

## Financial Globalization and China

By

MENZIE D. CHINN\*  
University of Wisconsin and NBER

HIRO ITO\*\*  
Portland State University

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### Abstract

This paper looks into the unique relationship between financial globalization and China's economic development. For a long time since the beginning of liberalization policies in the early 1980s, financial liberalization took the form of encouraging FDI flows to supplement scarce capital. Only in the mid-2000s, in response to demands by foreign governments, did the government gradually began liberalizing other types of cross-border capital flows, such as portfolio flows and banking lending. Nevertheless, the progress has been quite limited. China lags behind other countries including developing ones in terms of both de jure and de facto levels of financial openness. Overreliance on FDI flows and the government's emphasis on capital intensive industrialization has also led the economy to achieve the multi-faceted pattern of economic growth. High levels of savings, which has contributed to massive current account surplus in recent years, are a reflection of clogged flows of funds within the economic system caused by institutions and policies in place for decades to achieve rapid economic development. To correct them, China would need to implement drastic reforms in institutions and systems and introduce more market mechanism in capital allocation. One effective policy for that purpose would be further financial liberalization.

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\* Chinn: Robert M. La Follette School of Public Affairs; and Department of Economics, University of Wisconsin, 1180 Observatory Drive, Madison, WI 53711. Email: [mchinn@lafollette.wisc.edu](mailto:mchinn@lafollette.wisc.edu)

\*\* Ito: Department of Economics, Portland State University, 1721 SW Broadway, Portland, OR 97201. Tel/Fax: +1-503-725-3930/3945. Email: [ito@pdx.edu](mailto:ito@pdx.edu)

## **1. Introduction**

China's impact on the world economy has grown substantially over the past two decades. Attitudes toward the consequences of this development can, at best, be described as ambivalent. Some economists, notably the previous and current chairmen of the Federal Reserve, have argued that China is partially responsible for the crisis; its excess savings – i.e., a current account surplus at 11% of GDP as of 2007 – fed the profligacy of several industrialized countries, most notably the U.S. and the U.K. These “global imbalances,” they argue, gave rise to asset bubbles that eventually burst and led to the crisis.

Now, the question is how China's current account surplus balances will evolve, as financial globalization proceeds. How does China's access to global financial markets interact with its underdeveloped financial markets? Would opening up the Chinese capital account lead to a much trajectory?

In order to answer those questions, we review the development of external financial policies and cross-border capital flows of China. Second, we survey empirical findings of the determinants of current account balances and national saving in a cross-country context so as to identify how much portion of China's current accounts and national saving are unexplainable with cross-country variations. Third, we provide descriptive explanations for China's uniquely high saving rates. Last, we provide some concluding thoughts regarding China's saving behavior and financial integration with the rest of the world.

## **2. A Brief History of China's Financial Opening**

Since 1978, the Chinese government has very gradually liberalized product markets. Liberalization policies usually start with a limited scope; the policy implementation is often targeted to carefully chosen geographical areas, and narrowly restricted to strictly defined subjects. Only when they yield convincing success, does the government expand the scope of coverage and finally make it into a national policy.

Financial liberalization has also followed the same pattern. It started in 1980 when the government created the Special Economic Zones (SEZs) in four southern coastal cities and provided foreign firms in the cities (that were allowed to exist only in the form of joint ventures with local firms) with exemptions from the central planning and other special treatments including exemptions from corporate income tax and other generous tax incentives. Since then, there have been three waves of financial liberalization policies. In 1984, the experiments of the SEZs were expanded to 14 coastal cities, that led to a 98% increase in inward FDI. In 1992, when Deng Xiaoping made it clear that the country will pursue market-oriented economy (or “socialism with Chinese characteristics” in his words) during his famous “Southern Tour,” the government implemented further liberalization policies, which led to a surge in inward FDI in 1992 and 1993. The last wave, which is still underway, came when China joined the World Trade Organization (WTO) in 2001. In doing so, China committed to liberalize its financial markets. In this wave, FDI flows continued to be a dominant form of capital flows for the country. Only in the mid-2000s, in response to demands by foreign governments, and also in an attempt

to manage an overheating economy, did the government gradually began liberalizing other types of cross-border capital flows, such as portfolio flows and banking lending. Nevertheless, as of the beginning of 2011, the progress has been quite limited.

The last two waves can be observed in Figure 2 (a), which depicts the evolution of capital inflows to and outflows from China. In 1993, the amount of capital inflows increases dramatically, followed by an increase in capital outflows by a similar magnitude in the late 1990s. Figure 2 (b) through (d) highlight the fact that the biggest component of the increase in capital inflows were associated with FDI flows, which have been the main form of capital inflows ever since financial opening in the early 1990s. Both inflows and outflows of ‘other’ type of investment, which is comprised mainly of bank lending, became active after 2005 while portfolio outflows (which includes both equity and debt securities). These developments reflect the authorities’ efforts to cool down the then overheating economy and lessen the appreciation pressure on the exchange rate. The global financial crisis of 2008-2009 caused a significant drop in the outflows of portfolio investment and bank lending, both of which had just experienced a significant expansion in the preceding year. The crisis has more negatively affected FDI and bank lending inflows than portfolio investment inflows.

In contrast to the present situation, at the earlier stage of post-liberalization development, the primary motive for inviting FDI inflows was to increase accessibility to then scarce foreign exchange. As of 1980, China held only \$10 billion, or 5% of its GDP, of international reserves, a stark contrast to \$2.5 trillion, or 49% of GDP as of the end of 2009. FDI is typically perceived to be the most stable source of external financing compared to the other types of flows. Furthermore, the main motive for the Chinese government to focus on encouraging inward FDI in earlier years was to import corporate governance and other know-how for management and, in later years, banking practices. The relative stability of FDI inflows was much appreciated when other Asian economies with liberalized markets for portfolio investment were more directly exposed to the Asian crisis of 1997-1998. In fact, many agree that China’s tight controls over portfolio flows shielded the economy from contagious speculative attacks on other Asian currencies at the time of the crisis. This experience seems to have convinced Chinese policy makers that they need to be careful about removing restrictions on other forms of capital flows than FDI. As we just saw, Chinese authorities started relaxing restrictions first on capital inflows and later on outflows when the Chinese economy started overheating and receiving criticism as a big contributor to the global imbalances only in the mid- to late 2000s.

Although it has made significant progress toward more open cross-border financial transactions, China still lags behind other major economies including developing ones. While it is extremely difficult to compare the extent of financial openness, or that of capital controls, across countries, there are roughly two ways of measuring it in a cross-country context. One way is to look into the extensity and intensity of regulatory controls on cross-border capital transactions. Such a *de jure* approach usually uses information from the IMF’s *Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER)*. The other approach is to construct a *de facto* measure of financial openness.

Here, there are several approaches. One is to examine interest differentials, and another is to examine quantities.

Whether we use *de jure* or *de facto* measures of financial openness, it is clear that China is a laggard in terms of its openness to cross-border capital transactions. While many emerging market economies removed or loosened regulatory restrictions on capital flows in the 1990s as shown in Figure 3, in terms of *de jure* financial openness, China has not made progress since the early 1990s. It must be noted that *de jure* measures fail to fully capture the complexity of real-world capital controls.

One *de facto* measure involves a direct measure of gaps in interest rates. In principle, one would want to examine the two measures: (i) the domestic-foreign interest rates adjusted for expected exchange rate changes (or deviations from uncovered interest parity), and (ii) the domestic-foreign interest rates adjusted for the forward discount (or deviations from covered interest parity). Since, expected exchange rate changes are not directly observable, the first measure is hard to examine. A recent study finds that the deviations from uncovered interest parity between the United States and China, when the rational expectations are being imposed, declined over the 1996-2001 period. The development of a nondeliverable forward (NDF) market for the Chinese yuan has provided an alternative measure of expected depreciation. Another study which uses this alternative measure, on the other hand, finds no evidence of declining interest differentials in a sample over the 1997-2005 period while allowing for a structural break in 2001, and concludes that capital controls continue to bind. Since onshore rates are higher than offshore, the controls essentially prevent capital from flowing out.

Figure 4 shows the one-month covered interest differential (using offshore nondeliverable forward rates), calculated using Chibor and Libor. The evidence is, if anything, stronger for binding capital controls, in the post-2005 period, with the exception of a few months right after the de-pegging of the yuan in July 2005. The late 2008 decrease in the differential is attributable to distortions in Libor associated with the global financial crisis.

In Figure 5 (a), we examine the implications of using a quantity based measure, namely the components of the international investment position normalized by GDP -- Lane and Milesi-Ferretti's (2007) measure of *de facto* financial openness that is calculated as the sum of total stocks of external assets and liabilities as a ratio to GDP. It appears that China has been catching up with other developing countries since the mid-2000s. Based on Figure 5 (b) through (d), most of the catch-up is mainly driven by a rapid growth in the stock of portfolio investment (which does not include debt securities in this measure). Interestingly, the markets for debt securities have not shown any progress in terms of increasing openness toward international transactions (Figure 5 (d)).

Although most researchers agree that encouraging mainly FDI inflows has helped the Chinese economy to achieve impressive economic growth, this approach to financial globalization did not come without cost. First, its asymmetrical approach to financial liberalization toward inflows and outflows of capital has made the country prone to experience surpluses in both current and financial accounts, resulting in a massive

buildup of international reserves. Second, FDI inflows have also reinforced the government's efforts to focus on industrialization through strengthening the manufacturing, capital intensive sectors. As a result, the economy has had the tendency to experience overcapacity, which contributed to expanding exports and exacerbating current account imbalances. Third, the excessive focus on industry has also resulted in excessive capital intensity, driving down the share of national income going to labor. Many researchers have pointed out that labor income has been declining in the last decade, pushing down disposable income. Hence, the distorted industrial structure has raised savings in *both* the corporate and household sectors.

Thus, the unique development of financial liberalization in China has contributed to the rise of the global imbalances. To more closely examine the impact of financial globalization, we look at how saving and investment behavior has been influenced by these policies. We first investigate saving and investment determination in a cross-country context in the next section to identify common denominators of the saving and investment behavior across the countries. Once we identify the China-specific portion of current account and national saving behavior, we then focus on the peculiarities of China's saving behavior in the following section.

### **3. China's current account and saving behavior in cross-country context**

Estimating a simple empirical model of current account balances and national saving can be an effective way of identifying the commonalities and peculiarities of China's saving behavior. Here, we discuss results from an empirical exercise based on several recent empirical studies and conducted for 23 industrial and 86 developing countries over the period of 1970-2008 to estimate the determinants of the current account balances, national saving, and investment.

In this exercise, current account balances, national saving, and investment (all expressed as a share of GDP) are individually regressed against the same set of explanatory variables, which are selected based on the literature. The vector of explanatory variables includes budget balances (as a share of GDP), private credit creation (PCGDP) as a measure of financial development; the Chinn-Ito measure of financial openness; and a measure of legal/institutional development; net foreign assets as a ratio to GDP; relative income (to the U.S.); its quadratic term; relative dependency ratios on young and old population; terms of trade volatility; output growth rates; trade openness (= exports+imports/GDP); dummies for oil exporting countries; and time fixed effects. The ordinary least squares estimation with heteroskedasticity-consistent standard errors is applied to the panels of non-overlapping 5-year averages of the deviations from their GDP-weighted world means of each of the variables.

Most of the variables are found to behave consistently with what has been found in the literature. Among the variables of our interest, the estimation yielded a result consistent with the hypothesis that countries with more developed financial markets should have weaker current accounts. The estimation also identified significant interactions between capital account openness, financial development, and legal development. More

specifically, emerging market economies with better developed financial markets and open capital accounts are found to have weaker current account balances, as if they are on the receiving end of inflows (or experience the least tendency for capital to flow out). Consistently with the saving glut hypothesis, further financial deepening coupled with higher levels of legal development would worsen current account balances.

When the model is estimated for national saving and investment separately, it is found that government budget deficits affect primarily national saving. Given that the Ricardian hypothesis predicts the estimated coefficient of budget balances to be zero – any change in public saving would be offset by the exact same change but with the opposite sign in private saving, this finding can be interpreted as evidence that there is some non-Ricardian effect of deficit spending. It is also found that dependency ratios affect both savings and investment in the way consistent with the life-time income hypothesis. As the saving glut proponents argue, further financial development would lessen the need for precautionary saving. If a country is equipped with better-developed legal systems, the negative impact of financial development on national saving can be even larger. Financial development has a more consistent impact on investment than saving (something that would not be obvious a priori).

However, one must be careful about this sort of exercise especially if it is intended to examine the factors that led to the unique situation of the global imbalances on the eve of the crisis. Because the global crisis can be interpreted as a large-scale correction of the imbalances, some of the saving and investment behavior of countries, which contributed to the global imbalances, can only be interpreted as anomaly. If that is the case, there must be some portions of current account balances, or national saving or investment, that cannot be explained by cross-country variations of the explanatory variables.

In fact, these regression results suggest the possibility that current accounts may have behaved atypically in the 2006-08 period, a period with global imbalances prior to the global crisis. Figure 6 shows the Kernel density estimates of the distribution of the prediction errors for the groups of industrialized countries and emerging market economies when the predictions are made for the current account balances for the 2006-08 period using the data up to 2005. Interestingly, for both groups, the distribution of the prediction errors from the regression estimation has become significantly wider in the 2006-08 period. For the group of industrialized countries, the prediction errors are more skewed to the left and more widely distributed in 2006-08. While industrialized countries seem to have experienced wide variation of the prediction errors also in the 1980s and the 1990s besides the last period, the wider variation in the global imbalances period stands out for the group of emerging market countries, suggesting a possibility of a regime shift in the current account balance series in this period.

The estimation model performs poorly for China as well. Figure 7 displays the implied current account balances for China along with 95% confidence intervals of prediction that are calculated using the estimation results. The figure shows that China's current account is well outside the confidence interval. The same kind of underperformance of the

regression model is also observed for the national saving estimation, a result consistent with other studies.

These estimation results can be also used to see if any factors, which are not included in the estimation model and which can be more prevalent in the global imbalances period than other period, can explain the unexplained portion of current account balances for the countries. We can test to see if the portion of the current account balances that cannot be explained by the benchmark model can be explained by some variables that account for monetary or fiscal policy stance as well as those which represent the conditions of financial markets and most importantly, housing markets. While the boom in the financial markets as well as housing markets explain some of the unexplainable portions of the current account balances, it is found that there is still a large portion of current account balances left unexplained for the countries with overly imbalanced current accounts such as the United States, the United Kingdom, Greece, Iceland, and China.

These results indicate that these countries need to implement policies that are particularly tailored for their country-specific situations that affect the saving and investment decisions in order to guide themselves toward rebalancing. In the next section, we review some of the characteristics of China's policies and socio-economic conditions that may have contributed to its unique saving and investment imbalances.

#### **4. Explanations for China's high saving**

China's unique situation has led the country to experience two types of imbalances. The first is the well-known external imbalances. The second imbalance is the multi-faceted pattern of China's economic growth, which is reflected in several gaps. The first pertains to the wide income gap between industrial, high-growth coastal areas and agricultural, underdeveloped inland regions, which was essentially a result of the longtime emphasis on market-driven economic experimentation in the coastal cities. The second pertains to the gap between growth in the returns to capital versus labor. While the corporate sector profits, especially those of the manufacturing sector, have risen continuously throughout the 2000s, labor income has been declining in the same period. Both manufacturing-oriented industrialization and declining labor income have contributed to the third aspect of unbalanced growth, which is the rapid rise in savings, especially those of corporate and household sectors.

Figure 8 shows that, while the level of national investment of China has been fairly high in recent years, that of national saving has been even higher, the difference between the two accounting for the magnitude of the current account surplus. Hence, understanding the impact of financial globalization on China requires an examination of the growth imbalances that have contributed to China's unique saving behavior. For that purpose, we need to examine China's domestic savings from the perspective of the flow of funds.

Figure 9 displays the development of national savings in three sectors: household, corporate, and government sectors. Since 2001, the level of aggregate national saving has been rising steadily through 2008. While household saving was the main contributor to

the aggregate saving before 2000, both household and corporate savings have been the main contributors since then. During the last few years of the sample period, or the global imbalances years, household saving became the largest contributor again. However, it is also noteworthy that during the same period, government saving has been rising rapidly after having played a minor role for a long while.

Below, we will only briefly review what kind of economic and socio-economic factors as well as government policies have contributed to the different paths of development for each of the three sectors' savings.

#### **4.1 Financial Development and Corporate Finance in China**

As was in the case with other East Asian economies such as South Korea and Japan, China's rapid industrialization has been achieved through tight state controls on the financial system, that allowed (initially scarce) capital to be allocated to "strategically" important industries. In such financially repressed financial markets, the cost of capital would usually be artificially maintained low. The government, hoping to jump-start economic development with robust export growth, would encourage cheap capital to be allocated to capital intensive industries such as heavy and manufacturing industries that would produce tradable goods. While this sort of developmental strategy is typical among emerging market economies, what is unique about China's case is that; 1) because of its communist past, the state-owned enterprises (SOEs) have played an important role in industrialization and export growth as well as in capital allocation process; 2) because of more direct government involvement in industrial policy and corporate finance (in contrast to more private-government collaborations in the case of Korea and Japan), the government policies have been much less responsive to market forces, resulting in overinvestment in certain industries; and that 3) the lack of responsiveness to market forces also helped the country to lack a scheme that would redistribute the benefits of capital intensive industrialization to workers in the forms of distribution of dividends.

Such a state-dominant financial system may have been effective in capital allocation, but has clearly been an obstacle to the marketization process in the financial sector, making financial development lag behind overall economic development. It is the gap between the impressive economic development and China's financial *underdevelopment* that has contributed to a rapid raise in corporate saving. That is, even after many corporations, including both state- and non-stated owned, improved profitability in the robust economy in the 2000s, the financial sector continued to be dominated by SOEs and failed to provide attractive financial instruments, to which corporate profits could have been invested. Also, until recently, the government did not create a scheme to force corporations to redistribute dividends to shareholders (that is the government in the case of SOEs). Furthermore, in such an environment, where financial resources are not allocated based on market signals, internal earnings functioned as an important alternative financing source for firms.

The inevitable consequence of all these conditions is a rise in corporate saving; due to the lack of financial development, corporate profits are neither effectively reinvested in



financial instruments nor redistributed as dividends. For this sort of financial system, one could argue that one effective way to lowering China's high saving is to implement policies to allow corporate profits to be effectively reinvested or redistributed as dividends. However, that outcome is likely to occur only in the long term.

#### **4.2 Household behavior**

The peculiarities of China's economic and financial development have also affected households' saving behavior. The government's focus on capital intensive, tradable industries led to overconcentration of labor force in the manufacturing sector. The situation with labor surplus is worse in the urban areas due to constant migration from the rural areas while the government's tight controls of labor unions has also discouraged workers' demand for higher wages. All these factors have contributed to a declining labor income share in the economy. Furthermore, net interest income declined by about a half between 1992 and 2007, so did net transfers from the government, it has been found, mainly because of the increased contributions to pension funds and other welfare obligations.

While the household income share dropped, the average propensity to save (as a share to GDP) went up by 10 percentage points in the 2000s, resulting in a shrinkage of private consumption and a rise in household saving both as shares in GDP.

These changes in the household saving in China can be attributed to both macroeconomic factors as well as institutional factors. The life-cycle, permanent income hypothesis can be a good macroeconomic factor. Since 1980, the working-age share of the population rose from 60% to 74% in China, undoubtedly contributing to increasing the household saving rate. A combination of sluggish change in the consumption behavior and rapid output growth also contributed to a rise in the household saving rate, which is quite common among high-growth developing economies.

Furthermore, the restructuring and streamlining efforts as part of the marketization of the corporate sector after the 1990s, along with the large-scale influx of migrants from the rural areas, have made the labor markets highly fluid and led to a drastic shrinkage of the once comprehensive, "cradle-to-grave" social safety net, or "iron rice bowl." Many argue that these trends have motivated Chinese households toward precautionary saving.

Limited accessibility to mortgage financing despite increased private house ownership has been also argued to be a factor for the high household saving rate in China. According to a recent empirical study, 82.3% of urban "registered city residents" (or city *hukou* holders) own houses. This figure has been growing rapidly nationwide. However, due to the lack of financial development as well as risk averseness of the government authorities and financial institutions, mortgage financing has been relatively limited, requiring a high down payment requirement and thus motivating Chinese people to save.

#### **4.3 Government saving**

As Figure 9 illustrates, government saving has been playing a minor role compared to the other two sectors. However, it has been rising rapidly in recently years and becoming a major contributor to the rise in China's national saving.

The rise in government saving is a reflection of a rapid rise in government income, which is also an outcome of rapid economic growth. As it has taken a while for the households to change their consumption behavior to catch up with the rapid economic growth, the same phenomenon has been in place for the government. Now the question is, why has the government consumption level been relatively stable and low, making its saving high, despite a rapid increase in its income?

The first reason for the recent rise in government saving is the government's emphasis on investment for infrastructure building and other growth-enhancing economic policies. This type of initiatives through active investment is a legacy of the communist style policy implementation. The central government also appropriate a share of fiscal revenue to less well-funded local governments or provide capital transfers to related state-owned enterprises to execute national growth-oriented policies. Growth-enhancing projects are viewed as important at all government levels because promotions of government officials are often predicated on the performance of the economies under their jurisdiction. Whether it is implemented at the central or local levels, this type of investment is not counted as government consumption, but counted as government saving.

Second, the pension system reform implemented in 1997 as a preparation for anticipated ageing population has contributed to a rise in government saving. As a result of an increase in pension contributions, the government's holding of both financial and physical assets has increased in recent years, adding to government saving.

Thus, a strong emphasis on growth-oriented investment and preparation for future demographical changes (i.e., ageing population) are the main contributors to the recent rise in government saving. However, these types of increase in government saving or investment will also mean that government consumption will have to rise in the future. That means government saving is to fall in the relatively near future, though probably not at the pace the critics of China's high saving in the rest of the world hope for.

#### **4.4 Financial Globalization and China's High Saving**

China's path of development has incorporated a unique approach to financial globalization, associated with a high degree of distortion, manifesting in excessively high levels of savings in both the private and public sectors. In the absence of determined measures to correct the distortions, the extent of both external and internal imbalances may very well become greater. In principle, the development of financial markets could mitigate these distortions. In particular, introducing more market mechanisms could help unblock the flow of funds within the Chinese economy and reduce the accumulated savings in the country. Thus, developing *domestic* financial markets is a necessary ingredient of China's further economic development.

However, it is easier said than done. As we have observed, the misallocation of funds is also rooted in institutions and systems in place for decades, which ironically contributed to the government's reluctance to developing financial markets. Hence, drastically changing these institutions and systems will be necessary. Just as China decided to join the WTO to use external pressure as leverage to push the economy onto the next stage of market liberalization, the country may need a further push by opening its financial market.

The estimation exercise in the last section can be used to conduct simple forecasting exercises to examine what will happen to China's current account balances in the near future if it develops and/or liberalizes its financial markets. It is found that financial liberalization would be more effective than financial development in reducing China's current account surplus. Further, while financial development alone may help shrink only marginally the size of its current account surplus, when it is coupled with financial liberalization, it can contribute to reducing current account surplus significantly. This result highlights the potential impact of removing financial sector distortions on external imbalances.

## **5. Conclusion**

Our results indicate that China remains in some ways very incompletely integrated with the rest of the global financial system, even as it has an increasingly influential role in the world's economy. First, de jure measures indicate the presence of substantial capital controls, while de facto measures indicate extant restrictions on capital movements, even as cross-border holdings of Chinese assets increase.

Second, China stands out in terms of its saving and investment, and hence current account, behavior. The Chinese current account balance, particularly over the last decade, is anomalous, despite taking into account measurable financial development, and level of institutional development. The abnormally high private sector saving can be attributed to the idiosyncrasies of the Chinese financial system.

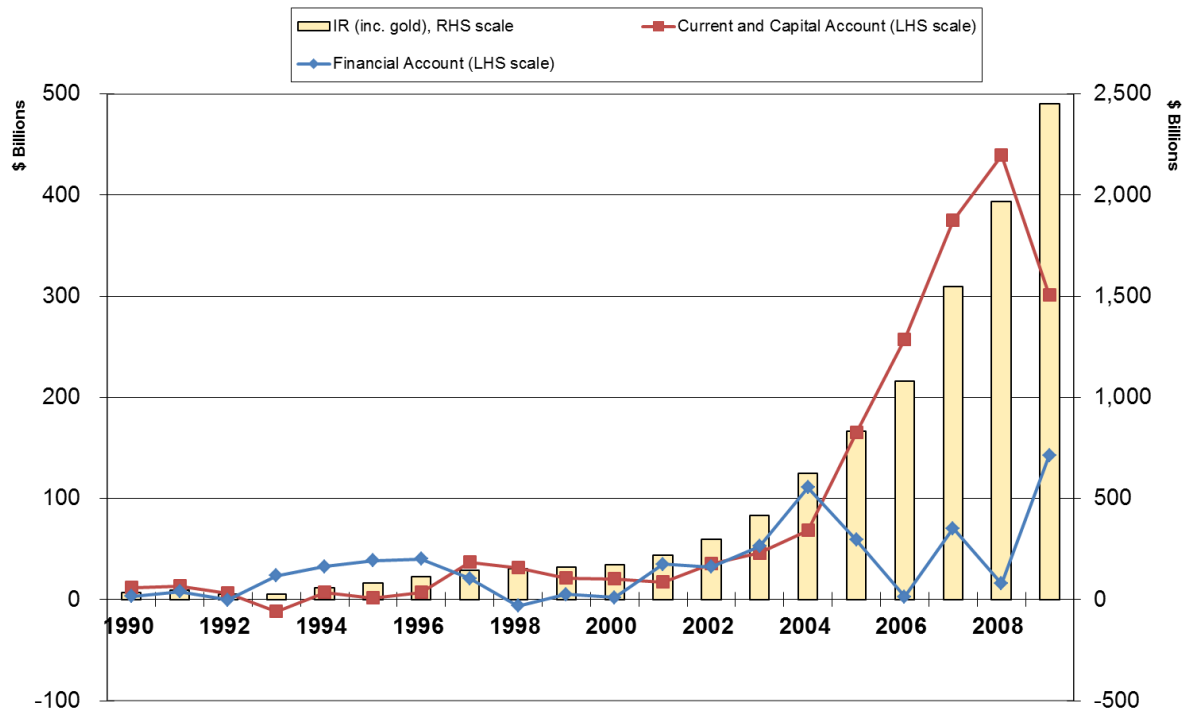
Third, Chinese accumulation of U.S. government debt can then be seen as the outcome of incomplete financial integration of the Chinese economy, rather than financial globalization per se, combined with a quasi-pegged exchange rate set at a level persistently weaker than that determined by private flows alone.

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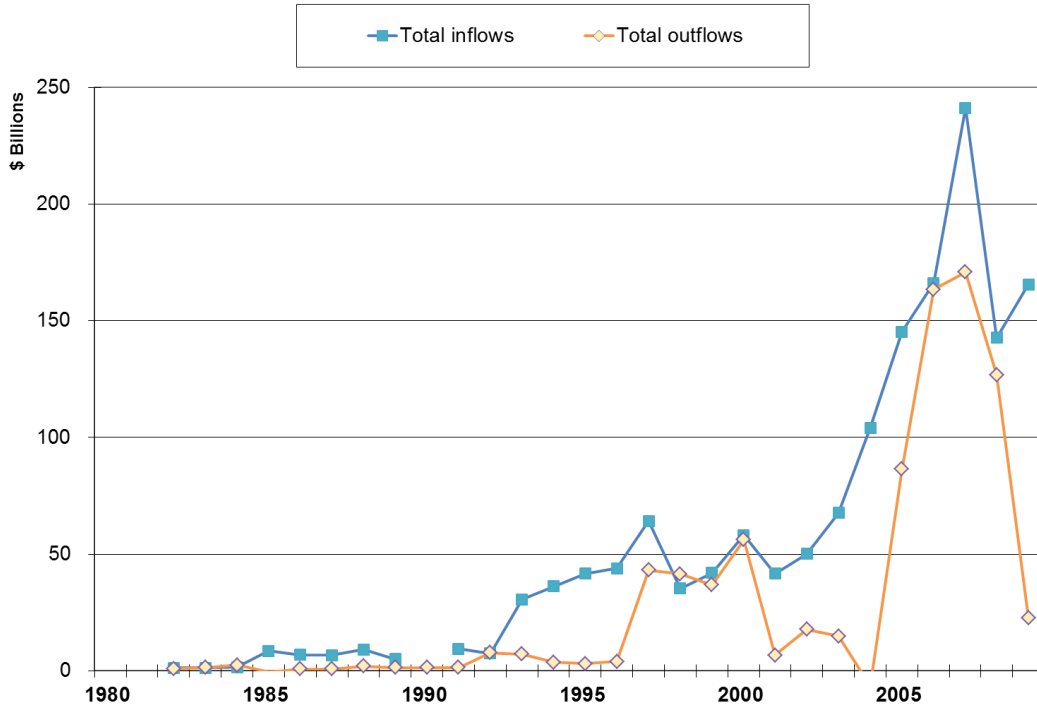
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**Figure 1: China's Current Account, Financial Account, and International Reserves Holding**



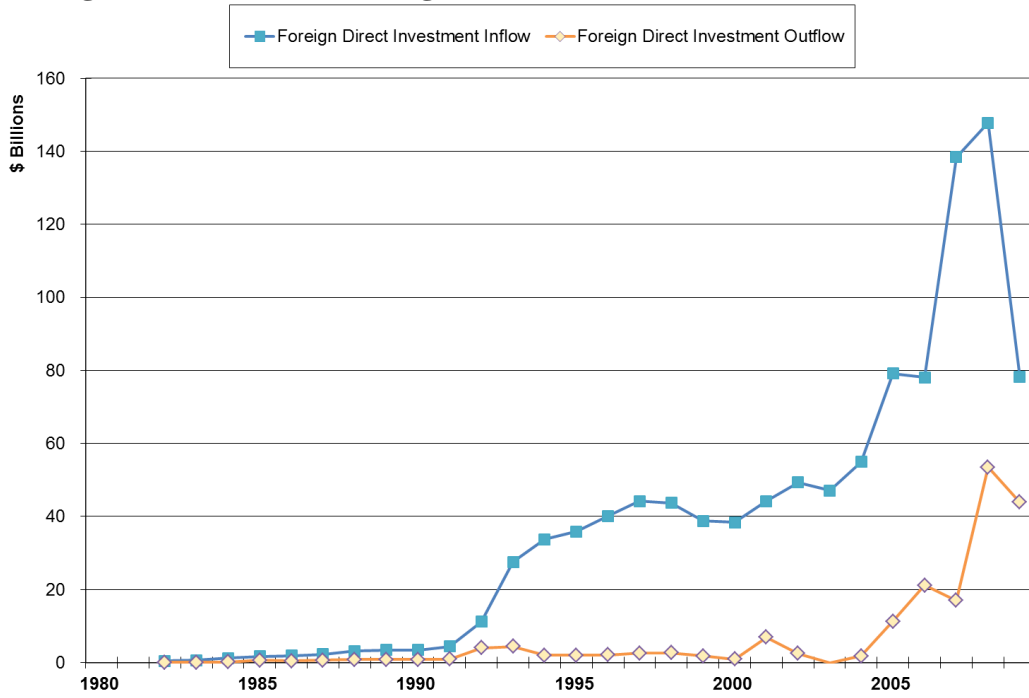
Source: CEIC, World Development Indicators (WDI)

**Figure 2 (a): China's Capital Inflows and Outflows**



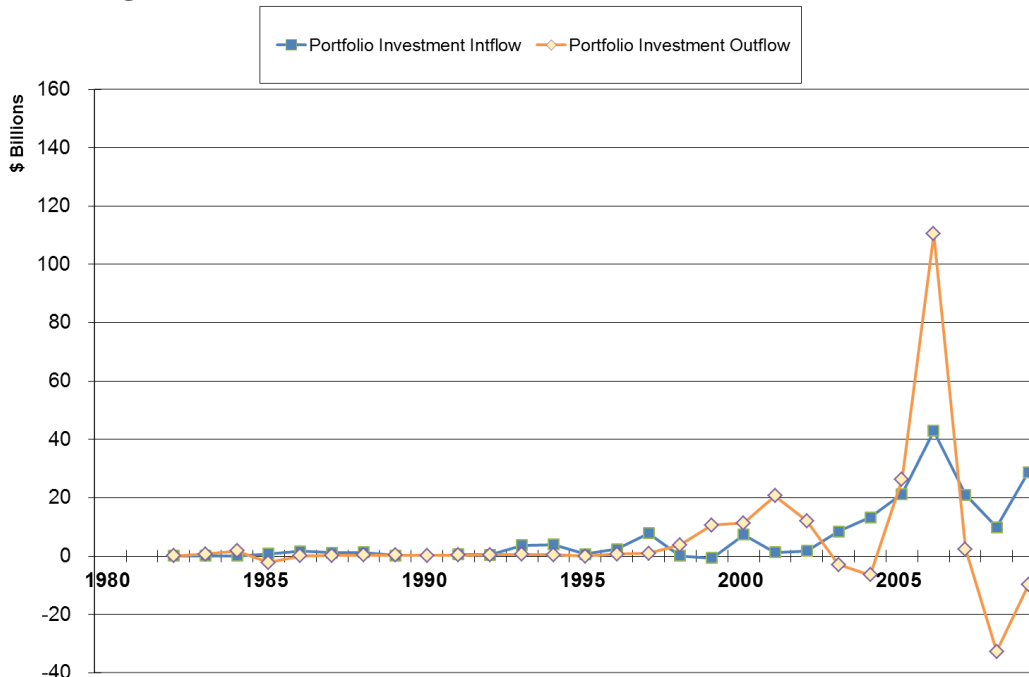
Source: CEIC, IMF

**Figure 2 (b): China's Foreign Direct Investment Inflows and Outflows**



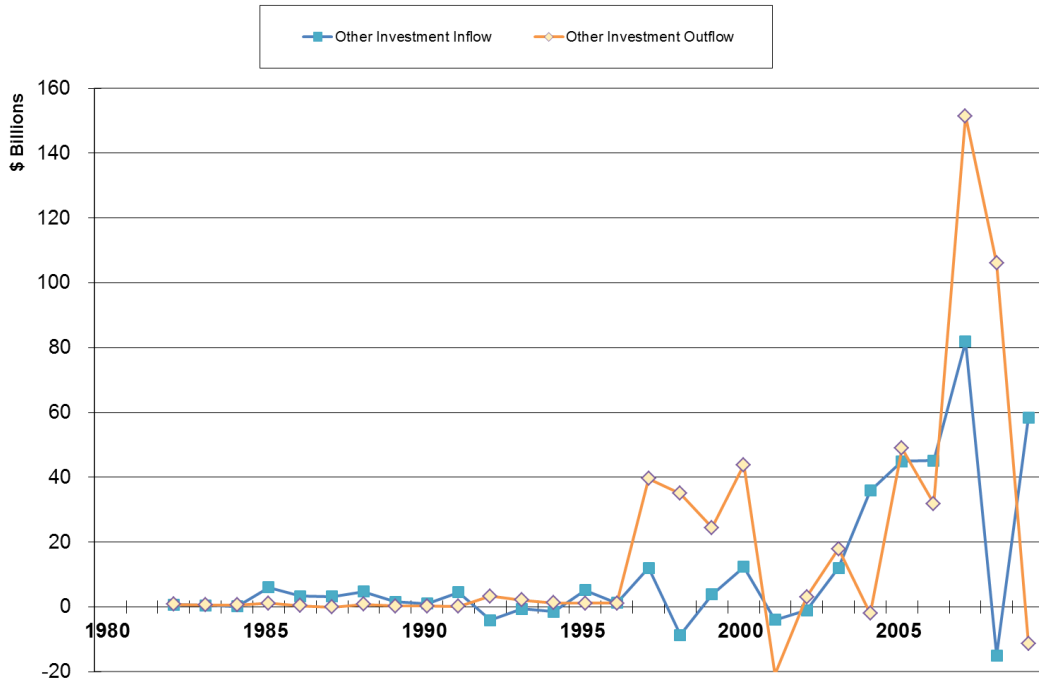
Source: CEIC, IMF

**Figure 2 (c): China's Portfolio Investment Inflows and Outflows**



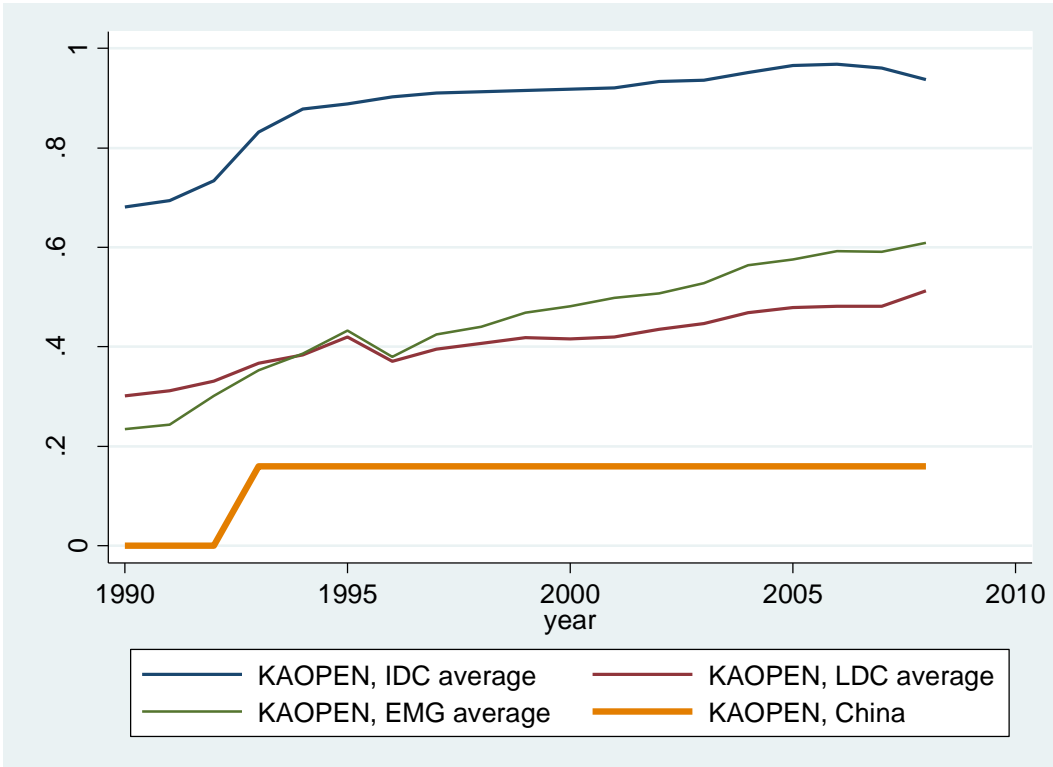
Source: CEIC, IMF

**Figure 2 (d): China's 'Other' Investment Inflows and Outflows**



Source: CEIC, IMF

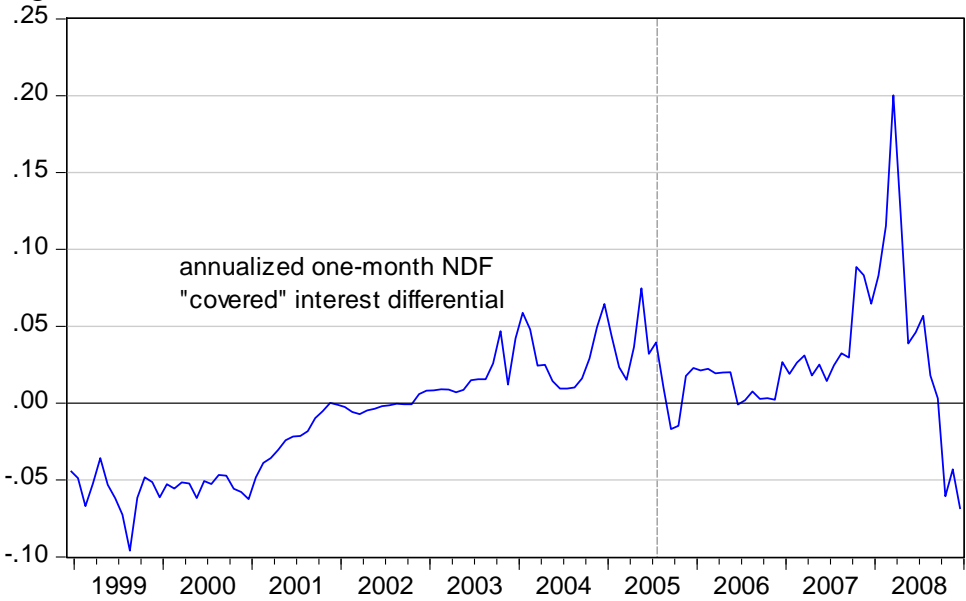
**Figure 3: De jure financial openness – China, IDC, LDC, and EMG**



Source: Chinn and Ito (2008) and updates

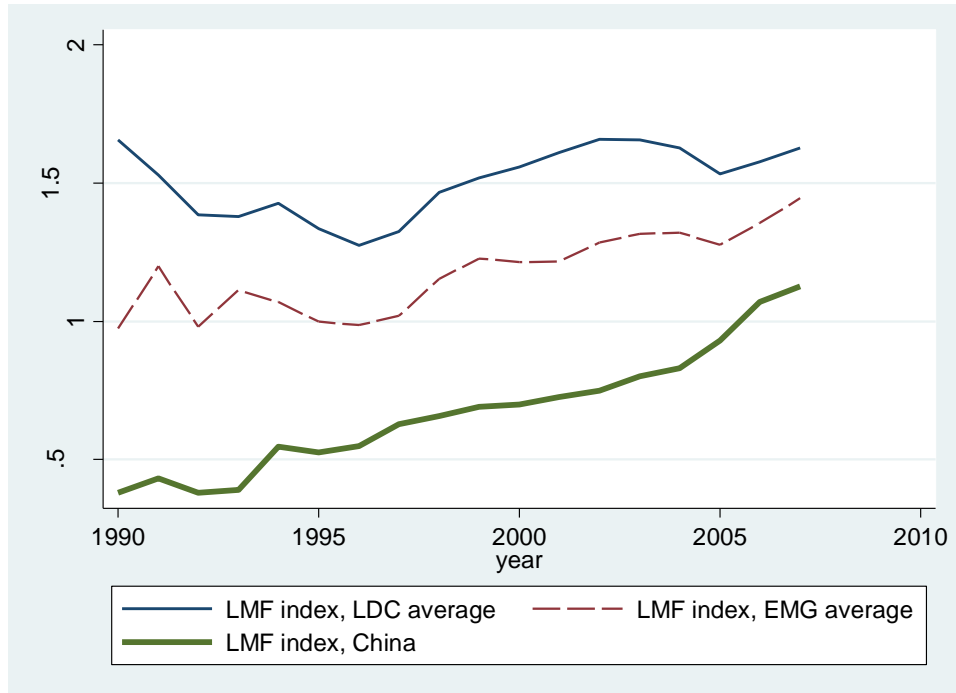


Figure 4: "Covered" one month interest differential, annualized



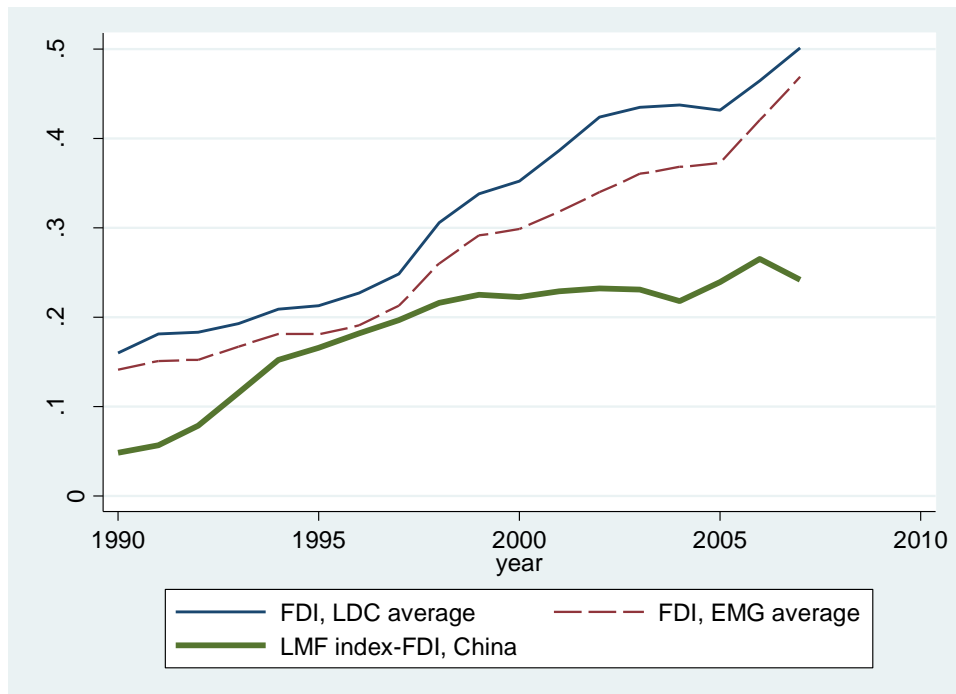
Source: Cheung and Qian (2010).

**Figure 5 (a): De facto financial openness – Overall**



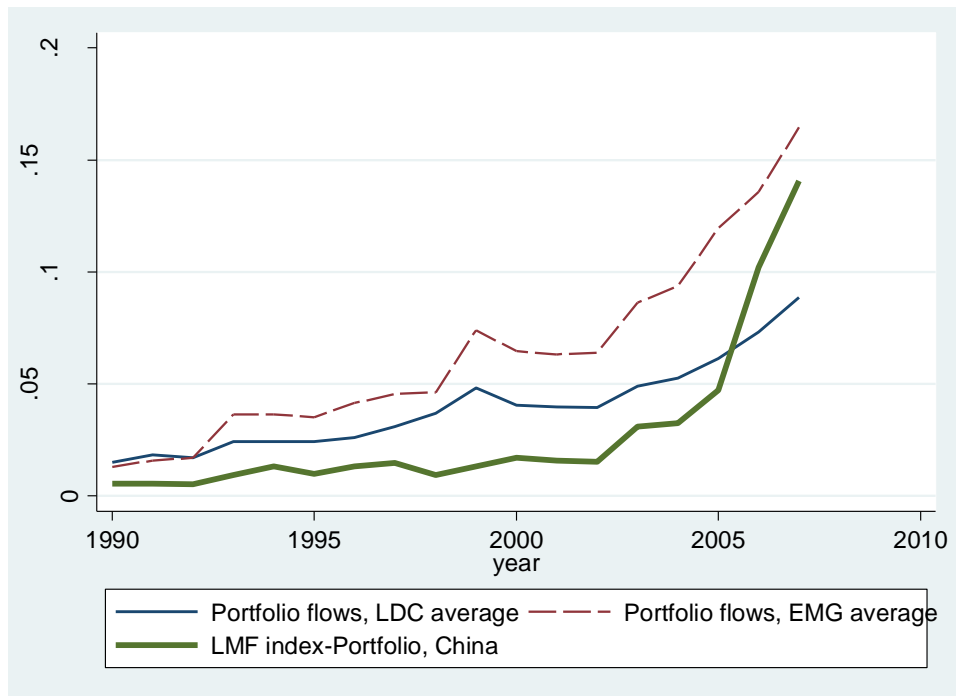
Source: Lane and Milesi-Ferretti (2007) and updates

**Figure 5 (b): De facto financial openness – FDI**



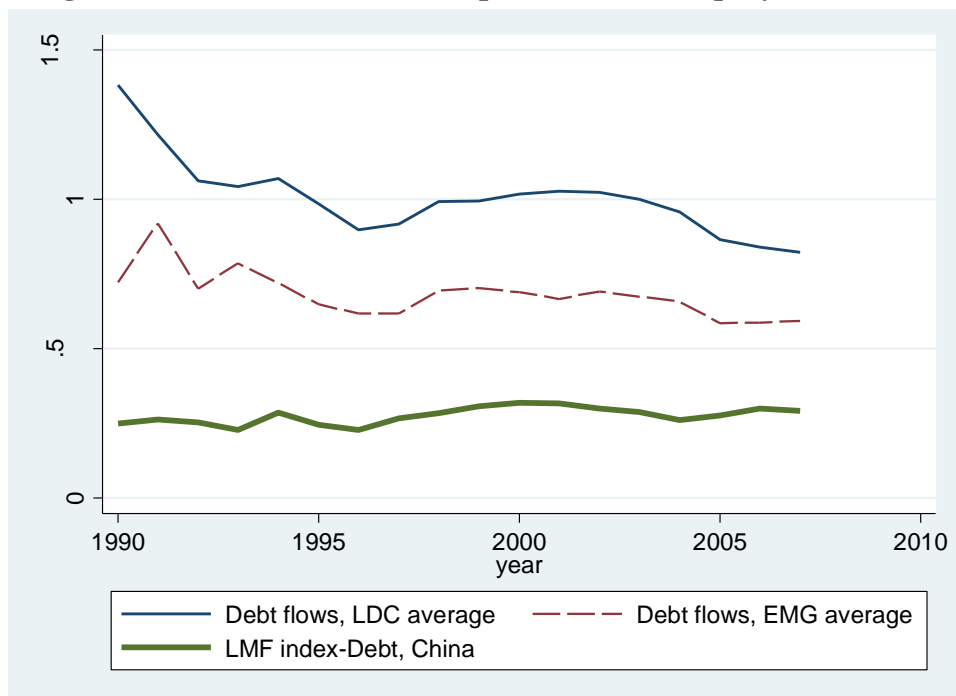
Source: Lane and Milesi-Ferretti (2007) and updates

**Figure 5 (c): De facto financial openness – Portfolio investment**



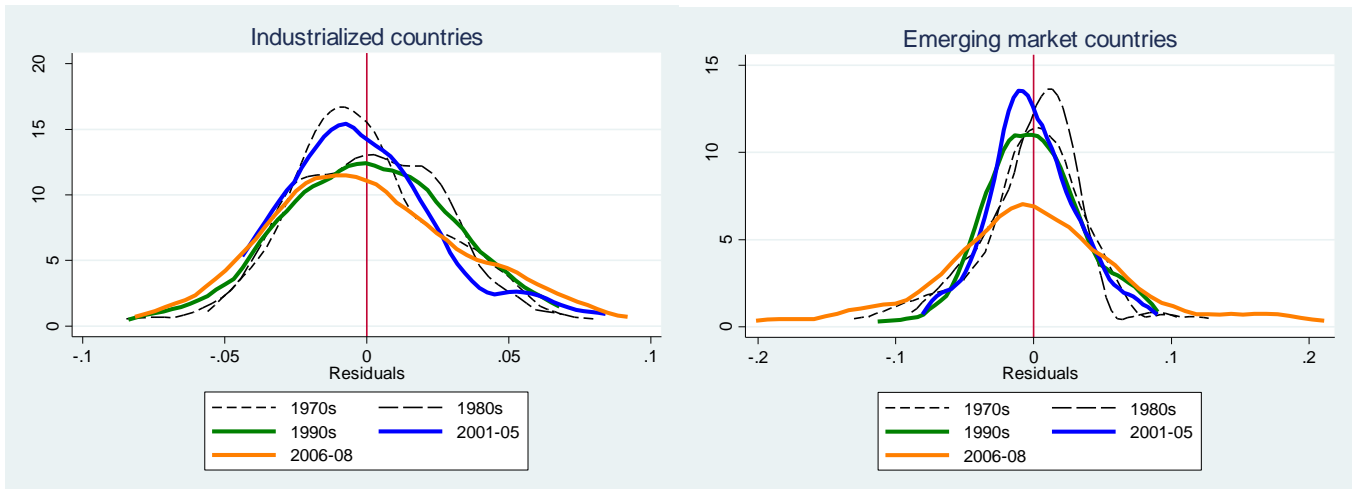
Source: Lane and Milesi-Ferretti (2007) and updates

**Figure 5 (d): De facto financial openness – Debt equity investment**



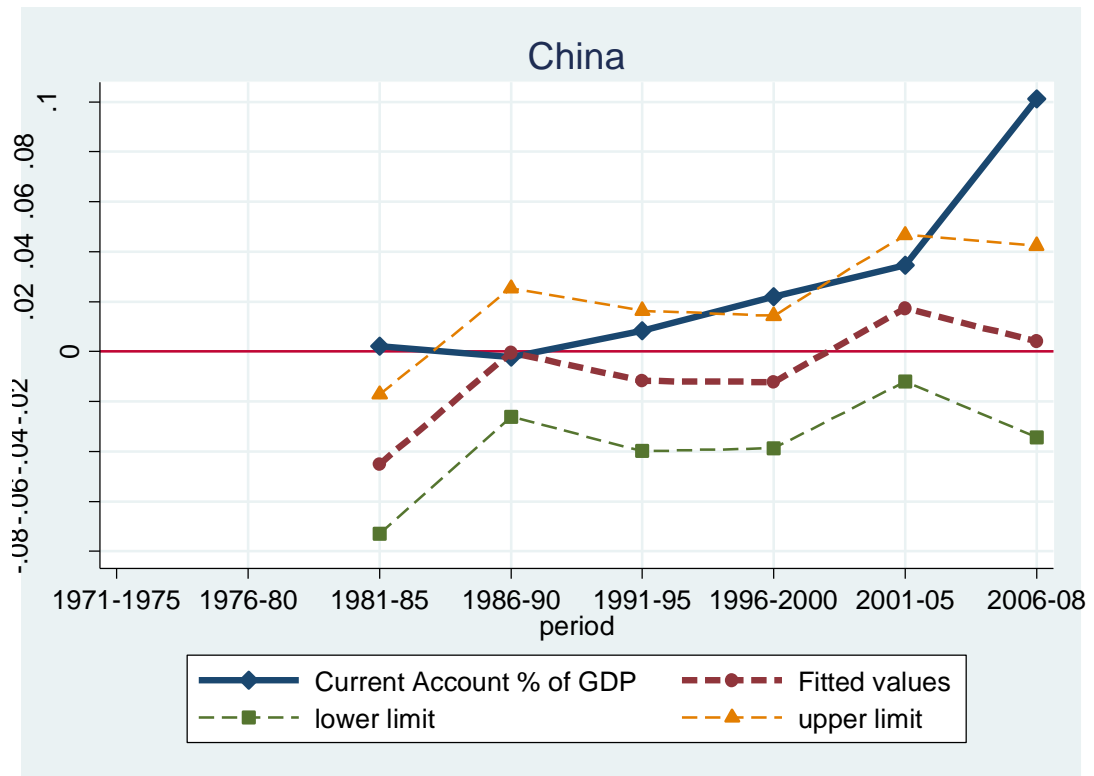
Source: Lane and Milesi-Ferretti (2007) and updates

**Figure 6: Kernel Distributions of Prediction Errors**



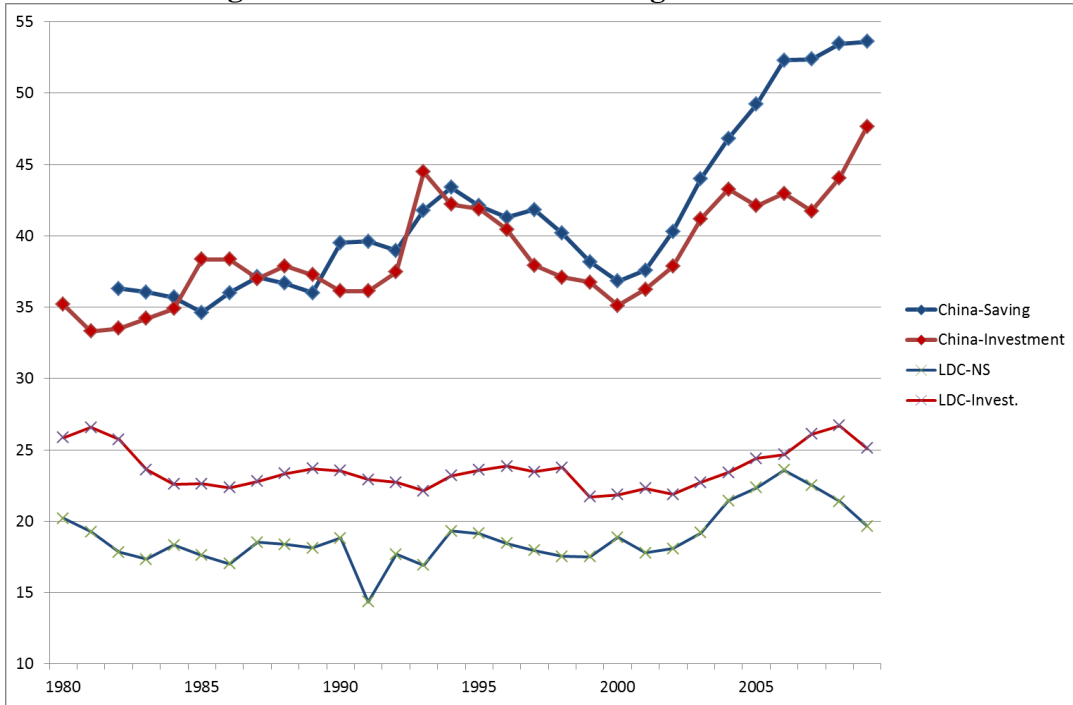
Source: Chinn, Eichengreen, and Ito (2011)

**Figure 7: Predictions of Current Accounts**



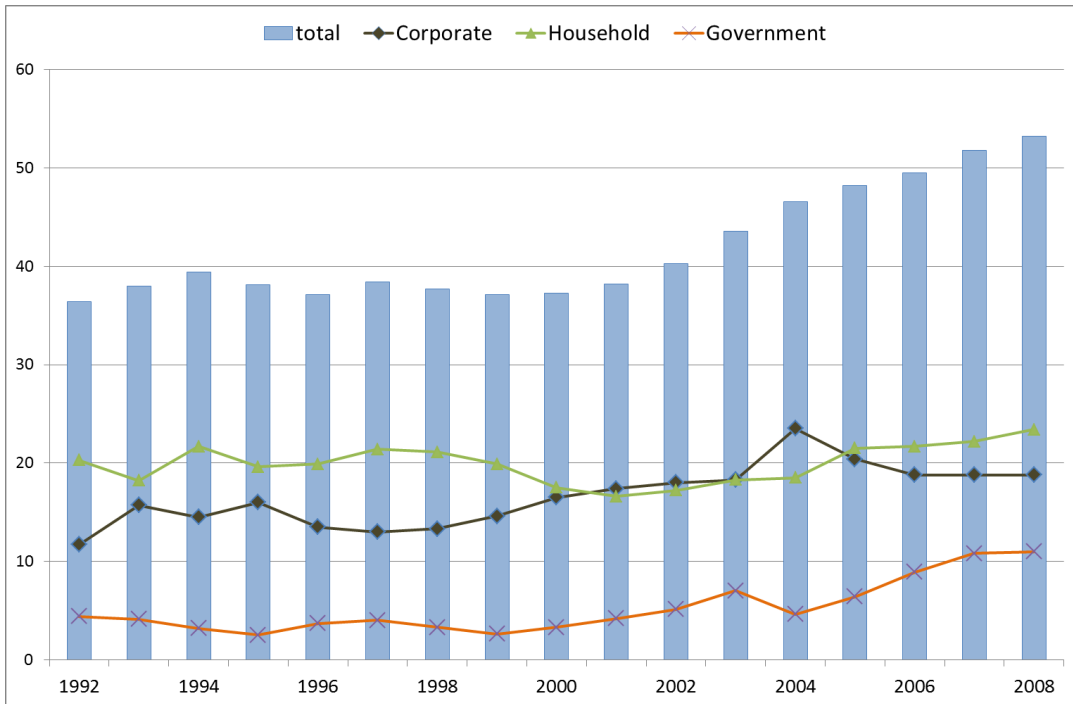
Source: Chinn, Eichengreen, and Ito (2011)

**Figure 8: China's National Saving and Investment**



Source: World Development Indicator

**Figure 9: Compositions of China's National Saving (As a percentage of GDP)**



Source: Ma and Wang (2010) and China National Bureau of Statistics