

Rebalancing of the World Economy and Asia

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Abstract

We examine the issue of global rebalancing with much focus on East Asia, particularly China. For that purpose, we re-examine the determinants of current account balances applying updated data to the framework based on Chinn and Ito (2007). Based on our estimates, changes in the budget balance appear to be an important factor affecting current account balances for advanced current account deficit countries such as the United States and the United Kingdom. We also find evidence for the effect of the “saving glut variables” on current account balances for emerging market countries. However, we also identify components of current account balances that cannot be explained by cross-country variation, but can be explained only by country-specific factors, suggesting that country-specific analysis is necessary to foresee the prospects of global rebalancing. For that purpose, we review the institutional aspects of China’s development that has led to high saving in the country, particularly the factors that have contributed to high saving rates all three of the public, corporate, and household sectors. We find that all these factors are the outcome of the country’s growth strategies and intricately intertwined with each other. These findings suggest that unless countries implement substantial policy changes, the global imbalances are unlikely to disappear.

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1. Introduction

In the decade leading up to the global financial crisis of 2008, economists debated the causes and consequences of the expanding current account imbalances. The United States ran enormous deficits, while China, the rest of East Asia, and the oil exporting countries ran correspondingly large current account surpluses (Figure 1). It was therefore unsurprising that China and other East Asian economies received much attention; several policy makers and economists (Bernanke, 2005, Greenspan, 2005a,b, and Clarida, 2005) argued that excess saving in these countries financed and encouraged profligacy in the current account deficit countries, most notably the United States.

With the outbreak of the global financial crisis and ensuing recession, these current account balances reversed drastically, albeit incompletely.. The proximity of the two events naturally leads to the question whether the two phenomena are related, or causal in nature.

With the resumption of growth in 2010, there was much speculation whether the world economy would return to the pre-crisis situation where the United States (and other advanced economies in Europe) deficits are financed by China, Japan, and other East Asian economies. The possibility that large imbalances made the world economy vulnerable to the financial crisis reinforces the importance of understanding the origins of the pre-crisis situation. That concern is only heightened by the lack of substantial changes in East Asia's economic policy framework.

This paper focuses on the link between the rebalancing of the world economy and the contribution of the East Asian economies, especially China. We will examine the cross-country determinants of current account balances by applying a panel data analysis to both industrialized and developing countries for the last four decades. In order to project how the world economy will rebalance, it is important to know how the global imbalances developed. This exercise will also identify what is left as unexplained as the cross-country factors, that is, what is left as country-specific characteristics contributing to current account balances. Then, we devote special attention to China, the largest contributor to the global imbalances in East Asia, by reviewing the characteristics of its national saving and relevant policies.

Section 2 will briefly review competing hypotheses that explain the global imbalances. In Section 3, we discuss the results from cross-sectional analyses on the determinants of current account balances. We will focus on China in the last two sections of the paper. In Section 4, we will review the characteristics of China's national saving on sectorial basis. In Section 5, we will

lastly provide some prospects of rebalancing for the United States and China and also make concluding remarks.

2. Review of Competing Hypotheses

While global imbalances were troubling from a policy standpoint, the state of the imbalances has stirred debates in the academic community because no single standard theory or hypothesis appeared sufficient to explain the imbalances' unprecedented scales and persistency.

The rise of global imbalances has been explained in a variety of ways. These explanations include (1) trends in saving and investment balances, (2) the intertemporal approach, (3) mercantilist behavior, (4) the global saving glut, and (5) distortions in financial markets. Note that the explanations are not mutually exclusive.

The National Saving and Investment Approach

The saving-investment approach takes the perspective from the national saving identity which states that the current account is equal to the budget balance and the private saving-investment gap. This is a tautology, unless one imposes some structure and causality.

One particularly simple variant of this approach relies upon assuming that the shocks primarily hit the government sector. Then changes in the budget balance are quasi-exogenous, and the current account consequently responds. The inspiration for this perspective is the mid-1980's experience with the Reagan era tax cuts and defense buildup. During that episode, the budget deficit and current account deficits both yawned to unprecedentedly large magnitudes, inspiring the term "the twin deficits".

Upon inspection, the simple interpretation of the twin deficits clearly does not hold, beyond the mid-1980s, and 2001-2004. Of course, other types of shocks perturb the economy, and once one allows for shocks to the other components of aggregate demand, or to the supply side, then no such positive correlation need hold at all times. However, that does not deny the validity of that view during the last decade.¹

A systematic approach involves modeling the current account by explicitly focusing on the determinants of private investment and saving, and adding those variables to the budget balance. Chinn and Ito (2007, 2008) find that the budget balance is an important determinant of

¹ See for instance Chinn (2005). A dissenting view is Truman (2005).

the current account balance for industrial countries; the coefficient for the budget balance variable is 0.15 in a model controlling for macroeconomic and institutional variables. A series of robustness checks yield the results that a one percent point increase in the budget balance leads to a 0.1 to 0.5 percentage point increase in the current account balance.² For the United States, their analysis confirms the view that it is a saving drought – not investment boom – that is contributing to the enlargement of current account deficits, although there is some evidence of anomalous behavior in the 2001-04 period.

The intertemporal approach

The intertemporal approach is the mainstay of the rigorous approach to explaining current account imbalances. In this perspective, consumption today is to equal a share of the present discounted value of future expected net output, or net wealth. Hence, changes in consumption are due solely to changes in either the interest rate, or changes in expectations about future net output due to productivity shocks or reductions in investment and government spending.

The U.S. experience of the late 1990's can therefore be rationalized by an anticipation of a future productivity boom which induces an immediate increase in consumption, resulting in a current account deficit.³ In the context of America in the 2000's, to consume more now means to import more and export less. The deficits leading up to the financial crisis of 2008-09 are more difficult to fit into this approach. A large proportion of capital flowing to the United States takes place in the form of purchases of U.S. government securities – not purchases of American stocks or direct investment in its factories, as it did in the years leading up to 2000. Moreover, the heavy involvement of foreign central banks in purchasing U.S. assets suggests that the profit motive was not behind the ongoing flows to the United States.⁴

A formal test of the intertemporal approach, as applied to the recent US experience, was conducted by Engel and Rogers (2006). They model the current account as a function of the expected discounted present value of its future share of world GDP relative to its current share of

² Smaller estimates of the fiscal impact are reported by Bussiere (2005), Corsetti and Muller (2006), and Gruber and Kamin (2007).

³ See Pakko (1999) for an early interpretation in this vein. Note that the empirical evidence for the theoretical model underpinning this argument is weak. See Nason and Rogers (2006).

⁴ There are numerous ways in which to account for intertemporal effects in current account dynamics. Chinn and Lee (2009) apply a structural VAR approach, which allows for transitory and permanent shocks to drive the current account and the real exchange rate. Using the same approach as in Lee and Chinn (2006), they examine the US, the euro area and Japan, and find that a large share of the 2004-07 US current account is inexplicable using their model.

world GDP (where the world is the advanced economies). The key difficulty in testing this approach is in modeling expected output growth; using a Markov-switching approach, they find that the U.S. is not keeping on a long-run sustainable path.^{5,6} However, using survey data on forecasted GDP growth in the G-7, their empirical model appears to explain the evolution of the U.S. current account remarkably well.

The Mercantilist Explanation

Another prominent view attributes the East Asian surpluses to explicitly mercantilist behavior. From this perspective, the developing countries of East Asia have followed an export led development strategy. That export led strategy resulted in rapid growth; however, starting in the mid-1990's, current account surpluses evolved into current account deficits, as investment boomed in some of the Asian economies especially those in Southeast Asia.

In the wake of the 1997 financial crisis, investment levels collapsed, while saving rates remained relatively high. Currencies depreciated sharply in the region; however, over time, East Asian central banks maintained their currencies at fairly weak levels and started increasing the amount of international reserves holding. Figure 2 illustrates China's experience; after 2004, the country's current account surplus persistently increased while its financial account did not fall into deficit, resulting in a pileup of international reserves. For some observers, this picture is worth a thousand words to explain the relatively large and persistent current account surpluses in the region has been manufactured by currency manipulation. One difficulty with this explanation is that the export led development path has been in place for decades while the sharp rise in current account surpluses and international reserves holding broke out in the post-Asian crisis period.

Another difficulty with this argument is that while the model explains one half of the current account imbalances, it does not explain the other side -- namely why it is that the United States, United Kingdom, and specific other developed countries ran substantial deficits. In a series of papers, Dooley, et al. (2003; 2008) interpret the U.S. current account deficit as the outcome of concerted mercantilist efforts by East Asian state actors. In this context, the financing

⁵ Engel and Rogers use data over the 1970-2004 period for one of their sustainability tests. The survey-based tests rely upon a shorter sample, 1994-2004.

⁶ Choi, Mark and Sul (2008) allow for different rates of discount, and can replicate the pattern of imbalances in a two-country model.

of America's trade (and budget) deficit is an explicit quid pro quo for continued access to American markets. Their explanation argues that the government interventions are aimed at supporting exporting industries.

There are also problems with this thesis. Most notable is the mysterious aspect of timing: East Asian savings began flowing to the United States in 2003. Why not earlier, if the mercantilist impetus had been there all along? For a thorough critique, see Prasad and Wei (2005). On the other hand, for emerging markets, Gagnon (2010) shows that current account balances are highly correlated with central bank official intervention.

An alternative interpretation for the large scale reserve accumulation has been attributed to the self-insurance or precautionary demand. Foreign exchange reserves can reduce the probability of an output drop induced by capital flight or sudden stop. This self-insurance motivation rose substantially in the wake of the East Asian crises; this point was verified by Aizenman and Marion (2003) and Aizenman and Lee (2007).⁷

The “Global Saving Glut” Hypothesis

The “global saving glut” explanation has been expounded by Bernanke (2005), Clarida (2005a,b), and Hubbard (2005). This argument views excess saving from Asian emerging market countries, driven by rising savings and collapsing investment in the aftermath of the financial crisis (and to a lesser extent Europe), as the cause of the U.S. current account deficit. More recently, the burgeoning surpluses of the oil exporters, ranging from the Persian Gulf countries to Russia, have moved to the fore as sources of excess saving. From this perspective, the U.S. external imbalance is a problem made abroad; the lack of well-developed and open financial markets encourages countries with excess savings to seek financial intermediation in well-developed financial systems such as the United States. Hence, a solution may only arise in the longer term, as better developed financial systems mitigate this excess savings problem.⁸

⁷ Aizenman and Lee (2007) evaluated the relative importance of these of the various motivations by augmenting the conventional specifications for reserve holdings with proxy variables associated with the mercantilism and self-insurance/precautionary demand approaches. While variables associated with both approaches are statistically significant, the self-insurance variables play a greater economic role in accounting for recent trends. See also Jeanne and Ranciere (2005).

⁸ Caballero, Farhi and Gourinchas (2008) model the saving glut explanation as a shortage of assets in the developing world. Mendoza, Quadrini and Rios-Rull model financial development as the increase in the degree of enforcement of financial contracts.

The strongest point in favor of the saving glut hypothesis is the observation of a widening current account deficit in the United States, combined with low real world interest rates. However, the saving glut versus twin deficits view is not an either-or proposition. An expansionary fiscal policy in the United States, combined with an investment drought in East Asia would yield the observed increase in current account imbalances, while at the same time resulting in a drop in the real interest rate. Thus, a simple open economy macro model can explain the recent rise in U.S. current account deficits, East Asian current account surpluses, and the recent fall in global interest rates without resort to exotic demand for high quality assets, or the like.

In order to formally test the saving glut hypothesis, one can evaluate whether financial development and institutional development explain the pattern of imbalances. Using a structural model while controlling for the level of financial development and openness as well as institutional development, Chinn and Ito (2007) provide evidence against the argument that emerging market countries, especially those in East Asia, will experience lower rates of saving once these countries achieve higher levels of financial development and better developed legal infrastructure. In addition, more open financial markets do not appear to have any impact on current account balances for this group of countries.⁹

3. Estimations¹⁰

One effective way of comparing the validities of these various arguments and hypotheses on the determinants of current account balances is to implement a systematic empirical exercise by using a reduced form of estimation and a large panel dataset that encompasses many countries and years. In this section we estimate a simple analytical model of current account balances as well as national saving and investment. In doing so we build on the work of Chinn and Prasad (2003) and Chinn and Ito (2007) and will estimate the following model.

⁹ Ito and Chinn (2009) examine whether their results are sensitive to the use of alternative indicators of financial development, namely measures of equity, bond, and insurance market activity, as well as different aspects of financial development such as the cost performance, size, and activeness of the industry. They find that credit to the private sector and stock market capitalization appear to be equally important determinants of current account behavior. While increases in the size of financial markets induce a decline in the current account balance in industrial countries, the reverse is more often the case for developing countries, especially when other measures of financial development are included. They also find that a greater degree of financial openness is typically associated with a smaller current account balance in developing countries.

¹⁰ This section is mainly based on Chinn, Eichengreen, and Ito (2011).

Using the data from 23 industrial and 86 developing countries covering the four decades 1970-2008, we estimate the following regression equation:

$$\begin{aligned}
y_{i,t} = & \alpha + \beta_1 BB_{i,t} \\
& + \beta_2 FD_{i,t} + \beta_3 LEGAL_{i,t} + \beta_3 KAOPEN_{i,t} \\
& + \beta_4 (FD_{i,t} \times LEGAL_{i,t}) + \beta_5 (LEGAL_{i,t} \times KAOPEN_{i,t}) + \beta_6 (KAOPEN_{i,t} \times FD_{i,t}) \\
& + X_{i,t} \Gamma + u_{i,t}. \tag{1}
\end{aligned}$$

$y_{i,t}$ refers to three dependent variables: the current account balance, national saving, and investment, all expressed as a share of GDP. FD is a measure of financial development, for which private credit creation (PCGDP) is usually used; $KAOPEN$, the Chinn-Ito (2006) measure of financial openness; and $LEGAL$ a measure of legal/institutional development – the first principal component of law and order (LAO), bureaucratic quality (BQ), and anti-corruption measures (*CORRUPT*).¹¹ $X_{i,t}$ is a vector of macroeconomic and policy control variables that include familiar determinants current account balances such as 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.

Panels of non-overlapping 5-year averages are used for all explanatory variables except when noted otherwise.¹² All the variables, except for net foreign assets to GDP, are converted into the deviations from their GDP-weighted world mean prior to the calculation of five year averages – net foreign asset ratios are sampled from the first year of each five-year panel as the initial conditions.¹³ We regress current account balances, national saving, and investment on the

¹¹ *LAO*, *BQ*, and *CORRUPT* are extracted from the ICRG database. Higher values of these variables indicate better conditions.

¹² The five year panels are 1970-74, 1975-1979, etc. However, the last panel is composed of only four years: 2005-08. We can consider the last panel as the years of the global imbalances.

¹³ The variables for ToT volatility (*TOT*), trade openness (*OPN*), and legal development (*LEGAL*) are averaged for each country, i.e., they are time-invariant. Most of the economic variables are retrieved from the *World Development Indicators*, *International Financial Statistics*, and the IMF's *World Economic Outlook*.

same set of regressors separately for industrialized countries (IDC), developing countries (LDC) and emerging market economies (EMG).¹⁴

We report the estimation results in Tables 1 and 2. Note first that these are consistent with the twin deficits hypothesis: budget surpluses and current account surpluses move together, other things equal. A coefficient of less than one suggests however that they move together less than proportionately.¹⁵ Larger net foreign assets, which should generate a stronger income account, affect the current account balance positively, as anticipated. The relative income terms, which tend to be jointly if not always individually significant, show that higher income countries generally have stronger current accounts (“capital tends to flow from higher to lower income countries”). Countries with higher dependency ratios (and, by the life-cycle hypothesis, lower savings rates) generally have weaker current accounts. Oil exporting countries have stronger current accounts, other things equal. All this is as expected.

The Caballero-Farhi-Gourinchas (2008) hypothesis that countries with more developed financial markets should have weaker current accounts (“capital flows from China, with its underdeveloped capital markets, to the United States, which has a comparative advantage in producing safe financial assets”) finds significant support in the full sample (left-most column). Given that current account imbalances are more apparent between countries with different levels of income (e.g., the United States and China), the findings in the full sample can be informative.¹⁶ The effect can be observed in the subsamples of industrialized countries and emerging market countries.

Together with the solo effect of financial development, its interactions with legal development and capital account openness are supportive of the Caballero et al. interpretation of global imbalances with statistically significant coefficients for the subsample of emerging markets; those with better developed financial markets and legal institutions or open capital accounts tend to have weaker current account balances, or experience the least tendency for

¹⁴ The emerging market economies are defined as the economies classified as either emerging or frontier during 1980–1997 by the International Financial Corporation, plus Hong Kong and Singapore.

¹⁵ These estimates are very similar to those in Abbas et al. (2010), who find that the elasticity of the current account balance with respect to the fiscal balance is on the order of 0.2–0.3. Erceg et al. (2005) also show their simulation results yield the coefficient of the budget balance to be around 0.20.

¹⁶ Theoretically, the current account of the world must be zero, nullifying the validity of estimating for the full sample. But our “full” sample does not cover all the countries on the globe. Not to mention, there are usually expected to be measurement errors.

capital to flow out. This is consistent with the saving glut hypothesis. When we look only at the industrial countries, however, these patterns are no longer evident.

Two dummy variables for the 2001-5 and 2006-8 subperiods look to the question of whether recent experience has been unusual.¹⁷ Emerging market economies appear to have run unusually large surpluses in the 2001-5 subperiod, consistent with the idea that they were fixated on minimizing financing vulnerabilities and accumulating reserves following the Asian crisis. Such behavior is not evident for emerging markets as a group in 2006-8. We confirm this by adding a dummy variable for China in the post-2005 period and finding its coefficient significantly positive at the one per cent level. When a dummy for the emerging market group for the entire post-2001 period (instead of two five-year period dummies), its coefficient turns out to be zero, implying that the contribution of emerging markets to global imbalances can be a China story. A surprise is that we see the industrial countries as a group running larger surpluses in the same 2001-5 period than their other characteristics would lead one to expect. Evidently the United States was an outlier in this respect.¹⁸

Table 2 then estimates the model for savings and investment separately. A few results of note are that government budget deficits affect primarily national saving (in the same direction as government saving, contrary to Ricardian equivalence stories), that dependency ratios affect both savings and investment (as emphasized in Eichengreen and Fifer 2002).¹⁹ 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. Interestingly, the solo effect of financial development has a negative impact on national saving for emerging market countries while it has a positive one on investment for industrialized countries. These findings suggest that increasing the level of financial development can have an overall negative impact on net saving, i.e., current account balances, although its channels can differ among different income levels of countries.

¹⁷ Time fixed effects for all the five-year periods (except for the first five-year period) are included in the estimation, but only those for the 2001-05 and 2006-08 periods are reported in the table.

¹⁸ We confirm this by adding a dummy variable for the U.S. in the 2001-5 subperiod; its coefficient is negative, and adding it does not eliminate the significant positive coefficient for 2001-5 in the industrial-country column. Not surprisingly, when we include all countries (in the left-most column), these period dummy variables are insignificant, since by definition current accounts should sum to zero.

¹⁹ The Ricardian hypothesis predicts that any change in public saving would be offset by the exact same change but with the opposite sign in private saving, thus making the estimated coefficient of budget balances zero. The Ricardian framework can be extended to predict public dissaving would not crowd out private investment, thus making public saving and investment uncorrelated.

A number of alternative specifications yield very similar results.²⁰ One of interest involves adding foreign reserves as a percent of GDP, lagged one five-year period, as an additional explanatory variable. Lagging the reserves variable is designed to address the concern that the current account balance and contemporaneous reserves are simultaneously determined (positive shocks to the current account will translate into positive shocks to reserves). Reserve-adequacy arguments suggest that, other things equal, larger reserves should mean less incentive for reserve accumulation and a weaker current account. For the industrial countries, the coefficient on this variable is negative and significant, as hypothesized. For emerging market economies, it is insignificant.²¹ For developing countries, it is positive and significant, contrary to the hypothesis.

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, Chinn, et al.'s 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 3 shows the Kernel density estimates of the distribution of the prediction errors from the model estimation for the current account balances for the groups of industrialized countries and emerging market economies. 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.

²⁰ Results not shown in the table.

²¹ This finding can be also interpreted as evidence that better current account balances are not driven by mercantilist currency interventions.

The estimation model performs poorly for China and the United States as well. Figure 4 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 observed for the national saving estimation as well.

Chinn, et al. (2011) also try 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. They test the variables that account for monetary or fiscal policy stance as well as the ones that 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 portions of the current account balances that cannot be explained by the benchmark model, they find that there is still a large portion of current account balances 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 focus on the biggest contributor to the global imbalances in Asia and review the country's policies and socio-economic conditions that may have contributed to its unique saving and investment imbalances.

4. Explanations for China's high saving rate

To understand China's uniquely high saving rate, one of the main contributors to the global imbalances, we also need to discuss it in the context of the country's rapid, but unbalanced, growth. 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 5 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 6 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 only briefly review the types of economic and socio-economic factors and government policies that have contributed to the different paths of development for each of the three sectors' savings. For more in-depth analyses on China's saving behavior or the flow of funds, the reader should refer to Kuijs (2006), Ma and Yin (2010), Hung and Qian (2010), and Lin and Schramm (2009).

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 (to a much higher extent compared to Korea or Japan); 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 rise 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.²²

²² Recently, the Chinese government decided to require SOEs to distribute dividends (to shareholders, i.e., the government). However, decisions involving dividend distributions are a function of many factors such as corporate governance, shareholder protection, and portfolio management, all of which require much long-term managerial experience and know-hows.

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.²³ Furthermore, net interest income declined by about a half between 1992 and 2007, so did net transfers from the government mainly because of the increased contributions to pension funds and other welfare obligations (Ma and Yin, 2010).

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 Gao (2010), 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

²³ According to Ma and Yin, wages account for 80% of the Chinese household disposable income. Also, the "decline in the labour share accounts for some 60% of the observed decline in the household income share between 1992 and 2007."

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.²⁴

4.3 Government saving

As Figure 6 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 redistributes 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 (Kuijs, 2006).²⁵ 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

²⁴ A more novel argument (Wei and Zhang, 2009 and Du and Wei 2010) is that the sex imbalance encourages saving by single men as a way of signaling their attractiveness as marriage partners. As a result of the one-child policy, the number of men outnumber the number of women with the sex ratio of around 120 boys for each 100 girls as of 2007 (Wei and Zhang, 2009). In such an environment, men are motivated to save to attract marriage partners as Du and Wei (2010) show using a simple overlapping generations model. Wei and Zhang (2010) argue that 60% of the actual increase in the household savings rate in the period from 1990 to 2007 can be explained by the increase in the sex ratio during this period.

²⁵ These growth-enhancing projects are viewed importantly at all government levels because promotions of government officials are often measured by the performance of the economies under their jurisdiction. Furthermore, the tax reforms in the 2000s significantly reduced the amount of transfers from the central government, and that has made local governments prone for precautionary saving, adding to the government saving.

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.

5. Concluding Thoughts

5.1 The Prospects of Rebalancing

We now use the estimated relationships from the previous empirical exercise to forecast the prospects for global rebalancing out to the 2011-15 period.²⁶ We make two types of forecasts: one type is the forecasts we make using data through 2008 and the other is the forecasts we make using data only through 2005. Given the possibility of a structural break in 2006, the forecasts made with data through 2005 can be interpreted as the projections of the current account countries may experience if their economic conditions revert to the pre-global imbalances period. Figure 7 presents forecasts of current account balances for several countries which contributed to the global imbalances. The forecasts made using data up to 2008 are shown in the red line and the forecasts made using data through 2005 are shown in the grey line. One standard deviation confidence intervals of forecast are also shown, that correspond to about 65% of probability of occurrence.

For the United States, the forecasts based on the data through 2008 in Figure 7 suggest modest movement in the direction of rebalancing. The forecasts with the data through 2005 suggest a more improved level of current accounts, but this level arises after experiencing a deterioration from the 2006-08 level. Both models persistently underpredict U.S. current account deficits, suggesting that the U.S. is an outlier. In fact, when we re-estimate current account balances for the full sample including the dummy for the U.S., the coefficient on the country dummy is found to be significantly negative with a magnitude of 0.036 (i.e., -3.6%). This is

²⁶ The forecasts start with 2011, omitting the crisis years 2009-10, when behavior was unusual. The assumptions and the data for the out-of-sample projections are explained in Chinn et al. (2011). We use the separate estimates for industrial and emerging-market economies as the basis for our forecasts.

consistent with the view that the U.S. has some special characteristic allowing it to run persistent current account deficits of some 3 per cent of GDP, presumably as a result of its status as the issuer of the international vehicle currency.²⁷

The UK's current deficit is projected to shrink over the 2011-15 period based on the 2008 projection. However, in either U.S. or U.K. case, the narrowing of current account deficits over the period is limited; substantial deficits remain even in 2015. The news for the surplus countries we consider – China, Japan, Germany, Singapore – is even less reassuring. The forecasts suggest that their surpluses will remain stable or rise further, absent additional policy changes. One interpretation is that the circle will be squared by other countries that will run smaller surpluses and offset America's smaller deficits. A less reassuring interpretation is that the parts do not add up under current forecasts and that even partial rebalancing will require further policy changes. Either way, it seems clear that imbalances will persist.

5.1.1 What Would Fiscal Consolidation Do to the United States?

One of the big issues of macroeconomic management among advanced economies is fiscal consolidation. The industrial countries need to reduce budget deficits without nipping the green shoots of recovery. How will global imbalances evolve under different fiscal scenarios? Figure 8 presents different out-of-sample predictions for U.S. current account balances in the 2011-15 period depending on the different scenarios about its budget balances, an optimistic scenario or a pessimistic one. The optimistic scenario is the case in which the average of the U.S. budget balances for the 2011-15 period turns out to be higher than the average based on WEO projection (-6.5% of GDP) by three percentage points.²⁸ The pessimistic scenario is the case in which the 2011-15 average is lower than the WEO projection by three percentage points.

Figure 8 shows that a 3 percentage point difference in the fiscal balance relative to the baseline scenario would change the current account balance by half a percentage point, suggesting that rebalancing cannot be accomplished through fiscal policy alone. If the shrinkage of budget deficits is coupled with overall economic recovery and consequent recovery in the

²⁷ See Gourinchas and Rey (2007).

²⁸ Three percentage points are equivalent to 1.5 standard deviations in the distribution of U.S. budget balances in the 1969 – 2008 period.

financial markets, as in the optimistic scenario, this would in fact slightly drag down projected current account balances.²⁹

5.1.2 What if China Liberalizes and Develop Its Financial Markets?

We can similarly consider alternative scenarios for financial development and capital account liberalization in China (Figure 9). The figure shows, for comparison, the same projection as in Figure 8 with the dotted grey line. It also shows the forecast if China's level of financial openness increases moderately to the level of Thailand in 2008 (blue). In this case the current account surplus falls significantly, in line with the predictions of the proponents of the saving glut argument. The figure also shows what happens when financial liberalization proceeds to Brazilian (green) and then Mexican (orange) levels.³⁰ Again, this leads to further declines in the current account surplus. Thus, financial liberalization may lead to an increase in net capital inflows and thereby to a deterioration of current account balances.³¹

Figure 10 makes alternative assumptions about financial development. Recall that this is measured by the average ratio of domestic credit to GDP, which fell, relative to the world average, between 2001-5 and 2006-8.³² A modest assumption about Chinese financial development over the next five years is that this ratio returns to its 2001-5 levels. If we place this assumption with Mexican levels of financial openness, this is enough to eliminate China's surplus. As a caveat, note that the model, based on average behavior in a cross-section of emerging markets, under-predicts the Chinese surplus in recent years. That the surplus *disappears* in 2015 under this scenario is at least as much an artifact of this under-prediction as it is a consequence of the financial liberalization and development. But the point remains: how quickly China narrows its surplus will be a function in part, of how much progress it makes in financial liberalization and development. Furthermore, given that the return of PCGDP to the 2001-05 level alone (blue dotted line that almost overlaps the grey one) hardly changes the

²⁹ Consistent with the Caballero et al. effect.

³⁰ The countries are ranked as Mexico (69.2 in the 100 scale), Brazil (58.8), Thailand (40.3), and China (16.1) in terms of the level of financial openness as of 2008. The average of KAOPEN for the LDC group as of 2008 is 50.2 whereas that for the EMG group is 60.9.

³¹ If capital account opening occurs while exchange rates are allowed to adjust more flexibly, the current account balance could also deteriorate through the price channel. Before the policy change of increasing the flexibility of the renminbi on June 19, 2010, it had been argued that one of the reasons for Chinese hesitation to allow greater exchange rate flexibility is that policy makers in Beijing are worried that financial liberalization may lead to further capital inflows, reinforcing the upward pressure on the currency.

³² Recall that in our empirical model all variables are normalized by the world average.

predicted current account level, and that the predicted level declines only when financial development is coupled with financial liberalization, we surmise that financial liberalization would be more effective than financial development in reducing China's current account surplus.³³

However, as we saw previously, our estimation model consistently underpredicts China's current account surplus. This indicates that, besides financial development and liberalization, other policies specific to China's situation, such as changing the rule about state-owned-enterprises' dividends, will be necessary to help reduce the enormous savings in all the three sectors of the country.

5.2 Conclusion

We examined the issue of rebalancing with primary focus on East Asia, particularly China. For that purpose, we undertook an empirical cross-country approach, augmented with an examination into the specific conditions facing China.

Empirically, we re-examined the determinants of current account balances applying updated data to the framework based on Chinn and Ito (2007). The main purpose of this study is to examine whether the determinants of global current account balances changed during the period preceding the global crisis of 2008-09 while inquiring into the prospects for the global imbalances in the post-crisis period. Based on our estimates, changes in the budget balance appear to be an important factor affecting current account balances for advanced current account deficit countries such as the United States. We also find evidence for the effect of the "saving glut variables" on current account balances for emerging market countries.

However, we also identified components of current account balances that cannot be explained by cross-country variation, but can be explained only by country-specific factors, suggesting that country-specific analysis is necessary to foresee the prospects of global rebalancing. For that purpose, we review the institutional aspects of China's development that has led to high saving in the country, particularly the factors that have contributed to high saving rates all three of the public, corporate, and household sectors. We find that all these factors are

³³ This conclusion relies upon our proxy of financial development, the ratio of private credit creation to GDP, accurately representing financial development. It would be preferable to use a broader measure of financial development, such as the composite bond/equity/bank indicators used in Ito and Chinn (2009), but the data are not yet available for that exercise.

the outcome of the country's growth strategies and intricately intertwined with each other. Also, because of the importance of past growth policies, the impact of policy reform on saving and investment behavior is likely to show up only after an extended period.

Looking forward, we found that for the U.S., fiscal consolidation alone cannot induce significant current account deficit reduction. For China, financial development may help shrink its current account surplus, but only when it is coupled with financial liberalization.

These findings suggest that unless countries implement substantial policy changes, the global imbalances are unlikely to disappear. Merely changing the variables of "usual suspects" such as budget balances and the level of financial development or financial openness will not be sufficient to lead to drastic reductions in large current account imbalances.

References

- Allen, F. R. Chakrabarti, S. De, J. Qian, and M. Qian. 2009. "The Financial System Capacities of India and China" mimeo.
- Caballero, R., E. Farhi, and P. O. Gourinchas. 2008a. "An Equilibrium Model of 'Global Imbalances' and Low Interest Rates," *American Economic Review*, 98(1) (March): 358-393.
- Caballero, R., E. Farhi, and P. O. Gourinchas. 2008b. "Financial Crash, Commodity Prices, and Global Imbalances," *Brookings Papers on Economic Activity* 2008(2) (Fall): 1-68.
- Cai, Fang and D. Wang. 2005. "Demographic Transition: Implications for Growth," in Ross Garnaut and Ligang Song (eds), *The China Boom and its Discontents*, Canberra: Asia-Pacific Press.
- Cheung, Yin-Wong, Menzie Chinn, and Eiji Fujii. 2005. "Perspectives on Financial Integration in the Chinese Economies," *International Journal of Finance and Economics* 10(2) (April 2005): 117-132.
- Cheung, Yin-Wong, and Xingwang Qian. 2010. "Deviations from Covered Interest Parity: The Case of China." Mimeo.
- Chinn, Menzie and Hiro Ito, 2006. What Matters for Financial Development? Capital Controls, Institutions, and Interactions. *Journal of Development Economics*, 82: 163-192.
- Chinn, M. D. and H. Ito. 2007a. "Current Account Balances, Financial Development and Institutions: Assaying the World "Savings Glut," *Journal of International Money and Finance*, Volume 26, Issue 4 (June), Pages 546-569.
- Chinn, M. D. and H. Ito. 2007b. "Price-based Measurement of Financial Globalization: A Cross-Country Study of Interest Rate Parity," *Pacific Economic Review* 12(4) (2007): 419-444.
- Chinn, M. D. and H. Ito. 2008. "A New Measure of Financial Openness." *Journal of Comparative Policy Analysis*, Volume 10, Issue 3 (September), p. 309 - 322.
- Chinn, M. D., B. Eichengreen, and H. Ito. 2011. A Forensic Analysis of Global Imbalances. Mimeo.
- Chinn, Menzie and Eswar Prasad, 2003, "Medium-Term Determinants of Current Accounts in Industrial and Developing Countries: An Empirical Exploration," *Journal of International Economics* 59(1) (January): 47-76.
- Du, Qingyuan and Shang-jin Wei (2010), "A Sexually Unbalanced Model of Current Account Imbalances," NBER Working Paper no. 16000.
- Eichengreen, Barry and Molly Fifer (2002), "The Implications of Ageing for the Balance of Payments Between North and South," in Horst Siebert (ed.), *The Economics of Ageing Societies*, Tübingen: Mohr.
- Gao, L (2010): "Achievements and challenges: 30 years of housing reforms in the People's Republic of China, *ADB Economics Working Paper*, No 198, April.

- Huang, Y., X. Wang, and N. Lin. 2010. "Financial Reform in China: Progresses and Challenges," mimeo, China Macroeconomic Research Center, Peking University, China.
- Hung, J. H. 2009. "China's Approach to Capital Flows since 1978" In Y.W. Cheung and K. Wang, ed. *China and Asia: Economic and Financial Interactions*, Routledge Studies in the Modern World Economy.
- Hung, J. H. and R. Qian. 2010. "Why Is China's Saving Rate So High? A Comparative Study of Cross-Country Panel Data," Congressional Budget Office Working Paper Series 2010-07. Washington, D.C.
- Ito, H. 2009. "U.S. Current Account Debate, With Japan then, with China now," *Journal of Asian Economics*, Volume 20, Issue 3, p. 294-313 (May).
- Kuijs, L. 2006. "How Will China's Saving-Investment Balance Evolve?" World Banking Working Paper Series #3958.
- Lane, P. R. and G. M. Milesi-Ferretti. 2007. "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970-2004," *Journal of International Economics*, vol. 73(2), pp. 223-250.
- Lin, G. and R. M. Schramm. 2009. "A Decade of Flow of Funds in China (1995-2006)." In Y.W. Cheung and K. Wang, ed. *China and Asia: Economic and Financial Interactions*, Routledge Studies in the Modern World Economy.
- Ma, Guonan and Robert McCauley. 2007. "How effective are China's capital controls?" in Ross Garnaut and Ligang Song, eds, *China: Linking markets for growth* (Canberra: Australian National University E Press, Asia Pacific Press and Social Sciences Academic Press (China)), pp. 267-289.
- Ma, G. and Y. Wang. 2010. "China's High Saving Rate: Myth and Reality." BIS Working Paper No. 312 (June).
- Quinn, D. 1997. The Correlates of Change in International Financial Regulation. *American Political Science Review* 91: 531-51.
- Quinn, D., M. Schindler, and A. M. Toyoda. 2010. "Assessing Measures of Financial Openness and Integration," mimeo, International Monetary Fund.
- Tyers, R. and Golley, J. 2010. China's Growth to 2030: The Roles of Demographic Change and Financial Reform. *Review of Development Economics*, 14: p. 592-610.
- Wei, S. J. and X. Zhang. 2010. The Competitive Saving Motive: Evidence from Rising Sex Ratios and Savings Rates in China. NBER Working Paper no. 15093.

Table 1: Current Account Regression with Institutional Variables

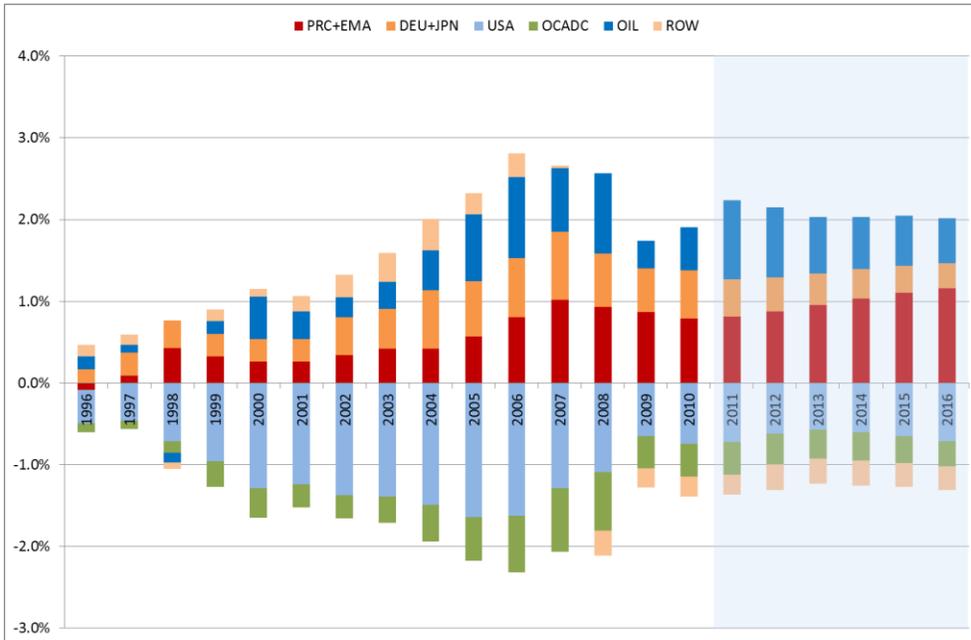
	Current Account			
	(1) Full	(2) Industrial Countries (IDC)	(3) Less Developed (LDC)	(4) EMG
Government budget balance	0.295 [0.058]***	0.289 [0.086]***	0.279 [0.063]***	0.094 [0.054]*
Net foreign assets (initial)	0.037 [0.006]***	0.078 [0.008]***	0.028 [0.007]***	0.026 [0.012]**
Relative income	0.09 [0.018]***	0.018 [0.022]	0.135 [0.022]***	0.284 [0.093]***
Relative income squared	0.055 [0.018]***	0.02 [0.094]	0.046 [0.017]***	0.16 [0.081]*
Dependency ratio (young)	-0.033 [0.015]**	0.004 [0.025]	-0.029 [0.017]*	-0.029 [0.019]
Dependency ratio (old)	-0.019 [0.010]**	0.057 [0.021]***	-0.022 [0.011]**	-0.068 [0.020]***
Financial Develop. (PCGDP)	-0.027 [0.014]*	-0.02 [0.010]*	0 [0.029]	-0.117 [0.038]***
Legal development (LEGAL)	-0.008 [0.005]*	0.015 [0.005]***	-0.015 [0.007]**	-0.018 [0.012]
PCGDP x LEGAL	-0.011 [0.008]	-0.014 [0.012]	-0.007 [0.008]	-0.032 [0.014]**
Financial open. (KAOPEN)	0.002 [0.005]	0.008 [0.004]*	-0.009 [0.008]	-0.008 [0.009]
KAOPEN x LEGAL	0.003 [0.001]***	0.012 [0.003]***	-0.001 [0.002]	0.004 [0.003]
KAOPEN x PCGDP	0.002 [0.007]	0.028 [0.010]***	0.003 [0.008]	-0.02 [0.010]*
TOT volatility	0 [0.023]	0.028 [0.047]	-0.01 [0.024]	0.023 [0.025]
Avg. GDP growth	-0.097 [0.091]	0.178 [0.178]	-0.09 [0.099]	0.072 [0.117]
Trade openness	-0.001 [0.006]	-0.001 [0.011]	-0.005 [0.010]	0 [0.012]
Oil exporting countries	0.028 [0.013]**	– –	0.025 [0.012]**	0.045 [0.016]***
Dummy for 2001-05	0.025 [0.009]***	0.015 [0.009]*	0.033 [0.015]**	0.041 [0.017]**
Dummy for 2006-08	0.017 [0.011]	0.002 [0.010]	0.032 [0.018]*	0.019 [0.022]
Observations	621	174	447	250
Adjusted R-squared	0.5	0.63	0.52	0.46

Note: Time fixed effects are included in the estimation, but only those for the 2001-05 and 2006-08 periods are reported in the table.

Table 2: National Saving and Investment Regression with Institutional Variables

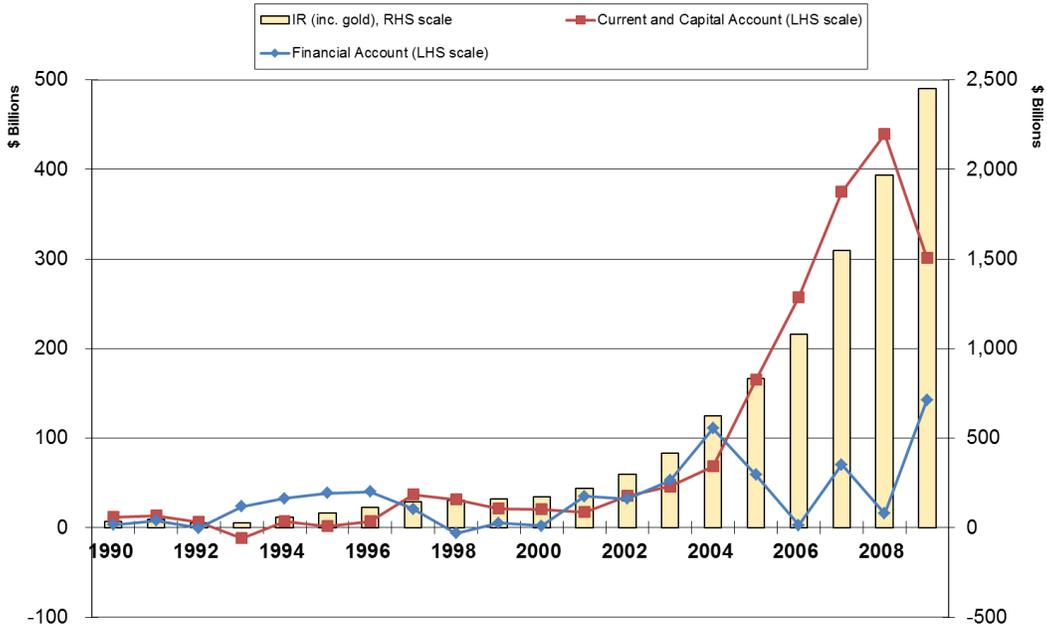
	National Saving				Investment			
	(5) Full	(6) Industrial Countries (IDC)	(7) Less Developed (LDC)	(8) EMG	(9) Full	(10) Industrial Countries (IDC)	(11) Less Developed (LDC)	(12) EMG
Government budget balance	0.432 [0.111]***	0.476 [0.087]***	0.419 [0.121]***	0.2 [0.071]***	0.033 [0.034]	0.304 [0.126]**	0.022 [0.033]	-0.011 [0.061]
Net foreign assets (initial)	0.022 [0.014]	0.072 [0.008]***	0.017 [0.015]	0.053 [0.015]***	-0.007 [0.004]*	-0.014 [0.010]	-0.003 [0.005]	0.012 [0.013]
Relative income	0.015 [0.034]	0 [0.027]	0.036 [0.044]	-0.054 [0.093]	-0.037 [0.018]**	-0.006 [0.032]	-0.051 [0.022]**	-0.264 [0.075]***
Relative income squared	0.054 [0.035]	-0.176 [0.116]	0.063 [0.031]**	-0.238 [0.097]**	0 [0.018]	-0.225 [0.155]	0.019 [0.018]	-0.342 [0.071]***
Dependency ratio (young)	-0.06 [0.017]***	-0.088 [0.025]***	-0.035 [0.022]	-0.057 [0.020]***	-0.05 [0.013]***	-0.097 [0.026]***	-0.033 [0.014]**	-0.046 [0.018]**
Dependency ratio (old)	-0.019 [0.015]	-0.017 [0.021]	-0.007 [0.017]	-0.083 [0.020]***	-0.006 [0.009]	-0.058 [0.020]***	0.006 [0.010]	-0.013 [0.019]
Financial Develop. (PCGDP)	0.02 [0.017]	0.017 [0.011]	0.073 [0.059]	-0.091 [0.053]*	0.037 [0.008]***	0.026 [0.012]**	0.073 [0.031]**	0.046 [0.043]
Legal development (LEGAL)	-0.012 [0.007]*	0.011 [0.006]*	-0.019 [0.012]	-0.034 [0.015]**	-0.002 [0.004]	-0.01 [0.006]*	0.007 [0.008]	-0.015 [0.014]
PCGDP x LEGAL	-0.02 [0.008]**	-0.028 [0.013]**	-0.016 [0.014]	-0.045 [0.018]**	0 [0.004]	-0.003 [0.012]	0.013 [0.010]	0.001 [0.015]
Financial open. (KAOPEN)	-0.004 [0.006]	-0.004 [0.005]	-0.013 [0.012]	-0.001 [0.010]	-0.011 [0.003]***	-0.01 [0.003]***	-0.016 [0.006]**	-0.006 [0.007]
KAOPEN x LEGAL	-0.002 [0.001]	0.01 [0.003]***	-0.006 [0.004]	0.003 [0.004]	-0.003 [0.001]***	0.003 [0.005]	-0.005 [0.002]**	-0.004 [0.003]
KAOPEN x PCGDP	0.007 [0.009]	0.009 [0.011]	0.012 [0.014]	-0.011 [0.014]	-0.001 [0.005]	-0.003 [0.011]	-0.004 [0.008]	0.002 [0.012]
TOT volatility	-0.024 [0.039]	0.314 [0.053]***	-0.051 [0.044]	-0.066 [0.035]*	0.017 [0.022]	0.252 [0.045]***	-0.003 [0.025]	-0.052 [0.031]*
Avg. GDP growth	0.692 [0.165]***	0.417 [0.252]	0.695 [0.190]***	1.129 [0.169]***	0.951 [0.094]***	0.38 [0.268]	0.944 [0.097]***	1.143 [0.127]***
Trade openness	0.021 [0.007]***	0.033 [0.016]**	0.024 [0.013]*	0.033 [0.012]***	0.02 [0.005]***	0.023 [0.012]*	0.025 [0.008]***	0.035 [0.009]***
Oil exporting countries	0.078 [0.018]***	- -	0.086 [0.020]***	0.032 [0.017]*	0.049 [0.012]***	- -	0.059 [0.011]***	0.01 [0.015]
Dummy for 2001-05	0.007 [0.013]	-0.053 [0.012]***	0.062 [0.017]***	0.048 [0.020]**	-0.028 [0.014]*	-0.08 [0.021]***	0.013 [0.014]	-0.005 [0.018]
Dummy for 2006-08	0.027 [0.015]*	-0.041 [0.012]***	0.097 [0.023]***	0.045 [0.026]*	-0.011 [0.015]	-0.058 [0.020]***	0.031 [0.016]*	0.014 [0.020]
Observations	621	174	447	250	621	174	447	250
Adjusted R-squared	0.46	0.63	0.49	0.57	0.35	0.46	0.39	0.5

Figure 1: Current account balances as a share of world GDP.



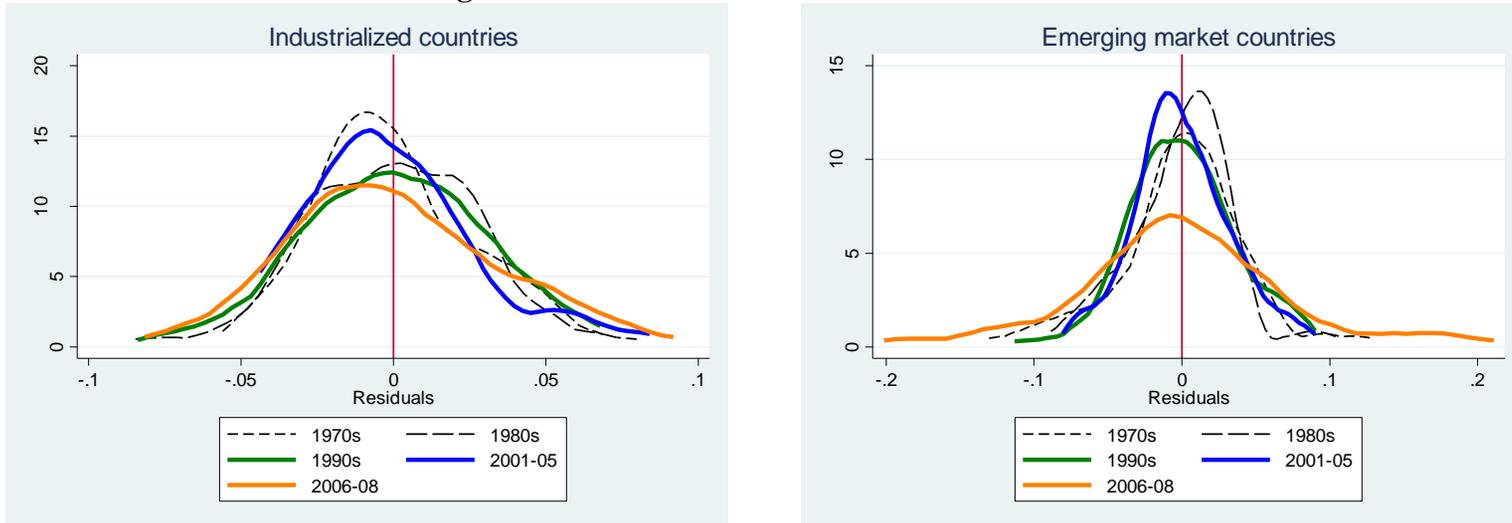
Notes: 2010-2016 data are IMF projections. ‘US’ is United States, ‘OIL’ is oil exporting countries, ‘DEU+JPN’ is Germany plus Japan, ‘OCADC’ is other advanced developed countries, ‘CHN+EMA’ is China plus other emerging Asia, and ‘ROW’ is rest of the world. Source: IMF, *World Economic Outlook*, April 2011.

Figure 2: China’s Current Account, Financial Account, and International Reserves Holding



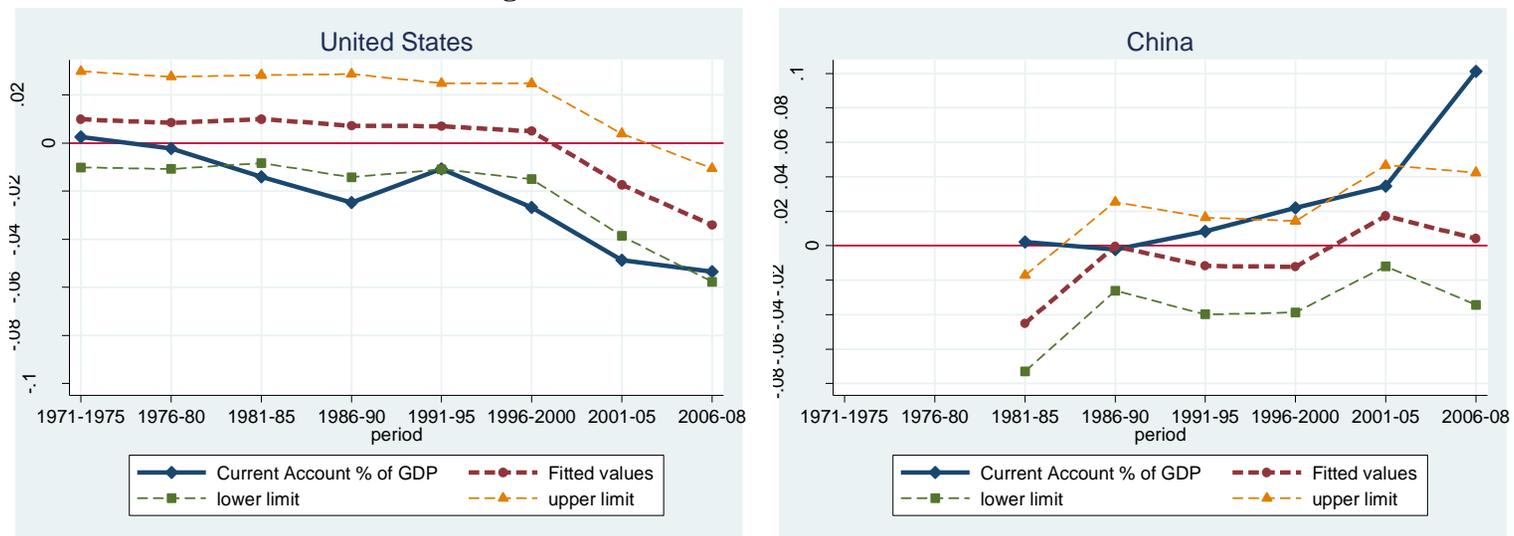
Source: CEIC, World Development Indicators (WDI)

Figure 3: Kernel Distributions of Prediction Errors



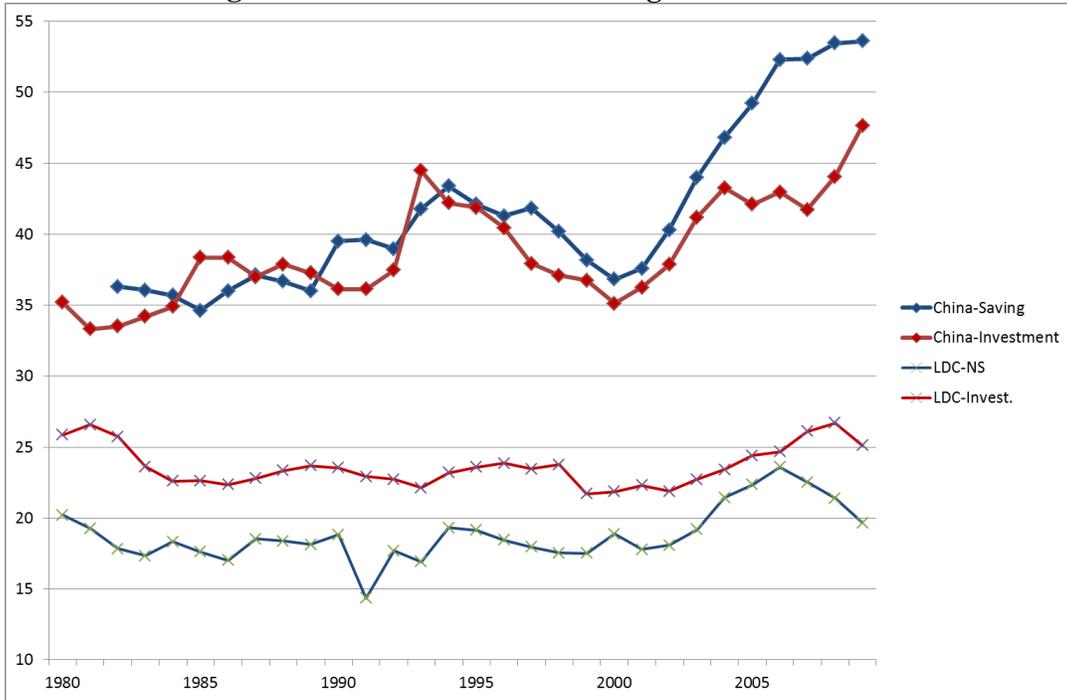
Source: Chinn, Eichengreen, and Ito (2011)

Figure 4: Predictions of Current Accounts



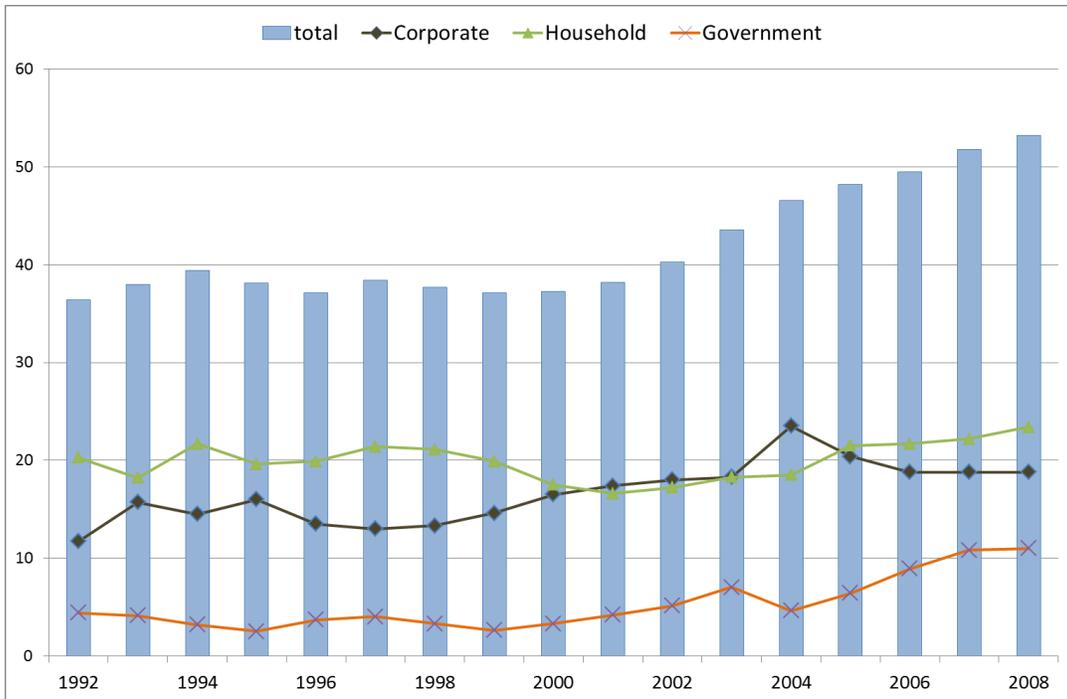
Source: Chinn, Eichengreen, and Ito (2011)

Figure 5: China's National Saving and Investment



Source: World Development Indicator

Figure 6: Compositions of China's National Saving (As a percentage of GDP)



Source: China National Bureau of Statistics

Figure 7: Forecasts of Current Account Balances for 2011-15 using data up to 2008 (red) or 2005 (grey)

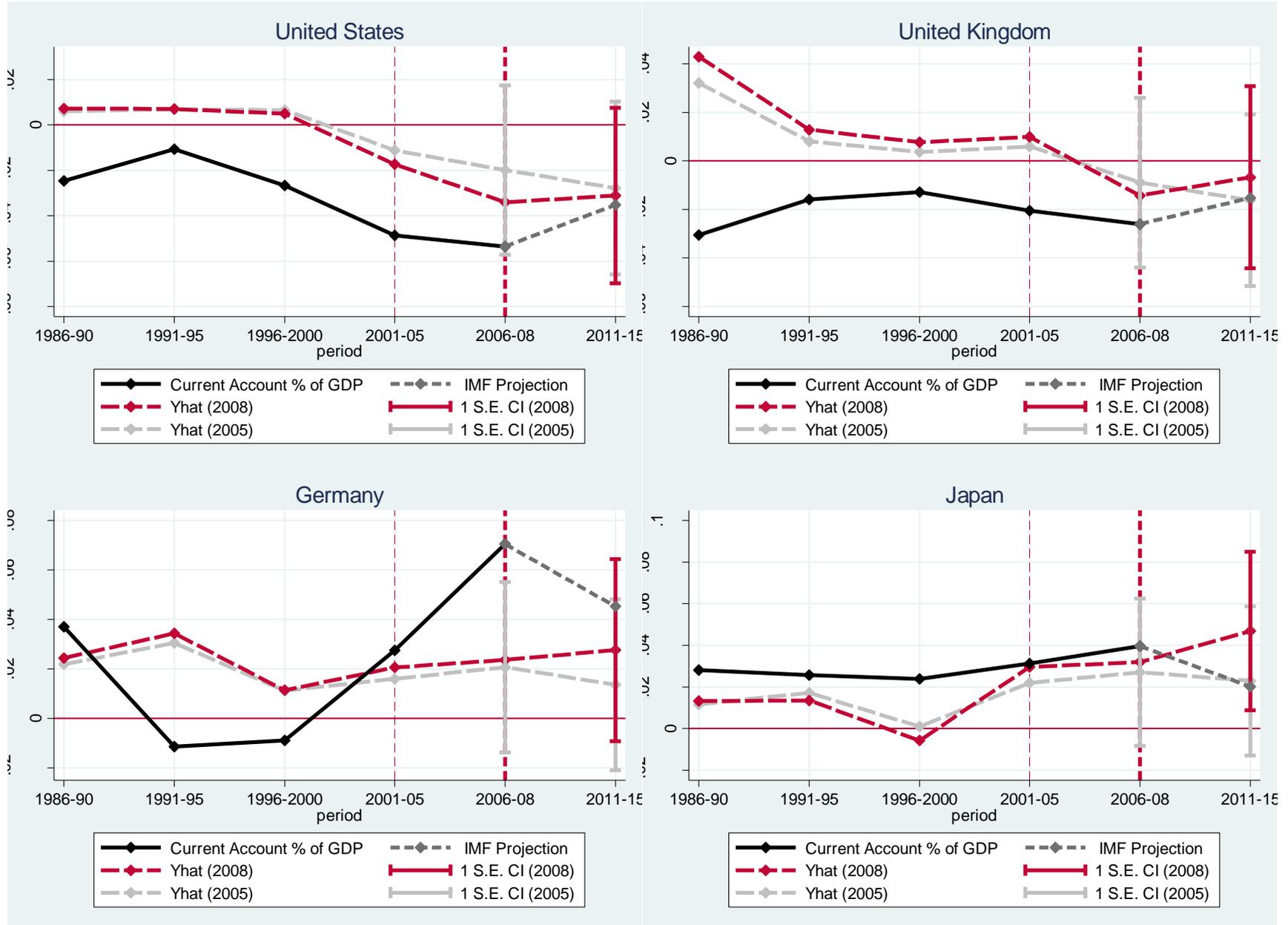


Figure 7 (cont'd): Forecasts of Current Account Balances for 2011-15 using data up to 2008 (red) or (2005 (grey)

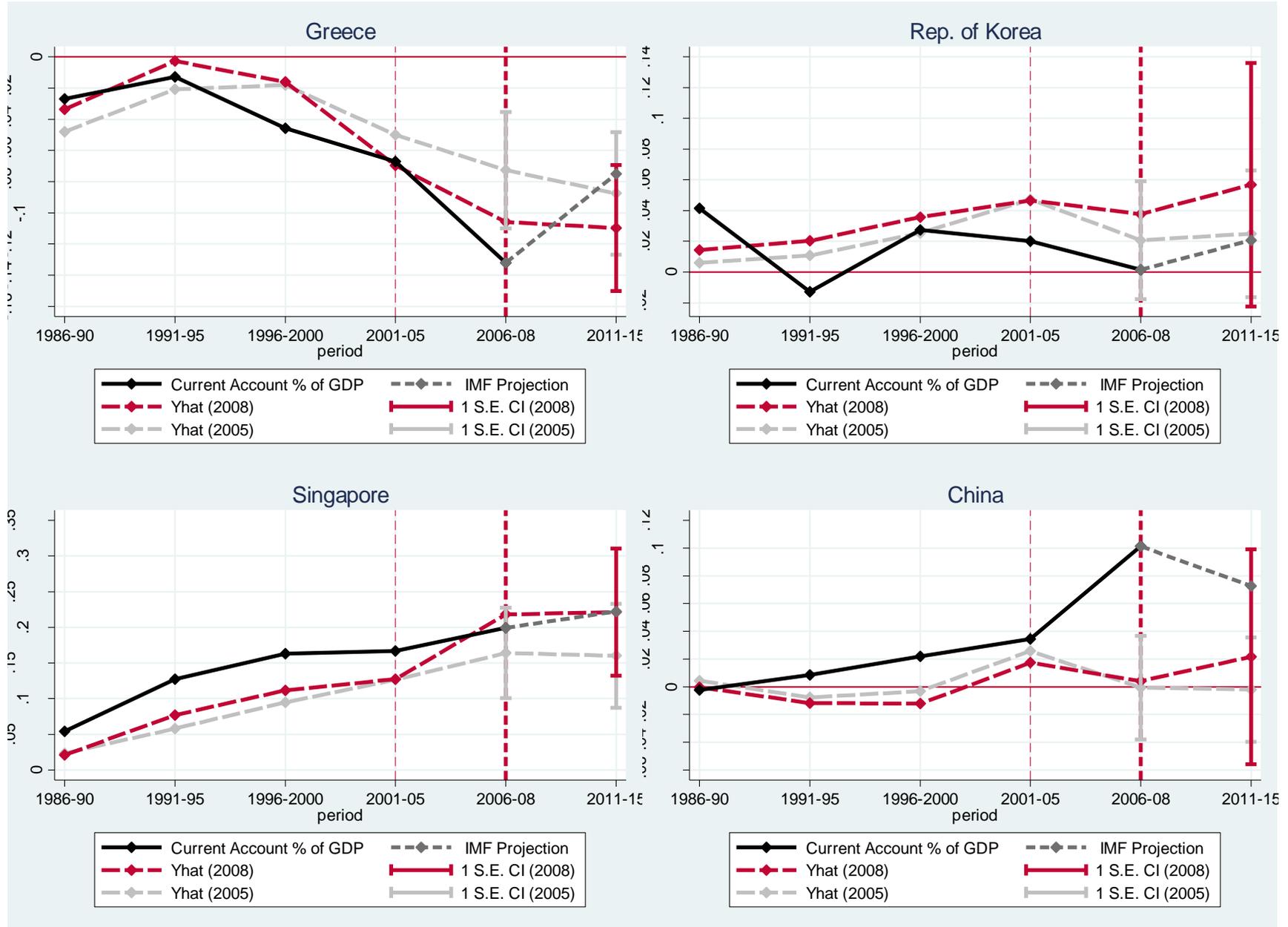


Figure 8: U.S. Current Account Projections for Optimistic and Pessimistic Scenarios

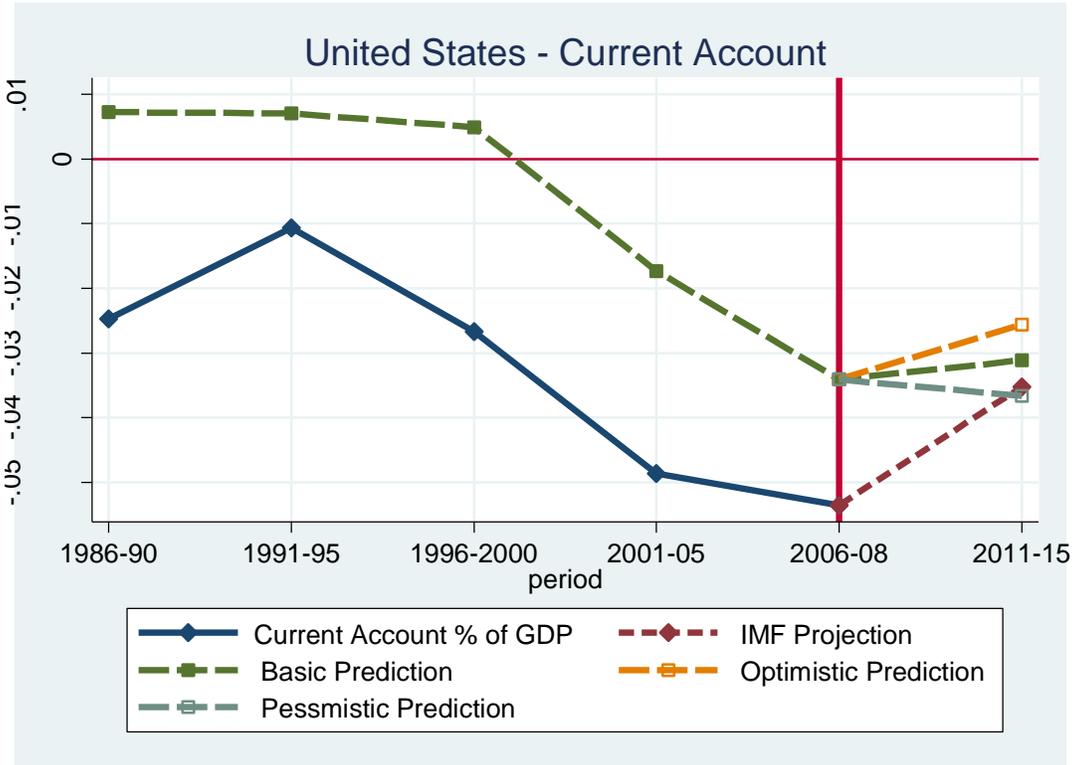


Figure 9: What if China Liberalizes Its Financial Markets

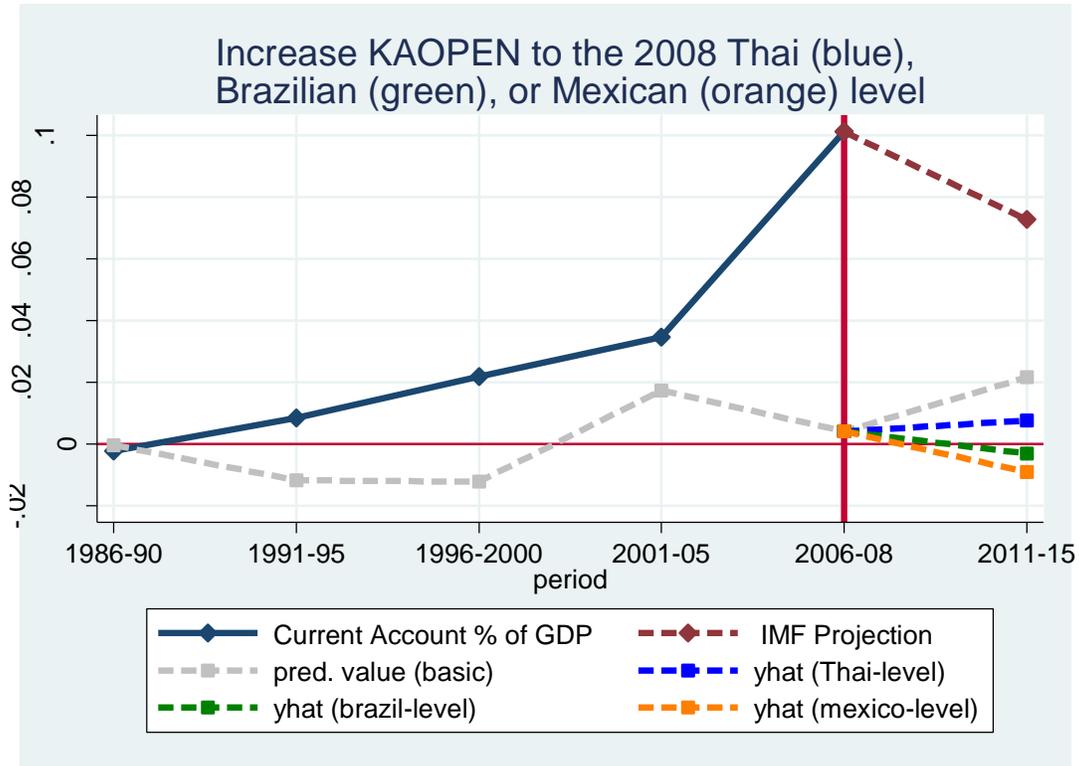


Figure 10: What if China both Develops and Liberalizes Its Financial Markets

