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An End To China's Imbalances?

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Asia and Pacific Department

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Abstract

Global imbalances have been a central theme of the international economic policy debate for much of the last decade, prompted by large and sustained current account deficits in the U.S. and counterpart surpluses in China, Germany, and among many of the oil producers. This paper focuses on the current state of the external imbalance in China, examining the factors underlying the post-2008 drop in China's current account surplus and analyzing the prospects for the external surplus going forward. The paper finds that China's current account surplus should remain modest in the coming years. However, despite the fact that China's medium-term current account is likely to stay below its pre-crisis range, it is too early to conclude that "rebalancing" has been truly achieved in China. While imbalances do not currently seem to be manifesting themselves as a feature of China's external accounts, the evidence increasingly points to a rising domestic imbalance as growth becomes increasingly dependent on very high levels of investment.

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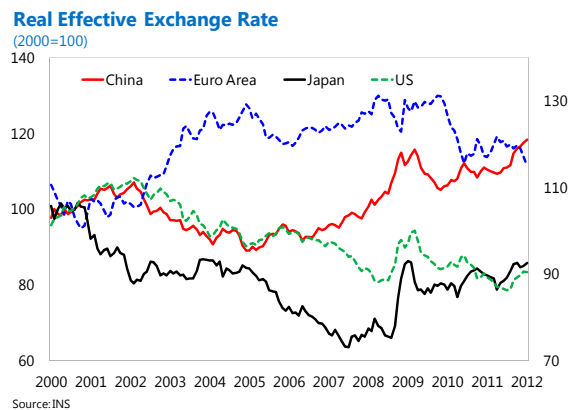
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I. INTRODUCTION

As early as 2005, analysts and academics became concerned about the prospects for, and sustainability of, growing current account imbalances in the world's largest economies (see, for example, Obstfeld and Rogoff, 2005). In the United States, low savings rates and growing household consumption—fueled in part by what later turned out to be a bubble in the property market—sucked in imports from abroad, causing the trade and current account deficit to balloon. Of course, this deficit had a counterpart among the United States' principal trading partners. Among the oil producers, strong demand and rising prices resulted in growing trade surpluses and a rising net foreign asset position. In Germany and Japan external surpluses rose steadily throughout the 2000s mainly on account of rising trade surpluses but also, in Japan's case, due to rapidly growing income flows accruing on Japan's significant stock of foreign assets. Finally, in China, beginning in 2004, the trade surplus took an unprecedented turn upwards which, in turn, created significant pressure for the renminbi to strengthen.¹

Researchers viewed this system of growing global surpluses and deficits as a renewed “Bretton Woods II” system (Dooley et al, 2003 and 2004, Roubini and Setser, 2005). The principal concern among commentators was that, at some point, the global system would be unwilling to continue to finance the growing imbalances in the U.S. (particularly in financing the U.S. fiscal position) and this would lead to a sudden stop in capital flows to the U.S., a spike in U.S. treasury yields, a weaker U.S. dollar, and a collapse in both external deficits and surpluses. This disorderly unwinding was predicted to be painful, creating macroeconomic and financial instability and a collapse of global growth.

The global economy did fall into a crisis—the worst tailspin since the Great Depression—but in a manner that was far from what was predicted by Bretton Woods II proponents (see DeLong, 2008 and Dooley, Folkerts-Landau, Garber, 2009). Catastrophic failures of risk management and financial regulation were exposed—spilling out from the U.S. real estate market—culminating in the startling failure of Lehman Brothers, the near-collapse of the international financial system, and a



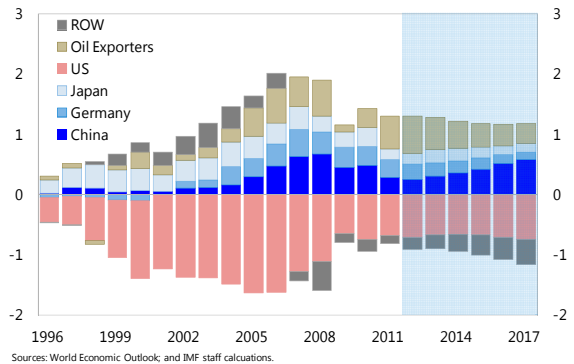
¹ An alternative view was that global imbalances had emerged as a by-product of underdeveloped financial markets in emerging economies (for example, Cooper 2007; and Caballero, Farhi and Gourinchas, 2008). In this interpretation, savings from emerging economies were channeled uphill to advanced economies, particularly the US, in search of safe and liquid assets (due to a lack of such assets in these countries' domestic economies). But as Obstfeld and Rogoff (2010) argue, based on the findings of Gruber and Kamin (2008) and Acharya and Schnabl (2010), there is little evidence to suggest that capital flows from emerging to advanced economies were systematically related to the state of financial development, or that it was principally demand for risk-free assets from emerging economies that was financing the US current account deficit.

sharp global recession. All of this occurred with relatively modest movements in the real exchange rates of both the deficit and the surplus economies.

As a by-product of the Great Recession, current account surpluses and deficits across the globe contracted. The U.S. saving rate moved sharply upwards and external demand collapsed. Japan's current account surplus fell from 4.8 percent of GDP in 2007 to 2.8 percent of GDP in 2010. Germany's current account surplus fell from 7½ percent of GDP to 5¾ percent of GDP over the same period. Despite relatively high oil prices, the current account surpluses of the oil exporters were cut in half (to around ½ percent of global GDP).

Global Imbalances

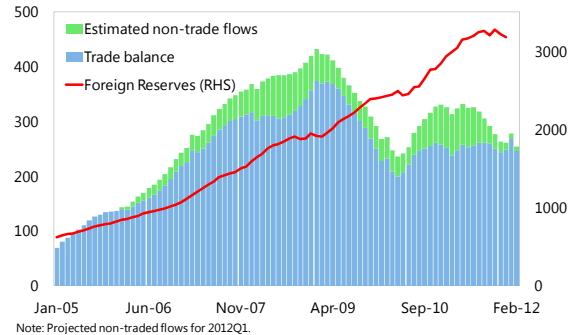
(In percent of world GDP)



And then there is China. In the world's second largest economy the current account surplus was cut in half from 2007 to 2009, amounting to a US\$150 billion swing in the current account surplus. The surplus leveled off in 2010 as the global economy recovered but then, last year, the current account surplus was almost cut in half once again. Forecasting China's external accounts has always been challenging, in part reflecting rapid structural change, uncertainties surrounding China's terms of trade, and a difficulty predicting the path for the global recovery—but the scale of this current account reversal has been far sharper and more durable than expected. It is also worth noting that, despite the dramatic contraction in the current account surplus, capital inflows have been very strong for much of the post-crisis period. As a result, Chinese reserve accumulation has remained high, leaving the total stock of reserves at US\$3.2 trillion by end-2011. In addition, over most of the interval, these large movements in the external position were accompanied by a relatively modest appreciation of the currency. In total, the real effective exchange rate appreciated 14¾ percent from April 2008 through December 2011, but this was by no means monotonic and was characterized by both ups and downs in the real exchange rate.

Current Account Balance

(12 month cumulative, US\$ billions)

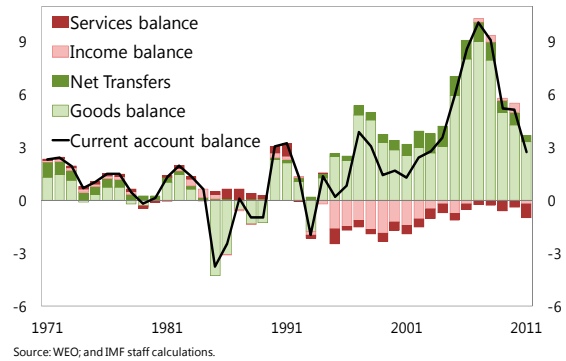


This paper focuses on describing the dynamics behind the recent fall in China's external surplus. It aims to assess what has driven the shrinkage of the external imbalance and provides a revised outlook for the current account over the medium term.

II. THE RECENT PATH OF CHINA'S EXTERNAL IMBALANCE

Up until 2004, China's external imbalances were relatively small with the trade surplus averaging only 3 percent of GDP from 1994–2003. This was reflected at a more disaggregated level whereby the trade surplus or deficit for various product components was also very small, although the trade surplus on textiles did grow steadily during the period. Starting in 2004, the size of China's imbalance accelerated, most notably due to an upswing in net exports of machine mechanical devices. This was offset, in part, by a significant expansion of China's trade deficit in minerals (largely metals and energy products). Despite this, as a share of GDP, China's current account was able to rise to reach double digits by the eve of the global financial crisis and, at the time, there were few signs that the pace of growth of the imbalance was set to slow down anytime soon.

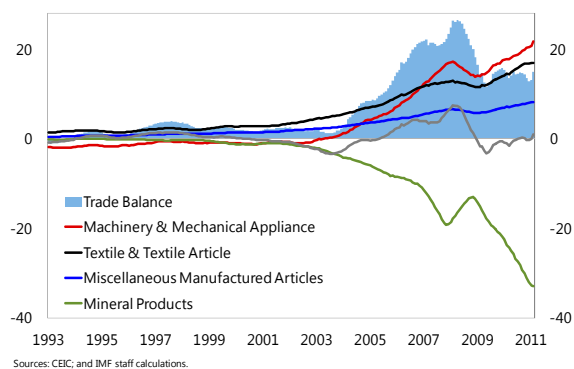
Current Account and Components
(In percent of GDP)



However, what happened next was an extraordinary set of global circumstances that combined to set-off the worst global financial crisis in the post-war period. Against this external backdrop, China's current account surplus was cut in half between 2007 and 2009 and, by 2011, had fallen to 2.8 percent of GDP. This compression in the external surplus was largely a result of a falling trade balance (which went from 9 percent of GDP in 2007 to 3.3 percent of GDP in 2011).

Certainly the fall in the trade balance has a cyclical component. After all, growth and demand in the global economy was damaged by the global financial crisis and there was an expectation that balance sheet repair and ongoing deleveraging would weigh on growth well into the medium term. At the same time, the significantly higher demand for imported minerals and energy was a side effect of China's policy response to the global financial crisis—to put in place a significant infrastructure-driven stimulus funded by high credit growth.

Trade Balance
(In billion USD; 12MMA)

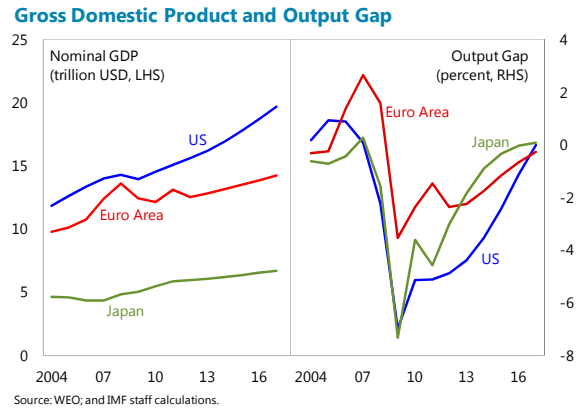


Nevertheless, there have also been more lasting forces at work, affecting the trade surplus in both directions. Domestic costs are rising, the costs of imported inputs (particularly commodities) have risen, and the stimulative effects on trade that were created by China's accession to the WTO may be waning. On the other hand, the relocation of global manufacturing capacity to China (financed by significant FDI inflows) continues and capacity is being built in new industries as China moves rapidly up the quality ladder. In what follows, we aim to weigh these various competing factors first by analyzing the main forces behind the recent decline in the surplus and then by drawing things together to summarize what this all means for China's external imbalance going forward.

III. WHAT IS DRIVING THE DECLINING SURPLUS?

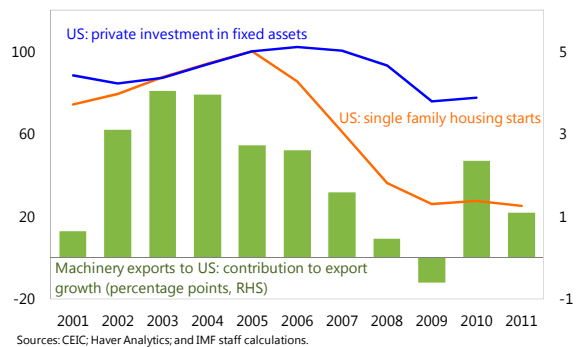
A. The Collapse in Global Demand

Since 2008 the global environment that China faces has changed radically. It has become clear that the path the advanced economies were on during the “Great Moderation” was unsustainable and built on excessive consumption and leverage. As a result, in 2008, the level of GDP in the advanced economies took a large step down. In addition, going forward, growth is likely to struggle as balance sheet excesses are worked through. This will certainly prove to be a headwind for China’s trade performance as global demand for tradable goods remains well below the levels that would have prevailed if the pre-crisis trajectory had continued. Part of this is cyclical; eventually the output gap in advanced economies is expected to close. However, there is also a longer-term trend with the advanced economies expected to endure lower potential growth over the medium-term. Indeed, the IMF’s estimates of potential output growth in the U.S. have fallen from an average of just under 3 percent pre-crisis (i.e., 2001–2007), to a projected average of 2 percent for 2012–2017. Similarly, in the euro area potential growth has fallen from 1.8 percent to under 1 percent.



The direct impact on China’s export sector has been very visible. For example, exports of machinery and equipment to the US—which contributed between 10–15 percent of China’s overall export growth in the early 2000s—look unlikely to recover as long as the U.S. housing market remains weak. Indeed, the contribution of these items to export growth has declined to around 5 percent in the post-crisis period.

US Private Fixed Investment and Machinery Exports to US
(Index, 2005=100)



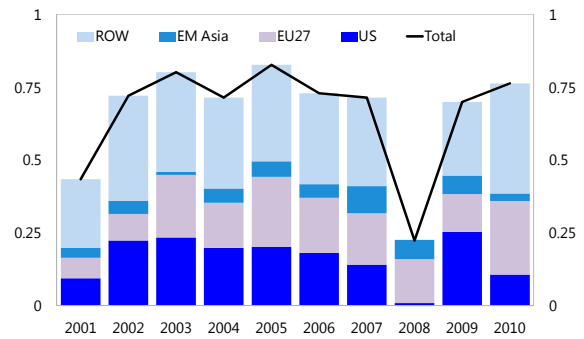
One additional aspect of China’s export performance that is worth highlighting is that, while overall external demand has suffered as a result of the global financial crisis, China’s ability to gain inroads in building a larger share of those external markets appears to have been relatively unaffected. Even in 2008 when global trade collapsed, China was still able to build market share and, since then, the pace of China’s market share gains has broadly returned to the level prevailing prior to the global crisis. At an aggregate level, China has, over the past decade, managed to increase its share of world exports by an average of around $\frac{3}{4}$ percentage points per year.

While maintaining its foothold in traditional areas, China has also started making a concerted push into industries typically dominated by more advanced economies. Prominent examples of these new growth areas include wind turbines, solar panels, automobiles, and semiconductor devices. In the wind energy industry for example, China has increased its share of global capacity from 16½ percent in 2009 to 22¾ percent in 2010, overtaking the United States as a world leader in wind energy capacity. This has allowed China to increase its global market share in exports of wind-energy to about 6 percent (as of September 2011) from almost zero five years earlier. Similarly, China has moved rapidly to build production facilities in solar panels and the upswing of China's global export share in this industry has come at the expense of Japan and Germany (in part as multinationals from those countries move their production facilities into China).

B. A Step Increase in Investment

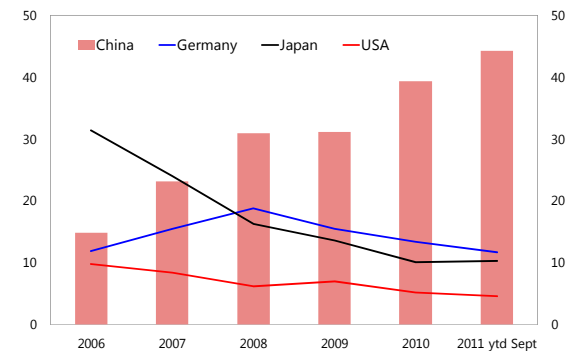
In 2008, as the global financial system melted down, China responded early and resolutely with a large stimulus package that was designed to prop up domestic demand and offset the large shock emanating from the coming collapse in external demand. This created the conditions for a dramatic step-up in investment from 42 to 47 percent of GDP. Much of that investment was concentrated in transportation, utilities, and housing construction. A direct consequence of this investment has been to remove many of the infrastructure bottlenecks that existed and increase the connectivity between provinces. Ultimately, this will serve to improve the competitiveness of China's industry, in part as it facilitates industrial relocation to lower cost areas within China (particularly the central and western provinces).

China: Change in Market Share From Previous Year
(In percentage points)



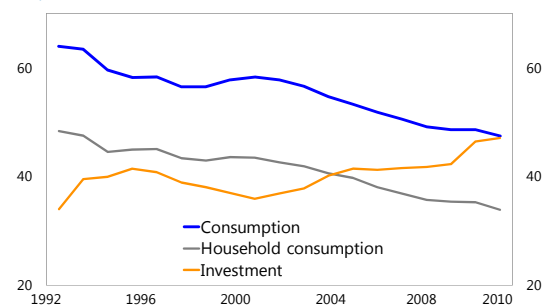
Source: WEO, and IMF staff calculations.

Photosensitive Semiconductor Devices Global Export Shares
(In percent of global exports of same category; value)



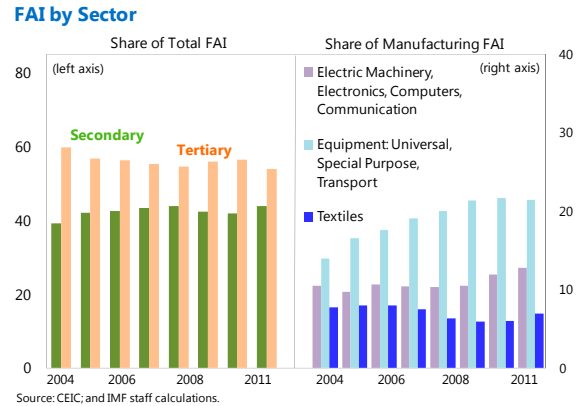
Source: CEIC, and IMF staff calculations.

Domestic Demand
(In percent of GDP)



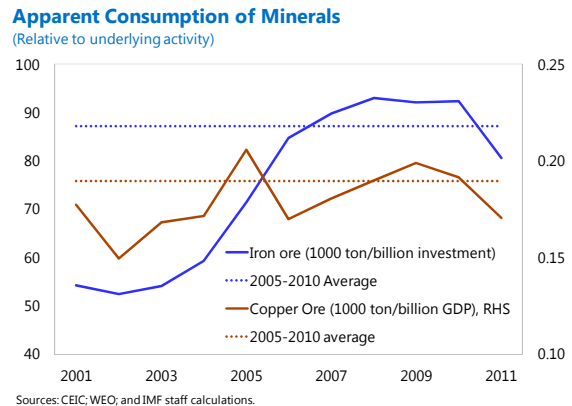
Source: CEIC, and IMF staff calculations.

As the global economy started to recover, China's spending on infrastructure began to wane. This created a hole in aggregate demand that was quickly filled by an upswing in private sector manufacturing investment. It appears this manufacturing capacity is being built predominantly in a range of relatively higher-end manufacturing industries. Potentially, in the coming years, this growth in manufacturing capacity could lead to future increases in exports (as China sells these goods onto global markets). Alternately, this capacity could be deployed domestically through sales to Chinese industries and households. Finally, there is a chance that it could remain underutilized (which would open up a question of how and whether the financing for these investments will be serviced). At this point, the means by which this new capacity will be utilized remains an important question but very difficult to predict.



C. The Role of Commodities and Capital Goods

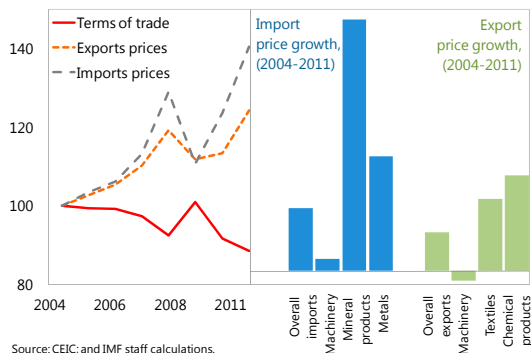
As discussed previously, one of the by-products of the step increase in fixed investment has been an important increase in China's demand for commodities. This growth in demand took off first in metals followed by strong import growth in machinery and energy products. Both private and public investment projects have proved to be very import intensive. There has been some opportunistic cyclical stockpiling of commodities and inventory data show stockbuilding in upstream industries such as ferrous metal mining (about 15 percent y/y growth in 2011) and non-ferrous metal mining (about 25 percent y/y). However, overall there appears to be little evidence of a secular rise in inventories which would suggest that this import demand is largely being used as an input to domestic production.



D. The Terms of Trade

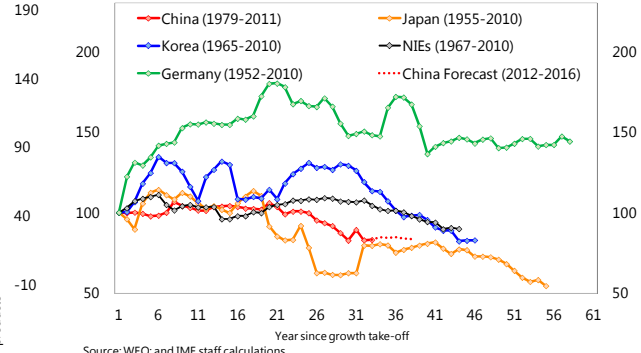
The sustained strength in imports of commodities and minerals has reinforced a dynamic that has been at work for several years now, going back to well before the global financial crisis. Over the past several years, imports have become more linked to commodities and minerals, where supply is relatively inelastic and global prices have been rising. At the same time, exports have become increasingly tilted toward machinery and equipment where supply is relatively elastic, competition is significant, and relative prices have been falling.

China Terms of Trade
(Index, 2004=100)



Source: CEIC, and IMF staff calculations.

Terms of Trade of Selected Economies since Growth Take-off
(Total; index)



Source: WEO, and IMF staff calculations.

As a result, aside from 2009, China's terms of trade has been steadily worsening. This may not be surprising from a historical context. Several other economies that have witnessed export-oriented growth (notably Japan and the NIEs) were affected by similar terms of trade declines along their development path. In China's case, this dynamic is further fueled by the fact that, in both export and import markets, it has become so large as to no longer be a price taker. As a result, to some modest degree, China may well be generating a decline in its own terms of trade, creating a self-equilibrating mechanism that drives China's terms of trade and creates countervailing downward pressures on China's external surplus, through global prices.²

E. Exchange Rate Appreciation

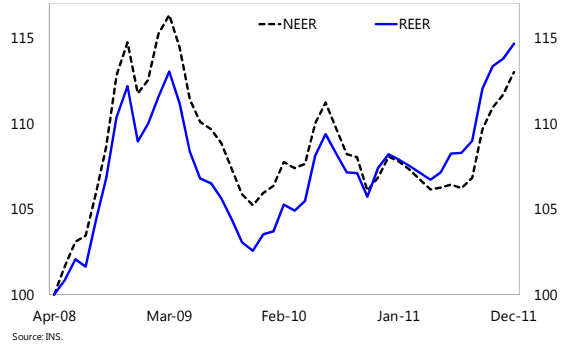
The exchange rate appreciated 14¾ percent in real terms during April 2008–December 2011 but, as mentioned above, this change masks considerable variation within the interval. A significant portion of this appreciation took place in 2008, after which the pace slowed markedly through the crisis and recovery (and has included intervals of real depreciation). Most of the real appreciation was due to movements in nominal exchange rates relative to major trading partner currencies, while the portion of the real appreciation accounted for by inflation differentials relative to trading partners has been relatively minor.

² The deteriorating terms of trade could also generate negative income effects as prices of imported goods rise, which would lower domestic demand and partly offset the narrowing of the external surplus. But this offset so far appears to be relatively muted in China's case with domestic spending (particularly investment) continuing to rise rapidly even as import prices have risen.

Table 1: China Exchange Rate Decomposition

| | Percent Change April 2008 - December 2011 |
|---|--|
| REER Appreciation | 14.7 |
| Contribution from | |
| Inflation differential | 1.6 |
| NEER Appreciation | 13.0 |
| of which, contribution from | |
| Appreciation against USD | 2.4 |
| Appreciation against other partner currencies | 10.6 |
| Memo item: | |
| Bilateral appreciation against USD | 10.6 |

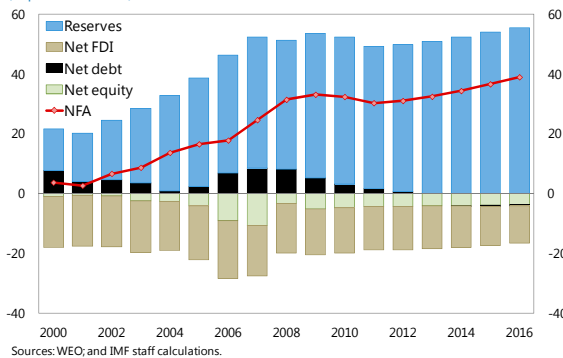
Effective Exchange Rate
(Index, April 2008 = 100)



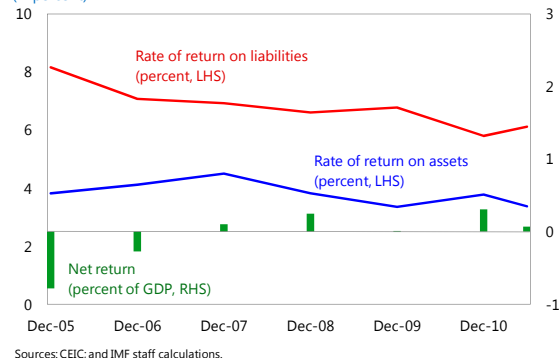
F. Net Income Flows

Finally, a few words on the net income flows are warranted. It is something of a puzzle that, as China’s net foreign asset position has accelerated, there has not been a corresponding increase in net income flows. Looking first at the asset side, the rise in foreign assets in China has largely tracked the evolution of the central bank’s reserve portfolio and China Investment Corporation’s (CIC) investment position. Liabilities, on the other hand, have mirrored the growing stock of FDI flowing into China. The low net income flow numbers (which were actually negative in 2011) suggest a significant differential between the return on FDI into China versus that on the reserve holdings of the central bank. Indeed, it would appear, for much of the past several years, that return differential has been of the order of 3–4 percentage points, resulting in net income flows that are close to zero despite a growing net foreign asset position.

China: NFA Composition
(In percent of GDP)



Effective Rate of Return on Foreign Assets and Liabilities
(In percent)



G. Putting It All Together

Even as China's growth has moderated since pre-crisis, import volumes have continued their upward trajectory as output has become more capital goods and commodity-intensive. The step increase in investment spending and the associated sustained strength in import volumes (particularly of key commodities) have reinforced an ongoing secular deterioration in China's terms of trade. To attach some quantitative importance to these effects actual developments were compared against a counterfactual scenario based on both a reduced form model of the current account and on separate trade regressions (details are in Section V below). The counterfactual scenario is based on decomposing the change in the current account surplus since then assuming that (i) partner country output was at potential from 2007–11, (ii) the real exchange rate had stayed constant, and (iii) the terms of trade and investment-to-GDP ratio had remained at their 2007 levels.

Table 2: Estimated Contributions to Decline in China's Current Account Surplus, 2007-2011
(In percent of GDP)

| | Estimated Trade Elasticities ¹ | Reduced - Form Current Account Equation |
|--------------------------|---|---|
| Actual 2007 | 10.1 | 10.1 |
| Actual 2011 ² | 2.8 | 2.8 |
| Decline | -7.3 | -7.3 |
| Contributing factors: | | |
| Terms of Trade | -1.6 | -3.6 |
| Foreign Demand | -1.1 | -1.4 |
| Investment | -1.8 | -2.6 |
| REER | -2.1 | -1.3 |
| Others | -0.8 | 1.5 |

Source: IMF Staff calculations.

¹Elasticities based on estimated calculations for exports and imports of goods and services.

²Preliminary actual.

The calculations suggest that the terms-of-trade decline contributed between one-fifth and two-fifths of the decline in the current account surplus over the past four years (Table 2). The acceleration in investment accounted for one-quarter to one-third of the decline, while the appreciation of the currency contributed between one-fifth and one-third. Below-potential growth in partner countries had a slightly smaller effect. Overall, the conclusion is that growing domestic investment, a worsening terms of trade, weakening external demand, and REER appreciation explain a large share of the post-crisis decline in the current account surplus. That said, it should be noted that these calculations are based on a partial equilibrium approach and have to be interpreted with some caution. For example, they do not account for feedback effects between these various factors (such as the linkages between high investment in China and rising global commodity prices).

IV. POLICY REFORM, DEMOGRAPHICS, AND COST PRESSURES

A. Policy Reforms

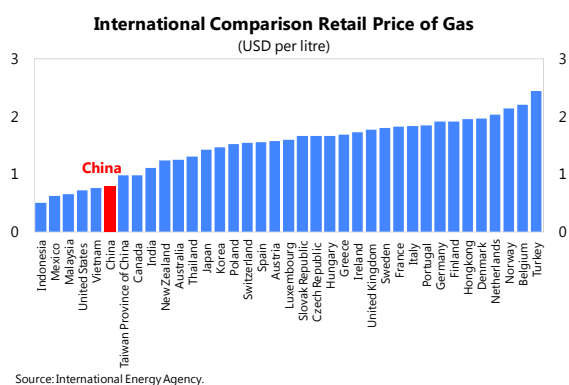
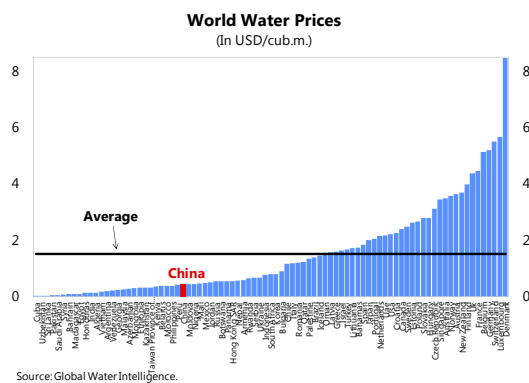
The Chinese government has rightly focused its policy efforts since the global financial crisis in a range of areas designed to accelerate the transformation of the Chinese economic model, improve livelihoods, and raise domestic consumption. Access to primary health care has been improved through the construction of new health facilities, particularly in previously under-served rural communities. A new government health insurance program has been launched nation-wide, with the objective of achieving near universal coverage by the end of 2012 and subsidies for a core set of prescription drugs have been introduced. In addition, the existing government pension scheme is being expanded to cover urban unemployed workers across

the country by end-2012 and to make those pensions more portable within China. Also, the absolute level of pensions has been increased, particularly for the elderly poor.

In addition to health care and pensions, improving access to affordable housing has been an important policy objective. The 12th Five Year Plan, launched in 2011, aims to construct 36 million low income housing units by 2016. The wider availability of low cost housing has the potential to ease the budget constraints of low income groups and release savings currently locked up toward financing home purchases.

However, so far, there are few signs in the data that the initiatives to build out the social safety net and increase the provision of social housing have led precautionary savings to decline or have created sufficient momentum for household consumption to reverse the secular decline as a share of GDP that has been seen over the past several years.

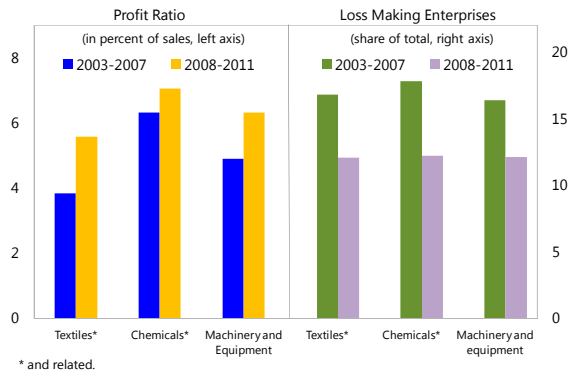
At the same time as these housing and social reforms have been put in place, there has been a greater policy emphasis on market-based pricing of factor inputs and the scaling back of subsidies. Nevertheless, the low-cost of many of China's factor inputs—including land, water, energy, labor, and capital—still creates incentives for an overly capital intensive means of production. Factor inputs are priced below prices that would be expected to equilibrate supply and demand and are also low relative to international comparators. For instance, in many cases industrial land is provided for free to enterprises to attract investment and the price of water in China is about one third of that of international comparators. Cross country data on the cost of energy shows that the price of gasoline and electricity in China is low relative to much of the rest of the world. Studies estimate the total value of China's factor market distortions could be almost 10 percent of GDP.³ Having said this, China is making progress in bringing some energy costs in line with international levels: oil product prices have been indexed to a weighted basket of international crude prices; natural gas prices have been steadily increased; and preferential power tariffs for energy-intensive industries have been removed.



³ See Huang and Tao (2010) or Huang (2010). Also see IMF(2011) for more discussion on relative factor costs comparing China with other economies.

Again, so far these rising costs, along with higher wages and the more appreciated currency, appear to have had little effect on lowering corporate saving. Corporate profit margins have stayed healthy and there are no signs of broad-based corporate stress. Indeed, corporate profit ratios have actually been rising—and the share of loss making enterprises has been declining—and the trends look similar across the manufacturing spectrum (from textiles and other traditional areas to higher-end manufacturing). This is not simply a sample selection issue (i.e. with a weeding out of weaker enterprises in labor intensive sectors) since the number of enterprises in these segments continues to grow. Geographical relocation, strong productivity, and modest increases in export prices are helping to defray cost pressures that firms may be facing.

Manufacturing Sector: Profitability

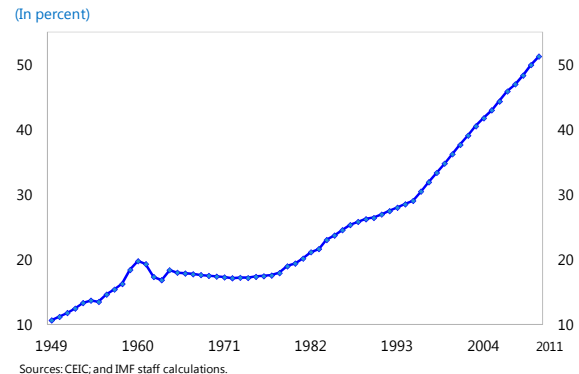


Overall, while the policy reforms that have been undertaken are valuable and necessary and there are structural forces at work that should help redistribute resources and shift behaviors, so far there is little evidence that these efforts have created a turnaround in national savings behavior, either at the corporate or household level. Having said this, many of these policies are likely to have long lags before their impact on saving behaviour is clearly seen. It may well be the case in the coming years that more of an effect on household income and consumption will become steadily more discernible.

B. Urbanization

In addition to the policy efforts taken by the government to lessen their external imbalances, raise household income, expand the service sector, and boost consumption, there are also some important underlying structural changes underway. Over the decades, urbanization has proceeded steadily and is now at the point where one-half of the Chinese population is living in urban areas. This process has tended to be commodity intensive, as new housing and infrastructure have been built to accommodate this growing urban citizenry, putting downward pressure on the trade surplus. At the same time, this shift has raised the standard of living for many Chinese, lifting millions out of poverty and creating a vibrant urban middle class. This process, undoubtedly, has been associated with a growing consumption of tradable goods, some imported from abroad but the majority produced within China. Thus, while manufacturing capacity has been expanding at a breathtaking pace, a large share of this has been deployed to provide goods to the domestic market. That is becoming increasingly evident as the domestic economy—and particularly

China Urbanization Rate

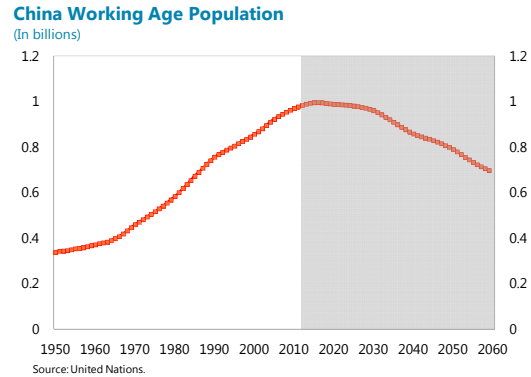


the interior of the country—develops and companies relocate production facilities out of the coastal areas and closer to these fast-growing local markets.⁴

C. Demographic Change

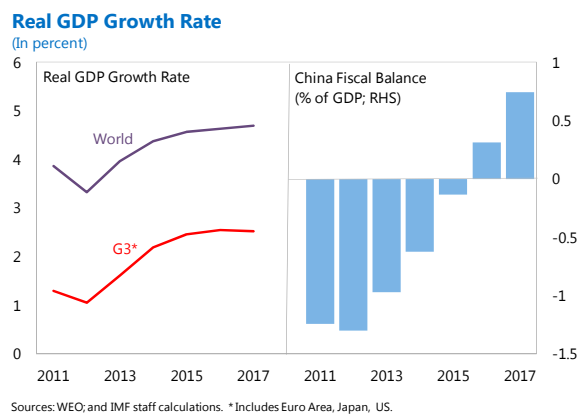
A second important structural factor has been China's unique demographics. China is fast approaching the point where its labor force will start to shrink and, already, the size of the cohorts that are younger than 24 years old has begun to decline. This naturally is going to tighten labor markets and put upward pressure on wages as the labor supply curve moves from perfectly elastic to moderately upward sloping, as is now happening. While China is far from a so-called "Lewisian turning point" it has entered

a period where real wages are going to continue to rise and increasingly at a rate that is faster than productivity. However, this process is really in its infancy and has not yet translated into a dynamic whereby household incomes start to increase as a share of GDP and where Chinese households have greater resources available for consumption. These ongoing shifts in factor markets—both labor and other inputs—are clearly important and, over time, should lead to rising cost pressures. This will also have implications for the external imbalance. Nonetheless, it is still too early to conclude that rising cost pressures have been responsible, in a meaningful way, for China's shrinking external surplus. As seen in the decomposition of the real exchange rate appreciation in Table 1 above, the contribution of the inflation differential (which in part reflects the influence of factor cost differences) has been relatively minor.



V. EMPIRICAL ANALYSIS

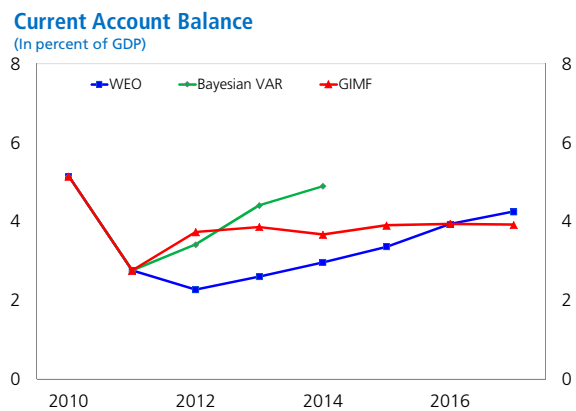
A number of different models have been estimated to explain the external surplus—see for example Aziz and Li (2007), Cheung et al. (2012), or Mann and Pluck (2007). Here we look at four different approaches—a structural DSGE model, a multivariate Bayesian VAR model, a reduced form time series model of the current account, and an approach using simpler trade equations—and examine their predictions for the path of the current account surplus going forward.



⁴ The process has been facilitated by loosening of restrictions on household registration requirements in certain interior urban areas such as Chongqing. For more details, see The Economist (2012).

It is worth highlighting at first that, in most cases, these forecasts assume a **constant real effective exchange rate**, the *World Economic Outlook* projections for global demand, and a path of steady, medium-term fiscal consolidation in China. If the exchange rate appreciates in real terms (either due to faster nominal appreciation or due to a sustained increase in domestic cost pressures that translate into larger inflation differentials relative to trading partners) or external demand is weaker, the current account will undoubtedly be below these projected ranges.

- Global Integrated Monetary and Fiscal Model (GIMF).** The first approach uses the Fund's multi-country dynamic general equilibrium model.⁵ The model captures the vertical trade structure and other key features of trade between China, advanced economies, emerging economies, and the rest of the world. Simulations using the GIMF show that a combination of stronger global demand and a lower fiscal deficit create the conditions for a rise in exports and a decline in commodity imports over time. As a result, the current account surplus would be predicted to increase to around 4 percent of GDP this year and remain at around that level over the medium-term. This medium-term forecast is broadly consistent with the latest IMF staff projection in the context of the World Economic Outlook (WEO) although departs from that forecast over the near-term.
- Bayesian VAR (BVAR).** The second method uses higher frequency, quarterly data based on the BVAR methodology (Österholm and Zettelmeyer, 2007). The model includes trading partners' demand, domestic demand, property prices, CPI inflation, commodity price changes, interest rates, the fiscal balance (in percent of GDP), the current account balance (in percent of GDP), the money supply, and the real effective exchange rate. Similar to the GIMF approach, the out-of-sample forecasts assume a steady path of fiscal consolidation and a global recovery as projected by the WEO. Simulations using the BVAR model show a much stronger and earlier rise in the trade surplus over time. The model forecasts that the current account surplus would rise to around 4 percent of GDP this year and continue higher to almost 5 percent of GDP by 2014.



⁵ See Kumhof et al. (2010) for a description of the model.

- **Reduced form Current Account model.** A third approach uses a similar set of variables to the BVAR. Specifically, the reduced-form model relates China's current account share of GDP to real GDP growth, China's trading partners' real GDP growth, the real effective exchange rate, the terms of trade, and the lagged current account-GDP.

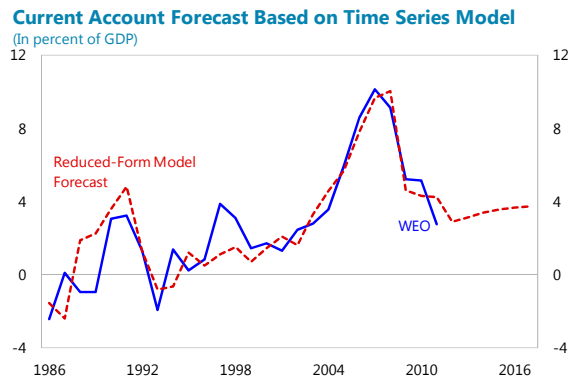
- The model was estimated over the sample 1986–2011 using the Generalized Methods of Moments. All parameters are significant and with signs consistent with economic theory.

| Current Account Balance (in percent of GDP) 1/ | |
|---|---------------------|
| | Parameter Estimates |
| Real GDP Growth | -0.30 [.001] |
| Trading Partners Real GDP Growth | 0.43 [.000] |
| REER | -0.09 [.006] |
| Terms of Trade (lagged 1 year) | 0.42 [.000] |
| Terms of Trade Squared (lagged 1 year) | -2.8E-03 [.000] |
| Current Account Balance (Lagged 1 year) | 0.64 [.000] |
| Dummy 2009-2011 | -2.99 [.000] |
| J-stat | 3.01 |

1/ GMM estimates over the sample: 1986-2011. Figures in brackets are p-values

- In the short run, a 1 percentage point increase in China's real GDP growth reduces the current account surplus by 1/3 percent of GDP; a 1 percentage point increase in trading partners' growth increases China's current account surplus by about 1/2 percent of GDP; a 10 percent REER appreciation would lower the surplus by 1 percent of GDP; an improvement in the terms of trade up to a threshold would improve China's current account surplus, above that threshold the income effect from the improvement in terms of trade would start to dominate, leading to a reduction in the current account surplus as the terms of trade improve. In the longer run, the effects of these variables are about 2³/₄ times larger.

- The model predicts that a gradual strengthening of demand for China's exports, steady GDP growth in China of around 8½ percent, a slight deterioration in the terms of trade, and a constant real effective exchange rate (all based on the projections in the latest World Economic Outlook), would leave China's current account surplus below 4 percent of GDP by 2017. This prediction is despite an in-sample over estimation of the 2011 current account surplus by 1½ percent of GDP (i.e. in 2011 the model predicts a current account surplus of 4¼ percent of GDP versus the 2¾ percent of GDP outturn).



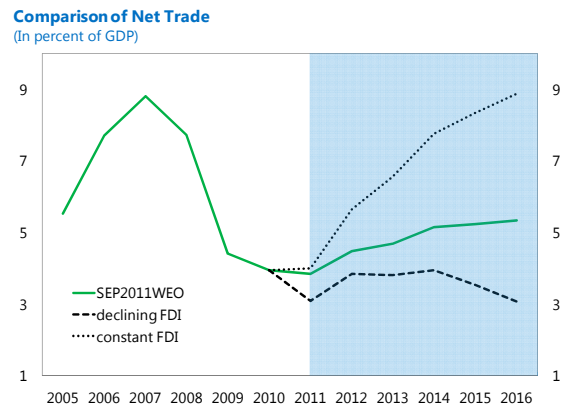
Sources: World Economic Outlook; and IMF staff calculations.

- Trade equations.** One recurrent theme in estimating trade equations for China is that the estimated elasticity of exports to external demand is very large.⁶ At the same time, on the import side, an important driver of imports has been the level of exports (around one-half of imports in some way or another are destined as inputs for goods that are processed and then eventually exported to third countries). To take into account these two features of China's trade, a simple modified trade model is used.⁷ In particular, FDI is included in the export equation as a proxy for the expansion of China's tradable production and increased involvement in cross-border production sharing. On the import side, the effect of processing trade is captured by including exports in the import equation. With FDI in the export regression the elasticity of exports to foreign demand falls from 5 to 2 while including exports in the import equation reduces the elasticity of imports to domestic demand from 1.4 to 0.6. Using these models to forecast, and assuming a modest decline in inward FDI as a share of GDP, the trade surplus falls to around 3 percent of GDP over the medium term. However, the forecast is subject to significant uncertainty and is highly sensitive to the path of future FDI inflows; if FDI stays around the same share of GDP as in 2011 the model would forecast the trade surplus to be some 6 percentage points of GDP higher over the medium term.

Table 3: Trade Elasticities

| with respect to: | Export elasticities | | Import elasticities | |
|------------------|---------------------|-----------------|---------------------|-----------------|
| | Standard model | Augmented model | Standard model | Augmented model |
| Foreign demand | 5.46*** | 2.28** | | |
| FDI/I | | 2.15*** | | |
| Domestic demand | | | 1.39*** | 0.62* |
| Exports | | | | 0.49** |
| REER | -0.32 | -0.30** | 0.52** | 0.42* |

Notes: *significant at 10%; **significant at 5%; ***significant at 1%.



⁶ For example, in Aziz and Li (2007) a 1 percent increase in external demand is associated with a 5 or 6 percent increase in China's exports. This far outstrips the typical elasticity in other countries and is the counterpart of China's rapid growth in global export market share. Such a large export response is clearly unsustainable and should eventually decline, although the timing of that decline is highly uncertain (see Guo and N'Diaye, 2009).

⁷ See Bems and others (forthcoming) for details.

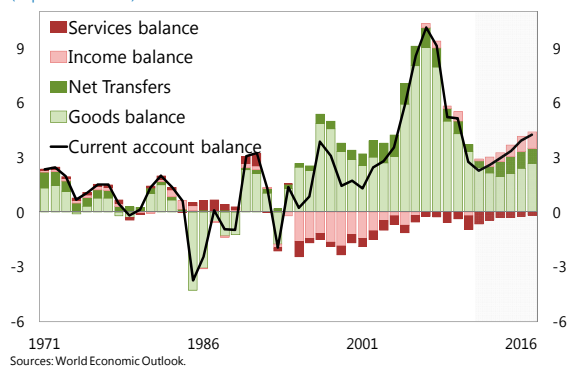
VI. A REVISED OUTLOOK

For some time now, the IMF's forecasts for the current account surplus have assumed that imbalances would bottom out in 2010 and steadily rise over the medium term. Clearly the data for 2011 show that not to be the case. As a result, a revised view on the prospects for China's medium-term current account surplus is warranted.

In the recent World Economic Outlook, our forecasts for China's balance of payments were revised significantly. This revised outlook draws on the conclusions of the various modeling approaches described above but also imposes some degree of judgment given the uncertainties. As discussed above, prospects for China's external surpluses are closely linked to the outlook for the principal drivers of the recent decline that have been described above—external demand, the level of investment, and the future trends for China's terms of trade and domestic costs. Therefore, these projections are predicated on the assumption that many of the recent shifts underpinning the surplus reversal will be persistent. In particular that:

- China continues to gain global market share at the average pace seen over the past decade, but in an environment of generally weak growth in China's main trading partners (as described in the April 2012 World Economic Outlook);
- The elevated level of investment spending continues, keeping the investment-GDP share close to current levels and well above the pre-crisis average;
- China's average export prices struggle to keep up with global inflation and the supply-demand balance in commodity markets remains tight leading China's terms of trade to continue to steadily deteriorate (by ½ percent per year);
- The usual WEO assumption that China's real effective exchange rate remains at the average levels observed during a 30-day period in February and March of 2012.
- As the global recovery gathers momentum over the medium term, the rates of return on China's reserve portfolio increases, leading to a growing surplus on the income account.
- Under these conditions, net exports will likely improve in real terms, as global demand slowly recovers, but the current account surplus will not rise to anywhere near those levels seen prior to the global financial crisis. Instead the current account surplus is expected to decline modestly in the near-term (with a recession in Europe being the principal reason for that decline) and rises over the medium term but only to around 4–4½ percent of GDP by 2017.

Current Account and Components
(In percent of GDP)

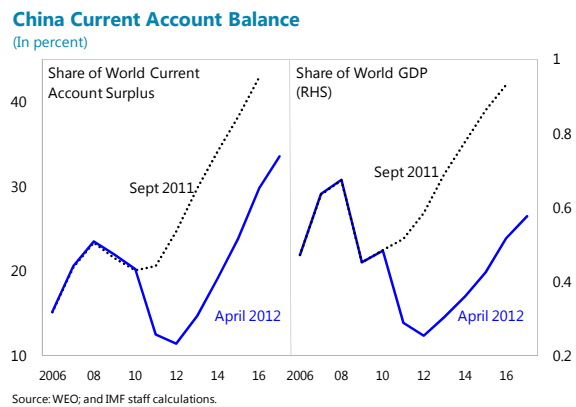


The downside risks to the outlook for the current account are considerable. They are partly tied to the global outlook, but there is also uncertainty about the pace of continued structural change in China's economy. For example, various factors—including the beneficial impact of WTO accession in 2001, strong growth in manufacturing productivity, a relocation of global production facilities to China, and low cost factors of production—created the conditions for the country's export market share to rise rapidly during this decade. Going forward, China is expected to continue building its export market share and rotate its product mix toward higher-end manufacturing. This process may, however, face headwinds from the slow recovery in global demand. It is also possible that market share gains will moderate relative to the rate experienced over the last decade, as China's export mix gets closer to the technology frontier and opportunities for technology transfer and the relocation of overseas production facilities diminish. Finally, if past experience can be extrapolated, China's real exchange rate may continue to appreciate which, again, will diminish the size of the external surplus.

VII. WHAT DOES THIS REVISED OUTLOOK FOR CHINA'S CURRENT ACCOUNT IMPLY FOR THE PATH OF GLOBAL IMBALANCES?

This is a big question that does not lend itself to a neatly wrapped answer. It is also a question that goes well beyond China and needs to examine the imbalances in many other large economies. However, there are three points that are worth highlighting:

- First, the Chinese economy is growing rapidly so even though the increase in the size of imbalance over the medium term is relatively modest, it would still translate over time into a growing share of the aggregate external balance of surplus economies. Furthermore, relative to the size of the world economy, it would imply the current account rising from 0.2 percent in 2012 to 0.6 percent of global GDP over the medium term (as high growth ensures China's economy becomes a bigger and bigger share of global output through time). By this metric, the current account surplus is far from negligible, albeit well below the share of global GDP that China's current account surplus had reached in 2007–08.
- Second, while China's external surplus may be fading that does not mean global imbalances are solved. Rather, these global imbalances may instead be rearranging themselves into a different geographical constellation. Notably, there are recent signs that the US current account deficit is once again rising with the counterpart being higher surpluses in the oil producers. China's external surplus may well have migrated elsewhere, aided, in part, by the impact China is having on global prices and its own terms of trade.



- Third, unless consumption can soon be catalyzed, the decline in the external surplus will have come at the expense of a widening imbalance in China's domestic economy. Such an imbalance is not merely a domestic issue though. If left unresolved, it has the potential to generate macroeconomic and financial instability in China's economy which, in turn, because of China's size and systemic importance, will undoubtedly have consequences for global macroeconomic and financial stability.

VIII. CONCLUSION

In conclusion, the decline in China's external surplus has been impressive and should be welcomed. However, this adjustment has largely been the result of very high levels of investment, a weak global environment, and a pace of increase of commodity prices that outstrips the rising price of Chinese manufactured goods. While all three of these factors are likely to continue to put downward pressure on the external imbalance, this does not represent the "rebalancing" in China advocated by the IMF over the past several years.⁸ In particular, the available official data which cover the period through the end of 2010 do not yet indicate that the shift in the external imbalance is due to consumption rising as a share of GDP or national savings falling.

Certainly, the policy thrust of the 12th Five Year Plan is very much focused on raising household income, boosting consumption, and facilitating an expansion of the service sector. In the coming years, if these ongoing structural reforms are implemented, China does have the potential to hand-off from an investment-driven to a consumption-driven decline in its external imbalance. If successful, this would ultimately prove a more lasting shift that would increase the welfare of the Chinese people and contribute significantly to strong, sustained and balanced global growth.

⁸ See for example People's Republic of China Article IV Staff Report 2010 and 2011.

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