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Management of China's foreign exchange reserves: a case study on the state administration of foreign exchange (SAFE)

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Management of China's Foreign Exchange Reserves: A Case Study on the State Administration of Foreign Exchange (SAFE)

Yu-Wei Hu¹

Abstract:

With rapid economic growth and continuing economic integration with the outside world, China's foreign exchange (FX) reserves have witnessed considerable accumulation. As of 2009 it amounted to USD 2.4 trillion, accounting for just under 1/3 of the global FX reserves. Rapid growth of FX reserves at this speed has created various problems, e.g. inflationary pressure and huge holding costs. In this paper by analyzing the SAFE – Chinese governmental agency in charge of administering the FX reserves in the country, we review how Chinese FX reserves are currently managed and their performance so far. Then, in the light of these findings and borrowing literature from the current debate on Sovereign Wealth Funds (SWFs), several reform proposals are presented regarding how to better tackle the problems relating to these rapidly accumulated FX reserves in China. It is argued that the proposed reform options not only benefit China, but also help in addressing some wider issues (e.g. global imbalances), therefore contributing to a more harmonious global economy.

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The views expressed in this paper are those of the author and do not necessarily reflect the views of the European Commission. Any queries should be addressed to the author at: yu-wei.hu@hotmail.com.

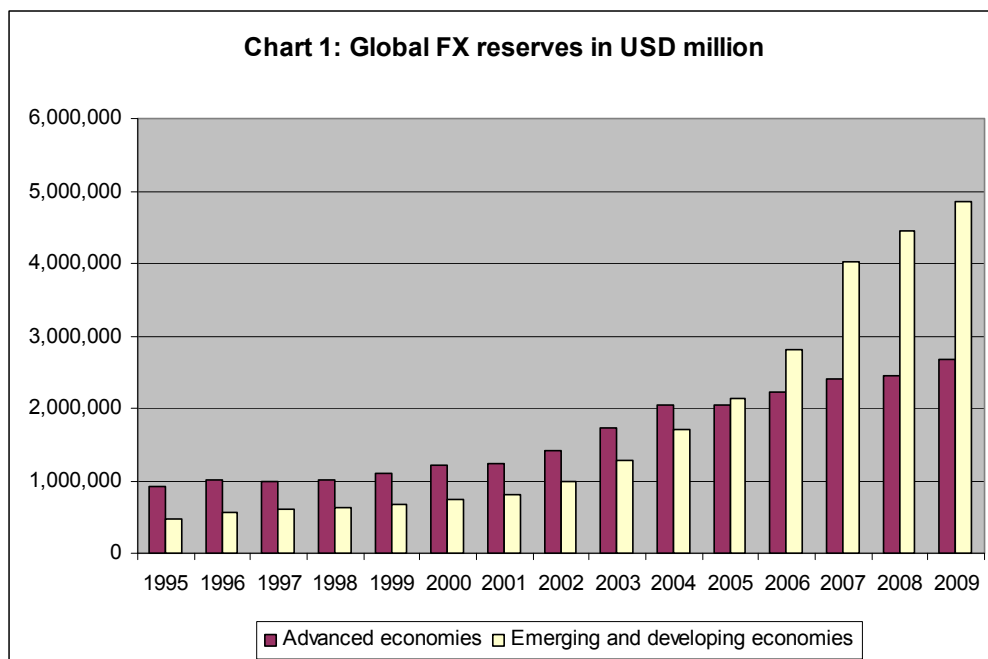
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1. Background

1.1 Global FX reserves

One major development in the global financial system over the past decade has been the rapid growth of foreign exchange (FX) reserves around the world. Chart 1 shows that the size of global FX reserves increased from USD 1.4 trillion (tr.) in 1995 to USD 1.9 tr. in 2000, and further to USD 7.5 tr.² in 2009. This is equivalent to a growth rate of 13.1% per annum.



Source: IMF COFER (Currency composition of official foreign exchange reserves). 2009 data refer to first 3 quarters.

Several factors are conducive to the rising FX reserves.

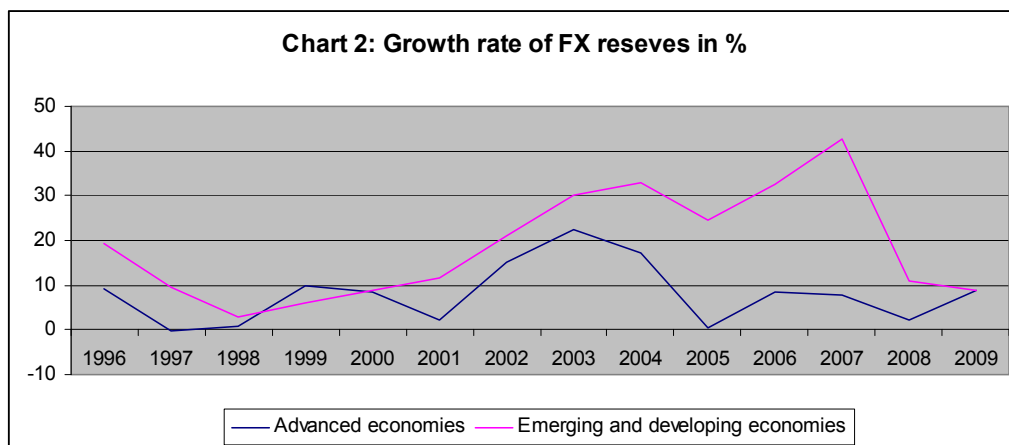
- Precautionary reasons. After the financial crisis in 1990s, many emerging economies learned a painful lesson, i.e. the importance of maintaining a surplus balance, so as to protect their country from volatile capital flows and subsequent economic crisis³; countries falling under this category include Korea, Thailand, and Singapore. Studies show that large FX reserves have helped some Asian countries to perform better than developed ones during the recent financial crisis (Lto, 2009).
- The rising price of natural resources, notably oil. Although the oil price has been volatile over the past decades, the general trend is that it has been increasing, particularly in the early 21st century; countries falling under this category include Botswana (diamond), Russia (oil) and Saudi Arabia (oil).

² It refers to the first 3 quarters of 2009.

³ Research provides evidence supporting this argument. For example Obstfeld et al. (2009) argues that for those countries adopting managed exchange rate policy, accumulation of FX reserves to a certain level is necessary to avoid financial instability, particularly when those countries feature fragile banking sector and currency mismatch.

- Managed exchange rate policy. In some countries the exchange rate is managed, and it has been argued that this practice in reality creates an unfair competitive advantage for its domestic exporting industries in the global market.

The above reasons partly explain why FX reserves have been accumulated in a much faster pace in many emerging economies than developed countries, in that some of them are either national resource rich countries, or have a strong export-oriented manufacturing industry. Chart 2 indicates the historical trend of FX accumulation by groups of countries. It is clearly shown that emerging economies accumulated FX reserves at a much faster rate than that of advanced economies, particularly during the period between 2000 and 2008 (i.e. post 90s financial crisis). As a whole, the former started to exceed developed countries in the year of 2005 in terms of size of FX reserves⁴.



Source: IMF COFER (Currency composition of official foreign exchange reserves). 2009 data refer to first 3 quarters.

According to IMF's *Balance of Payments Manual*, reserve assets are defined as follows:

Those external assets that are readily available to and controlled by monetary authorities for direct financing of payment imbalances, for indirectly regulating the magnitude of such imbalances through intervention in exchange markets to affect the currency exchange rate, and/or for other purposes.

This definition indicates that the purposes of holding FX reserves are mainly for meeting external imbalances. However, central banks in emerging economies as a whole have accumulated foreign reserves 60% higher (approximately USD 3 trillion) than what is needed for the traditional purposes of meeting short-term external debts (Bank of England, 2008).

Indeed governments in many emerging economies were already aware of this issue, so (although often together with other considerations) started to invest part of their excess FX reserves (i.e. those reserves considered unnecessary for traditional needs of paying external debts) in a more diversified manner. For example, the Government of Singapore Investment Corporation (GIC) was created in 1981 and was authorized to invest the reserves surplus

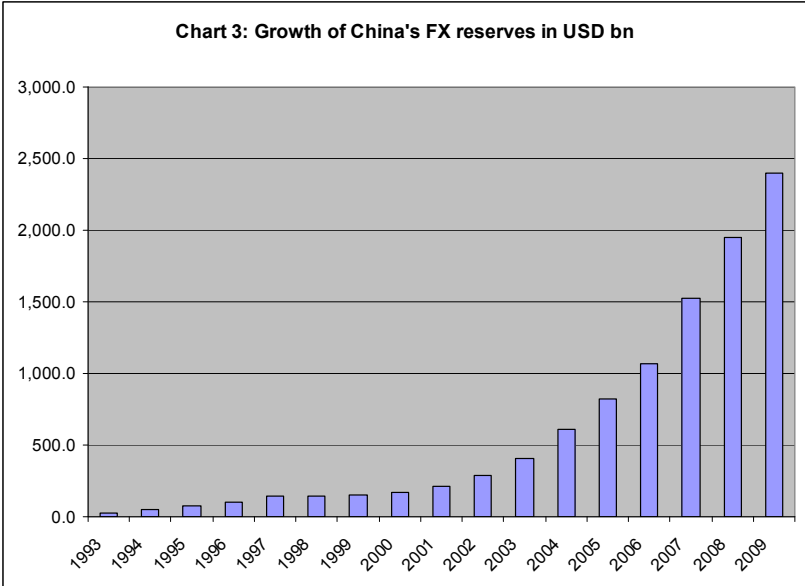
⁴ It is worth noting that some Eastern European countries are still running deficit, while some traditional surplus countries (e.g. Germany and Japan) are still in surplus.

primarily in foreign markets, with the purposes of diversifying FX reserves investment and increasing returns.

1.2 Chinese FX reserves

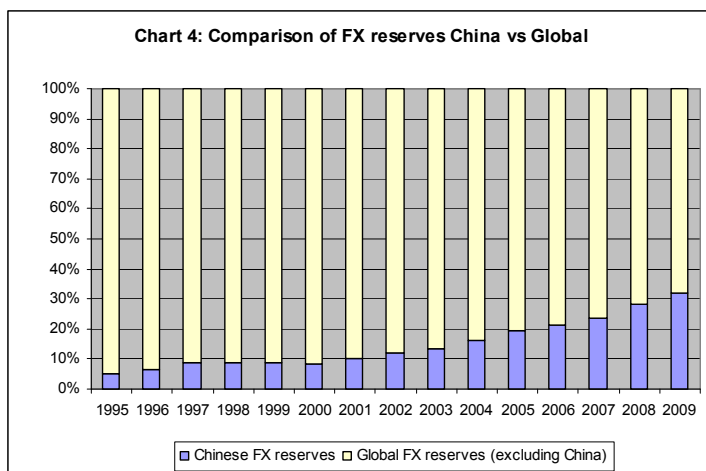
Chinese FX reserves have increased rapidly over the past, and such trend is likely to continue in the foreseeable future. As shown in Chart 3, in 1993 the size of Chinese FX reserves was only about USD 20.1bn, but this figure increased gradually to USD 165.6 bn in 2000, and this momentum has been accelerating since then. As a result, Chinese FX reserves amounted to USD 2.4tr. as of December 2009, accounting for 31.9% of global FX reserves in 2009 in comparison to 5.3% in 1995 (Chart 4). Meanwhile, the Chinese FX reserves were approximately 48.9% of the country's GDP in 2009,

An increase in Chinese FX reserves has arisen from sizable surplus in both current and capital accounts, while in many other emerging economies, the increase mainly reflects surplus in the current account. Surplus in the current account in China is not surprising given that the country has been continuously running trade surpluses since the 1990s (except for 1993), and the level of the surplus got larger in 2006⁵ and onwards – partly thanks to joining the WTO in 2001. It is reported that as of 2009 China exceeded Germany, becoming the world's largest exporter (Xinhua 2009). FDI inflow has also been far more than capital outflow in China, not only due to the strict capital control imposed by the Chinese government. Furthermore, since 2005 when the Chinese government announced to implement the new, more flexible exchange rate policy (i.e. allowing for gradual appreciation of RMB), it effectively induced increased amount of foreign capital inflow to China, and a large proportion of it was reported to be speculative international capital.



Source: SAFE

⁵ In 2006 the trade surplus amounted to USD 177.5bn, accounting for 10.1% of total import and export, and 6.6% of GDP, while in two years time in 2008, the figure of trade surplus increased considerably to USD 298.1bn (NBS 2009). <http://219.235.129.58/reportYearQuery.do?id=2100>



Source: IMF and SAFE.

1.3 Structure and main contributions of this research

How to manage the rapidly growing FX reserves has become a big challenge and somehow a burden for the Chinese authorities.

In this paper we focus on the central questions, i.e. how Chinese FX reserves are currently managed and the possible solutions available. To achieve this objective, we first in Section 2 conduct a detailed overview of the State Administration of Foreign Exchange (SAFE), i.e. the Chinese governmental agency in charge of administering China's FX reserves. In this context several key issues are addressed, e.g. investment strategy of SAFE. Section 3 deals with the question of why growing public attention on SAFE has emerged recently. Then in the light of the analysis above, in Section 4 some reform proposals are presented concerning how to improve current investment strategies of SAFE. Section 5 concludes the paper.

The main contributions of this paper to current literature are as follows:

Firstly, despite great and growing interest in SAFE, this institution has so far remained as one of the most secretive reserve managers in the world. Therefore we aim to provide an overview on various aspects of this institution, e.g. organisational structure, investment strategies, so as to help the reader to understand this low-profile but important institution.

Secondly, the debate on SWFs has intensified over the past couple of years, and we found that SAFE (although not a SWF in the strict sense) could benefit from the current debate on this issue, particularly given that we recommend the formation of another SWF under SAFE in order to better manage the assets professionally. In this context we will draw on some useful experiences from the current SWFs literature.

Thirdly, based on our understanding and analysis on this issue, reform proposals are presented, aiming to address concerns of both Chinese and foreign observers. The solutions will be a wider range of choices, different from current literature which may only focus on dealing with one aspect of the problem.

2. SAFE in detail

SAFE is a subsidiary department under China's central bank, namely People's Bank of China (PoBC). However given the unique nature of SAFE, this institution is treated as equivalent to a vice-ministry agency. Therefore the head of SAFE has always been a deputy governor of the PoBC too.

The legal foundation of SAFE relies on the Law on People's Bank of China 1995, in which it is specified that the PoBC owns, administers and manages the country's foreign reserves. In this context, PoBC delegates the tasks of administration and management to SAFE.

According to the Overview of Management of China's Foreign Reserves (SAFE 2009), SAFE sticks to three principles concerning portfolio management, i.e. safety, liquidity and value appreciation. It is particularly stressed that maintaining the safety of China's foreign reserves is the utmost task of SAFE.

2.1 Organisational structure

SAFE is headquartered in Beijing, and the head office in Beijing currently consists of eight departments as follows:

- Department of General Affairs (i.e. Policy and Legal Department),
- Department of International Settlement
- Department of Management of Current Account
- Department of Management of Capital Account
- Department of Supervision
- Department of Reserves Management
- Department of Personnel
- Department of Science and Technology

In addition, SAFE has 34 local bureaus and 2 foreign exchange administration centres across the country (in Beijing and Chongqing, respectively). Staff in local bureaus are mainly responsible for dealing with local needs on foreign trade and currency related issues, while management of reserves is centralised in Beijing.

Meanwhile, SAFE has four offices abroad, i.e. in Hong Kong, Singapore, London and New York, where the offices in London and New York have their trading desks. The more well-known one is the HK office, which was established in June 1997, just one month before the hand-over of Hong Kong's sovereignty to mainland China by the British government with the aim of supporting and promoting development of HK's financial market. Indeed during the period of Asian financial crisis in late 1990s, it was reported that this office played an important role in defending the value of the Hong Kong dollar.

The SAFE's HK office is a private company, commonly known as SAFE Investment (or Hua An in Chinese). SAFE did not publicly admit existence of this HK subsidiary until 2008. One

reason leading to the final admittance of the existence of SAFE Investment might be that various transactions conducted via this company in 2007/8 aroused great public and media attention, therefore making it difficult for the authorities to deny it.

Among the eight departments in SAFE Beijing, the Department of Reserves Management is in charge of managing and investing the country's foreign reserves. The department composes of up to 20 divisions, each division being arranged by function, e.g. asset allocation, risk management, accounting, and compliance, etc. Meanwhile, for the divisions responsible for asset investment, tasks are further delegated to different units, largely by type of assets, e.g. bond, money market, and regions, e.g. U.S. and Europe. This department employs approximately 400 globally, of which 350 are based in Beijing, and others in overseas offices.

2.2 Investment strategy

Investment strategy of SAFE has been traditionally conservative, which is not surprising given that as a reserves manager, the main concerns are safety and liquidity. However, in the light of rapid accumulation of FX reserves in China, particularly over the past 10 years, SAFE has been becoming gradually more active. There are two main reasons for it.

1) Conservative management of the reserves creates huge opportunity cost⁶, if they continue to be invested in low-risk-low-return government bonds.⁷

2) SAFE has been facing strong competition from its domestic rival, i.e. CIC over the past 2 years. It imposes significant pressures on the management of SAFE to increase return.

So far, SAFE mainly relies on its in-house team to manage and invest the reserves, i.e. staff from the Department of Reserves Management as noted above. However, since the late 1990s, SAFE has started to outsource some of its assets to external professional institutions, but its amount was reported to be very small.

In addition, SAFE's overseas offices have been able to conduct foreign trading. However, it is understood that staff in these offices mainly replicate portfolios of the head office in Beijing while benchmarked to pre-determined, strategic asset allocation. The exception might be the HK office, which has become more aggressive in recent years, i.e. investing in high risk and high return assets.

2.3 Asset allocation

China is one of the very few major countries which does not disclose portfolio composition data of its FX reserves. Different sources, however, have estimated such information. The market consensus is that by type of currency 60-70% of the reserves are invested in US

⁶ Opportunity cost refers to the cost related to the suboptimal choice. In our paper it means higher returns could be obtained if investment were more diversified and under the optimal scenario.

⁷ Table 3 gives hypothesized overall returns of Chinese FX reserves. In comparison, according to MSCI, the nominal return in the U.S dollar term on one-year AC World Index for 2007 was 14.46%, while the five-year return was 9.32%, and the ten-year return 6.30%.

dollars (Morrison and Labonte, 2008; Cappiello and Ferrucci, 2008)), 30-20% in Euro, and 10% in British pounds, Japanese yen and others (Zhang and He, 2008).

Regarding composition data by type of asset, there is also no official data. However, we may be able to gather some information from secondary sources. For example, the US government conducts a survey of foreign holders of US securities by country; such data is annual and accessible via their website. It is worth noting at the outset that although the surveyed data does not distinguish foreign holdings by government or private sector, we believe that in the Chinese case the data should reflect (to a great extent) the overall actual composition of SAFE's portfolio for several reasons.

1) The capital account in China is still not liberalised, so capital outflow is strictly controlled by the government, albeit except for the Qualified Domestic Institutional Investors (QDII)⁸ and some state-owned enterprises (Setser, 2008). However, the total quota allowed for the QDII is quite small when compared to the overall size of Chinese reserves, i.e. USD 57 bn vs USD 1.9 tr. as of end of 2008 (only 2.9% of total). Furthermore, for the allowable QDII quota, the domestic licensees might not use up their entitled amount of quota, for example because Chinese institutions are not familiar with the markets, thus prefer to invest abroad cautiously and gradually. As a result, the unused capital is still in the hands of SAFE.

2) Although the portfolio composition of SAFE's remaining funds (i.e. those invested outside of US or US dollar denominated assets) is not necessary to be the same as that in the U.S, there are reasons to believe that it should not differ significantly from the U.S. portfolio. This is because investing in non US dollar assets is mainly for diversifying currency risk, so together with the traditional risk aversion of SAFE (as reviewed in the previous section), it is likely that non US dollar assets are also concentrated on government or sovereign bonds⁹. A portion of the portfolio may be invested in high risky assets but the amount is expected to be small.

SAFE investment in the U.S. market

Table 1 gives the latest data for the top 3 countries in terms of holding value of U.S. securities.

It shows that as of June 2008 China as a whole held an amount equivalent to USD 1.2 tr. of U.S. securities, accounting for 11.7% of the total U.S. securities held by foreigners, while Japan was still the largest holder by value (although only slightly higher than that of China). Among the five broad groups of asset category, China has favoured long term debt, particularly long term treasury bonds and long term government agency bonds; the latter two almost accounted for 90% of the total investment, i.e. 43.3% and 43.7%, respectively as shown in Table 2.

The heavy investment in US government agency bonds (e.g. mortgaged bonds) might explain why the Chinese government was so worried about the way in which the U.S. government

⁸ Chinese government started to allow approved institutional investors to invest abroad in 2006. As of end 2009 69 domestic institutions had permission to invest up to USD 65 bn abroad. So far those licensed institutions are mainly commercial banks, insurance companies and investment funds.

⁹ The headline of FT on 27 January 2010 notes that "Athens turns to Beijing for bond sale", but it was reported that China already held a significant amount of Greek bond, so had no interest in purchasing more.

bailed out Fannie Mae and Freddie Mac in 2009¹⁰. In comparison, the largest holder (Japan) had relatively the same amount of U.S. Treasury bonds, but with much lower investment in the U.S. government agency bonds. Meanwhile Japan invested more than China in higher risky assets, i.e. equity and long term corporate debts.

China is currently the largest holder of the U.S. treasury securities. As of November 2009 China held an amount equivalent to USD 789.6 bn of the U.S. treasury securities, in comparison to USD 757.3 bn for Japan (US Department of the Treasury 2010).

Table 1: Foreign holders of U.S. securities by country (top 3); in 2008 and USD bn

	Total	Equity	LT treasury debt	LT gov't agency debt	LT corporate debt	ST debt
Japan	1,250	199	568	270	149	66
China	1,205	100	522	527	26	30
UK	864	376	45	26	394	24
Total	10,322	2,969	2,211	1,464	2,820	858
China as of % of total	11.7	3.4	23.6	36.0	0.9	3.5

Source: U.S. Department of the Treasury.

Note: the data refers to the end of June.

Table 2: Foreign holders of U.S. securities by country (top 3) in % of its own portfolio; in 2008 and USD bn

	Total	Equity	LT treasury debt	LT gov't agency debt	LT corporate debt	ST debt
Japan	100.0	15.9	45.4	21.6	11.9	5.3
China	100.0	8.3	43.3	43.7	2.2	2.5
UK	100.0	43.5	5.2	3.0	45.6	2.8
Total	100.0	28.8	21.4	14.2	27.3	8.3

Source: U.S. Department of the Treasury.

Note: the data refers to the end of June.

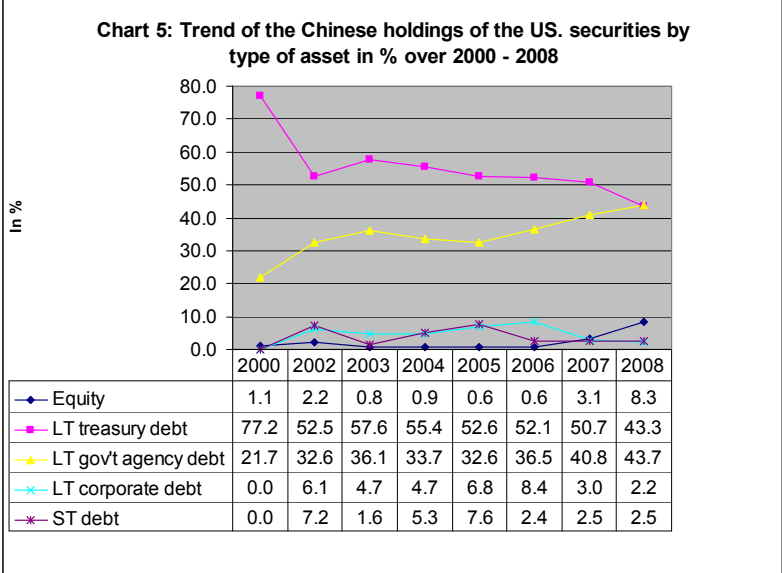
Recent trend of SAFE investment

For Chinese (FX) investment in the U.S. market, the pattern has undergone gradual changes over the past decade. As shown in Chart 5, in 2000 77.2% of assets were invested in U.S. treasury bonds, but in 2008 the proportion was reduced to 43.3%, almost a half reduction over the 8 years period¹¹. In the same period, investment in the U.S. government agency debt, however, increased significantly. It may reflect the changing behaviour of the SAFE, i.e. keep investing in safer assets but aiming to earn a higher return than that of the U.S. treasury bonds.

¹⁰ See the same quote of the Premier Wen Jiabao's comments on Chinese holdings on U.S. assets (Xinhua 2010), referred to later in Section 3.1.

¹¹ However, it was reported that this trend might not be the truth, since China may have continued investing (as usual) in the US. treasury bonds via other international financial centres, e.g. London, as well as other means (Yan and Green 2008; Johnson 2010).

In addition, equity investment has witnessed a dramatic increase as shown in Chart 5¹². Although as of 2008 only 8.3% of the portfolio was invested in the U.S. equity market, much lower than what was invested in the U.S. treasury and agency bonds, the magnitude of the increase over the past 8 years was significant (i.e. almost an eight times increase). This observation again is consistent with the overall changing investment strategies of the Chinese government (i.e. SAFE).



Source: U.S. Department of the Treasury.
 Note: Data refers to the end of June.

3. Why has SAFE been receiving increasing attention?

SAFE has been recently receiving increasing attention both within China and abroad. Various factors have contributed to this.

3.1 In China

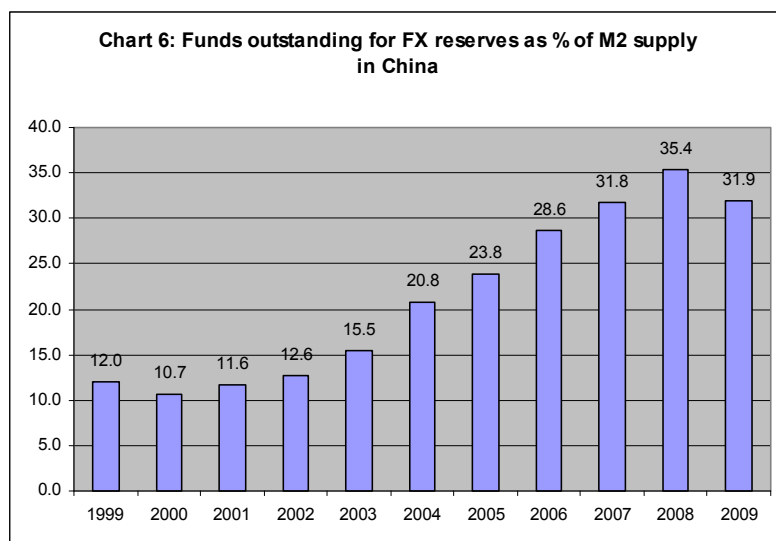
- Rising assets and associated problems

As mentioned earlier, AUM (asset under management) of SAFE stood at up to USD 2.4 tr. by 2009, and the rapid growth is expected to continue in the foreseeable future. In this context, the monetary authorities in China have been facing several serious problems, particularly with reference to monetary policy.

Firstly, PoBC has had to increase monetary supply (significantly) in response to rapid accumulation of FX reserves. Chart 6 below shows that over the period between 1999 and 2009, Chinese monetary authorities witnessed rapidly increased credit creation due to accumulation of FX reserves. This in effect subjects monetary policy to foreign exchange

¹² It is noted that CIC started overseas equity investment in 2007 and 2008, but the amount was rather small, as highlighted in Chart 7.

policy in China, thereby creating inflexibility or difficulty in achieving intended monetary policy by PoBC.



Source: People's Bank of China (PoBC)

Secondly, PoBC has been using the sterilization tool to alleviate the inflationary pressure¹³ arising from an increase in monetary supply. However due to inefficiency and imperfection of the Chinese financial markets, such a tool does not always achieve its aimed policy objectives. The recent asset bubble in housing and stock markets in China has been argued to be related to excessive monetary supply (in which case increased FX reserves play a role indirectly).

Thirdly, there has been observed an increased incidence of double settlement of exchange in China. It leads to increasing liquidity in the market and further inflationary pressure. In view of this issue, SAFE has recently issued several notices aiming to crack down on such behaviour by both enterprises and individuals.

Therefore, against the background that the Chinese economy is facing greater inflationary pressure, and indeed the Chinese economy which was becoming easily overheated in the past, the Chinese policy makers have been increasingly concerned about the role played by rapid accumulation of FX reserves in this context.

- Low return, particularly against the background of the weakening US dollar

Again there is no official data on performance of SAFE's investment. However, given the investment portfolio as we analyzed in the above section, together with accessible market data on return by asset category, we calculated the estimated portfolio returns of the Chinese holdings on the U.S. assets during the period 2000 – 2008. It is shown in Table 3 that the period average return in USD value was above 5% in nominal term. The exception is the year of 2008, where the nominal return was only 1.9%, largely due to the market downturn. If inflation is considered, the real return would be -1.9% for the year of 2008, and 2.1% for the whole observation period.

¹³ It is noted that due to closed capital account and arguably excess labour pool in China the inflationary pressure might be less severe than what is thought.

Table 3: Estimates on the return of SAFE investment in the U.S. market; in %

	In USD value		In RMB value	
	Nominal term	Real term	Nominal term	Real term
2000	6.5	3.1	6.5	6.1
2002	5.1	3.5	5.1	5.9
2003	5.4	3.1	5.4	4.2
2004	5.1	2.4	5.1	1.2
2005	5.0	1.6	2.5	0.7
2006	5.6	2.4	2.5	1.0
2007	5.6	2.8	-0.3	-5.1
2008	1.9	-1.9	-5.2	-11.1
Average (00-08)	5.0	2.1	2.7	0.4
Average (00-07)	5.5	2.7	3.9	2.0

Source:

1. Portfolio data: The U.S. Treasury Department

2. Return data:

Equity (Yield on the Dow Jones Industrial Average): Securities Industry and Financial Services Association)

LT treasury debt (Market yield on the U.S. treasury securities at 20-year constant maturity): Federal Reserve Bank

LT government agency debt (Conventional mortgages): Federal Reserve Bank

LT corporate debt (Moody's yield on seasoned corporate bonds – all industries): Federal Reserve Bank

ST debt (90-day AA financial commercial paper interest rate): Federal Reserve Bank

Exchange rate: People's Bank of China

Inflation rate (U.S.): The U.S. Department of Labour

Inflation rate (China): National Bureau of Statistics, China

Given that liability associated with the excess FX reserves are domestic, it is worth knowing whether the return is satisfactory in Chinese currency. Table 3 again provides such information. Unfortunately the result is discouraging. In other words the real value in terms of Chinese RMB is much less than that in USD value. The period-average return after consideration of both inflation and currency risk (i.e. RMB appreciation) is only 0.4%, although the adjusted return in nominal terms is higher at the level of 2.7%. The worst period is 2008, in which year the real return was estimated to be as low as -11.1%.

However, we may view the year of 2008 as an exception or outlier. Therefore if we exclude this year, the results are improved. The nominal return was 5.5% in USD value and 3.9% in Chinese RMB, while the real value was 2.7% and 2.0%, respectively. It is worth noting that Chinese SAFE investment is in different currencies, therefore the results herein might not reflect the whole and true picture.

In either case, it is interesting and important to notice the big impact of currency risk on the real return of SAFE investment. In the long run, Chinese RMB is expected to continue its appreciation, not only because economic theory suggests that developing countries witness a stronger currency while catching up with their economic development, but also because of repeated statements by senior Chinese officials to making the exchange rate more flexible in the long term (*de facto* plans to appreciate RMB).

Nevertheless, SAFE's investment over the observation period in the U.S. features unsatisfactory return, and such performance has been subject to both investment risk and currency risk. Potential loss (although maybe not yet realized) has been becoming more noticeable, therefore increasing attention/criticism within China in recent years. For example, in response to questions in a press conference, China's premier Wen Jiabao repeated his concern about the safety of China's investments in the U.S. in March 2010 (Xinhua 2010), by saying:

"Last year I said I was concerned about the safety (of our U.S. assets). This year I will say it again."

In addition to the Chinese leaders, people from other groups of society (among others, academics and journalists) have also been questioning the performance of SAFE (despite its secrecy regarding its investment). It is particularly the case in recent years, since it was reported that several new investments of SAFE on risky assets abroad have incurred significant losses.

- Competition between SAFE and CIC

In September 2007 China established its major sovereign wealth fund (SWF), the Chinese Investment Corporation (CIC). The Chinese government injected an amount equivalent to USD 200bn to the CIC. The fund was originally from the FX reserves, but swapped with special bonds of RMB 1.55 tr. issued by the Ministry of Finance (MOF).

Regardless of the highly debated question, i.e. whether CIC's investment is politically driven or purely commercially oriented¹⁴, CIC does have strong pressure on returns¹⁵, and aims to be a leading global asset manager. In this context, CIC has been aggressive since its inception in terms of both investment and international presence. For example, it conducted several major overseas investments, e.g. on Blackstone and Morgan Stanley in 2007. Meanwhile, they have been emerging as the first official SWF in China, therefore actively representing China in the international community, notably in the International Working Group of SWFs.

All of these developments are in direct competition with SAFE because CIC may request the State Council for agreement to transfer more FX reserves from SAFE¹⁶. Indeed in theory the Chinese government may assign the task of traditional FX management to SAFE, while that of investment of excess FX reserves to a SWF (i.e. CIC). Several studies show that the excess FX reserves in China could be as large as USD 600bn as of 2007 (Cheung 2008), and up to USD 1.5 tr. as of 2009¹⁷. Recent creation of CIC looks likely to be consistent with this

¹⁴ This issue (which is not the scope of this paper) has been extensively addressed in the literature, e.g. Hu (2008), Martin (2008) and, Zhang and He (2008).

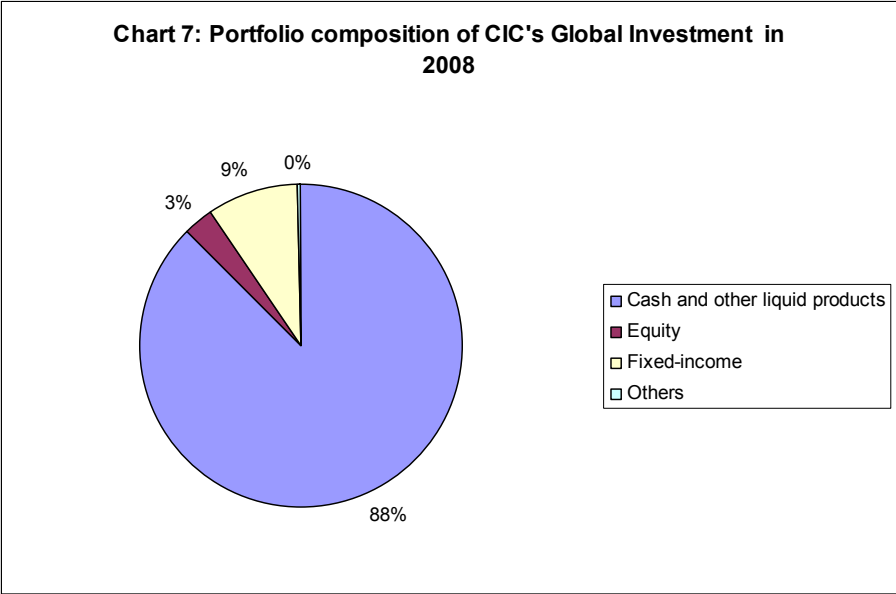
¹⁵ The reason is that by arrangement CIC is responsible for the payment of interest on the RMB 1.55 tr. bond insurance. According to Mr. Lou Jiwei (Chairman of the CIC), the interest cost was approximately RMB 300m per day. It seems that the initial injection of USD 200bn was treated as capital rather than debt, since the 2008 annual report of CIC states that "CIC pays dividend out of its profit to the shareholder (i.e. state), and such dividend payment is aimed to cover the interest incurred from the RMB 1.5 tr. bond".

¹⁶ Some reports recently note that CIC was likely to receive a further USD 200bn from the FX reserves, but this was allegedly denied by the State Council. A new request to receive USD 100bn has been submitted. <http://oxfordswfproject.com/2010/03/30/council-rejects-cics-request-for-200bil>.

¹⁷ We assume that excessive FX reserves are equal to the total amount minus the sum of short-term foreign debt and import bills for 6 months according to Feldstein (1999).

hypothesis, i.e. separate management of the growing Chinese FX reserves. Therefore if CIC could prove to the Chinese leaders that they are more capable of managing FX reserves than SAFE, it is likely that more assets would be transferred from SAFE to CIC, as indicated by Chairman Lou of CIC in a public event.

Statistics show that CIC achieved a return of 6.8% in nominal terms in 2008. In comparison it was 1.9% for SAFE, although it was argued that the satisfactory performance of CIC in 2008 was unintended, and mainly due to luck, rather than superior investment skills (Ashby and Clark 2010). It might be true, as return on global investment (accounting for 50% of CIC's asset) was -2.1% in 2008 (albeit still higher than that of many other SWFs), while that on other investment (mainly on domestic banks¹⁸ and accounting for the remaining 50% of CIC's asset) were high so that it compensated the loss incurred from international investments.



Source: CIC Annual Report (2008).

In addition to the possibility of higher return by CIC, we believe that CIC has another major advantage when compared to SAFE, namely a more transparent organizational structure, or at least strong, public commitment to be as transparent as many other SWFs in the future. For example, CIC recently released its first annual report (2008), which although does not include much information, but is a good start in the right direction given its short history.

However, as far as SAFE is concerned, opacity is the major hurdle limiting SAFE's capacity in competing with CIC, particularly on the issues of large overseas investments (see below sections), if SAFE keeps its existing organizational structure unchanged¹⁹.

¹⁸ CIC's investment in domestic banks is mainly via its separate subsidiary China Central Huijin Investment Company, which was merged to CIC from SAFE since CIC's inception in 2007.

¹⁹ The latest Linaburg-Maduell Transparency Index (of global SWFS) shows that CIC occupied the 16th place in the league table, while SAFE 37 out of the 45 SWFs as of Q3 2009.
<http://www.swfinstitute.org/research/transparencyindex.php>

3.2 Abroad

- Large and rapidly rising assets and associated concerns

A high concentration of SAFE's portfolio in U.S. government bonds also raises concerns in the U.S., on the grounds that the Chinese government might be able to use the position of a large creditor as leverage against the national interests of the latter (Morrison and Labonte 2008). However, this argument holds in theory, while in practice it is not achievable or at least not desirable for both the Chinese and U.S. governments, as demonstrated by the comparative statistics below:

1) Total outstanding of U.S. treasury securities

As of 2008 (2009), the total outstanding of U.S. treasury securities was USD 10.0 tr. (USD 11.9 tr.), of which USD 5.2 (USD 6.9 tr.) were marketable (FMS 2009), which dwarfs the Chinese holdings of this asset category (i.e. USD 0.5 tr. as of 2008).

2) Issuance of U.S. treasury securities

The U.S. government issues treasury securities on a large scale annually. Latest statistics from SIFMA show that as of 2009 the U.S. government issued marketable securities at an amount equivalent to USD 8.6 tr., which was also much larger than the total amount of U.S. treasury securities held by Chinese investors.

3) Daily trading volume of U.S. treasury securities

The daily trading volume of U.S. government securities by primary dealer was USD 434.3 bn as of January 2010, while this figure was USD 66.7 bn for federal agency bonds (excluding mortgage-backed securities), USD 426.6 bn for mortgage-backed securities and, USD 146.0 bn for corporate securities (FED. 2010).

While it is admitted that China as a whole holds an amount of U.S. treasury bonds larger than the average daily trading volume (USD 522 bn vs USD 434.3 bn), in reality we would not expect that the Chinese government sells all (even a large proportion of) holdings within one day (if technically possible), since a sudden sale of US dollar assets *en masse* by SAFE is not in the interest of China at all²⁰.

- Becoming more aggressive

SAFE investment has been becoming less conservative and in fact more aggressive than many other central banks in this context (Setser 2008). This trend can be observed from our earlier discussion on the portfolio of China's investment in U.S. assets, i.e. an increasing amount of reserves have been invested in government agency bonds and equities. In addition, it was reported that at the end of 2006 SAFE started its direct investment (FTSE 2009).

²⁰ There is another scenario in which foreign investors may conduct herding transactions following Chinese selling; this would possibly create larger problems than Chinese selling alone.

SAFE reportedly purchased shares in various UK financial firms, e.g. USD 345.4m of Barclays and USD 340.9m of Royal Bank of Scotland. Furthermore, SAFE has also quietly built up stakes in natural resources²¹ companies in 2008/09. It was reported that SAFE bought shares of Royal Dutch Shell at an amount of USD 1.2bn, and Total at USD 2.8bn. In addition to equities, SAFE has been also reported to be open to investment opportunities in alternative assets, e.g. private equity.

The trend of investment diversification might also be consistent with the reported new recruitment of former Wall Street talents in recent years.

Therefore, it seems that SAFE is starting to act like a SWF²², rather than a conventionally viewed FX reserve manager.

- Becoming more diversified²³

As analyzed in the previous section SAFE is diversifying their investment by type of assets, and probably by geography as well. Given the size of the overall holdings, foreign observers have shown their concerns about such movements. The reason is that it may affect global financial markets. Beck and Fidora (2008) simulated that theoretically emerging economies' SWFs (particularly those FX reserve ones) would allocate 42% of their reserves in the U.S. bond market in comparison with the actual allocation of 61%. The result implies that if Chinese SAFE shifts away from the U.S. treasury bond market, it could have the potential of increasing bond yields in the U.S. However, it is argued that SAFE might reduce their holdings in the U.S. bond market but increase their investment in the U.S. equity market, therefore making the net effect less significant. Meanwhile, there is some observation that SAFE is also increasing their investment in non dollar denominated assets, e.g. Euro and Japanese yen. This may have consequences in the financial markets concerned.

- Lack of transparency

Perhaps what foreign observers are more concerned or worried about is the possibility of political decisions behind SAFE's investment under the guise of seeking a diversified portfolio, e.g. engaged in obtaining sensitive technology by acquiring foreign firms, or achieving some geopolitical ends (Johnson 2010). We believe that this concern is legitimate. The main reason for this is that as a governmental agency, SAFE will continue serving the needs of national interest if needed and requested to do so. However, given the potential (negative) impact afterwards (e.g. wide media coverage and consequent protectionism over what has been happening), it is plausible to believe that SAFE will avoid, or at least minimize involvement in these kinds of activities in the future, if at all possible.

²¹ Note that the Chinese government set up the African Development Fund (ADF) in 2007, which is classified as another Chinese SWF along with CIC. This fund has up to USD 5bn under management, and aims for financing projects between China and African countries (likely to include natural resources projects too).

²² Admittedly, according to the IMF definition on SWF, SAFE is not a SWF. The IMF proposes the definition as follows: SWFs are special purpose public investment funds, or arrangements. These funds are owned or controlled by the government and hold, manage, or administer assets primarily for medium to long term macroeconomic and financial objectives.

²³ As noted earlier, the question of whether China has been really diversifying from U.S. dollar assets is debated, since China might keep investing in the U.S. through intermediaries located abroad. This argument is legitimate, and we will amend the paper if needed, when new and accurate information becomes available.

This kind of concern is largely attributable to lack of transparency of SAFE. Regarding portfolio data, the only disclosed information by the authorities is total size, while portfolio composition is not published yet, nor is investment performance. Meanwhile, concerning the organizational structure of this institution, public information is also minimized. As a result, opacity of SAFE has aroused much attention, and also often led to suspicious views on its activities, particularly those related to foreign investment.

It is believed that improving transparency of SAFE is one major issue the authorities need to tackle. Without this change, SAFE would not be able to invest in an optimal manner (see the following section for details).

4. Policy recommendations

In the previous sections we reviewed how the Chinese FX reserves are managed by using a case study on SAFE. We also reviewed the current problems facing the Chinese government. In this section some policy recommendations are proposed with the view of addressing the issue of better managing Chinese FX reserves from various different perspectives.

4.1 Fundamental issues

Accumulation of excessive FX reserves is difficult to avoid given the uncertainty on various factors, e.g. foreign trade, capital inflow. However, for the Chinese case there is a general consensus that China has been holding FX reserves in an unnecessary and excessive amount. Therefore, the first and fundamental approach in addressing this problem is to reduce the current level, which accounts for approximately 1/3 of the global FX reserves, or the speed at which it grows. In this regard, the Chinese government would need to adjust its economic growth model, from over-relying on export and investment to a more balanced approach, i.e. with a higher domestic consumption (OECD 2010). In this context, a well-functioning social security system in China would be able to play an important, positive role, since many Chinese people restrain their consumption, mainly because of the three contemporary “*mountains*”, i.e. weak health care system, expensive education, and rising cost of housing. On the top, insufficient pension coverage and benefit is another important factor contributing to high savings rates in China (Salditt et. al. 2007; Hu and Davis 2009).

Meanwhile, the rising gap between rich and poor in China should also be addressed, on the grounds that it has not only contributed to domestic social unrest in China, but also largely constrains the capability of the lower-income population to consume more.

In addition to relatively high household savings, the corporate and government savings rate has also been high in China. As a result, it leads to even higher investment, which might be highlighted by the recent asset bubble observed in Chinese metropolitan cities. Therefore solutions need to be found to resolve this issue as well.

It is hoped that if China's economic growth could be based on a more balanced approach, more products would be able to be consumed domestically, therefore leading to a smaller current account balance, thus ultimately a lower level of FX reserves.

On the other hand, re-balancing China's growth model would also potentially help in alleviating some global macro-economic issues, e.g. global imbalances, therefore benefiting the global economy.

4.2 Greater flexibility of exchange rate policy

Since July 2005, China has been implementing the managed exchange rate policy, i.e. the RMB is pegged to a basket of foreign currencies, notably the US dollar²⁴. Research on China's exchange rate policy is extensive, and many argue that the Chinese RMB is undervalued, and as a result it gives Chinese exporters an unfair advantage, and consequently a large trade surplus, and eventually an accumulation of FX reserves.

Chinese policy makers have been aware of this issue, and have repeatedly emphasized their intention to gradually²⁵ make the current exchange rate regime more flexible (i.e. implicitly appreciate RMB in the long run)²⁶, but this process will be gradual and conditional on various factors (e.g. economic performance). One key reason explaining why the Chinese government is so cautious about its exchange rate policy (i.e. RMB appreciation) is related to the potential negative impact on the export industry and employment. Indeed it is of crucial importance to the government, since it is widely believed that China needs to retain its economic growth at (at least) 8% per annum, otherwise it would lead to rising unemployment, social instability and ultimately, more importantly political instability.

This worry is understandable but the government might be over-concerned. It is recommended that the process of RMB appreciation could be faster, thus reducing the speed of rapid FX reserves accumulation in China. There are two reasons for it.

1) The Chinese labour market has demonstrated itself to be more flexible and resilient than what was commonly viewed, and even performed better than many OECD countries during the current economic crisis (OECD 2010). When weak global demand on Chinese products was starting to affect China in the second part of 2008, approximately 70m migrant workers (a large portion of them were employed by export-oriented factories) lost their jobs and went

²⁴ Since July 2008 a *de facto* fixed exchange rate pegged to the US dollar has been observed.

²⁵ Gradualism is what the Chinese government has typically followed when implementing economic reforms in China. However, regarding the exchange rate policy, it has been argued that such gradual approach should be both politically acceptable and (equivalently importantly) economically meaningful and effective. One reason is because if revaluation of RMB were too small (e.g. 2%), it would in fact raise higher market expectation of further revaluation in the (near) future, thus making the situation worse.

²⁶ Over 2007 and 2008, RMB in nominal terms appreciated over 20% against the US dollar. However, due to the economic crisis, further appreciation was halted. It is expected that RMB will remain at the current level against the US dollar until the government is confident that the recovery is sustainable and strong. In addition, the Chinese government also started to internationalize RMB (Chen and Zhang 2008), so as to reduce reliance on the US dollar in international trade. Recent efforts include bilateral currency swaps with not just neighboring countries, e.g. Japan and Korea, but also with other countries, e.g. Argentina. As of April 2009, the total currency swap amounted to RMB 650bn (Xinhua 2009). http://news.xinhuanet.com/fortune/2009-04/02/content_11117072.htm

back to their home countries, but when the economy started to recover in 2009, 90% of them returned to the cities and found jobs with much difficulty as of Q1 2009 (MOHRSS 2010), although not necessarily in the same city and probably with a lower salary. Meanwhile, exporting industry is largely concentrated in the coastal area, while large inland China mainly relies on domestic consumption, so RMB appreciation would have less impact on that part of the country.

2) Export industry in China is on the lower end of the global product chain, which features extensive use of unskilled labour and is also often associated with environmental damage to the local areas. As stressed by the Chinese government for many years, China's export sector should upgrade its industrial level, and produce more high tech products rather than low quality and cheap goods. In this context, the outbreak of the global economic crisis provides a good opportunity for the Chinese government and exporters to speed up such (albeit painful) changes, in the sense that overcapacity in certain exporting sectors is squeezed out, and Chinese entrepreneurs are pressured to compete in the global market by quality, rather than (merely) price.

4.3 Liberalisation of capital account

A large and rising capital account surplus is another contributing factor to the large FX reserves in China. Therefore, liberalization of capital account in China is relevant here.

Capital flows from and to the country are strictly controlled by the Chinese government, whilst inflow is generally subject to less restrictions than outflow. Given the greater difficulty in restricting capital inflows (e.g. FDI) now, it might be advisable to alleviate controls on capital outflows (Truman 2007). This liberalization might be applied not only to SOEs, but also other entities, particularly those purely commercially oriented ones, e.g. private firms and individual investors²⁷.

This action if taken properly could help in addressing the current problems on different aspects.

- 1) It reduces the level, or at least the speed of rapid accumulation of FX reserves.
- 2) It soaks up extra liquidity from the domestic economy, thus mitigating inflation pressure.
- 3) It facilitates domestic firms to invest in a diversified manner, and improve allocation of funds, for example by shifting away from risky real estate industry and the stock market.
- 4) Collectively, separate investment decisions by a wider group of the population and entities may not necessarily underperform that of one institution (i.e. SAFE) or selected and approved entities.

²⁷ It is recognised that the Chinese government has been moving in this direction, but mainly encourages SOEs to go abroad. Private firms and particularly individuals are still subject to restrictions on investing abroad, although there have been some changes as highlighted by the recently announced take-over of Chinese carmaker - Geely of Volvo.

5) If foreign investment from China is conducted by a large amount of un-related, separate entities, e.g. SOEs, small firms and individuals, it would help reduce public attention abroad, and therefore to some extent play down concerns raised by foreign observers.

The benefits of a more liberalized capital account for China are apparent as noted above. However, some caveats warrant attention.

1) Liberalization of capital account or financial liberalization in general should not start when the institutions and macroeconomic conditions are weak and insufficient (Cappiello and Ferrucci 2008). International experiences show that the managed exchange rate regime with a liberalized capital account is prone to crisis (Prasad, et. al 2005; Chen et. al 2009).

2) Foreign markets are not free of risk, so Chinese domestic investors (firm or individual) should understand the importance of prudential investment, since they in general have less experience in international investment. If they are allowed to invest freely abroad, losses would be unavoidable, as highlighted by CIC's investments in Blackstone and Morgan Stanley in 2007.

4.4 Further diversification

SAFE's foreign investment needs to be diversified. It could be achieved by diversifying by type of currency, asset category, and geography. At the outset it is worth noting that given the size of Chinese holdings abroad, it may be more advisable to diversify the flow of FX reserves, rather than dramatically changing the stock, given the potential negative impact.

As noted earlier, up to 60-70% of China's FX reserves are invested in US dollar dominated assets. However, as of 2009, China's export to the U.S. relative to the total Chinese export was 18.4%, while China's import from the U.S. relative to the total Chinese import was 7.7% (China Customs and Ministry of Commerce 2010)²⁸. It indicates the excessive holding of Chinese FX reserves in the U.S. dollar. Meanwhile, as analyzed above, currency risk has been one of the important factors affecting returns of SAFE investments in the U.S. Therefore, given the condition that RMB will appreciate against the US dollar gradually in the future, it is recommended that Chinese foreign investment be diversified into other currencies, e.g. Euro²⁹.

A large proportion of China's FX reserves are held in the form of government bonds and other similar fixed-income products. It reflects the legacy of SAFE as a traditional FX reserves manager. However, with rapid accumulation of (excess) FX reserves in recent years and the expectation that the trend continues in the foreseeable future, it might be worth considering more investment in riskier assets, e.g. equity and gold. The main reason is that if

²⁸ <http://www.customs.gov.cn/publish/portal0/tab4370/module3760/info209230.htm>
<http://zhs.mofcom.gov.cn/aarticle/Nocategory/201001/20100106747574.html>

²⁹ However, it is important to have in place a liquid and large Euro bond market which can accommodate such shift. It seems it is not the case at the moment, particularly given the evidence showing that the ECB has been reluctant to take the responsibility of becoming another major FX reserve currency.

conducted prudently, riskier investment is likely to provide a higher return in the long run, which is relevant for SAFE, since the excess FX reserves do not have immediate liability.

SAFE investment could also be diversified into different regions, including both developed and emerging economies. Traditionally China's FX reserves have been invested in advanced countries (e.g. U.S.), which reflects not only the high share of foreign trade with these countries, but also the relative safety of the assets due to a stable political situation and sound macro-economic conditions. However, with growing international trade with emerging markets and stabilization of country risk in these countries, geographical diversification might be beneficial to the overall performance of the SAFE portfolio in the long run. Also, more foreign investment by the Chinese to other countries, e.g. to the Eastern European countries, would potentially help their local economies and raise living standards, since some of these countries have been greatly in need of capital, but had difficulties to receive or secure funds from other sources in recent years.

4.5 Establishment of a separate investment company

In view of the problems associated with the current regime of FX reserves management and SAFE in particular, a separate investment company (hereinafter referred to as CIC 2 for convenience) could be established to manage the excess FX reserves. There are several important benefits for this.

First, it would significantly improve its transparency, and build up confidence both in China and abroad³⁰. As a firm at arm's length from SAFE and the People's Bank of China, it would be much easier for CIC 2 to meet the requirements considered as international best practices, for example those specified in the SWF Santiago Principles - Generally Accepted Principles and Practices (GAPP). In comparison, if SAFE continues to manage the whole reserves on its own, as a governmental agency with the Chinese bureaucracy, it would be rather difficult to enhance transparency, for example to disclose basic information viewed as necessary to mitigate concerns by foreign observers. As a result, such opacity will continue serving as a bottleneck in further investing abroad (even if it was genuine commercial investment), since any SAFE investment, particularly those considered as being political transactions will still receive wide media coverage, and possibly increased protectionism afterwards.

Second, as a commercially oriented investment company, CIC 2 will have much less constraints in hiring high quality staff, thus conducting more professional investments. According to the current institutional structure of SAFE, all staff are either civil servants, or PSU³¹ employees which is particularly the case for the Department of Reserves

³⁰ Note that it is legitimate that national governments want SWFs to be sovereign, which makes it easier for the former to conduct "strategically important" (overseas) deals. However, given their high profile status, it would be very difficult for SWFs to remain sovereign to some extent. Therefore we would not expect the creation of CIC 2 will erase all concerns, particularly those arising from its investment abroad.

³¹ The public sector in China is split into a number of segments: public service units (PSUs), state organs and state-controlled enterprises (SOEs). The first two constitute the government sector of the economy. The bulk of government employees, however, do not work for the government but are employees of PSUs; terms and conditions of employment for PSU employees are effectively those of civil servants, though the units have more autonomy to raise salaries above the national base level of pay (Hu and Herd 2010).

Management³². Therefore, even the salary structure of many of the PSU type SAFE employees is more flexible than that of civil servants, it is still subject to strict government regulations, and in general the remuneration package is much less competitive to that prevailing in the market. It is hoped that CIC 2 would be able to recruit qualified industry practitioners more easily³³, thus improving investment returns and performance.

Third, competition between SAFE and CIC has already taken place since the inception of CIC in 2007. Both parties recognize that if one party underperforms more than the other, it is likely that the former will be taken over by the latter, or at least has pressure to improve performance so as to assure the government that they are still capable of doing their job. Benign competition is argued to be one key reason why the Chinese government formed CIC in 2007. If this thinking is correct, therefore in view of the growing FX reserves and the bottleneck in managing the reserves better largely due to the current institutional constraints of SAFE, it should not be difficult, and in fact reasonable for the central government to approve establishment of CIC 2 in China, but under control of SAFE or the People's Bank of China, rather than the Ministry of Finance in the case of CIC.

It might be argued that a separate CIC 2 is not necessary, since all the excess FX could be transferred to CIC. However there are some reasons against this argument from our perspective.

- Due to complex and complicated ministerial conflicts in China, it would be anything but easy (if at all possible) for the PoBC to surrender its control on FX completely, and hand it over to MoF via CIC. In comparison, CIC 2 as designed herein will be much more acceptable to PoBC.
- Given the size of China's FX and its potential of growth, handing over the excess FX to CIC will create an institution with AUM well above USD 1 trillion eventually. As a consequence, CIC may become too big to be efficient. Therefore, splitting the huge FX into different institutions but with different mandates might be justified.

Healthy competition between SAFE, CIC and CIC 2

According to our proposal above, there would be three major institutions in charge of managing China's huge FX reserves, which, however, should be complementary to each other, rather than engaging in vicious competition.

SAFE should focus its main function on traditional FX reserves management. In this context, investment strategies typically are more conservative, while government bonds and other more liquid assets are still heavily held. The ideal AUM of the (shrunk) SAFE is the amount needed to meet its short-term external debt and import payment, while the excess FX reserves should be transferred to either CIC or CIC 2, according to their performance.

CIC could be delegated to invest in more risky assets in domestic and particularly global markets, as it is currently emerging.

³² For this department employing approximately 400 people, only a small portion of them (mainly senior officials, e.g. head of department and division) are civil servants, while the remaining are PSUs employees.

³³ It was reported that a well-known Chinese overseas banker recently joined SAFE as CIO, and his salary is much higher than all the other SAFE employees, but still much less than the prevailing compensation package available in the industry.

CIC 2 stands between the above two institutions. Its main investment strategies feature a combination of both risky and conservative investments. The question of how much of the FX reserves should be injected to CIC 2 from SAFE at the inception is out of the scope of this paper, but the government could start with an amount equivalent to the CIC's initial injection, i.e. USD 200bn.

For both CIC and CIC 2, they should be allowed to invest in a broad range of assets, as long as they can achieve higher risk-adjusted returns in the long run. The government should set up performance evaluation targets, which could however vary between them since they are basically two asset managers with different types of mandates. Nevertheless, it should be noted that it is difficult (if at all possible) to avoid any overlapping areas between CIC and CIC 2 (even SAFE too) in terms of investments, but the focus of their portfolio should be differentiated beforehand so as to encourage and facilitate a benign and orderly competition between them, consequently in the best interest of the Chinese government and ultimately the Chinese citizens.

5. Conclusion

With rapid economic growth and continuing economic integration with the outside world, China's foreign exchange (FX) reserves have been accumulating sizably in the past, particularly over the past 10 years. As of 2009 it stood at USD 2.4 tr., accounting for just under 1/3 of the global FX reserves. On the one hand, huge amounts of FX reserves demonstrate the enjoyable position of China in terms of foreign trade; on the other hand it leads to many problems, e.g. inflationary pressure, asset bubble.

Against this background the Chinese government has been concerned about how to better manage its FX reserves. In this paper after a careful case study on SAFE – a governmental agency in charge of administering and investing China's FX reserves, the following policy recommendations are proposed from various angles and aim at suggesting solutions which could benefit both China and the outside world:

First of all, the economic growth model in China needs to be changed, which has directly contributed to the rapid growth of FX. Therefore the government needs to stimulate its domestic consumption - through an improved social security system, and reduce over-reliance on investment and export. It would also be helpful in terms of reducing global imbalances.

Second, a greater exchange rate flexibility might be allowed, which would enable reducing FX reserves, and more importantly help upgrade the Chinese export industry from the low-cost end of the global chain to the upper end featuring high quality and its own brand. Nevertheless, we admit that this process would be gradual and cautious.

Third, given a continued, steady surplus in the capital account, the government might consider liberalizing its capital account. In view of the current situation, capital outflows could be liberalized further, so allowing not only SOEs, but private firms and individual investors to

invest abroad. This would greatly diversify the risk concentrated on one institution (i.e. SAFE), or this small number of selected institutions.

Fourth, SAFE investment needs to be diversified further. It could be achieved by currency, type of asset and geography. Geographical diversification, for example, could potentially help those countries in need of capital to develop local economy and further raise peoples' living standards. However, in order to ensure such a transition as smooth as possible, the diversification could first start with the new flow of FX reserves, rather than the huge stock.

Last, but not least, SAFE may establish a separate SWF under its authority, but at arm's length, while all excess reserve funds could be transferred to this institution. Several major advantages are associated with this change. Most importantly it provides the opportunity for greater transparency, therefore alleviating concerns raised by foreign observers. Although it may create a domestic rivalry for CIC, it is believed that such competition already exists, and from the government perspective, such competition might be positive; such positive benefits are particularly the case if certain a mechanism is pre-arranged and establishes a complementary competition platform between the three major institutions managing the Chinese FX reserves, i.e. SAFE, CIC and CIC 2.

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