

CHINA'S FADING TWIN SURPLUSES AND ITS POLICY IMPLICATIONS

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***Abstract:** This paper argues that the twin surpluses of China's balance of payment tend to vanish in the future due to some external and internal structural changes. China's current account surplus would diminish due to the decline of good trade surplus and the expanding service trade deficit and negative investment income. China's capital account surplus might turn into deficit as a result of shrinking net direct investment income and rising volatile short-term capital flows. The fading twin surpluses would speed up the normalization of US treasury bond yields, terminate the one way appreciation of RMB exchange rate, alleviate PBC's sterilization pressure as well as cause new problem for PBC, and pose new financial vulnerability to Chinese economy. Finally, this paper provides some policy suggestions to deal with the new challenges brought by the shrinking twin surpluses.*

Key words: China, twin surpluses, capital account liberalization, financial risk

JEL codes: F21, F31, F32

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1. Introduction

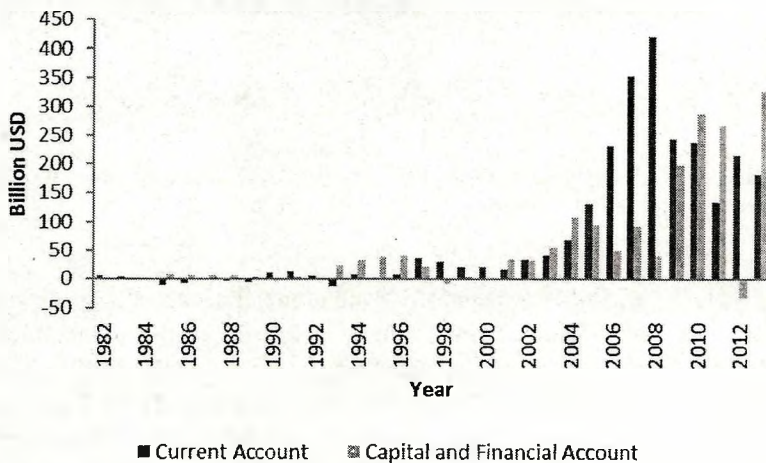
China experienced both current account surplus and capital account⁵ surplus in its balance of payments for 13 consecutive years from 1999 to 2011 (Figure 1). As a result of this twin surpluses, China's foreign exchange reserve rose from USD 155 billion at the end of 1999 to USD 3.8 trillion at

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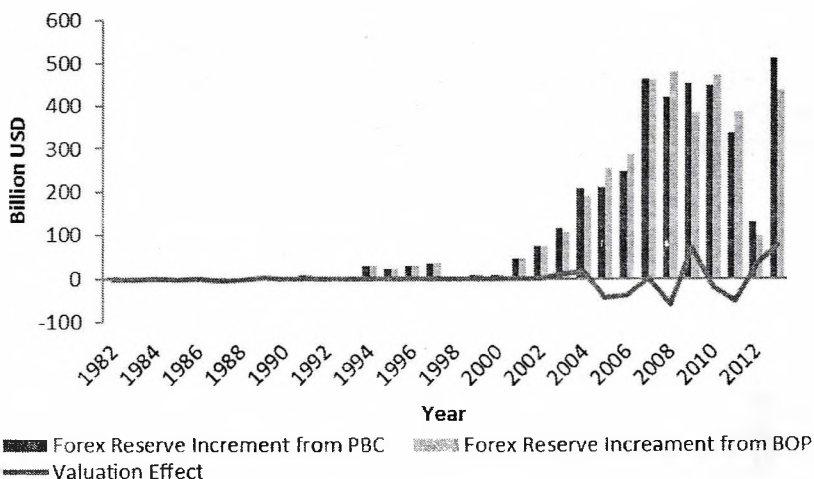
the end of 2013. The persistent twin surpluses were deemed as a symptom of China’s external imbalance, which contributed significantly to the global current account imbalance in 2000s. The sharp rising of foreign exchange reserve was regarded as an evidence of People’s Bank of China (PBC)’s intervention on foreign exchange market, which was commonly cited as an argument for foreign countries (especially the United States) to pressure RMB to appreciate (Figure 2).

Figure 1. The Twin Surpluses of China’s BOP



Source: CEIC.

Figure 2. The Accumulation of China's Forex Reserve

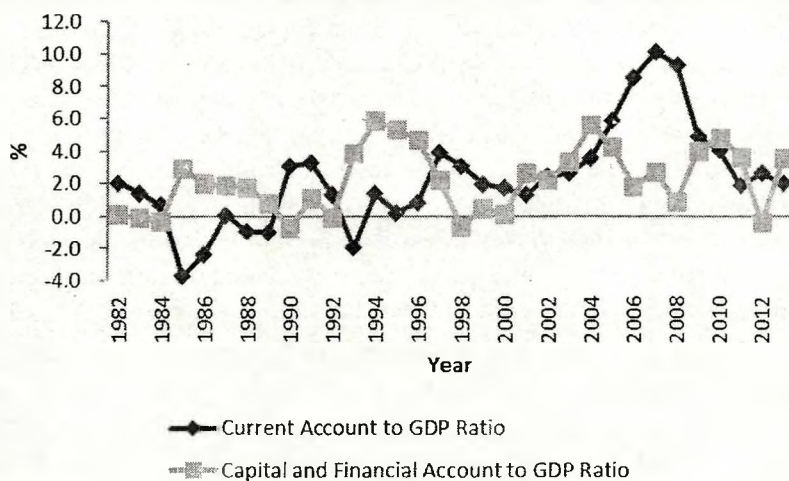


Source: CEIC and the author's calculation.

However, since the burst of US subprime crisis and European sovereign debt crisis, China's twin surpluses have been facing some structural changes. First, the current account balance peaked at USD 421 in 2008 (Figure 1), and the ratio of current account balance over GDP peaked at 10.1% in 2007 (Figure 3). After that, both the level and the ratio of current account surplus declined markedly. The ratio of current account balance to GDP had been under 3 percent for 3 continuous years since 2011, which demonstrated that China's current account imbalance had been mitigated observably. Second, the importance of capital account position has been increasing. As can be seen from both figure 1 and figure 3, the current account balance was larger than capital account balance from 2005 to 2009, but the capital account balance was larger than current account balance from 2010 to 2013 except 2012 (during the exacerbation of European sovereign debt crisis). Third, considering that the volatility of current account balance was much lower than that of capital account balance, the annual growth of foreign exchange reserve began to face more uncertainty. For example, the annual increment of China's foreign exchange fell sharply from USD 334 billion in 2011 to USD 131 billion in 2012 due to the transition from

net capital inflow to net capital outflow, and rise dramatically to USD 510 billion in 2013 as the result of another transition from net capital outflow to net capital inflow.

Figure 3. The Evolution of China's BOP accounts to GDP ratios



Source: CEIC and the author's calculation.

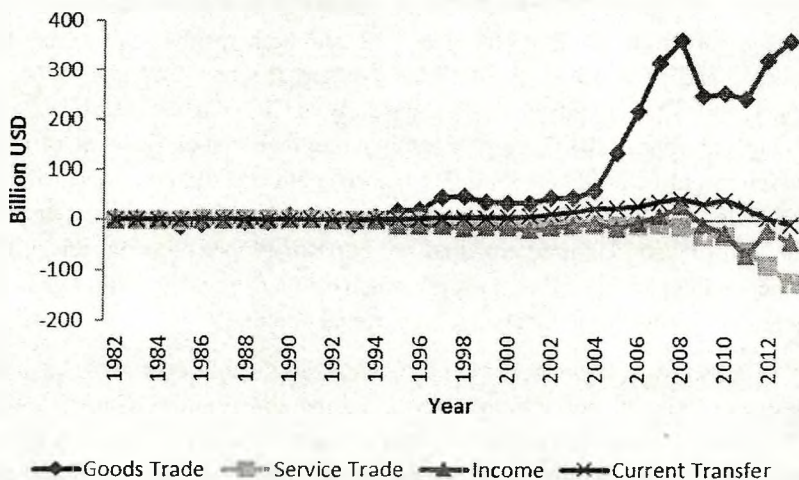
Although China faced current account surplus and capital account surplus again in 2013, we argue that China's twin surpluses phenomenon will fade away due to the important changes in both current account and capital account, which would be driven by domestic structural reforms and further opening up of the service sector. Moreover, the vanishing of China's twin surplus will exert strong policy implications for both global and Chinese macro-economy and financial markets. This paper tries to analyze the drivers of fading twin surpluses and its policy implications. The rest of paper is organized as following: the second section focuses on the evolution of China's current account balance, the third section focuses on the evolution of China's capital account balance, the fourth section discusses the policy implications of the end of twin surplus, and the fifth section concludes and provides some policy suggestions for Chinese government.

2. The Evolution of China's Current Account Balance

As shown in Figure 3, the ratio of current account surplus to GDP declined markedly after 2008, which indicates that China's current account imbalance has already been significantly alleviated. However, whether the decline of current account to GDP ratio was caused by cyclical factors or structural factors remains a question mark. On the one hand, some economists argued that the declining of China's current account surplus resulted from the surging of domestic investment after the burst of global financial crisis, which shrank the saving investment gap and therefore pushed down the current account surplus. Along this logic, China may face the rising of current account surplus again once the domestic investment level goes down due to the exacerbation of excess capacity. On the other hand, if the shrinking of current account to GDP ratio was caused by structural factors, China's current account would be more balanced in the future.

To answer this question, we would first decompose the current account into more specific items, and then analyze the driving factors and evolutions of those items. Figure 4 demonstrates the four major components of China's current account. Firstly, good trade balance has been persistently positive and always the major contributor of China's current account surplus, which rose sharply from 2005 to 2008, dropped significantly in 2009, and rose again since 2012. Secondly, service trade balance has been persistently negative, and service trade deficit widened markedly since 2011. Thirdly, income balance has been negative for most of the years except 2007 and 2008. Finally, current transfer balance has been positive for most of the years, but it turn into negative in 2013. To predict the trajectory of China's current account in the future, we will analyze the evolvement of good trade, service trade and income respectively.

Figure 4. The Breakdown of China's Current Account



Source: CEIC.

Good trade balance

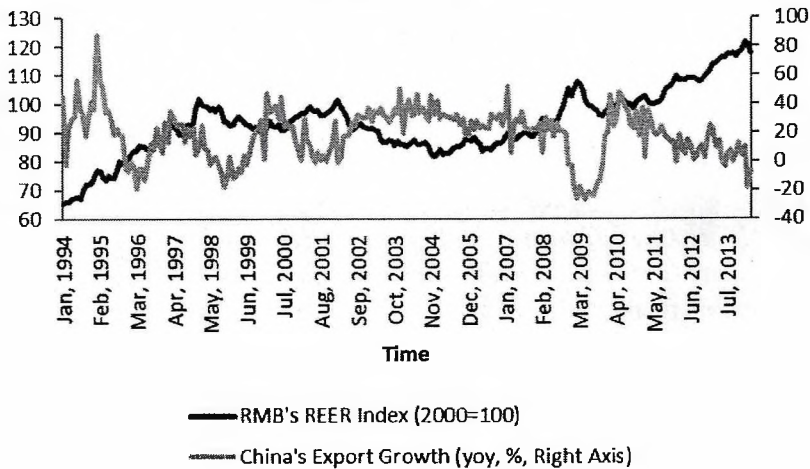
Good trade surplus has been the major component of China's current account surplus since mid 1990s, thus the evolution of good trade balance will have a decisive impact on the evolution of China's current account. Generally speaking, the good export depends on external demand and export price, and the good import depends on internal demand and import price. Moreover, the movement of RMB exchange rate exerts an important impact on both export and import prices. Therefore, to analyze the future direction of China's good trade balance, we should consider the relative strength of external and internal demands, the move of RMB exchange rate, and the export and import elasticities for both demand and price.

Yao et al. (2010) estimated the demand function of China's export from 1992 to 2006, and found that the short-term income elasticity and price elasticity of China's export were 2.34 and -0.65 respectively. Their research showed that the short-term income elasticity of China's export was 3.6 times of the short-term price elasticity, therefore external demand is

much more important than RMB appreciation in shaping China's export growth. Wang and Zhang (2014) estimated the demand function of China's export from July 2005 to June 2012, and their results showed that the income and price elasticity of China's export reached 1.39 and -1.70 respectively. The estimation of price elasticity of China's export estimated by Wang and Zhang (2014) is significantly larger than that of Yao et al. (2010), which might be partly attributed to the different methodologies. However, the difference may also show that, along with the RMB appreciation, the rise of domestic labor forces, and the burst of global financial crisis, the change of export price might exert a much heavier impact to export growth, even after controlling the change of external demand.

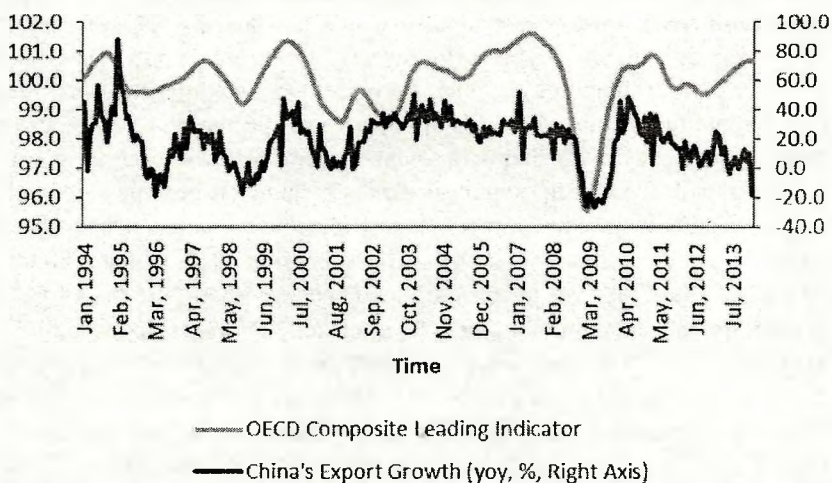
As show in figure 5, there has been a significant negative correlation between China's good export growth and the appreciation of RMB's real effective exchange rate. Figure 6 demonstrates that there has been a significant positive correlation between China's good export growth and the external demand from advanced economies. These two relationships are in accord with the finding by Yao et al. (2010) and Wang and Zhang (2014).

Figure 5. The RMB Real Effective Exchange Rate and China's Export Growth



Source: CEIC and the author's calculation.

Figure 6. The External Demand and China's Export Growth



Source: CEIC, OECD and the author's calculation.

In the future, China's good trade surplus may maintain, but the good trade surplus over GDP ratio would gradually go down. The major reasons include: First, along with the further appreciation of RMB's real effective exchange rate and the liberalization of domestic factor prices, the prices of China's good export tend to rise and the export competitiveness will be hurt; Second, after the burst of global financial crisis, the growth of world economy will remain relatively weak for quite a long time, which means that the external demand for China's export will continue to be weak; Third, the relative strengths of domestic economic growth, the strong RMB exchange rate, and the further opening up of domestic market would result in the faster growth of good import. Fourth, there are many longer-term structural reforms in train, such as beefing up government spending on social welfare policies, reducing import tariffs, lifting minimum wages, building 36m social housing units by 2016 and industrializing the Central and Western provinces to promote domestic demand, notably consumption. These structural reforms will mitigate a high precautionary motive to save and lower the ratio of household savings to national income. Fifth, it is increasing for China to rely on primary imports. As China continue to push

forward the process of industrialization and urbanization, the surge in Chinese demand for natural resources lead to China's trade deficit in primary products increase much more rapidly. China first lost its self-sufficiency in crude petroleum and soybeans in the early 1990s and is now a large net importer of both commodities; it has become a large net importer of cotton, coal and nonferrous metals, and is on the verge of becoming a net importer of corn. It is highly likely that in this next decade China will become a large net importer of food for the supply-demand equation has become very challenging. China is now the world's largest incremental consumer of many commodities. According to data from Bloomberg, in 2012, China accounted for 45.02% of total world consumption in cooper, 48.96% in tin, 44.51% in lead, 44.76% in aluminum, 47.96% in nickel, 60.05% in soybean, 40% in cotton and 12% in crude oil. Sixth, the growth of population is slowing down and ageing population is coming. According to the data from World Population Prospects: 2012 from the United Nations, the average growth rate of people age 65 and over is 2.7% between 1991 to 2000, down to 2.1% between 2011 to 2010 and will rose to 4.2% between 2011 to 2020. The number of people age 65 and over by 2020 will increase 57 million compare to 2010, the total dependency ratio in China will be in bottom value 37% in 2015 and then climb continuously.

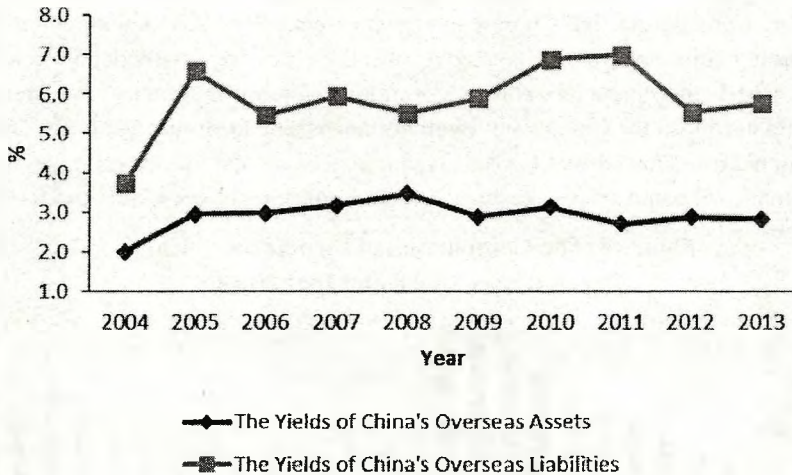
Service trade balance

China has been facing persistent service trade deficit since 1995, which shows that although China enjoys a comparative advantage in its manufacture sector, it suffers from a comparative disadvantage in its service sector. Considering that many sub-sectors of Chinese service sector are still monopolized by state owned enterprises such as education, medical care, telecommunication, railway, finance, etc., China needs a long time to raise the competitiveness of its service sector. However, it seems that Chinese government plans to accelerate the opening up of its service sector from now on, through the experiment of Shanghai Free Trade Zone and Qianhai Specialized Region. If China's service sector is more open without the relative increasing of competitiveness, underpinned by a burgeoning middle class, China's demand for foreign services, from tourism to education, to healthcare, will grow rapidly, we predict that the service trade deficit will continue to expand in the near future.

Income

Till the end of 2013, China's net international assets reached over USD 1.97 trillion. However, as an important international creditor, China has been facing a continuous negative investment income in the past twenty years except for 2007 and 2008. The reason behind the above weird phenomenon is that the investment returns for China's overseas assets have been much lower than the returns for foreign countries' assets in China. As shown in figure 7, the yields of China's overseas assets (the mean was 2.9% in the past decade) are significantly lower than those of China's overseas liabilities (the mean was 5.8% in the past decade) during the period from 2004 to 2013.

Figure 7. The Comparison of Investment Yields for China's Overseas Assets and Liabilities



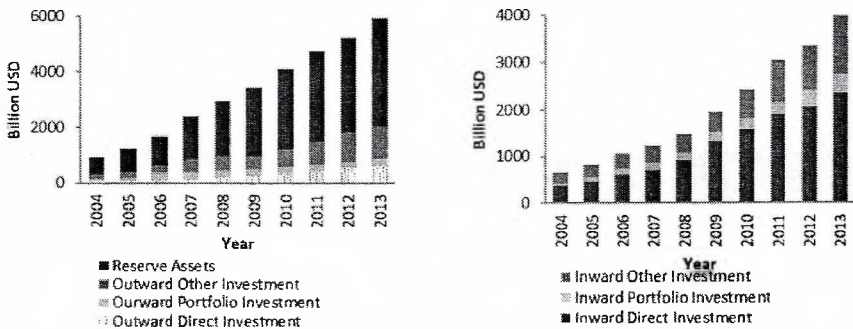
Source: CEIC and the author's calculation.

Note: To calculate the yields of China's overseas assets, we use the credit side of investment income from China's BOP divide overseas assets from China's IIP. To calculate the yields of China's overseas liabilities, we use the debit side of investment income from China's BOP divide overseas liabilities from China's IIP.

The investment yields gap between China's overseas assets and overseas liabilities could be attributed to the different asset allocations of China's outward investment and inward investment. As figure 8 demonstrating, in the past decade, about 67% of China's outward investment was reserve assets, which focused on low yield and high liquid assets such as United States treasury bonds, but about 61% of China's inward investment was direct investment, which was more risky but enjoyed much higher returns. Other than asset allocations, the experiences of investors could also explain part of the investment yields. Without doubt Chinese investors' experiences in international financial market lagged heavily behind international investors, as a result of financial repression and capital account regulation in China. Xiao and Chen (2013) stated that China's valuation loss reached USD 421 billion between 2005 to 2011 due to the yield gap between overseas assets and liabilities.

Considering that China's overseas assets are mostly denominated in foreign currencies, and China's overseas liabilities are mostly denominated in RMB, the appreciation of RMB against foreign currencies will cause valuation loss for China's net international assets. Deer and Song (2013)'s calculation showed that China's accumulative net capital losses on its international balance sheet reached USD 134 billion between 2005 to 2010.

Figure 8. The Comparison of Structures of China's Overseas Assets and Liabilities



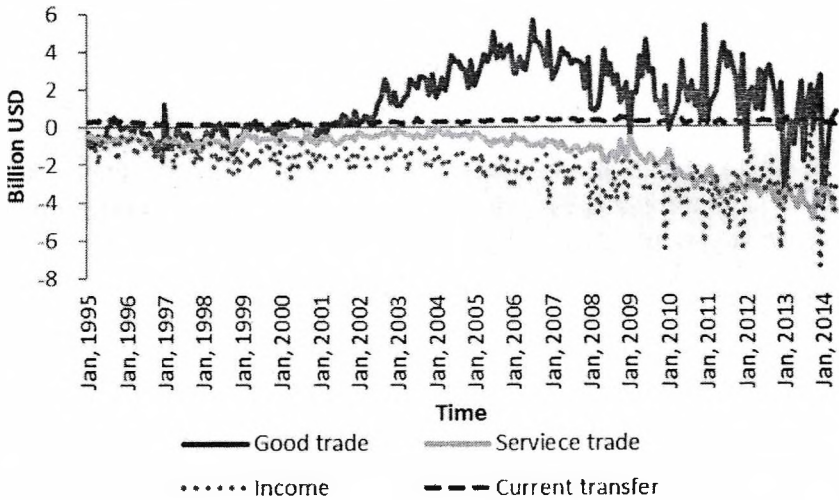
Source: CEIC.

Chinese government began to promote outward direct investment by Chinese enterprises after the burst of US subprime crisis, which could improve the investment yield for overseas assets in the future. However, Chinese government has been also expanding the quota for international investors' investment in domestic financial market. Considering the experience gap between domestic and international investors, we predict that China's overall investment income deficit may deteriorate first in the future, then begin to improve gradually when Chinese investors become more matured in international financial market.

Brief Summary

To sum up, in the future, China's good trade surplus tend to shrink, service trade deficit may increase, and investment income deficit may increase first (then decrease). Adding the items up, China's current account surplus to GDP ratio might continue to shrink in the future, which means that China's external imbalance will continue to improve. However, we could not exclude the possibility that China's current account surplus might turn into deficit under some circumstances. For example, if RMB exchange rate mechanism has been fully liberalized, a large capital inflow would push RMB to appreciate sharply against USD, which could result in a good trade deficit and a current account deficit. A good lesson for China is Brazil. As shown in figure 9, although Brazil is a famous commodity-exporting country, it faces persistent current account deficit. The reason is that the sum of its service trade deficit and negative investment income is much larger than its good trade surplus.

Figure 9. The Breakdown of Brazil's Current Account

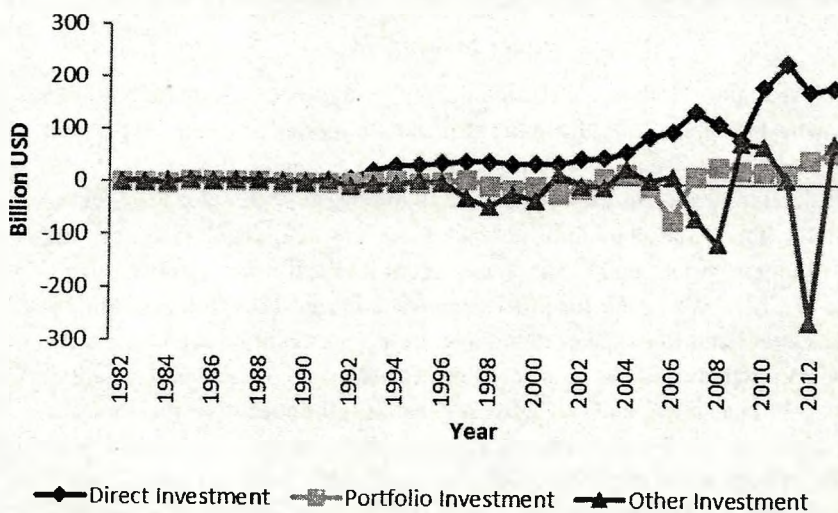


Source: CEIC.

III. The Evolution of China's Capital Account Balance

As can be seen from both figure 1 and figure 3, the volatility of China's capital account balance is much higher than that of current account balance. To analyze the evolution of China's capital account, we should also decompose the capital account into more specific items, and then analyze the evolution of each item respectively. Figure 10 demonstrates the three major components of China's capital account. From it we can see that direct investment flow is relatively stable, and other investment flow is relatively volatile. As table 1 illustrates, direct investment flow is not only the major contributor of China's capital account surplus but also the most stable type (the coefficient of deviation is only 166%), however other investment flow is the major component of capital outflow and also the most volatile type (the coefficient of deviation reaches 734%). The average level of portfolio investment flow is the smallest, but its volatility is higher than direct investment flow.

Figure 10. The Breakdown of China's Capital Account



Source: CEIC.

Table 1. The Descriptive Statistics about Capital Flows under China's Capital Account (Yearly data from 1982 to 2013)

Billion USD

	Max	Min	Mean	Standard Deviation	Coefficient of Deviation (100%)
Overall Balance	323 (2013)	-36 (2012)	53	88	166%
Direct Investment	232 (2011)	0 (1982)	57	65	114%
Portfolio Investment	61 (2013)	-68 (2006)	5	21	430%
Other Investment	80 (2009)	-260 (2012)	-8	58	734%

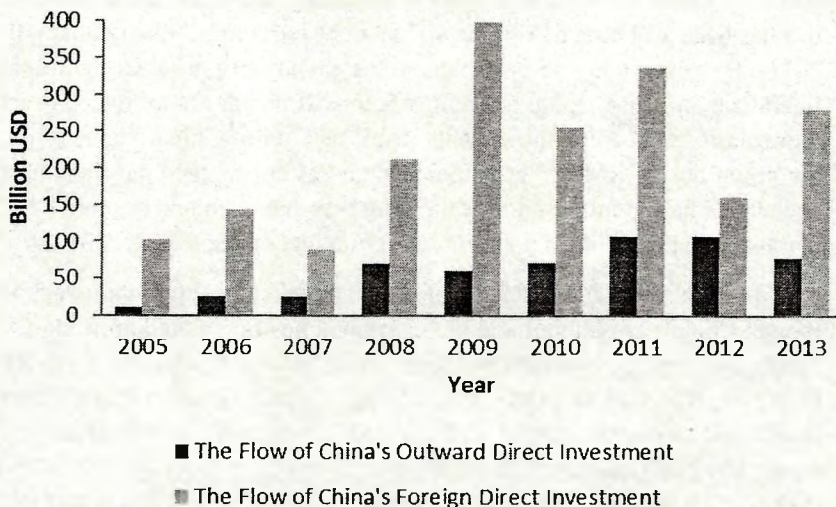
Source: CEIC and the author's calculation.

Note: The number in the brackets is the year when the max or min value occurred.

Direct Investment

As Figure 11 shows, although the outward direct investment has been growing fast since 2005, China is still a net importer of direct investment flows. However, we think that the net direct investment inflow to GDP ratio will decline further in the future. The major reasons include: First, along with the liberalization of domestic factor (such as labor, land, resources and environment) prices and the appreciation of RMB, the comparative advantage of China as a center for processing trade is vanishing; Second, as Chinese central and local government already began to cut or even cancel the past preferential policies to foreign enterprises such as income tax reduction, low land price, and other fiscal subsidies, the incentive for domestic capital to do institutional arbitraging through the so called round-tripping FDI has been declining; Third, Chinese enterprises, especially state-owned enterprises, have a strong need to secure the overseas supply of energy and commodities through merger & acquisition; Fourth, Chinese enterprises, especially private enterprises, have strong dual incentives to climb over the value chain by obtain the advanced technologies and management expertise, and to circumvent the trade protectionism by foreign countries through outward direct investment; Fifth, to slow down the accumulation and to diversify the use of China's foreign exchange reserve, Chinese government are actively encouraging domestic enterprises to invest abroad by granting them more foreign exchange loans through State Administration of Foreign Exchange (SAFE) directly or Chinese Development Bank (CDB) indirectly.

Figure 11. The Inward and Outward Direct Investment Flows of China



Source: CEIC and the author's calculation.

Note: We use the stock data from China's IIP to calculate the flow data, which includes the valuation effects.

Short-term investment (portfolio investment plus other investment)

It's very difficult to predict the direction of short-term capital flows facing China, because those flows are very volatile. However, if the net investment inflow tend to decline, it is very likely that the short-term capital flow will dominate the change of China's capital account balances in the future. As shown in table 1, the volatility of China's capital account will increase significantly. When Chinese economy behaves well and global financial market is calm, China may face huge capital inflow, which often accompanies economy overheating and asset bubbles. However, when Chinese economy is facing adjustment or crisis, or global financial market is in turmoil, China may face huge capital outflow, which often results in various kinds of financial crisis such as asset bubble crash, domestic currency depreciation, balance of payment crisis or debt crisis.

Till now China has not experienced a real financial crisis caused by the volatile international capital flows, thanks to capital account regulation. Although there are more and more leakages, China's capital account control has been still effective till now (Ma and McCauley, 2008; Otani et al., 2011). However, Chinese government has already begun to accelerate the liberalization of its capital account, which will inevitably introduce much more short-term capital movements inside and out of China. For example, the promotion of RMB internationalization has encouraged the short-term exchange rate and interest rate arbitraging between mainland onshore RMB market and Hong Kong's offshore RMB market (Zhang and He, 2012).

He et al. (2012) predicted that if the capital control was removed, although China's gross international investment position would grow significantly, the capital inflows and outflows would become much more balanced. However, Bayoumi and Ohnsorge (2013)'s research showed that if China liberalized its capital account, there would be huge net outflows from both equity and bond markets as domestic investors seek to diversify their larger domestic savings, and the stock adjustment of Chinese overseas assets will be around 15-25% of China's GDP. We agree more with Bayoumi and Ohnsorge (2013) other than He et al. (2012). First, Historically there has been a positive relationship between the expectation of RMB appreciation and net non-FDI capital inflows. However, as the substantial narrowing of the current account surplus and net FDI inflows, suggest to us that RMB exchange rate is moving closer to equilibrium, thus the expectation of RMB appreciation is near the end. This will reduce the incentive for more speculative, short-term capital inflows. Second, as shown in Table 2, the average return in overseas stock market is higher than that of China, people tend to allocate more money to abroad assets. According to the statistics from Bloomberg, the return of Capital of Chinese listed company from 2010 to 2012 is below to the U.S. and the world average. Considering the financial repression environment in China and the very limited choices for Chinese household to diversify their assets, when China's capital account has been liberalized, the risk for huge capital outflow will be much larger than the risk of huge capital inflow in the initial period of short-term capital account liberalization, and the former risk might trigger certain financial crisis in China.

Table 2. Return of Capital in different regions or countries (%)

Region	Year 2010	Year 2011	Year 2012*	Average
Latin American Economies	14.09	14.00	14.02	14.04
North America Economies	12.96	13.86	14.04	13.62
Eastern Europe Economies	12.06	12.38	12.47	12.30
Emerging Asia Economies	13.55	11.72	11.44	12.24
Western Europe Economies	12.49	11.55	10.95	11.66
Middle East and Africa Economies	11.33	11.46	9.16	10.65
Developed Asia Economies	9.00	9.31	7.49	8.60
World Average	12.21	12.05	11.56	11.94
China	11.57	11.60	11.57	11.58

Data Resource (Bloomberg)

Note (1) Return of Capital (ROC)=(net profit+ interest payments after tax)/(Shareholder's equity + liability with interest) ; 2. ROC in a region or country=ROC of listed companies registered in the region weighted average by stock market value. Data of year 2012 is the result of first quarter of year 2012.

Brief Summary

To sum up, on the one hand, the more stable long-term capital inflow (direct investment inflow) tends to shrink in the future, on the other hand, the more volatile capital flows (portfolio investment flows and other investment flows) tends to increase in the future. As a result, China's capital account balance would be much more volatile from now on. Both the scale and the direction of short-term capital flows would be more unpredictable and more difficult to deal with.

IV. The Policy Implications for China's Fading Twin Surpluses

The gradual fading twin surpluses on China's balance of payment would have important policy implications not only for Chinese economy but also for global financial market, especially U.S. government bond market.

Implication 1: Promoting the normalization or even overshooting of US government bond yields

The Fed and PBC are the two largest holders of US government bonds now. According to the TIC data issued by US treasury, PBC held over USD 1.28 trillion US government bonds by the end of June 2013. On the one hand, Fed has already begun to exit from quantitative easing (QE) by gradually cutting the purchase of long-term treasury bonds. On the other hand, as the shrinking twin surplus slows down the accumulation of China's foreign exchange reserve, the demand for US government bonds from PBC will also decline. Therefore, if the increasing demand from private investors could not fill the gap of the decreasing demand from both Fed and PBC, the market value of US government bonds will go down, and the yields of US government bonds will go up. The three rounds of QE once pushed the yields of US government bonds to historical low point such as 1.6% for ten years bonds, and the yield for 10 years US treasury bonds is around 2.8% by the end of June 2014. In the future, as the demand from official investors shrinking, the yields of US government bonds will continue to normalize. If the reduction of official demand is too fast, there is also some risk of overshooting of US government bond yields. The continuous rising of US government bond yields will resulting in the rise of other long-term interest rates, thus restraining the growth of consumption and investment in United States.

Implication 2: Terminating the one way appreciation process of RMB

The twin surpluses create the excess demand for RMB in foreign exchange market, pushing RMB to appreciate. The one-way appreciation expectation of RMB against other currencies pulls a large scale of short-term capital inflows in turn. Some of the arbitraging capital inflows take the form

of portfolio or other investment, pushing up capital account surplus. Other arbitraging capital inflows take the form of over-invoicing in export and under-invoicing in import, pushing up current account surplus. Zhang and Tan (2013) found that RMB appreciation or depreciation expectation is the most important driver of China's short-term capital flow. In other word, there is a mutual reinforcing relationship between China's twin surplus and RMB appreciation.

However, China's current account surplus to GDP ratio has been below 3% for 3 consecutive years since 2011, which shows that the current RMB exchange rate is very near to its equilibrium level. For the short term, along with the tapering off of US quantitative easing, the interest rate spread between China and the world will shrink. For the mid-term, China's inflation will be persistently higher than US's inflation. For the long term, US labor productivity growth may speed up if new technology revolution breaks out, and the structural transition of Chinese economy may drag down China's labor productivity growth. The above three trends all point out that the one way appreciation process of RMB against USD tend to terminate soon. If Chinese government accelerates the liberalization of capital account, the potential capital outflow might cause RMB to depreciate against USD in the future.

Implication 3: Alleviating the sterilization pressure of PBC, but creating new challenges for PBC's monetary policy

The persistent twin surpluses and PBC's intervention on the foreign exchange market cause huge injection of RMB through PBC's purchase of USD. To avoid the over liquidity in domestic market, PBC has to sterilize a large proportion of new created RMB. In the past ten years, PBC has done a heavy sterilization work through both issuing central bank bills and raising required reserve ratio (RRR) for commercial banks. On the one hand, PBC's sterilization enhanced the independence of monetary policy and restrained the rising of inflation and asset prices. On the other hand, the continuously heavy sterilization brought a huge cost not only to PBC itself (in the form of sterilization cost) but also to commercial banks (in the form of low yields for required reserve) and Chinese household (in the form of negative real deposit interest rate) (Zhang, 2012).

However, as the twin surpluses keep shrinking, the quantity of RMB injected by PBC through purchasing USD will decrease, which will not only alleviate the sterilization pressure for PBC but also create a new problem. Actually, in the past decade, the RMB injection through PBC's purchase of USD has become the most important channel for PBC to issue base money. Therefore, as a result of fading twin surplus, PBC must find a new way to issue enough base money to support economic growth. We predict that PBC may adopt the following measures to deal with this new challenge. First, PBC will stop using central bank bill as a major monetary tool in principle, because the cost of issuing central bank bill is relatively high for PBC and there is no need for heavy sterilization any longer in the near future. Second, PBC will lower the require reserve ratio to release liquidity into the market. Third, PBC will frequently use the new open market tools (such as repo, reverse repo, short-term liquidity operation (SLO) etc.) to adjust the liquidity level in domestic market. Fourth, PBC may re-introduce re-lending as a mid-term tool to inject new liquidity. For example, there is now some market rumor that PBC is planning to introduce pledged supplementary lending (PSL) as a mid-term monetary tool to adjust the market interest rate, and the basic logic of PSL is a market-oriented relending facility.

Implication 4: Posing new risks and challenges for PBC's capital flow management

The huge foreign exchange reserve resulting from persistent twin surpluses and the effective capital account control are two important buffers for Chinese economy to mitigate both external and internal negative impacts. In the future, the fading twin surplus would mitigate the accumulation of China's foreign exchange reserve. In some bad scenario, if the twin surpluses turn into twin deficit, China's foreign exchange reserve may shrink significantly in a short time. Moreover, considering that Chinese government plans to accelerate the liberalization of capital account, a potential huge outflow of domestic saving might create a huge capital account deficit, which would push RMB to devalue. The RMB depreciation expectation would result in a new round of capital outflow. If Chinese government intervenes on the foreign exchange market, the stock of foreign exchange reserve might decrease quickly. Although China's foreign exchange reserve is near USD 4

trillion now, it is still limited if compared to Chinese household and corporate savings, or China's M2 stock. Under some extreme scenarios, the foreign exchange reserve alone could not handle with the deterioration of capital outflows. Under such circumstances, it is quite probably that Chinese government would re-introduce some capital management measures again. That's the reason why Gallagher et al. (2014) suggested Chinese government should adopt a more gradual method to liberalize its capital account.

V. Conclusion

China has been facing both current account surplus and capital account surplus for over a decade. However, the twin surpluses would fade in the future due to some structural factors. The liberalization of domestic factors, the appreciation of RMB exchange rate and the weak external demand would push down good trade surplus. The opening up of Chinese service sector and financial market might expand service trade deficit and negative investment income. As a consequence, China's current account surplus tends to shrink in the future. The structural adjustment of Chinese economy would weaken the incentive for FDI, but the incentive for domestic enterprises to invest abroad would strengthen under the support of Chinese government, which would reduce the net direct investment inflow. The scale of short-term capital flow would increase, but they are very volatile. Therefore, China's capital account balance would face some uncertainty in the future. For example, capital account surplus may change into deficit in a short time.

The gradual vanishing of China's twin surpluses would generate some important policy implications for both global and domestic economy. US government might find it more difficult to finance their fiscal deficit, so they have to raise the yields of treasury bonds significantly. The one way appreciation process of RMB against USD would terminate soon, and it is possible that RMB depreciate against USD significantly in the future due to some internal or (and) external shocks. The sterilization pressure for PBC would be alleviated, however PBC should find new channel to issue base money. The fading twin surpluses together with the accelerated capital account openness may bring new financial vulnerabilities to Chinese economy, especially adding the risk of potential capital outflows.

To deal with the new impacts brought by the shrinking of twin surpluses, we provide the following policy suggestions for Chinese government. First, to avoid a large service trade deficit in the future, Chinese government should break the monopoly of SOEs in many service sectors and open these sectors to domestic private enterprises as soon as possible, which could enhance the competitiveness of Chinese service sector. Second, to improve the yields of Chinese overseas assets, on the one hand, Chinese government should continue to encourage domestic enterprises, especially domestic private enterprises to investment abroad; on the other hand, Chinese household's overseas investment should also be allowed and encouraged in a gradual and controllable pace. Third, Chinese government should continue to liberalize its capital account in a cautious and gradual way to avoid the breakout of financial crisis. At least the full openness of China's capital account should follow three prerequisites: RMB's exchange rate and interest rate mechanism should be largely liberalized; domestic financial market should be opened to domestic private players first; the existing vulnerabilities on domestic financial market should be detected and handled. Fourth, even after Chinese government liberalizes capital account, the short-term capital flow should still be closely monitored by PBC. If necessary, some price-based policy measures (such as Tobin tax or macro-prudential regulations) should be introduced to reduce the negative of volatile capital flows.

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