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The Management of China's Huge Foreign Reserve and its Currency Composition

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Abstract:

In view of the current situation of China' s huge foreign reserves, this paper puts forward the concepts of foreign reserve management - regular reserve management which focuses on liquidity management, and excess reserve management focusing on security and return. The scale and the currency composition of regular reserve management can be determined by the factors of usage, while the currency composition of excess management can refer to that of the Special Drawing Right issued by the IMF.

Contents

1.   Introduction

With the opening of mainland China in 1978, China implemented a dual track exchange rate system with no convertibility of RMB, and forcing foreigners to use foreign exchange certificates. In 1994, China then cancelled the dual track exchange rate system, officially devalued the RMB to 8.7 per US dollar from 5.72 per US dollar at the end of 1993, and pegged its currency to the US dollar. Since then, China's foreign reserves[1] have increased from 21.2 billion US dollars in 1994 to 1.06 trillion US dollars at the end of 2006, when the reserve size exceeded Japan's to become the largest in the world. On July 21, 2005, China's central bank announced a reform of the foreign exchange rate system. This new system (1) appreciated the RMB to 8.11 per US dollar, (2) introduced a more flexible and market-driven exchange rate, and (3) based the central rate of exchange on a basket of currencies, which have a close relationship with China's trade and economy, including the US dollar, the euro, the Japanese yen and the South Korean won, etc., rather than being strictly and solely tied to the US dollar.

The reasons for the large Chinese foreign reserves can be contributed to a number of factors, as follows: (1) A large surplus was kept in both the current and capital account (cp. Xu Zhifeng 2005); (2) Chinese residents or enterprises are only allowed to keep a limited amount of foreign exchanges. The amount exceeding the foreign exchanges allowed to keep must be sold to banks which sell the foreign exchanges to the central bank, which in turn collects a substantial part of the Chinese foreign assets (cp. Zhang Jindong 2004); (3) The exchange rate of the RMB seems to be undervalued (cp. Wang Zhao 2005); (4) The difference in interest rates between Chinese and foreign financial markets and the expectation of a further appreciation of the RMB stimulate Chinese financial institutions, enterprises and residents to change foreign currency in RMB (cp. He Dexu 2006); (5) Hot money for speculative purposes flows into China under the expectation of RMB appreciation (cp. Li Junjie 2006); (6) The export-led strategy of China leads to central bank interventions to prevent a strong appreciation of RMB (cp. Pang Jiaoming 2005).

With regard to huge foreign reserves, many economists have conducted research to check the adequacy of China's foreign reserves. Wu Lihua and Li Peng (2006) used the Agarwal model and compared the costs and returns of holding China's foreign reserves, and concluded that the size of Chinese foreign reserves has now exceeded the optimal level. Shi Jianren and Guo Encai (2001) put forward that the size of China's foreign reserves is much larger than the appropriate amount measured by the ratio of foreign reserves to imports, the ratio of reserves to short-term foreign liability, and the ratio of reserves to a broad money supply. With the model of Frenkel (1979), Xu Chenming (2001) proved that the size of Chinese foreign reserves has been relatively excessive since the 1990s. With such huge

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[1] In this paper, foreign reserves of China specifically refer to the foreign reserves of mainland China excluding the reserves of Hong Kong, Taiwan and Macao.

reserves, some scholars suggest that the rate of return of foreign reserves is too low. For instance, after deducting the inflation rate and the costs of the sterilization of foreign exchange interventions, the actual average yields of U.S. treasury securities, which account for the largest part of foreign exchange reserves held by the central bank of China, are only about 0.7%-1.7% (cp. Yan Qifa 2006).

Other researchers and officials are currently paying more attention to how to deal with such huge reserves: Zhou Xiaochuan, President of the People's Bank of China (PBC) (Chinese central bank), believes that the size of China's foreign reserves is "sufficient" and that China has no intention to " enlarge this size further". At the same time, he disclosed that the PBC will hand over part of its reserves to the newly established institutions for foreign investment purposes.[2] Hu Xiaolian, the Director General of the State Administration of Foreign Exchange of China, declared that "China will further optimize the asset structure and currency structure of foreign reserve"[3].

This paper deals with the question how to effectively manage foreign reserves with respect to the current situation of China's abundant foreign reserves. It can be divided into four sections. The first section discusses the strategy of how to manage foreign reserves and puts forward that China can carry out a classified reserve management strategy - regular reserve management and excess reserve management. In the second section, we review the size and currency structure of regular foreign reserves. In the third section, the size and currency structure of excess reserves are discussed. The fourth section offers conclusions for new institutions and proposals.

2. The Strategy of Classifying the Management of Foreign Reserves

The basic functions of foreign reserves include the financing of the imbalance of international payments and maintaining the stability of the domestic currency. To assure such functions, foreign reserve management should focus on liquidity and safety. If the size of foreign reserves of an economy is larger than needed to satisfy these basic functions, the surplus part exceeding the amount of reserves needed for these basic functions might have additional functions as the opportunity costs for holding foreign reserves are higher. On the other hand, if the size of reserves is large enough, the goals of management cannot be the same as for the management of reserves for basic needs. Higher rates of return are necessarily required for surplus reserves. Thus, if the size of reserves is larger than that of the basic needs, the reserves might be divided into two parts: one as regular foreign exchange reserves with its management focused on liquidity, safety and stability; the other as excess foreign exchange reserves, with its management or investment paying more

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[2] Zhou Xiaochuan expressed this view on 20th March, 2007 when he attended the Annual Conference of the Inter-American Development Bank in Guatemala.
[3] Hu Xiaolian made this speech at the Conference of China's Foreign Exchange Administration, 5th Jan. 2006.

attention to returns. The objectives, scope and evaluation criteria of management, as well as the currency structure of reserve holdings for each part might vary.

Some central banks have already carried out such policies of foreign reserve management. For example, Norway's foreign exchange reserves are split into four sub-portfolios: (1) the liquidity portfolio, which is used in connection with the conduct of monetary policy (for potential foreign exchange interventions and to control liquidity and interest rates in the Norwegian money market); (2) the long-term portfolio or investment portfolio, which should also be available for market operations, but is intended for investment on the basis of more long-term considerations; (3) the so called immunization portfolio, which is equivalent to government foreign currency debt and is aimed at neutralizing foreign exchange and the interest rate risks associated with foreign debt; (4) the Petroleum Fund buffer portfolio, which receives capital daily, and is transferred to the Government Petroleum Fund on a monthly basis.[4]

We suggest that China should divide its foreign reserves in regular reserves and excess reserves to help to improve the management of its reserves. In the following, emphasis is placed on the size of the regular reserves needed to satisfy the basic needs and its management strategy. Then we discuss the investment strategy of excess reserves.

3. The Management of China's Regular Foreign Exchange Reserves

3.1. Objectives

How much foreign reserve does a country need, or what is the adequate level of regular reserve a country requires? Studies by Robert Triffin (1960) suggested that reserve adequacy requires a minimum average yearly reserve equal to 30-35 percent of yearly imports. Guidotti (1999), Argentina's former Deputy Minister of Finance, proposed that the size of one country's reserves should be sufficient to satisfy its net external payments and liabilities without additional foreign borrowing for up to one year. Alan Greenspan (1999), Chairman of the US Federal Reserve Board, also suggested calibrating reserve adequacy on short term debt outstanding with a maturity of less than one year. Another reserve adequacy criterion is the reserve to broad money (M2) ratio, used by Kaminsky and Reinhart (1999). De Beaufort Wijnholds and Kapteyn (2001) estimated the need for foreign reserves according to possible capital exports by domestic residents.

In this paper, regular reserves in China have the following functions: a) meeting the demands for imports; b) meeting the demands of debt repayment of foreign debt including interest; c)

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[4] Guidelines and performance reports for the foreign exchange reserves and various funds managed by the Norges Bank and invested in the international capital markets are presented on Norges Bank's website (www.norgesbank.no).

meeting the demands of remitting or transferring profits by foreign enterprises; d) meeting the demand of intervening in the foreign exchange market to stabilize the RMB exchange rate.

To fulfill these aims reserves generally have to be kept in a liquid form as demand and time deposits, short-term money market instruments and treasury bills.

3.2.   Determining the Scale of Regular Foreign Exchange Reserves

The size of the regular foreign exchange reserves are determined by the total amount needed to meet the demand of the objectives mentioned above. In a simplified approach the regular exchange reserves can be roughly regarded as the sum of the reserves needed for the different objectives. If the quantity of demand which meets the objectives above is recorded as "D_i" (*i=1,2,3,4*), the appropriate scale of the regular foreign exchange reserves (D) can be expressed as:

$$D = D1 + D2 + D3 + D4 \qquad or$$

$$D = \alpha\,IM + DF + \beta\,FDI + y\,T$$

IM stands for annual imports, *α* for the proportion of needed reserves to annual imports, *DF* for the annual amount of repaying foreign debt and interest, *FDI* for the accumulated balance of FDI, *β* for the proportion of profit transfers to accumulated FDI, *T* for the total trading volume in the foreign exchange market, *y* for the ratio of foreign reserve intervention by the central bank needed to stabilize the foreign exchange rate. We select the data from 1999 to 2005 as samples to quantitatively sum up an estimation of the appropriate scale of Chinese regular foreign exchange reserves.

D1: Demand of Foreign Exchange Reserves for Satisfying Imports

The "import ratio analysis" raised by Triffin (1960) is the most representative. According to his empirical analysis, he holds that a country's appropriate reserves should satisfy the payment of imports for three months. Hence, α = 0.25. Using this method, the quantity of foreign reserves will guarantee "normal" imports. For China, this is illustrated in Table 1.

Table 1: Foreign Reserves for Maintaining Normal Imports 1999-2005

Unit: 100 Million US Dollar

Year	Annual Imports (IM)	D1= α IM
1999	1657.0	414.25
2000	2250.9	562.75
2001	2435.5	608.88
2002	2952.0	738.00
2003	4128.0	1032.00
2004	5614.2	1403.55
2005	6601.2	1650.30

Source: Statistical Yearbook of China (1999-2005), website of the National Bureau of Statistics of China

D2: Demands of Foreign Exchange Reserves for Satisfying the Debt Service

The basic functions of foreign exchange reserves also include repaying foreign debt including interest. The annual debt service is illustrated in Table 2.

Table 2: Foreign Reserves for Annual Debt Service 1999-2005

Unit: 100 Million US Dollar

Year	D2 = DF
1999	364.5
2000	350.1
2001	312.8
2002	696.7
2003	981.3
2004	1902.4
2005	2715.9

Source: Statistical Yearbook of China (1999-2005), website of State Administration of Foreign Exchange of China

D3: Demands of Foreign Reserves for Remitting Profits by Foreign Enterprises

Generally, foreign investors hope to get a rate of return above 10% for their foreign direct investment. Wu Jian (1998) suggests that the ratio of repatriated profits as a percent of accumulated FDI in China is about 15%. This means that β = 0.15. The foreign reserve requirements for remitting profits are given in Table 3.

Table 3: Foreign Reserves for Foreign Enterprises' Profit Transfers 1999-2005

Unit: 100 Million US Dollar

Year	Accumulated Balance of FDI	D3 = β FDI
1999	3076.36	461.454
2000	3484.08	522.612
2001	3952.54	592.881
2002	4502.65	675.398
2003	5027.70	754.155
2004	5621.01	843.152
2005	6345.01	951.752

Source: Statistical Yearbook of China (1999-2005), website of National Bureau of Statistics of China

D4: Demands of Foreign Reserves for Central Bank Interventions in the Foreign Exchange Market

Wei Xiaoqin and You Yuanbao (2004) suggest that the amount of foreign reserves for China's central bank interventions in foreign exchange markets accounts for 10%-20% of the total foreign exchange transaction. Thus γ = 0.15. The demand of foreign reserves for foreign exchange market interventions are given in Table 4.

Table 4: Foreign Reserves for Central Bank Interventions in the Foreign Exchange Market 1999-2005

Unit: 100 Million US Dollar

Year	Total Trading Volume in Foreign Exchange Market, T	D4 = γT
1999	314.50	47.185
2000	421.80	63.270
2001	750.30	112.555
2002	971.90	145.795
2003	1511.32	226.700
2004	2099.41	314.910
2005	1461.46	219.220

Source: Statistical Yearbook of China (1999-2005), website of People's Bank of China.

According to equation 3.1 above, the scale of regular foreign exchange reserves and that of excess foreign exchange reserves in China since 1999 can be calculated. The results are given in Table 5.

Table 5: The Scale of China's Regular and Excess Foreign Exchange Reserves 1999-2005

Unit: 100 Million US Dollar

Year	Regular Foreign Exchange Reserves	Actual Foreign Exchange Reserves	Excess Foreign Exchange Reserves
1999	1287.38	1546.75	259.37
2000	1498.73	1655.74	157.01
2001	1627.10	2121.65	494.55
2002	2255.89	2864.07	608.19
2003	2994.15	4032.51	1038.36
2004	4464.01	6099.32	1635.31
2005	5537.171	8188.72	2651.549

Source: Data from Table 1, Table 2, Table 3 and Table 4

3.3.   The Determination of the Currency Structure of Regular Foreign Exchange Reserves

Foreign reserves are composed of foreign assets usually denominated in reserve currencies. The reserve currencies in the world mainly include the US dollar, the euro, the Japanese yen, the pound sterling, etc. According to the IMF (2006), the international composition of the accumulation of foreign reserve currencies in 2006 was 65.7% in US dollar, 25.2% in euro, 4.2% in pound sterling, 3.2% in Japanese yen and in 1.7% other currencies.

The principles of managing regular foreign reserves are demand oriented. The currency composition of regular reserves are based on the currency structure of China's imports, the currency structure of foreign debt, FDI, and the currency structure used by intervening in foreign exchange markets.

The Currency Structure Needed for Imports

The currency structure of foreign reserves needed for imports depends on the currency structure of imports. The main origins of China's imports include Japan, the Republic of Korea, the Association of Southeast Asian Nations (ASEAN), Taiwan, the European Union (EU) and the United States[5]. However, the RMB tends to be more important among the traders in Eastern Asia, and has actually become the main currency in the settlement of trades between ASEAN and China. Fu Liying, Assistant Minister of the Department of Commerce of China, has suggested that the RMB is soon expected to become the official

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[5] See Statistical Yearbook of China (2005)

settlement currency within the Free Trade Area of Sino-ASEAN[6]. So the factors influenced by imports from ASEAN will no longer be considered as deciding factors of the currency structure of reserves. Although Great Britain belongs to the EU, the pound sterling is a separate reserve currency; we list its trade with China accordingly. Imports from Japan, Korea, Taiwan, the EU, the US, and Great Britain are shown in Table 6.

Table 6: The Import Structure of China 1999-2005

Unit: 100 Million US Dollar

Countries or Regions	1999	2000	2001	2002	2003	2004	2005
United States	194.78	223.63	262.02	272.38	338.66	446.57	487.30
Japan	337.63	415.10	427.97	534.66	741.48	943.27	1004.50
EU*	224.62	272.53	321.96	351.94	494.43	634.52	676.32
Great Britain	29.95	35.92	35.27	33.36	35.70	47.59	59.48
Republic of Korea	172.26	232.07	233.89	285.68	431.28	622.34	768.20
Total	3153.51	3434.19	3555.51	3860.63	4538.16	5345.87	5747.61

Source: Statistical Yearbook of China (1999-2005)

* Data of EU includes 15 countries excluding Britain from 1999-2004; includes 25 countries excluding Britain in 2005

Besides trading with the United States, the currency used for bilateral trades with the Republic of Korea and Taiwan is also usually denominated in US dollar. The euro has become the major currency used in trading between China and EU (excluding Great Britain). Imports from Britain are assumed to be denominated in pounds sterling. Then, the currency structure of mainland China's imports is given in Table 7. If we assume a fluctuation range of 5 percent of import values we will come form Table 7 to Table 8.

Table 7: Currency Structure of China's Imports 1999-2005

(in percent of total imports)

Currency	1999	2000	2001	2002	2003	2004	2005	average
US dollar	48.71	49.55	49.49	50.50	49.84	51.36	53.50	50.42
Euro	19.46	19.00	20.71	18.94	19.50	18.99	18.07	19.24
Yen	29.24	28.94	27.53	28.77	29.25	28.2	26.84	28.40
Others	2.59	2.50	2.27	1.79	1.41	1.42	1.59	1.94
Total	100	100	100	100	100	100	100	100

Source: Data from Table 6

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[6] Speech by Fu Ziying, Assistant Minister, Department of Commerce of China, at the news conference held by the State Council of China, 16 Sep. 2005.

Table 8: Currency Structure of China's Imports with an Assumed Fluctuation in the Range of 5 Percent

(in percent of total imports)

Currency	US Dollar	Japanese Yen	Euro	Other Reserve Currencies
Ratio	48 to 53	26 to 31	17 to 22	0 to 4

Source: Data from Table 6

The Currency Structure Needed for Foreign Debt Service

The foreign exchange reserves of a country should be sufficient to guarantee external liquidity and solvency. To calculate the needed reserves the currency structure of foreign debt becomes important. For a long time, most of China's foreign debts have been denominated in US dollars, Japanese yen, German marks and French francs (in 1999 transferred to euro) and some other currencies.

At the end of 2006, the debts denominated in US dollar accounted for 69.71% of the total balance of the registered foreign Chinese debt, while debt denominated in Japanese yen and euro respectively accounted for 10.86% and 7.3%, and other debts including SDRs accounted for 12.13%.[7] Assuming again a fluctuation range of 5 percent, the currency structure needed for debt service is given in Table 9.

Table 9: Currency Structure Needed for Debt Service with an Assumed Fluctuation Range of 5 Percent

(in percent of total debt service)

Currency	US Dollar	Japanese Yen	Euro	Other Reserve Currencies
Ratio	67 to 72	8 to 13	5 to 10	10 to 15

Source: China's International Balance of Payments Report for 2006, issued by the People's Bank of China, 2006

The Currency Structure Needed for Transferring Profits from Firms in Mainland China to Firms Outside Mainland China

High foreign direct investment inflows are one of the main sources of China's increasing foreign exchange reserves. The cumulated inward FDI to China from the top ten origins up to 2005 is given in Table 10.

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[7] Source: China's International Balance of Payments Report for 2006, issued by the People' s Bank of China, 2006.

Table 10: Cumulated Inward FDI to China from Top Ten Origins to 2005

Unit: 100 Million US Dollar

Origin	Amount	Proportion in Percent
Hong Kong	2595.2	45.01
Taiwan	417.6	7.24
Japan	533.4	9.25
USA	510.9	8.86
EU*	341.9	5.93
Cayman	86.6	1.50
British Virgin Islands	459.2	7.96
Great Britain	131.2	2.28
ASEAN	379.4	6.58
Republic of Korea	311.0	5.39
Total	5766.4	100

Source: Statistical Yearbook of China (1999-2005)

* Data of the EU includes 15 countries excluding Britain from 1999-2004 and includes 25 countries excluding Britain in 2005

Nevertheless, the World Bank (2002) suggested that a large proportion of inward FDI to mainland China is merely its capital flight which comes back to mainland China by round tripping, especially FDI from Hong Kong.[8] Although round tripping also does stem from other origins, especially other off-shore centers, we have only calculated the FDI from Hong Kong. There are two important reasons: firstly, the FDI from off-shore centers to mainland China including Hong Kong is usually denominated in US dollar; secondly, as we have discussed, the amount of FDI from Hong Kong is close to that of the capital flights estimated by errors and omissions in China's international balance of payments. We therefore estimate the quantity of inward FDI from Hong Kong to be equal to that of the round-tripping capital and assume such capital will not flow out any longer.

As we have discussed above, we also exclude ASEAN. Excluding Hong Kong and ASEAN, the FDI structure is given in Table 11:

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[8] The World Bank (2002) used a separate box with the title "Round-tripping of capital flows between PRC and Hong Kong, China" to highlight the importance of the round tripping FDI in the PRC (see Box 2.3 on page 41 of World Bank 2002). The graph shows Hong Kong, China's annual flow of FDI to PRC follows closely PRC's net errors and omissions in its Balance and Payment. Since the net errors and omissions term is usually regarded as a proxy for capital flight. The graph gives the impressions that capital flights have come back to PRC in the form of FDI from Hong Kong.

Table 11: Cumulated Inward FDI to China Excluding Hong Kong and ASEAN

Unit: 100 million US Dollar

Origins	Amount	Proportion in Percent
Taiwan	417.6	14.96
Japan	533.4	19.11
USA	510.9	18.30
EU*	341.9	12.25
Cayman	86.6	3.10
British Virgin Islands	459.2	16.45
Great Britain	131.2	4.70
Republic of Korea	311,0	11.14
Total	2791.8	100

Source: Data from Table 10

The settlement currency between mainland China, Taiwan, and the Republic of Korea is mainly US dollar. The FDI from the off-shore centers, such as the Cayman and British Virgin Islands is also mainly denominated in US dollar. The currency structure of inward FDI to mainland China is given in Table 12.

Table 12: Currency Structure of Inward FDI to Mainland China

Unit: 100 million US Dollar

Currency	Amount	Proportion in Percent
US dollar	1785.3	63.95
Yen	533.4	19.11
Euro	341.9	12.25
Other	131.2	4.70
Total	2791.8	100

Source: Data from Table 10

We assume the currency structure of remitting profits back to home countries is the same as the currency structure of inward FDI to mainland China. The structure with a fluctuation range of 5 percent is given in Table 13.

Table 13: Currency Structure of Profits Remittances by Cumulated Inward FDI

(Fluctuation Range of 5 Percent)

Currency	US Dollar	Japanese Yen	Euro	Other Currencies
Ratio	61 to 66	17 to 22	10 to 15	2 to 7

Source: Data from Table 10

The Currency Structure Needed for Central Bank Foreign Exchange Market Interventions

Wei Xiaoqin and You Yuanbao (2004) put forward that the amount of foreign exchange needed by the central bank for intervening in the foreign exchange market relates to the total volume of foreign exchange transactions. As the RMB has not been freely convertible, the

demand for central bank reserves for foreign exchange market interventions is smaller than under a regime of full convertibility. The currencies transacted in China's inter-bank foreign exchange market are limited to US dollar, the Japanese yen and Hong Kong dollar, as well as to euro, added at April 1, 2002. We will not consider the factors of Hong Kong, because the RMB is becoming more and more available and acceptable in Hong Kong. The transaction volumes in US dollar, the Japanese yen and euro on China's inter-bank foreign exchange market from 2002 to 2004 are shown in Table 14. The currency structure needed for central bank interventions on the foreign exchange market is given in Table 15.

Table 14: Transactions in US Dollar, Japanese Yen and Euro in China's Inter-Bank Foreign Exchange Market, 2002-2004

(in percent of total transactions)

Year	US Dollar	Japanese Yen	Euro
2002	99.22	0.65	0.13
2003	99.27	0.48	0.25
2004	99.24	0.64	0.12

Source: Calculated from data of the Financial Statistical Yearbook of China (1999-2005), website of the People's Bank of China

Table 15: Currency Structure Needed for Central Bank Interventions in China's Inter-Bank Foreign Exchange Market

(Fluctuation Range of 5 Percent)

Currency	US Dollar	Japanese Yen	Euro	Other reserve currencies
Ratio	95 to 99	1 to3	1 to 3	0

Source: Data from Table 14

The Currency Composition of Regular Foreign Exchange Reserves

As can be seen above we have calculated the different components of regular foreign exchange reserves needed. The total amount of regular reserves is shown in Table 16.

Table 16: The Total Need for Regular Reserves

Demand Factor	The Average Amount of Needed Foreign Reserves (100 Million US Dollar)	Portfolio Weight in Reserves, in Percent
Maintaining Normal Imports (D1)	915.675	32.60
Debt Service (D2)	1046.243	37.24
Profit Remittances by Foreign Enterprises(D3)	685.9146	24.42
Interventions in the Foreign Exchange Market (D4)	161.3719	5.74
Total	2809.204	100

Source: Data from Table 1, Table 2, Table 3 and Table 4

The currency structure of China's regular foreign exchange reserves is shown in Table 17.

Table 17: The Currency Structure of China's Regular Foreign Exchange Reserves in Percent of Total Regular Reserves

Currency	US Dollar	Japanese Yen	Euro	Other Reserve Currencies
Ratio	61 to 66	16 to 21	10 to 15	4 to 9

Source: Data from Table 8, Table 9, Table 13 and Table 15

4. The Management of China's Excess Foreign Exchange Reserves

Excess foreign exchange reserves are the surpluses which surpass the regular reserves. Keeping the long-term value and realizing high investment yields are the primary targets of the management of excess reserves. Some countries set up independent investment institutions to manage this part of their reserves. Normally the investment period, the yield and scope of investing excess reserves might be longer, higher and larger than those of regular reserves. For example, the assets invested can be long-term bonds issued by foreign governments, financial institutions, corporations with a high credit rating, and even some strategic equities.

The main difference between the management of excess foreign exchange reserves and the management of regular reserves is that the former pays more attention to liquidity and the latter pays more attention to long-term safety and profitability. When deciding the currency structure of excess reserves, the international status and the exchange rate risk of the various reserve currencies are the primary factors to be considered. Taking these factors into account the currency basket of the Special Drawing Rights (SDR) can serve as a reference to determine the optimal currency structure of excess foreign exchange reserves. The currency composition of SDRs is adjusted every 5 years. The structure of the basket mainly

reflects the relative importance of reserve currencies in international trade and the international financial system. The last adjustment occurred in October 2000 because of the introduction of the euro and its growing status in international financial markets. Nowadays, some countries such as Canada or Israel use the structure of SDRs as an orientation for their foreign reserve holdings or use SDRs as a measurement to evaluate the whole value of foreign exchange reserves. When we take the value of the US dollar on Jan 11th, 2006 the weights of the currency value can be calculated according to the composition of the SDRs. The result is shown in Table 18.

Table 18: SDRs and Their Components

(US Dollar Equivalent on January 11th 2006)

Currency	Component of the Currency Basket in SDRs	Spot Exchange Rate (US Dollar equivalent)	Value of US Dollar Equivalent	Portfolio Weight in SDRs in Percent
Euro	0.4260	1.2948	0.5516	36.90
Japanese Yen	21.0000	0.0084	0.1756	11.75
US Dollar	0.5770	1.0000	0.5770	38.6o
Other currencies	0.0984	1.9327	0.1902	12.70

Source: see IMF website: www.imf.org

From the table above, the weight of euro in SDRs is close to that of the U.S. dollar, which to some degree reflects the increasing importance and improved status of the euro in the world economy estimated by the IMF; and it also shows the current trend of an appreciating euro. Therefore, concerning foreign exchange rate risks and the importance of currencies in the world market, it is necessary for China to adjust the currency structure of its excess foreign reserves with the aim to improve the safety and long-term purchasing power of these reserves. Today, about 60%-70% of China's reserve assets are denominated in US dollar, about 20% in euro, and 10% in Japanese yen.[9] US treasury securities are the dominant assets held by China's government. According to the disclosure of the US Treasury Department, the holdings of US treasury securities by the Chinese government reached 414 billion US dollars by April 2007[10],which accounts for 34.5% of its gross reserves[11]. The large holdings of US government bonds help to finance the huge deficits of the US current account and also the deficit in the budget of public households. However, in a situation of US dollar depreciation, such huge holdings have and will definitely mean a great loss to China.

This is a dilemma for the central bank in China. On the one hand, from the perspective of portfolio management, reducing holdings of US assets is important; but on the other,

[9] Cp. Zhou Maoqing, interviewed by a journalist, see the website www.XINHUANET.com, 31th, Apr. 2006.

[10] The related report is presented on the website of the U.S. Treasury Department (www.ustreas.gov).

[11] The size of foreign reserves in China reached 1,200 billion in April 2007; see PBC website, (www.pbc.gov. cn).

reducing them will encourage US dollar depreciation even further, which will hurt China itself, as the rest of the reserves in US dollar will suffer a decline in value. Reducing US assets, moreover, will enlarge fluctuations of exchange rates in the world.[12]

Thus, reducing US assets of foreign reserves cannot be realized in the near future, while decreasing the ratio of US assets for the increment of reserves might be a proper way to change the currency structure of Chinese official reserves.

5.   New Institutions for Managing Chinese Excess Foreign Exchange Reserves

Most of the foreign reserves in China have been kept by the PBC, and the daily management has been run by the State Administration of Foreign Exchange, which is an associated independent institution belonging to the PBC. Excess foreign exchange reserves were invested in bonds issued by foreign governments, financial institutions and corporations with outstanding ratings. However, the two newly established companies, "Central Huijin Investment Company of China" [13]and "China's Forex Investment Company [14]" reflect a new pattern of the management of China's foreign exchange reserves. The investment direction of the former is focused on the equities of local financial institutions. Huijin has already bought the stocks of the Bank of China, the Construction Bank of China, the Industrial and Commercial Bank of China and has become the biggest shareholders before their listings on the stock exchange markets. The investment strategy of the latter is mainly concentrated on overseas equities. In June 2006, this company bought about 10% of the shares of the US Blackstone Group, valued at 3 billion US dollars. Equity investments helps to achieve higher earnings for foreign reserves. For example, the listing of the "Bank of China" on the stock exchange market brought Huijin a profit of more than 360 billion RMB, about 47 billion US dollars[15].

The establishment of these two companies is a new experience for China. The companies are commercially driven and engage in long-term strategic investment. A number of issues, such as who is authorized to manage the companies, their legal foundations, how reserves should be allocated as well as how internal and external corporate governance should be shaped all need to be clarified and explored further.

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[12] A brief announcement that "China will diversify the structure of foreign reserves" by one of China's officials brought about a great disturbance in the US, for US media guessed that China would begin selling US assets. The announcement also shocked the international financial market. The markets could not be stabilized until officials from both of the US and China refuted such rumors publicly. See the website: www.XINHUANET.com, 31th Mar. 2006.

[13] The PBC injected 45 billion US dollars of foreign reserves to establish the "Central Huijin Investment Company" in 2003.

[14] In 2007 the "Foreign Exchange Investment Company of China" was injected by the Ministry of Finance (MOF) of China, who authorized the company by national legislation to sell 1.55 trillion yuan (US dollar 200 billion) of special treasury bonds. The funds raised will be used to buy US dollar 200 billion of the country's total of US dollar1.2 trillion foreign exchange reserves from the central bank.

[15] Xie Ping, CEO of Central Huijin Investment Company of China gave a speech on the "Conference of Framework of International Finance and Financial Supervision", held by Tsinghua University, Beijing, 10th Jul. 2006.

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