-conditions" should be in place:

- The recognition of crucial role of knowledge governance-based institutional coordination,

---

[21] The international business press is already firing the shots: "Brazil: Humbled heavyweight": Financial Times, March 25th, 2013.

[22] A year and a half ago, on March 2013, a very similar initiative to the one suggested here was announced by Finance Minister Guido Mantega in the BRIC's meeting in Durban:, "Estaremos abertos para que os chineses possam participar desse empreendimentos de infraestrutura, energia e também na área de petróleo e gás, em vários setores onde pode ser encontrada uma sinergia, uma complementaridade que podemos explorar" (O Globo, March, 27, 2013p 27). Several agreements in that same direction resulted from the BRICS meeting just finished in Fortaleza, Brazil (July 14-16, 2014. Cf. O Globo, July, 18, 2014 p 23)). However, the actual deals are still in the pipeline,but the pay-offs should be high, and comprehensive.

[23] "Só faz sentido reforçar aquilo em que temos chance de correr mais rápido do que eles [chineses]….o resto tem que ser redirecionado ou desaparecer" .

- A proactive role of the public sector and the creative – and comprehensive – use of public resources, tools and *deal making power* to craft structural change and push for radical innovation.
- Commitment to "manage change" – to manage creative destruction if you will – instead of relying on the "market" to perform the magic[24].
- Awareness of the focused nature of the strategy: not targeting everything but a very specific set of niches and, then, heavily pushing for their rapid transformation.

That is certainly a challenging agenda for both policy and institutional design, but we submit that the pay-off should be very high.

6- Conclusion: Questions, Policy Recommendations, and Institutional Restructuring.

Recommendations for Brazil should rightly reflect a wide range of considerations. Here, we are most interested in CDB experiences and approaches that might be relevant for Brazil. Most important in understanding CDB's success are not only its specific programs but also the entire enabling environment offered by other components in China's financial system and its related policy positions.

The various components of China's supportive framework represent China's solutions to a range of basic challenges that any country needs to manage if it is to generate and manage well an overall national financial system conducive to rapid growth and poverty reduction. Other countries' solutions to these challenges need not be the same as China's, but other countries need to find some way of handling each of these aspects of effective financial intermediation, which includes intermediation that adequately funds public projects and that both smooths and elevates overall aggregate demand.

Complementary conditions supporting CDB's effectiveness include the following: skillful vetting of potential public projects by NDRC (China's planning commission), separate business accounting for each individual public project that CDB lends to, a significant degree of decision independence on the part of government banks, evolution of financially viable off-budget investment vehicles, an effective national auditing agency, development of a bond market for CDB-issued securities, the non-independence of China's central bank, government regulation of interest rates, restrictions on international flows of short-term and portfolio capital, intervention to fix Dutch disease damage and promote current-account surpluses, tax reforms for future public debt servicing, and sympathetic bank loan rollovers if projects were delayed but were still considered viable public projects contributing to future community productivity.

[24] For a further development of those themes from an essentially analytical perspective, see Burlamaqui: 2012.

In other words, the environment that has made CDB so effective is one that recognizes the limitations of private, liberalized finance for the successful development of developing economies. Liberalized markets introduce significant inefficiencies and result in overall national financial shortcomings. They are short-sighted, require excessively high rates of return for long-term investments, ignore public goods projects, which by definition earn no profits, and react to current trends in ways that make economic highs and lows more exaggerated rather than more moderate. They are technically incapable of meeting national financial needs, and, what is worse, inflict regular damaging influences on the economy's healthy operation.

For a developing country facing a large per-capita income gap relative to rich countries, only large-scale government banking with direct investment capabilities is able to overcome the shortcomings of a liberalized private financial sector. The dimensions of public finance mentioned below all draw on Chinese solutions to certain universal national financial challenges. Brazil, as a developing economy, faces the same challenges. The solutions Brazil must come up with will likely be different from China's, but whether different or not, Brazil must also solve these problems if it is successfully to travel its only path to rapid growth and poverty reduction – the path through good government banking.

Independence of project vetting processes:

Every government proposes and evaluates public investment projects – most usually as part of its budgeting process. Brazil also has a federal governance system, and so any national investment program heavily involving government-owned banking should include sub-national government agencies in its overall organization. China's provinces and many municipalities also have local government-owned development banks. At every level, China's planning commission, the National Development Research Commission (NDRC) has its agencies identifying and designing projects.

What is or could be Brazil's agency or group of agencies functioning as NDRC functions in China? Is it some combination of ministries such as Planning, Budget and Management (MP), Economic Policy and Treasury (Fazenda) and National Integration (MI)? How independently are sub-national planning agencies going to be able to prepare projects on a scale moving in the direction of what China shows is possible? A hallmark of federal systems is that the central government has an on-the-ground presence and authority at the sub-national level, so strong local independence is probably not the best guiding principle.

For projects to have maximum effectiveness for national development, as opposed to influence over political fortunes for local and national leaders, project selection and vetting needs to establish a significant degree of independence – evaluating what is of highest priority for the region or nation as a whole. Establishing such independence in a politically exuberant democracy like Brazil may require special legislation or constitutional adjustment, but most important is that the need be recognized and actions taken in the direction of further improving project selection's public economic effectiveness.

Independent local project management and accounts:

How are individual projects managed in Brazil – is each one a separate accounting identity? Is management of each made personally responsible for technical performance and financial viability? This has been important in China for building the incentive systems needed not only for project performance but also for evaluation of project finances by would-be investors. Each public project is a corporation or some other independent accounting entity with clear immediate leadership lines of authority.

This degree of independence is relevant for establishing public-private partnership (PPP) projects. Too much independence over a many-decades period of both investment and operation can make oversight difficult and raise the overall cost of the project. Breaking long-term projects into sub-projects differentiating construction phases and shorter-term service provision contracts, as already mentioned, combines the best of both private-sector incentives and public-sector cost and quality concerns.

The important point is that individual projects, even small ones, are best separated from direct management by ministerial departments and sub-agencies so that each project is in effect a separate company. This allows core on-the-spot accountability.

Government banks' greater decision-making independence:

In order for the technical and financial incentives built into independent project companies to work well, Brazil's development bank and other relevant investors need to exercise their own decision-making power by being free to refuse to finance a vetted public investment project. Government administrative agencies can propose and design projects available for financing, but government-owned banks need to be able to examine the design and financial particulars and decide whether a related investment is likely to be successful from their financial perspective. In China they say that "planners dig the hole, but finance decides whether or not to plant the tree." At the least this helps prevent sweetheart projects at the local level which may benefit a particular contractor or other business or political interest but not make sense in terms of delivering the revenue, directly or indirectly, that public projects by definition can generate if well designed (for example, by significantly increasing prospects for future tax revenues).

Caution needs to be exercised that this independence is not abused for the benefit of a particular political constituency operating in a democracy such as Brazil's, and such guarantees may even require regular re-design of the nature of such independence, but the role of a strong civil service and judiciary in helping assure this qualification might be especially relevant.

Increased sophistication of off-budget investment vehicles:

The use of off-budget investment vehicles, so widespread in China and the United States, is an obvious area for increased application in Brazil, if it is not already dominant. In China and the United States, local governments do not – are not legally allowed to – guarantee public project borrowings. They may instead contract for certain services, or say vaguely that if they so decide each year in the future, they *may* provide stipends to public projects – without directly linking those payments to debt service obligations. How much is this "conduit finance" arrangements are already in operation in Brazil?

Their potential sophistication is especially strong in area of finance. What options are available for independent off-budget project companies to sell bonds and use other specially designed fund-raising instruments? What are the legal precedents that allow such fund-raising without requiring or allowing local government guarantees for project debt service? The better relationship is one in which the project office is committed to providing public services at some point in return for either direct revenues from the project or some understood, even though not guaranteed, likelihood of future government payments out of enhanced tax revenues. The various financial and project performance parameters require well-trained project managers able to operate such off-budget vehicles in ways that allow incentives in all dimensions to play their full potential roles.

Strategies for disciplining investment project debt servicing:

BNDES and other government-owned banks in Brazil may already have effective micro systems for successfully prodding poorly performing projects to bring their debt service payments up to speed. CDB has effectively denied funding for *new* projects in a certain county or municipality if existing projects are in arrears. How easily could Brazil's government-owned banks withhold funding for new projects in a particular municipality if one or more of that location's other projects was in arrears? Do current political or legal relationships make this practice problematic? If so, such obstacles need to be moderated if not removed.

Strengthened project auditing capacity at all levels:

How strong and politically independent are Brazil's public auditing and public accountability institutions? Is there over-reliance on private sector firms with conflicts of interest? China, even when it was much poorer in earlier decades, has invested significantly in audit and accounting capabilities at all levels. Are there major training and institutional expansion investments required to prepare Brazil's public auditing capacity to handle the needs of expanded government-bank lending? The ability to uncover deviations from approved public investment project designs or inappropriate if not fraudulent financial arrangements is central to enabling good government banking as opposed to dysfunctional government banking.

<u>Domestic bond markets for BNDES paper</u>:

A major program of bond sales for BDNES and other government-owned banks has the potential to develop Brazil's small and immature bond markets for longer-term issues. The World Bank-IMF 2012 FSSAP (Financial System Stability Assessment Program) report for Brazil (World Bank 2012) made this need for a larger long-term bond market a high priority for Brazil's financial system. In China, CDB's sale and servicing of a wide variety of bonds has not only supported its own financing needs but also laid a strong and deep foundation for China's evolving bond market. For government banking to expand its operations significantly, BNDES and other government banks need to be able to raise funds affordably, with longer maturity, and in significant volume.

How well suited are Brazil's bond markets to meeting this requirement? A wide variety of potential investors in BNDES and other government-bank paper have different lending needs and risk appetites. BNDES would need to have the flexibility to raise funds on a large scale form a wide range of potential sources. Both financial policies and legal foundations for this fundraising activity need to be adequate. In particular, central bank authority over limits to BNDES bond issuing, if any, would need to be weakened if not eliminated.

<u>A cooperative central bank</u>:

The role of the central bank in ensuring adequate liquidity for viable public investment initiatives is vital. How squeamish is Brazil's central bank going to be about enabling BNDES borrowing on the needed scale? What other policy adjustments are needed to help the central bank feel comfortable with this role? The approach to inflation targeting needs to be sophisticated enough to encompass BNDES and other government bank lending – in part by being able to differentiate what are most likely inflationary projects drawing on limited resources and what are projects exploiting underutilized labor and materials.

In general, central banks around the world, and especially in the United States and Europe, have failed in providing economic leadership. They have focused too intently on their reputations with the financial sector as agents of inflation discipline and too little as sober proponents of adequate national demand levels necessary for high rates of well-remunerated employment. China's central bank is not independent of executive authority, which takes over responsibility for inflation-fighting strategies.

Brazil's central bank might also do well to view inflation targeting from a cyclical perspective. Rather than seeking a steady pace for inflation, it should seek to encourage gradual increase of investment's share of GDP, and public investment's share as well, This goal is likely better served by a recurring undulating pattern for inflation and investment cycles over time. Over the medium, term inflation would kept within certain bounds, but the surges in public investment as a share of GDP could be maintained while credit tightening in other sectors restores inflationary balance. This has been the many-decades pattern in China.

<u>Lower interest rates for public investments</u>:

The ability to access lower-cost funding on a large scale is one of the secrets to successful public investment strategies. In Brazil's relatively open and competitive financial system, interest rates unfortunately reflect shorter-term interests and concerns of both business and private citizens. But effective financial leadership requires finding ways to make sufficient funding for public investment less expensive. The ideal way, perhaps, is caps on domestic bank deposit account interest rates. Such caps are essentially taxes on short-term liquid investments which their rates of return. These are good taxes, both because they incentivize investors to work harder to find good returns on longer-term commitments, and because they raise funds from those making the least effort to raise national investment productivity. Short-term bank depositors, from a risk perspective, don't deserve much return, if any at all. Budgetary subsidies for government-bank lending rates are a possibility, but they have the drawback of facing budgetary limitations and are transparent in ways that undermine their effectiveness.

Arranging for lower interest rates for public investments is one of the great leadership challenges for any financial system. The effort will meet strong opposition from private financial interests, but this is to be expected. To the degree this result can be achieved, the financial system from a national perspective will operate more efficiently – the need for public investments will move in the direction of its optimal scale.

<u>Restrictions on short-term international financial flows</u>:

To make its national financial system efficient through good government banking, and out of concern for financial stability, interest-rate affordability, and domestic-funding incentives, it is important that Brazil's financial system continues to move in the direction of managing short-term international financial flows, especially inflows into Brazil. The idea that Brazil will be able to meet its public investment needs from international funding sources is difficult if not impossible to support. Supporting domestic investments through short-term inflows is even less advisable. Longer-term foreign direct investment (FDI) does have a beneficial albeit limited role, especially when it comes to transfer of production and management technologies. But the scale of FDI cannot begin to meet national needs if investment's share in GDP is to rise above 30 percent or 35 percent. FDI in China, in quantitative terms, only played a minor role.

In order for Brazil to institute exchange rate stability as suggested in the next section and establish control over domestic interest rates to make them suitable for affordable large-scale public investments, it is not possible for short-term international financial flows to be free, and they should not be free if the goal is an efficient national financial system. As noted in the IMF's 2012 Article IV report, "There has been a convergence in views that use of capital flow management measures to manage cyclical pressures is an appropriate part of this [Brazil's countercyclical monetary] policy tool kit" (IMF 2012). But controlling short-term flows should be more than just an occasional countercyclical measure. Moreover, controlling inflows is just as important if not more important than restrictions on outflows, because it is the initial inflows that generate legally binding obligations for later outflows, when exchange-rate and other conditions might be less optimal. This apparently was Brazil's unfortunate experience in the late 1970s and early 19890s, when despite having "strong capital controls" [but only on outflows], freer flowing short-term foreign investment inflows led to later unavoidable crippling outflows. China's experience shows how close management of all short-term flows can be a permanent policy measure helping ensure the efficiency of the whole national financial system.

This need will of course find resistance and objections from not only both domestic and foreign financial and other business interests, but also from other countries who have established financial agreements with Brazil ensuring freer flow of funds. To the degree that such agreements are difficult to undo, certain short-term flows (such as short-term repayment and repatriation rights) may need to be grandfathered. But new financial transactions need as much as possible and as soon as possible to adhere to short-term restrictions enabling the domestic national financial system to operate efficiently in the service of an overall well-designed national investment pattern.

Interventions to cure Brazil's various strains of Dutch disease:

Affliction with Dutch disease is especially damaging for the effectiveness of government-owned banking systems' promotion of rapid growth and poverty reduction. Brazil has been especially sensitive to the special variety of Dutch disease caused by the United States dramatic expansion of dollar-denominated liquidity. Capital inflows into Brazil not only promoted inflation and relatively high rates of return on domestic bonds, they also resulted in over-appreciation of the Brazilian Real such that for a while there was little difference between Brazil's purchasing-power-parity GDP and its GDP according to commercial exchange rates. Such an over-appreciated currency puts Brazil's manufacturing exports at a competitive disadvantage, harms better-paid employment growth. Damage from this externally generated Dutch disease requires correction through direct government intervention in currency markets to prevent appreciation of the Real.

At the same time, Brazil is renowned for its exports of primary products, with which it earns large revenues from countries like China. This pattern introduces Dutch disease damage of a more traditional sort, since low-skilled-labor-content exports also tend to result in export-earning revenues that promote excessive currency appreciation. Once such a pattern is established, sticky currency overvaluation can trigger episodes of current-account deficit difficult to remedy quickly.

For government banks like BNDES to be able to function on a useful scale, and in order for better paying jobs to expand more rapidly in the manufacturing sector, intervention in exchange markets to resist unreasonable currency appreciation is an important part of the enabling environment.

A tax system allowing local governments to service development bank debt:

According to the most recent IMF Article IV report, Brazil's taxation system provides stronger funding for public investments when the economy is booming. This has a pro-cyclical effect, the report says, such that when the economy is overheating, public investment makes it even worse, and when there is insufficient demand because of a growth slowing, weaker government revenues and investment make the problem more serious (IMF 2013). In order to increase the benefits from government banking, Brazil needs to assure that its taxation system, both nationally and locally, is dedicated to servicing public investment debt when revenues are strong, while allowing budget deficits to expand when revenues are weak. Most importantly, by whatever means, the tax system needs to optimize its design so that it is as buoyant as possible and so that when economic activity expands in a certain location – for example as a result of successful infrastructure investments – its tax revenues will increase in ways allowing service for the earlier incurred debt.

Alternatives to costly PPP funding:

BNDES needs to find ways to use its own resources to replace the core funding from international PPP partners. Despite the apparent attractiveness of reliance on large-scale foreign funding for major infrastructure projects, the international PPP approach to funding infrastructure is fraught with inefficiencies and unnecessary costliness that could be avoided with well supported development bank programming and funding. Large-scale foreign PPP funding introduces numerous sources of inefficiency.

If large parts of PPP funding are the responsibility of the private partner, and if the PPP contract includes expected revenue from post-completion operation over a long period of time, risk-based cost increases negotiated into the contract often result in excessively expensive projects (UNISON 2007). In addition, the possibility of either excessive profits for the private partner or its financial failure in cases of unexpected project deterioration risk damaging the political popularity of the overall infrastructure investment strategy (Katz 2007).

Strong government bank participation in PPP investments also has the advantage of relying heavily on domestic currency credit rather than foreign credit, minimizing complications and cost contingency needs due to exchange-rate and other foreign currency availability risks for debt service obligations. The main reason for foreign participation, rather than funding, then becomes the special technical expertise of the potential foreign private partner.

Overall, the success of CDB's strategy has many interconnected dimensions that represent potentially useful options for support of BNDES' and other government banks' promotion of rapid growth and poverty reduction. In China they have taken decades to create and strengthen to maturity, and many dimensions still have a ways to go. But as a strategic whole, as a design for national financial efficiency, CDB and its supporting environment represent concepts and solutions available in principle to most countries. For this to happen, however, those countries must overcome resistance and misconceptions about the value of government-owned banks and of development banks like CDB in particular.

Bibliography

ACIOLY, Luciana; PINTO, Eduardo C.; CINTRA, Marcos Antonio M. China e Brasil: oportunidades e desafios. *In*: LEÃO, Rodrigo P. F.; PINTO, Eduardo C.; ACIOLY, Luciana (Orgs.). **A China na nova configuração global**: impactos políticos e econômicos. Brasília, Ipea, 2011, p. 307-350.

BERGGRUEN, Nicolas; GARDELS, Nathan. **Intelligent governance for the 21st Century**: a middle way between West and East. Cambridge: Polity Press, 2013.

BLINDER, A. **When the music stopped**. The financial crisis, the response, and the work ahead. Penguin Press. Kindle edition. 2013.

BLOCK, F.; KELLER, M. (Eds.). **The State of innovation**: the U.S government's role in technology development. Paradigm Press, 2011.

BRESSER-PEREIRA, Luiz Carlos. **Globalization and competition**. Cambridge: Cambridge University Press, 2010.

BURLAMAQUI, Leonardo. Finance, Development and the Chinese Entrepreneurial State. Paper for the Mission-Oriented Finance Conference – INET/ Ford Foundation. London. July 22-24, 2014.

BURLAMAQUI, Leonardo. Development theory: convergence, catch-up or leapfrogging? A Schumpeterian Approach. Paper for Celso Furtado Workshop on **Novo Desenvolvimentismo e uma Macroeconomia Estruturalista do Desenvolvimento**. São Paulo: FGV- SP, August 2011.

BURLAMAQUI, Leonardo. Evolutionary Economics and the Role of State. In: BURLAMAQUI, Leonardo; CASTRO, Ana Celia; CHANG, Ha-Joon. (Eds.). **Institutions and the role of the State**. E. Elgar, 2000.

BURLAMAQUI, Leonardo. **Global economic governance**. Program Officer Memorandum, The Ford Foundation, New York, 2007.

BURLAMAQUI, Leonardo. Knowledge governance: an analytical approach. *In*: BURLAMAQUI, Leonardo; CASTRO, Ana Celia; KATTEL, Rainer, . (Eds.). **Knowledge governance**: reasserting the public interest. Anthem Press, 2012.

BURLAMAQUI, Leonardo; TAVARES, Maria C.; TORRES Filho, E. T. **Japão**: um caso exemplar de capitalismo organizado. Brasília: Instituto de Pesquisa Econômica Aplicada (Ipea) e Comissão Econômica para América Latina e Caribe (Cepal), 1991.

CASTRO, Antonio B. **Do desenvolvimento renegado ao desafio sinocêntrico**. Rio de Janeiro: Editora Campus, 2012.

CASTRO, Antonio B. **O inconformista**: homenagem do Ipea ao mestre. Brasília: Ipea, 2011.

CDB 2013 – 国家开放银行 (China Development Bank), *2012 年度报告 – 财务概要（Annual Report for year 2013 – Financial Summary*)," http://www.cdb.com.cn/web/NewsInfo.asp?NewsId=4410

CHANDRASEKHAR, C. P. **Basel II and India**. Working Paper for the IBASE seminar on Financial Regulation. Rio de Janeiro, March 2007.

CHANG, Ha-Joon. **The East Asian development experience**: the miracle, the crisis and the future. London: Zed Books, 2006.

CORNFORD, Andrew. Further thoughts on the GATS rules for banking services. **Observatoire de la Finance**, Geneva 2011.

COUSIN, Violaine. **Banking in China**. New York: Palgrave Macmillan, 2011.

EATWELL, John; TAYLOR, Lance. **Global finance at risk**: the case for international regulation. New York: The New Press, 2000.

ECONOMIST (The). **Huawei**: the company that spooked the world. London: August, 2012.

ECONOMIST (The). **The alchemists of finance**. Special Report. London, May 19th, 2007.

EICHENGREEN, Barry. **Toward a new international financial architecture**: a practical Post-Asia agenda. IIE, 1999.

FREEMAN, Chris; LOUÇÃ, Francisco. **As time goes by**: from the Industrial Revolution to the Information Revolution. Oxford: Oxford University Press, 2005.

FRIEDEN, J, **Global Capitalism- Its Fall and Rise in the Twentieth Century**. Norton .2006

GALLAGHER, Kevin P.; IRWIN, Amos; KOLESKI, Katherine. **The new banks in town**: Chinese finance in Latin America. Washington, D.C.: Inter-American Dialogue, February 2012.

GALLAGHER, Kevin P.; PORZECANSKI, Roberto. **The dragon in the room**: China and the future of Latin American industrialization. Palo Alto, CA: Stanford University Press, 2010.

GARTNER, Jeffry A. **Global capitalism**: its fall and rise in the Twentieth Century. New York, NY: W. W. Norton & Company, 2006.

GERSCHENKRON, Alexander. **Economic backwardness in historical perspective**: a book of essays. Cambridge, MA: Harvard University Press, 1962.

GUTHRIE, Doug. **China and globalization**: the social, economic and political transformation of Chinese society. New York-London: Routledge, 2006.

HELLMANN, Thomas; MURDOCK, Kevin; STIGLITZ, Joseph. Financial restraint: towards a new paradigm. *In*: AOKI, M.; KIM, H-K.; OKUNO-FUJIWARA, M. (Eds.). **The role of government in East Asian economic development comparative institutional analysis**. Oxford; Clarendon Press, 1997, p. 163-207.

HILFERDING, Rudolf (1981[1910]). Financial Capital, Routledge. (*O capital financeiro*. São Paulo: Nova Cultural, 1983 (Os Economistas).

KALETSKY, Anatole. **Capitalism 4.0**: the birth of a new economy in the aftermath of crisis. New York, NY: Public Affairs Books, 2010.

KEIDEL, Albert. China economic developments, prospects and lessons for the international financial system. *In*: **Brasil e China no reordenamento das relações internacionais**: desafios e oportunidades. Brasília: Fundação Alexandre de Gusmão/Ministério das Relações Exteriores, 2011. Disponível em: http://www.funag.gov.br/biblioteca/dmdocuments/brasil_e_china_no_reordenamento_das_relacoes_internacionais_site.pdf .

IMF – International Monetary Fund, *Brazil 2012 Article IV Consultation: Staff Report*, Washington, DC: IMF, http://www.imf.org/external/pubs/ft/scr/2012/cr12191.pdf 2012

IMF – International Monetary Fund, *Brazil 2013 Article IV Consultation: Selected Issues*, Washington2013,

KEIDEL, Albert. China's financial sector: contributions to growth and downside risks. Paper delivered at for the Conference **China's changing financial system**: can it catch up with or even drive economic growth? Indiana State University, 2007.

KEIDEL – Albert Keidel, *China's Economic Fluctuations: Implications for its Rural Economy*, Washington, D.C.: Carnegie Endowment for International Peace, www.carnegieendowment.org/files/keidel_china_fluctuations_final.pdf2008

KEIDEL - Albert Keidel, "Brazilian Growth Prospects in the Global Context," PowerPoint presentation at the conference *Financial Governance after the Crisis*, Rio de Janeiro, Brazil, September 26-27, 2013 http://www.levyinstitute.org/conferences/rio_2013/keidel_rio.pdf2013

KEYNES, John M. (1936). **The General theory of employment, interest and money**. Londres: Macmillan (Tradução brasileira **A Teoria geral do emprego, do juro e da moeda**. São Paulo: Nova Cultural, Coleção "Os Economistas", 1985).

KIM, Byung-Kook; VOGEL, Ezra F. **The Park Chung Hee era**: the transformation of South Korea. Cambridge, MA: Harvard University Press, 2011.

KREGEL, Jan. **Changes in the U.S. financial system and the subprime crisis**. Annandale-on-Hudson, NY: Levy Economics Institute (Working Paper, n. 530), 2008.

KREGEL, Jan. Derivatives and global capital flows: applications to Asia. *In*: CHANG, Ha-Joon; PALMA, Gabriel; WHITTAKER, Hugh (Eds.). **Financial liberalization and the Asian crisis**. Basingstoke-New York: Palgrave, 2001.

KREGEL, Jan. **Draft remarks for the round table**: a crise e as transformações internacionais: um novo papel do Brasil no cenário global? Rio de Janeiro: Fórum Nacional, 2009.

KREGEL, Jan. **Yes, 'it' did happen again**: a Minsky crisis happened in Asia. Annandale-on-Hudson, NY: Levy Economics Institute (Working Paper, n. 234), April 1998.

KRUGMAN, Paul. **End this depression now**. New York: W.W. Norton & Company, 2012.

LA PORTA – Rafael La Porta, Florencio Lopez de Silanes and Andrei Shleifer, "Government Ownership of Banks," Harvard Institute of Economic Research Paper No. 1890, KSG Working Paper No. 01-016, March 2000, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=236434&download=yes

LA PORTA – Rafael La Porta, Florencio Lopez de Silanes and Andrei Shleifer, "Government Ownership of Banks," *Journal of Finance*, 57 (2), pp. 265-301, http://onlinelibrary.wiley.com/doi/10.1111/1540-6261.00422/abstract2002

LANDES, D – Unbound Prometheus. Cambridge University Press.1969

LARDY, Nicholas R. **Sustaining China's economic growth after the global financial crisis**. Washington, D.C.: The Peterson Institute for International Economics. Kindle Edition. 2012.

LEÃO, Rodrigo P. F.; PINTO, Eduardo C.; ACIOLY, Luciana (Orgs.). **A China na nova configuração global**: impactos políticos e econômicos. Brasília, Ipea. 2011.

LEE, Ann. **What the U.S can learn from China**: an open-minded guide to treating our greatest competitor as our greatest teacher. San Francisco: Berrett-Koehler Publishers, 2012.

Mc GREGOR, Richard. **The Party**: the secret world of China's communist rulers. HarperCollins, Kindle Edition, 2010.

MCKENNA – Cameron McKenna, Ted Rhodes, Paul Smigh and Mark Oliver, "Brazil's new logistics investment programme," Lexology, September 3, 2012, http://www.lexology.com/library/detail.aspx?g=f8c0069e-d360-4900-b2de-fa4ef82cc074

MINSKY, Hyman P. (1978). The financial instability hypothesis: an interpretation of Keynes and an alternative to standard theory. *In*: MINSKY (1982).

MINSKY, Hyman P. **Can "It" happen again**: essays on instability and finance. Armonk, NY: M. E. Sharpe, 1982.

MINSKY, Hyman P. **Stabilizing an unstable economy**, New Haven and London: Yale University Press, 1986.

MINSKY, Hyman P. **Uncertainty and the institutional structure of capitalist economies**, Annandale-on-Hudson, NY: Levy Economics Institute (Working Paper, nº 155), 1996.

MORGENSON, Gretchen. JPMorgan's follies, for all to see, **New York Times**, NY, March 16, 2013.

NAYYAR, Deepak (Ed.). **Governing globalization**: issues and institutions. Oxford: Oxford University Press, 2002.

PEREIRA, Alexius A. Whither the developmental State? Explaining Singapore's continued developmentalism, **Third World Quarterly**, Volume 29, Issue 6, 2008, p. 1189-1203.

PETTIS, Michael. **China financial markets**. Disponível em:<http://www.mpettis.com/>.

PETTIS, Michael. **The great rebalancing**: trade, conflict, and the perilous road ahead for the world economy. Princeton, New Jersey: Princeton University Press, 2013.

RAMO, Joshua C. **The Beijing consensus**. London, The Foreign Policy Center, 2004.

REINERT, Erik. **How rich countries got rich...and why poor countries stay poor**. New York, NY: Public Affairs Books, 2008.

REINHART, Carmen M.; ROGOFF, Kenneth S. **This time is different**: eight centuries of financial folly. Princeton, New Jersey: Princeton University Press, 2011.

ROACH, Stephan S. China is okay, **New York Times**, New York, NY, 10/15/2012.

RODRIK, Dani. Feasible globalizations. *In*: WEINSTEIN, Michael M. (Ed.). **Globalization**: what's new? New York, NY: Columbia University Press. 2005, p. 196-213.

RODRIK, Dani. **The globalization paradox**. New York, NY: W. W. Norton & Company, 2011.

RODRIK, Dani. **The new global economy and developing countries**: making openness work. ODC Press, 1999.

RUMELT, Richard. **Good strategy, bad strategy**: the difference and why it matters. New York: Random House, Inc., 2011.

RUTTAN, Vernon W. **Is war necessary for economic growth?** Military procurement and technology development. Oxford: Oxford University Press, 2006.

SANDERSON, Henry; FORSYTHE, Michael. **China's superbank**: debt, oil and influence. How China Development Bank is rewriting the rules of finance. Bloomberg Press, 22 January 2013.

SCHOLTE, Jan Aart. **Globalization**: a critical introduction. New York: Palgrave, 2005.

SCHUMPETER, Joseph (1912). **The theory of economic development**. Transaction Press, 1934.

SCHUMPETER, Joseph (1942). **Capitalismo, socialismo e democracia**. Rio de Janeiro: Editora Fundo de Cultura, 1961.

SKIDELSKY, Robert. **Keynes**: the return of the master. New York, NY: Public Affairs Books, 2009.

SOLOW, R – Robert M. Solow, "A contribution to the Theory of Economic Growth," *The Quarterly Journal of Economics*, Vol. 70, No. 1. (February 1956), pp. 65-94. 1956

SOROS, George. **The alchemy of finance**. New York: Simon and Schuster, 1987.

STIGLITZ, Joseph E. **The price of inequality**. New York: WW Norton & Company, 2012.

TSAI, Kellee S. **Capitalism without democracy**: the private sector in contemporary China. Ithaca, NY: Cornell University Press, 2007.

TSELICHTCHEV, I: **China versus the West**. John Wiley. 2012.

TURNER, Adair. **Economics after the crisis**: objectives and means. Cambridge, MA: The MIT Press, 2012.

UNISON Scotland, "At What Cost: a UNISON report on the aggregate costs of PFI/PPP projects in Scotland – and some suggestions on a way forward," [UNISON: Trades Union for public sector workers, incorporating COHSE, NALGO and NUPE], October 2007, http://www.unison-scotland.org.uk/comms/atwhatcostoct07.pdf

VOGEL, Ezra F. **Deng Xiaoping and the transformation of China**. Cambridge, MA: Harvard University Press, 2011.

WADE, Robert. **Governing the market**: economic theory and the role of government in East Asian industrialization. Princeton, New Jersey: Princeton University Press, 1990.

WALTER, Carl E.; HOWIE, Fraser J. T. **Red capitalism**: the fragile financial foundation of China's extraordinary rise. Hoboken, New Jersey: John Wiley & Sons Inc., 2012.

WEINSTEIN, Michael M. (Ed.). **Globalization**: what's new? New York, NY: Columbia University Press, 2005.

WEISS, L. America Inc.? Cornell University Press. 2014.

WOLF, Martin. The wealth of nations. Do political institutions hold the key to a country's economic success? Comments on the book: ACEMOGLU, Daron; ROBINSON, James A. **Why nations fail**: the origins of power, prosperity and poverty by. London: Profile Books Ltd., 2012. **Financial Times**, London, March 3, 2012.

WOO, Jung-en. **Race to the swift**: State and finance in Korean industrialization. New York, NY: Columbia University Press, 1991.

WOODS, Ngaire. (Ed). **The political economy of globalization**. New York: St. Martin's Press, 2000.

WOODS, Ngaire. **The globalizers**: the IMF, the World Bank and their borrowers. Ithaca, NY: Cornell University Press, 2006.

WORLD BANK – International Monetary Fund, *Brazil: Financial System Stability Assessment*, Washington, DC: IMF, July 2012, http://lnweb90.worldbank.org/FPS/fsapcountrydb.nsf/(attachmentwebFSSA)/Brazil_FSSA_Update.pdf/$FILE/Brazil_FSSA_Update.pdf 2012

WORLD Bank (The); Development Research Center of the State Council of the People's Republic of China. **China 2030**: building a modern, harmonious, and creative high-income society. Washington, D.C., 2012.

WRAY, L. Randall. **What should banks do? A Minskyian analysis**. Annandale-on-Hudson, NY: Levy Economics Institute (Public Policy Brief, n. 115), September 2010.

WRAY, L. Randall; LIU, Xinhua. **Options for China in a dollar standard world**: a sovereign currency approach. Annandale-on-Hudson, NY: Levy Economics Institute (Working Paper, n. 783), January 2014.

YONGDING, Yu. The impact of the global financial crisis on the Chinese economy and China's policy responses. *In*: AKYÜZ, Yilmaz (Ed.). **The financial crisis and Asian developing countries**. Geneva: Third World Network (TWN Press), 2011.

***