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CHINA'S FINANCIAL SYSTEM AND FOREIGN EXCHANGE REGIME

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เศรษฐกิจของประเทศจีนได้กลายมาเป็นส่วนหนึ่งของตลาดโลกมากขึ้นเรื่อยๆ สังเกตได้จากการที่ธุรกรรมทางเศรษฐกิจระหว่างประเทศส่วนใหญ่เป็นไประหว่างประเทศจีนกับประเทศอื่นๆที่เกี่ยวพันกับตลาดปริวรรตเงินตรา (foreign exchange market) ดังนั้นจึงมีความจำเป็นอย่างยิ่งสำหรับผู้ที่เกี่ยวข้องและสนใจเรื่องเศรษฐกิจโลกในการทำความเข้าใจ ระบอบการแลกปริวรรตเงินตราของประเทศจีน (China's Foreign Exchange Regime) ทั้งนี้จุดประสงค์ของการทำวิจัยฉบับนี้เพื่อชี้ให้เห็นถึงปฏิสัมพันธ์ระหว่างระบบการเงินของจีน ระบอบการปริวรรตเงินตราต่างประเทศ รวมถึงผลต่อเศรษฐกิจของจีนโดยรวม สำหรับข้อสมมติฐานในเบื้องต้นก็คือ ระหว่างระบบการเงิน (the financial system) และระบอบการแลกปริวรรตเงินตรา (the foreign exchange system) ของจีนมีความเชื่อมโยงที่สำคัญต่อกัน และเป็นข้อจำกัดซึ่งกันและกัน วิธีการศึกษาในรายงานวิจัยชิ้นนี้ได้ใช้หลักการจากทั้ง เศรษฐศาสตร์จุลภาค และเศรษฐศาสตร์มหภาค ร่วมด้วยการใช้ แบบจำลองทางเศรษฐศาสตร์มหภาค (macroeconomic modeling) การสัมภาษณ์ การวิเคราะห์โดยการบรรยาย และการวิเคราะห์ทางสถิติ กรอบความคิดทางเศรษฐศาสตร์มหภาคที่ใช้ในที่นี้คือ Macroeconomic Balance Approach Model.

ผลของการวิจัยฉบับนี้ คือสกุลเงินหยวน (renminbi) มีมูลค่าน้อยกว่าความเป็นจริง (undervaluation) อย่างมาก และการที่มีมูลค่าน้อยกว่าความเป็นจริงนี้เองมีส่วนสำคัญที่ทำให้เกิดกระแสความกดดันด้านเงินเฟ้อของเศรษฐกิจภายในของจีน ส่งผลให้เกิดการแทรกแซง ด้วยวิธีการ sterilization อย่างเข้มข้น จากแบบจำลองเศรษฐศาสตร์มหภาค (macroeconomic model) พบว่าการทำ sterilization เป็นตัวก่อให้เกิดการถดถอยลงของอุปสงค์ภายในประเทศ และเพิ่มภาระการพึ่งพาให้ตกกับอุปสงค์จากภายนอกประเทศ การควบคุมจากรัฐในเรื่องเงินทุนไหลออกเพื่อที่จะช่วยคุ้มครองภาคการเงินที่ขาดการแข่งขัน (uncompetitive financial sector) ถือเป็นแหล่งหนึ่งที่มีการเกิดมีมูลค่าน้อยกว่าความเป็นจริงของเงินสกุลหยวน นอกจากนี้รายงานวิจัยฉบับนี้ยังพบว่าระบอบการแลกเปลี่ยนในระยะกลาง (optimal medium-term foreign exchange regime) ของจีนมีหน้าที่ในการรักษาเสถียรภาพค่าของเงินหยวน (renminbi) ต่อเงินตราสกุลต่างประเทศอื่นๆ ซึ่งมีความเสรีในการแลกเปลี่ยนสกุลเงิน (fully convertible currency) อย่างไรก็ตามในระยะยาวประเทศจีนควรมีการปรับให้เงินหยวนมีอัตราแลกเปลี่ยนที่เสรีมากขึ้น โดยเงื่อนไขก่อนการปฏิรูปครั้งนี้ก็คือการพัฒนาศักยภาพการแข่งขันระหว่างประเทศของตลาดการเงินภายในประเทศจีนเอง (domestic financial markets)

สาขาวิชาเศรษฐศาสตร์และการเงินระหว่างประเทศ ลายมือชื่อนิสิต.....
ปีการศึกษา 2548 ลายมือชื่ออาจารย์ที่ปรึกษา.....

488 59741 29 MAJOR: INTERNATIONAL ECONOMICS AND FINANCE

KEY WORD: FINANCIAL SYSTEM / FOREIGN EXCHANGE REGIME / CHINA

PATRIK SLOVIK: CHINA'S FINANCIAL SYSTEM AND FOREIGN EXCHANGE REGIME. THESIS ADVISOR: CHAYODOM SABHASRI, PH.D.

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China's economy has become increasingly integrated with the world markets. Most international economic transactions conducted between China and other countries involve the foreign exchange market. It is therefore important for everybody concerned with the global economy to understand China's foreign exchange regime. The objective of this research is to point out interactions between China's financial system and foreign exchange regime, and the implications for the overall Chinese economy. The underlying hypothesis is that there are significant implications and constraints between the financial system and the foreign exchange regime in China. The methodology employed in this study combines microeconomic and macroeconomic approaches. It includes macroeconomic modeling, research interviews, descriptive analysis, and statistical analysis. The macroeconomic framework of the study is the macroeconomic balance approach model.

The findings of the research show that the renminbi is significantly undervalued. The undervaluation plays a leading role in ongoing inflationary pressure on the domestic economy and consequent large scale sterilization. According to a macroeconomic model, proposed in this study, large scale sterilization will lead to deterioration of domestic demand and increasing dependency on external demand. Administrative controls on capital outflows, that aim to protect the internationally uncompetitive financial sector, are one of the main sources of the undervaluation. According to this study, the optimal medium-term foreign exchange regime for China is to stabilize the value of renminbi against an internationally fully convertible currency. However, in the long-term China should attempt to introduce a more convertible renminbi. The prerequisite for such a reform is an improvement of international competitiveness of the domestic financial markets.

Field of Study: International Economics and Finance Student's signature.....

Academic Year: 2005 Advisor's signature.....

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LIST OF ABBREVIATIONS

ABC	Agricultural Bank of China
ADBC	Agricultural Development Bank of China
BOP	Balance of Payments
CAB	Current Account Balance
CBRS	China Banking Regulatory Commission
CIRC	China Insurance Regulatory Commission
COB	Construction Bank of China
CSRC	China Securities Regulatory Commission
EIBC	Export-Import Bank of China
EX	Exports
FX	Foreign Exchange
GIS	Government Insurance System
ICBC	Industrial and Commercial Bank of China
IM	Imports
IPO	Initial Public Offering
JSCB	Join Stock Commercial Bank
LIS	Labor Insurance System
NFFI	Net Foreign Financial Income
NFFT	Net Foreign Financial Transfers
PBC	People's Bank of China
PICC	People's Insurance Company of China
REER	Real Effective Exchange Rate
RMB	Renminbi
OECD	Organization for Economic Cooperation and Development
OTC	Over the Counter
SDB	State Development Bank
S-I	Saving-Investment Balance
SOCB	State Owned Commercial Bank
SOE	State Owned Enterprise
USD	United States Dollar
WTO	World Trade Organization

CHAPTER 1
INTRODUCTION

1.1. Background, Objectives and Scope of the Study

China's economy has sustained a rapid and steady growth for over two decades. At the beginning of the 21st century, China accounts for an important share in the global economy, with ever rising trade and financial integration with the world markets. This naturally comes with an increasing interdependency between the global and Chinese economies. It is therefore necessary for any country that participates in the global economy to understand the opportunities and uncertainties of China's economy.

Foreign exchange market integrates most of the various economic transactions conducted between China and the rest of the world. Not surprisingly China's foreign exchange regime has become a central point of the debate among renowned economists and eminent policy makers. For these reasons it has also become a subject matter of this research study. The objective of this research is to pinpoint the implications between China's financial system and foreign exchange regime.

Most of the studies conducted in this field concentrate on the relationship between the trade balance and exchange rate regime. The hypothesis underlining this research is that there is significant implications and constrains between the domestic financial system and foreign exchange regime. Consequently, the study focuses on China's domestic financial system, and gives attention to the development of the overall balance of payments and its financial account.

The study is beneficial for everyone that is looking for a thorough but concise analysis of China's financial system since the establishment of the People's Republic of China in 1949 and/or an analysis and explanations on some questions connected with China's foreign exchange regime after the Asian financial crisis. Most notably this paper introduces some original conclusions about the implications between China's financial system and foreign exchange regime.

1.2. Methodology and data collection

The methodology that was employed in this study combines microeconomic and macroeconomic approaches. The analysis is further strengthening by research consolations and interviews with experts of the Chinese economic development. Microeconomic analysis was conducted in the form of consultations with the stakeholders of the China's financial system. Macroeconomic analysis attempts to examine the economic behavior on an aggregated level. This study includes and develops macroeconomic balance approach framework and some other models (e.g. effects of sterilization on economic activity).

The main part of the study was conducted in the form of field research in People's Republic of China. One of the main conclusions of this study is the implication between the domestic capital markets and development of the foreign exchange regime. During my stay in China I held consultations about the capital markets with experts from Shanghai Jiao Tong University. Furthermore, I conducted a research interview, on this matter with a financial journalism and securities analyst from Zhejiang Province. This interview is included in this paper in BOX III.

I conducted a necessary microeconomic analysis of China's trade enterprises during 'East China Fair' held in Shanghai on March, 2006. During meetings, with selected companies, I addressed the interactions between trade and foreign exchange system, in particular the issue of pricing and invoicing, impacts of RMB revaluation, and other trade related issues. Later on, I had the chance to discuss these issue and some preliminary results with international and domestic experts during the 'Global and Local Marketing Conference' held at Shanghai University.

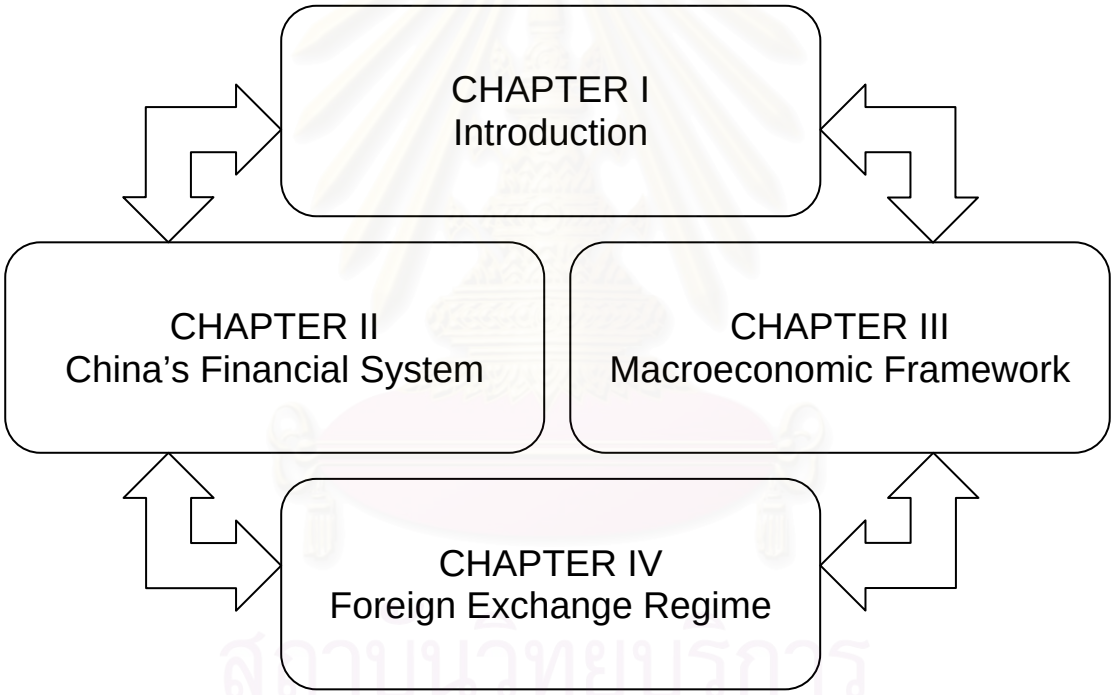
This paper is one of few research studies published outside mainland China that puts significant attention to the development of the Health Care System and Social Security System. One of the conclusions form this is study is that a successful development of these system will play an important role in lowering precautionary savings and a much needed tightening of the saving-investment gap. I conducted a research interview on this matter with Associate Professor Huang Cheng, PhD. from Shanghai Jiao Tong University. This interview is included in this paper in BOX II.

Macroeconomic modeling became one of the crucial parts of the research. Most of the macroeconomic models presented in this paper originate from this study. Macroeconomic Balance Approach model of exchange rate determination was used as a macroeconomic framework to support some of arguments about the relationships between fundamental economic indicators in an open economy. Further, there are two new models of relationships between undervaluation and economic activity, in particular the impacts of undervaluation on domestic and external aggregate demand.

More than 90% of the reference literature was collected during the field study in China. The main sources of the papers are Shanghai Municipal Library, People's Bank of China, Shanghai Banking Regulatory Commission, Shanghai Security Regulatory Commission, and as well the libraries of Chulalongkorn University and UN's Economic and Social Commission for Asia and Pacific. The literature was used to support and enhance the arguments of this study. However, most of the conclusions of this paper are new and in the main outcome disagree with the conventionally presented arguments about China's foreign exchange regime.

1.3. Organization of the study

The paper focuses on the implications between China's domestic financial system and foreign exchange regime. Introduction to the subject matter, together with the research objective, hypothesis, and description of the methodology are included in this first chapter. The review of literature is included in the consequent chapters together with the analytical part. Chapter 2 encompasses an analysis of the evolution of China's financial system, performance of China's financial institutions, and a structure of the Chinese financial markets. Chapter 3 develops a macroeconomic framework of exchange rate determination that serves as an overall methodological background for this study.



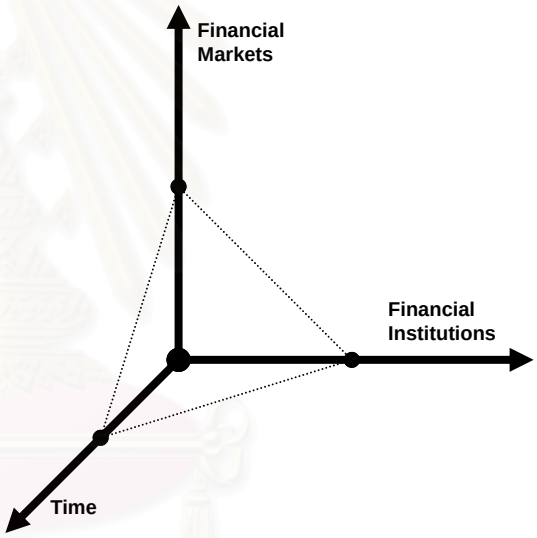
The analyses of the financial system together with the macroeconomic framework make a good foundation for an in depth analysis of China's foreign exchange regime. Chapter 4 addresses the questions of optimal exchange rate, sources and causes of domestic economic imbalances, impacts of sterilizations on economic activity, and foreign exchange policy options and their impacts on the trade sector and financial sectors. The conclusions and recommendations from this study are included in Chapter 4 – part 4.7, which summarized the implications between China's financial system and foreign exchange regime.

CHAPTER II
CHINA'S FINANCIAL SYSTEM

2.1. Introduction to Financial Systems

According to the traditional definition, financial system consists of various financial institutions (commercial banks, insurance companies etc.) and various financial markets (the money market, the stock market etc.)[1]. Such a definition is lacking a necessary dynamic, because it does not emphasize the role of historical experience. For a comprehensive analysis of the financial system, it is necessary to add the variable of time as a third characteristic feature of the financial system.

The Dynamic approach to the analysis of financial system states that a financial system consists of three dimensions[2], namely financial institutions, financial markets, and its own historical path. The reason behind emphasizing the third dimensions is the belief that historical experience of the stakeholders of the financial system has a significant impact on the present and future structure of the financial system. Same sets of actions (e.g. economic reforms) are likely to have different outcome in two systems that are similar in their present characteristics, but different in their past evolution.



For illustration consider two countries with the same present characteristics of their financial systems. Both countries have, at the present fixed, exchange rate regimes. However, one of the countries has had fixed exchange rate regime for about 50 years (or the life span of one generation), while the other country has had fixed exchange rate only for 5 years, and prior to that had a successful period of floating

[1] See for example: Wu J. (2005)
[2] Instead of two considered by the traditional approach.

exchange. It is likely that the two (experienced and inexperienced) countries will face different potential risk, anticipated costs and necessary time, if they decide to move to floating foreign exchange rate.

The underlying analysis of the China's financial system will follow the above described three-dimensional approach. First, the evolution of the domestic financial system will be considered. Second, the institutional structure of the system will be analyzed. Finally, attention will be devoted to the financial markets of the domestic economy. Historical perspective, institutional background, and analysis of financial markets will provide a good framework for later analysis of the foreign exchange market.

2.2. Evolution of China's Financial System

2.2.1. Evolution of the financial system before the 1980s

The People's Republic of China was formally established in 1949. The new government carried out policies aimed at building up a socialist planned economy system. The socialist transformation had also a significant impact on the domestic financial system. The newly constructed financial system was monolithic, with only one financial institution – the People's Bank of China[3] (PBC). The milestone of this period is the year 1956, when all existing private financial institutions where merged into PBC, and a unified and centralized financial system came into being.

The one-tier banking system, where central banking and commercial banking are merged into one centralized banking institution, is typical especially for socialist planned economies that emerged after the Second World War (e.g. Soviet Union, Czechoslovakia, Cuba etc.). Furthermore, there were usually no other financial institutions than banks. Thus, the banking system and financial system were essentially the same.

Main distinctive characteristics of a financial system under a socialist planned economy are summarized below:

1. The Financial system is highly bank-centered, with no other financial institutions than banks. All financial institutions are centralized under the rule of one single super-bank.
2. Variety of financial assets is extremely limited. Usually there are only two types of financial assets, namely cash and bank deposits.
3. The role of banks in allocation of resources is insignificant. Banks usually play only an administrative function in the system, with minimal independency and flexibility.

"Under the planned economic system, finance was restricted by the overall planning mode and the People's Bank of China merely played the role of a cashier. It

[3] The People's Bank of China was formally founded in 1948 in Shijiazhuang City, Hebei Province and in 1949 moved to Beijing where is it headquartered until the present days.

was neither a real commercial bank, nor a true central bank[4].” Furthermore, in 1969 the headquarters of PBC was merged with the Ministry of Finance, and all its branches were combined with governmental institutions at corresponding levels. Thus, the banking system also lost its very limited institutional independency and institutional integrity[5].

The monolithic banking system and the overall socialist planned economic system did not prove to be very efficient. Furthermore, the ten years of Great Cultural Revolution (1966-1976) also left a negative mark on the national economic welfare. According to the renowned Chinese economist Jinglian Wu, in the period around the year 1976, the Chinese economy was driven “to the verge of collapse[6]”. Consequently, the market oriented reform began in the year 1978, when China’s leaders decided to undertake a “program of gradual but fundamental reform of the economic system[7]”.

In the late 1970s China’s economy experienced great changes in three main aspects[8]:

1. People’s communes were replaced by households as units of agricultural production, which greatly expanded the scope of monetary activities.
2. Non-state industrial and commercial enterprises, which operated independently and were somewhat market-oriented, began to emerge.
3. State-owned enterprises (SOEs) were given more decision-making power in financing.

The financial reform was triggered by the changes in China’s economy. The changes called for a more flexible and efficient forms of financing. The reform of the financial system was initiated in the 1980s, when a rudimentary financial system came into being.

[4] Xu (2000)
[5] Seven years later in 1976, the PBC was re-established by separating it from other governmental financial departments.
[6] Wu J. (2005)
[7] Worden, Savada, and Dolan (1987)
[8] Wu J. (2005)

2.2.2. Evolution of the financial system during the 1980s

The inefficient mono-bank system was due to change. A completely new financial structure was gradually introduced during the 1980s. The objective of such reform was to create a more flexible system, incorporate competitiveness, and meet financial needs of the changing economy. Already in 1979, PBC's division responsible for agriculture was given operational independence and it has been transformed into the Agricultural Bank of China (ABC). In a similar manner, the PBC's division for foreign trade was transformed into the Bank of China (BOC), and the project finance and construction lending division was changed into independently operating People's Construction Bank of China[9] (COB). In 1980 the People's Insurance Company of China (PICC) restored insurance operations[10].

After the creation of three big specialized banks and one big insurance company, the PBC still continued to pursue central and commercial banking functions. Savings and loans businesses were separated from PBC four years later in 1983 when the State Council decided to establish the Industrial and Commercial Bank of China (ICBC) for this purpose. The separation of commercial banking functions is an important milestone in the evolution of China's financial system. Since then, the People's Bank of China began to exercise the functions of a central bank. A two-tier banking system, where the first tier comprehends central banking functions and second level comprehends commercial banking functions, was established.

The first half of the 1980s is thus clearly characterized by formation of specialized financial institutions. The People's Bank of China specialized and pursued the functions of a central bank. The big four specialized banks focused on different sectors of the economy. The Agricultural Bank of China attempted to assist the rural economy. The Bank of China focused on international economic transactions. The People's Construction Bank of China specialized in financing investments in fixed assets. Finally, the saving and loan services for industrial and commercial purposes became the domain of the Industrial and Commercial Bank of China. The only

[9] In 1996, the People's Construction Bank of China changed its name to China Construction Bank.

[10] In 1996, PICC was divided into three independent companies and in 1998: China Life Insurance, China Property Insurance, and China Reinsurance.

financial institution specialized in insurance businesses was the People's Insurance Company of China.

From the above description it is apparent that on the one hand the system became more flexible and with lesser conflicts of interests, however on the other hand it was lacking competitiveness, because each financial institution was specialized on a different segment of the national economy. Further more the big four banks were often instructed to give loans to unprofitable state-owned businesses, which lead to a low profit orientation and insufficient risk control policies. Another characteristic drawback of this period was the double objective of the central bank – to support economic growth on the one hand and to maintain currency stability on the other. "In practice central Bank was often pushed by the government to give priority to economic growth through expansionary monetary policy which led to inflation and economic fluctuations[11]."

During the second period of the 1980s, the creation of new financial institutions had further accelerated. Rural and Urban credit cooperatives were established with the aim to provide small scale banking services. The first joint-stock commercial banks were established in 1987[12]. These banks were much smaller in scale than the big four, specialized banks, thus more flexible to finance small and medium sized enterprises. Furthermore, various non-bank financial institutions (e.g. Trust and Investment Corporations, Leasing Financial Companies) were created. Thus, 1980s is the period when China's financial system was invented. However, the various problems the system was facing at the end of the decade called for a serious restructuring.

2.2.3. Evolution of the financial system during the 1990s

At the beginning of the 1990s the newly established Chinese financial system was facing significant problems that called for a serious reconstruction. First, the central bank was under a strong influence of the central and local governments, with

[11] Wu J. (2005)
[12] Bank of Communications (BOCOM) and China CITIC Bank (CNCB)

all its negative impacts. Second, the big specialized banks were pushed into non-profitable policy loans, especially those given to inefficient government enterprises. Further, as already described before, there was virtually no competition between banks. Third, the financial system was strongly bank-centered and a development of other means of financing was necessary. Finally, with the financial system developing into a more market oriented one, and with the establishment of various new bank and non-bank financial instructions, a more coherent system of financial supervision had to be developed.

In the case of the People's Bank of China an important milestone was set in the year 1995 when the National People's Congress adopted the Law of the People's Bank of China, giving the central bank a higher level of independency. The double objective of economic growth and price stability was abolished. According to the new law, the aim of central bank is to "maintain the stability of the currency and thereby promote economic growth[13]." Thus the leading objective of the central bank is stability of the currency, which is seen as an important prerequisite for economic growth. To weaken the interference of local governments in the monetary policy and financial supervisor of the People's Bank China, a major organizational reconstruction took place in 1998. The thirty-one branches of the PBC that were based in the administrative regions were replaced by nine branches located in major cities. Furthermore, throughout the 1990s the monetary policy conduct of the PBC was restructured from rather direct instruments to rather indirect policy instruments.

At the beginning of the 1990s there were basically two types of banking institutions: the specialized banks and the joint-stock commercial banks. There was a significant difference between those two kinds of banking institutions. First, the specialized banks were large banks with nation wide influence, while the joint-stock commercial banks were smaller banks with a rather local or regional scope. Second, the specialized banks were under the pressure of the government to perform non-profitable policy oriented loans. On the other hand, "some of the newer and more independent banks were not subjected to the same pressure. Essentially, the

[13] Law of the People's Republic of China on the People's Bank of China: Article 4.

government was driving the creation of a two-part banking system – one subject to direct control and the other more market oriented.[14]"

In order to separate the policy oriented loans from the specialized banks, the State Council decided in 1994 to set up three policy banks. The Sate Development Bank established to carry out policy loans related to priority state projects. The China Agriculture Development Bank was to perform loans related to the agricultural sector. Finally, the Export-Import Bank of China was given responsibility for transactions related to international trade. After the establishment of these policy banks, the specialized banks were gradually transformed into state-owned commercial banks. In addition to these changes, some of the rural and urban credit cooperatives were transformed into rural and urban cooperative commercial banks. Thus at the end of 1990s the domestic bank industry already consisted of four different banking institutions: the state-owned commercial banks, joint-stock commercial banks, policy banks and cooperative commercial banks[15].

Indirect financing via the banking sector was and still remains a dominant source of financing in China. The development of the securities market started on a slow pace already in the 1980s. However, the milestones in the development of securities markets were set in 1990s when the direct financing accelerated. In 1990, the first nation-wide market for securities was set up in Shanghai[16] and one year later also in Shenzhen[17]. These two stock exchanges also serve as a secondary market for trades with government and corporate bonds[18]. These changes, together with the development of an OTC market for securities, enabled the Chinese corporations to raise valuable long-term capital. The other effect of direct financing was growing transparency of the enterprises and improvement of their control. Together with the development of the capital markets plentiful security companies and various investment funds started their operations during the 1990s.

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[14] Casserley, Gribb (1999)

[15] According to the 13th article of the Law on Commercial banks, the required capital for establishment of commercial banks is 1 billion yuan, while the capital necessary for establishment of urban credit cooperative bank is 100 million yuan and rural cooperative commercial bank 50 million yuan.

[16] Shanghai Stock Exchange (SSE)

[17] Shenzhen Stock Exchange (SZSE)

[18] Bonds are currently predominantly traded on the Shanghai Stock Exchange, where they represent more than 50% of total trades in stocks, bonds and funds.

The 1990s also brought about improvements in financial system supervision. China Securities Regulatory Commission (CSRC) started its operation in 1993 with the objective to regulate the security markets, security financial institutions and other security related issues. Later on, in 1998, the China Insurance Regulatory Commission (CIRC) was established as a specialized agency in charge of supervision over the insurance services, insurance companies, and the insurance market. Thus during the 1990s China's financial system was restructured in most of its aspects: central banking, commercial banking, policy financing, securities markets and financial system supervision. At the end of the 1990s the introduced reforms were far from finished and were to be further deepened in the new millennium.

2.2.4. Evolution of the financial system since 2000

The restructuring of China's financial system continued gradually in the first decade of the 21st century. The mile stone of this period was the accession to WTO in 2001. The commitments that China made upon the accession will have significant impact on the financial sector. Most significantly, China has promised to fully open its banking and financial sector to foreign financial institutions five years after entering the WTO. Opening up to foreign investors will automatically mean opening up to domestic private investments. According to the Chinese authorities, "domestic private investments should be permitted and encouraged in all areas where foreign investment is encouraged and permitted[19]." Thus, the first decade of the new millennium is likely to witness more foreign and private engagement in the domestic financial industry.

During the first half of the decade the four wholly state-owned banks were gradually transformed into shareholding banks. The shareholding system is believed to perform better, as the property rights are more clearly defined. "The root cause of the Big Four's Banks problems lies in their poorly defined relations of property rights

[19] Opinions on Promoting and Guiding Domestic Private Investment and Opinions on Policies and Measures to Seed Up the Development of Service Industries during the Tenth Five-Year Plan Period (2001).

and lack of proper governance structure. Although they are nominally state-owned banks, the owner is actually absent. … As a result, without pressure from the government, no one really cares about the financial risk and economic efficiency of state-owned banks. Hence, the transformation of state-owned banks into joint-stock banking corporations has become one of the most important reform tasks.[20]"

Chinese authorities carried out several actions aimed at increasing the competences of the banking sector. To overlook the reform process the China Banking Regulatory Commission (CBRC) was spun off from the People's Bank of China in 2003. The supervision of the banking sector was given institutional independence and institutions responsibility. The CBRC adopted the Basel Core Principles for Effective Banking Supervision, and took measures to lower non-performing loans[21], increase capital adequacy ratios, and limit risks from loan concentration. According to Liu Mingkang, Chairman of the China Banking Regulatory Commission, the objective of CBRC is to put "in place all the essential elements for banking supervision in 2006 and achieve broad compliance of the Basel Core Principles in 2012.[22]"

In order to speed up know-how transfer, the banks have introduced foreign strategic investors. As an example, the Singapore based Temasek Holding already acquired shares in two former SOCBs. In October 2005, Temasek acquired 6% in China Construction Bank and 5% share in Bank of China in February 2006. Furthermore, in 2005 two of the five largest Chinese banks, the Bank of Commutation and Construction Bank of China were listed on foreign stock-exchange markets. Initial public offerings for the Bank of China and the Industrial and Commercial Bank of China are planed during the second half of 2006 or at the beginning of 2007. Agricultural Bank of China, the last of the former four wholly state-run banks, is viewed as a much longer-term listing candidate since it is the weakest among them.

[20] Wu J.(2005)
[21] Earlier in 1999, Asset Management Companies (AMCs) were established to acquire NPLs from the state-owned banks. These ACMs are: China Oriental ACM, Great Wall ACM, Cinda ACM, and China Huarong ACM.
[22] Mingkang (2006)

In the middle of 2001 the stock market indices[23] reached their historically highest points. The stock markets which were already considered to be overvalued started to decline. The bearish trend forced many of the plentiful security companies, and trust and investment corporations out of business. The commercial banking industry, that is prohibited to involve in investment banking activities, was basically unaffected by the deteriorating stock market. In the middle of the first decade the banking sector remained the dominate source of financing of the Chinese economy, with less than 5% of funds raised on the stock markets, and a significantly underdeveloped corporate bond market.

BOX I: HIGHLIGHTS OF THE EVOLUTION OF CHINA'S FINANCIAL SYSTEM

HIGHLIGHTS: Evolution of the financial system before 1980s

- Foundation of the People's Bank of China in 1948;
- All financial institutions were merged into PBC in 1956;
- The PBC was merged into the Ministry of Finance in 1969 and re-established in 1976;
- The gradual reform of the economic system began in 1978;
- Three specialized banks (ABC, BOC, CBC) were created in 1979;

HIGHLIGHTS: Evolution of the financial system during 1980s

- The People's Insurance Company of China restored its operations in 1980;
- Last of the four specialized banks was established in 1983;
- People's Bank of China cease to exercise commercial banking services in 1984;
- The first joint-stock commercial banks were founded in 1987;
- Expansion of Credit Cooperatives and other non-bank financial institutions throughout the period;

[23] Index of Shanghai Stock Exchange and Index of Shenzhen Stock Exchange

HIGHLIGHTS: Evolution of the financial system during 1990s

- Shanghai Stock Exchange was established in 1990;
- Shenzhen Stock Exchange started to trade in 1991;
- China Security Regulatory Commission was established in 1993;
- Three new Policy Banks (ADBC, SDB, EIBC) were created in 1994;
- Consequently in the same year Specialized Banks were transformed into SOCB;
- Law on the People's Bank of China was adopted in 1995;
- Law on Commercial Banks was adopted in 1995;
- China Insurance Regulatory Commission came into being in 1998;

HIGHLIGHTS: Evolution of the financial system since 2000

- Historically highest point of stock indices in 2001 and a large decline since;
- China Banking and Regulatory Commission was established in 2003;
- Initial Public Offering of the Bank of Commutation took place in 2005;
- Initial Public Offering of the China Construction Bank took place in 2005;
- Foreign financial institutions will gain full accesses to domestic markets in 2006;
- Transformation of state-owned into shareholding banks throughout the period;
- Growing foreign and private engagement in the financial sector during the period;

2.3. Financial Institutions in China

2.3.1. China's Informal Financial Institutions

Many academic papers[24] provide a one-sided analysis of the China's financial system solely focused on the formal financial sector. This characteristic is indeed only one part of the whole story. Beside the formal financial institutions there exist a significant number of informal financial institutions. The informal financial sector consists of all those institutions which engage in borrowing and lending without direct authorization, supervision or regulation of financial authorities as provided by the laws. The coexistence of informal and formal financial sectors is dubbed 'financial dualism'[25]. Especially in emerging markets, the share of informal financing is significantly high.

In China the informal financing institutions played a significant role in fueling the development of the private economic sector, in particular in the development of private small and medium enterprises. According to a nationwide survey on informal finance[26] in the least developed western provinces, over 60% of small and medium enterprises financing comes from informal sources (sometimes over 70%) and in eastern provinces the corresponding share is 30%. The share on total financing in some provinces reaches out to 30%. It is astonishing that such a significant economic powerhouse – the informal sector – was completely ignored by so many renowned economists. That is why I decided to begin the analysis of financial institutions unprecedently with an analysis of informal financial institutions.

Segmentation of the financial market by the size of the company, points at an important characteristic of informal financing: As shown in the table 1, small-scale private enterprises borrow from the informal financial sector comparatively more. On the contrary, it can be derived, that the formal financial system serves mainly public enterprises and large or medium sized private firms.

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[24] Xu (2000), Chow (2002), Harner (1999),
[25] Yang, Shea (1999)
[26] Central Finance University of China, 2005

Table 1: Share of informal borrowing in total borrowing of the private sector

	Size of the company (Sales volume, CNY million)						
Sector	**0 - 1**	**1 - 3**	**3 - 10**	**10 - 20**	**20 - 50**	**50+**	**All**
Manufacturing	24%	24%	20%	26%	9%	4%	18%
Services	44%	35%	9%	12%	12%	9%	21%
All	36%	28%	16%	20%	10%	6%	20%

Source: University Service Centre of the Chinese University of Hong Kong[27].

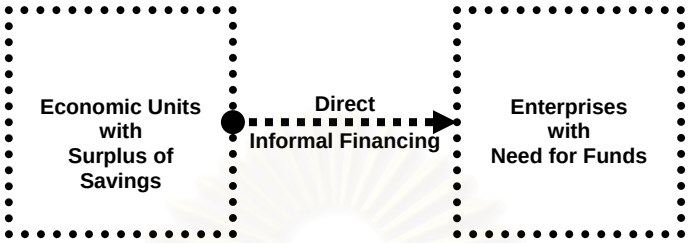
Institutions that engage in informal financing activities can be divided into two broad groups: The first group comprises of authorized financial institutions that engage in activities outside their operating scope. For example, Rural Credit Cooperatives were originally set up to support the development in rural areas. However, "many of these funds have turned to non-agriculture and banking-oriented businesses, deviating from their original aim, especially in attracting funds and providing loans.[28]" The second group comprises of unauthorized financial institutions that engage in financial activities. Those are individuals or companies that pool funds for their internal financing or act as financial intermediates on the informal markets. The sequence in evolution of these unauthorized financial institutions is analyzed below.

There are various possible explanations for the emergence of the informal sector. The most notorious of them are based on the theory of information asymmetry[29] or consequences of governmental financial repression[30]. According to my own survey conducted during a visit in China in March 2006, the development of informal financial institutions evolves in a sequence where direct financing develops first, while the indirect financing develops second. This is in contrast to the evolution of formal financing, where it is traditionally believed that indirect financing (intermediation by financial intermediaries) evolves before direct financing[31].

Small and medium private enterprises often face difficulties when raising funds from the big and highly regulated banks[32]. To raise funds for their operations

[27] Note: Sample size is 2 460 companies (with available data).
[28] Zhang Ch. (2000)
[29] Stiglitz and Weiss (1981)
[30] McKinnon (1973)
[31] See for example: Seiichi Masuyama (2000)
[32] The difficulties to raise funds by small and medium private enterprises are by Ya-Hwei Yang and Jia-Dong Shae (2000) caused by asymmetric information, financial repression, low equity ratios, unreliable financial statements, and questionable collateral of small firms. In this analysis

they sometimes turn to the public (or other economic non-financial units) offering them higher returns on deposits. This way the enterprise raises funds on lower cost compared to the opportunity cost connected to borrowing from financial official intermediaries. Direct financing take place by issuing of non-regulated securities.



Some of the companies that are directly financed in a non-regulated and informal manner will become know, over time, as reliable depository partners. Good reputations will lead more individuals (or other economic units) to deposit their savings in those companies. With more deposits, relative to actual need for funds, these companies will gradually change to informal intermediaries, by lending the surplus to other companies. Thus, indirect financing will develop in the informal sector with certain companies gaining the role and reputations of financial intermediaries.

The above described model is an example of possible evolution of the informal financial institutions. In an economy there are various informal financing institutions and their evolution can have similarities or differences to the above described model. The diverse types of formal financial institutions operating in the Chinese economy are characterized below.

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we will take the difficulties that small and medium private enterprises face by raising funds, rather as a fact that is characteristic for most of the developing economies.

2.3.2. *Formal Financial Institutions*

The People's Republic of China has adopted a specialized financial system – separating commercial banking, investment banking and insurance services. Commercial banks can not involve in investment banking or insurance services and vice versa. The financial regulatory system is set up in a similar manner. While the People's Bank of China is mainly in charge of monetary policy and foreign-exchange policy, there are three independent supervisory commissions that regulate the financial system. China Banking Supervisory Commission (CBSC) is in charge of the commercial banking sector, China Securities Supervisory Commission (CSSC) regulates the securities market, and China Insurance Supervisory Commission (CISC) controls the insurance business. All these financial system regulators are independent from each other and under the supervision of the Sate Council as shown in the figure below.

China's banking sector accounts[33] for more than 90% of total assets of all financial institutions. The major banking institutions in the country can be divided into two groups: sate-owned commercial banks (SOCB) and joint-stock commercial banks (JSCB). At the beginning of 2006, there were in total 17 major banking institutions. State owned commercial banks have undergone three phases of their development. In the first phase[34] these banks were set up as specialized banks

[33] Calculated as share of the combined banking sector assets to total assets of all financial institutions

[34] From 1979 – Until 1994

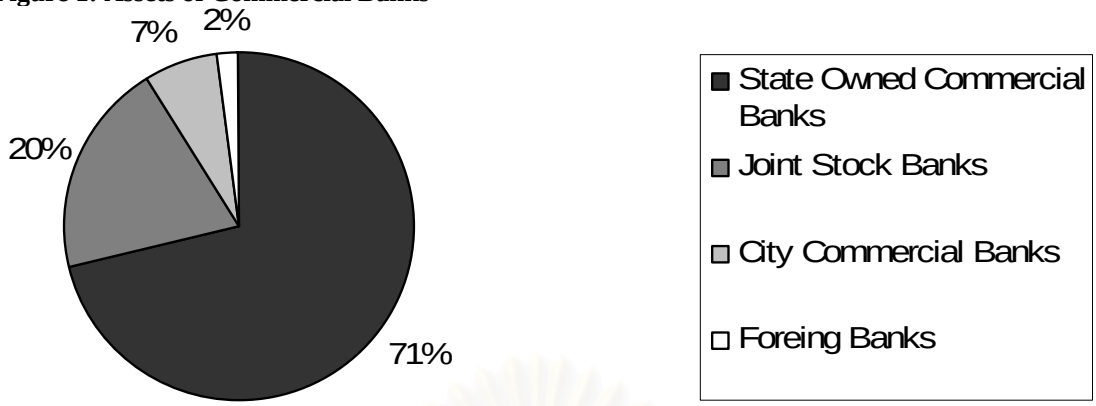
focusing on different segments of the economy. In the second phase[35], these banks were transformed into wholly state owned commercial banks. In the last phase[36], state owned commercial banks have been gradually transformed into shareholding companies, introducing foreign strategic investors and undergoing their first initial public offerings[37] on foreign and/or domestic stock markets. These changes suggest that the difference between state-owned commercial banks and joint-stock commercial banks has been diminishing.

Joint-stock commercial banks were first established in 1987[38]. Since then the JSCBs have been developing quickly. "Their rapid development can be explained in part by two factors. One is that they were founded after economic development had been proceeding for a relatively long time. The other is that their operations are based on the market mechanism.[39]" Compared with SOCB, these banks had clearly defined property rights, market and profit orientation and smaller business scope. The banks were easier to pick up on modern bank management methods. The asset size of the biggest JSCBs is already comparable with the size of SOCBs[40]. Apart from the seventeen major commercial banks there are also city commercial banks and foreign banking institutions. City commercial banks are comparatively small banks that operate under geographical restrictions. They were establishing in a row of reorganizations of urban credit cooperatives. They focus on small and medium size banking activities on a local level[41]. Since the opening of the domestic financial sector, new foreign banks are entering the market and opening their operations[42].

The figure below represents the share of financial assets between Chinese commercial banks.

[35] From 1994 – Until 2003
[36] From 2003 – onwards
[37] China Construction Bank's IPO was held in October 2005. IPOs for Bank of China and Industrial and Commercial Bank of Chain are planned during the year 2006. The restructuring of Agricultural Bank of China, the weakest of the four, is expected to take comparatively longer.
[38] The first joint-stock commercial bank is the Bank of Communications established in 1987.
[39] Zhang Chenghui (2000)
[40] The biggest JSCB is the Bank of Communication based in Shanghai (BOCOM). SOCB together with BOCOM are sometimes referred to as "big five" of the banking sector.
[41] At the end of 2005 there were 100 plus Urban Commercial Banks.
[42] At the end of 2006 there were 200 plus foreign bank branches and subsidiaries.

Figure 1: Assets of Commercial Banks



Source: Own Calculations based on date from OECD Economic Surveys, 2005

Apart from commercial banks, there are three other non-commercial banking institutions – policy banks[43]. They were established in 1994 when the government decided to separate policy loans from commercial loans. Policy banks are non-profit financial institutions closely connected and controlled by the government. They are mainly funding government related projects or policies, that are expected to have high social benefits, but low economic returns. Because of low profitability, these project and policies are out of the scope of commercial banks. Their common used methods are comparatively lower interest rates, longer loan durations, or credits with higher potential risks. For instance, the banks have been engaged in various environmental projects[44], development of comparatively poor regions, supporting of big construction projects[45], enhancing of foreign trade, or controlling reserves of national agricultural production[46].

Credit cooperatives are small collectively owned saving institutions. Their raison d'etre is to provide small scale banking services in rural and urban areas that were neglected by major banking institutions. They have played an important role in channeling credit into the domestic economy, as is shown by their almost 10% share on total assets of financial institutions. While the of size individual credit cooperatives is very small, there are literally tens of thousands of those micro-banking houses throughout China. However, due to unclear property rights, insider control and poor

[43] Sate Development Bank, Agriculture Development Bank, and Export-Import Bank of China
[44] For instance China Development Banks has financed 3 billion RMB project aimed to improve the environment of the Suzhou River and the surrounding property.
[45] For instance financing of the Three Gorges Dam projects, that are expected to improve the river transportation, minimize the risks of flooding and produce hydroelectric power..
[46] For instance Agricultural Bank of China is handling state reserve for grain, cotton, sugar etc.

management "most of them have suffered huge losses[47]". The reforms of credit cooperatives, since the mid 1990s, were aimed at improvement of their ownership structure, operational management, and risk management. Some of these cooperatives were reorganized into cooperative unions, cooperative banks or shareholding banks. Urban credit cooperatives underwent a transformation into urban banks that are now dubbed "City Commercial Banks". Because of the waste number and small scale of rural credit cooperatives their transformation was lacking behind, with notable achievements only during the past few years[48].

Table 2: Assets of the Financial Institutions in 2004

	Number of Institutions	Total Assets	Share of Total Assets
		RMB Billion	%
State Owned Commercial Banks	4	16932	50.3%
Joint Stock Banks	12	4697	14.0%
Credit Cooperatives[49]	33823	3312	9.8%
Policy Banks	3	2412	7.2%
City Commercial Banks	112	1706	5.1%
Insurance Companies	69	1185	3.5%
Postal Saving Banks[50]	1	1080	3.2%
Fund and Securities Companies	175	893	2.6%
Other Financial Institutions[51]	200	863	2.6%
Foreign Banks	67	582	1.7%
TOTAL	**34466**	**33662**	**100.0%**

Source: Own Calculations based on date from OECD Economic Surveys (2005)

The table above describes the number and share on financial assets of Chinese financial institutions in the year 2004. From the table it is apparent that the share on financial assets of non-bank financial institutions is less than 10% of the total. These institutions have only minimal impacts on the money supply. Their function is to provided services for the capital market (security companies, investment funds), insurance services (insurance companies), and other supportive financial services

[47] Wu J. (2005)

[48] As of end-2005, there were 12 rural commercial banks, 60 rural cooperative banks and 519 legal entities at the province or township level, and another 9 rural cooperative banks got the approval for establishment. : Report of China Banking Regulatory Commission, 2006

[49] Credit Cooperatives include Rural Credit Cooperatives, Urban Credit Cooperatives and Rural Commercial Banks.

[50] Postal saving system was established under the China Post in 1986 in an attempt to accelerate the withdrawal of currency to avoid high inflation. The postal saving system may accept deposits but not extend loans. The collected deposits are transferred to the central bank.

[51] Other Financial Institutions include Financial Companies and Trust and Investment Companies.

(financial companies, asset-management companies, trust and investment companies, leasing companies etc.). As noted before, China has established a specialized banking system. Whereas major banks and credit cooperative institutions specialized only on commercial banking, the main intermediaries and agents for investment banking are security companies. The structure and evolution of the money market and capital market will be characterized in the next part of this paper.

BOX II: HEALTH CARE SYSTEM AND FINANCIAL SYSTEM IN CHINA

The Health Care System provides a good example of a financial system that develops along with the frequently analyzed banking, securities and insurance systems. China's Health Care System has been given only little attention in international economic studies. During my research trip to China in March 2006 I conducted an interview with Mrs. Huang Cheng[52] about the development of China's Health Care System.

What were the main characteristics of the Chinese Health Care System before the economic reform began in the late 1970s?

Before the economic reform started in late 1970s, there were two major health care systems in China: Government Insurance System (GIS) and Labor Insurance System (LIS). The Government Insurance System served the public service units. The Labor Insurance System was designed for workers of State Owned Enterprises and Collective Enterprises. Medical care was provided to patients either at no charge or very little charge.

What obstacles did the Health Care System face after the commencement of the reform?

[52] Mrs. Huang Cheng is associate professor and doctorate supervisor at Shanghai Jiao Tong University. Her research areas comprise of Health Care and Health Management.

After the economic reform began, the share on the national product of the private and township enterprises gradually increased. Workers at those enterprises had no coverage of health expenditures. The traditional foundations of the Health Care System collapse because many of the state owned enterprises could not afford to finance the health care costs and because the private and township enterprises did not participate in the system. The central and local governments have become more and more aware of the necessity of health care system reform.

What are the main challenges of China's Health Care System for the near future?

The first challenge is the transition of the health care system from planned economy into market economy. The new health care system must adjust to market principles. Second, there is an imbalance between demand and supply of health care services. The demand for health care services increased significantly with the growth of the per capita income and China is now facing a situation where the demand for health care services is higher than its supply. A third challenge is the gap between provision of health services in urban and rural areas. Large cities like Beijing, Shanghai are well served with health care, while the countryside is often lacking behind. Finally, the health care system reform will have to take into account social developments in China such as a huge population, aging society, one child policy and economic transformation, etc.

Could you describe the prevailing financial structure of the Health Care System in China?

Generally speaking, there are two different systems: First, the new cooperative health system in rural areas. The funds for this system are raise from central government, local government and part from the ordinary people. Second, in urban areas the contributions to the system are shared by individuals and their

companies. The collected funds are transferred into a general pool and individual saving accounts. The saving account is then used by individuals to finance part of their health expenditures. Along with this system individuals can also engage in private health insurance.

What changes in the overall economic environment would benefit the aims of health care system?

The difference between the development of urban and rural areas is quite large. It would benefit the health care system to have a more balanced allocation of national income. Health care system will also depend on the development of the health system and pharmaceutical system – especially logistics. Reform always comes with re-allocation of resources. The government's ability to push through the reform will be crucial in the process of establishing an effective Health Care System.

Shanghai: March 31, 2006

2.4. China's Financial Markets

2.4.1. Money and Capital Markets

Well-functioning financial markets are of utmost importance for a market economy. The purpose of financial markets is an effective allocation of funds between units with surplus and deficit of financial resources. With the transformation of Chinese economy into a market economy, various reforms had been and should be conducted on the side of the financial markets.

When analyzing the financial market it is often useful to divide the market into the money market and the capital market. The money markets serve for an allocation of liquidity, usually within a period of less then one year. "Generally speaking, the development of the money market is to achieve two objectives: to establish a market system with sufficient liquidity of monetary assets and to provide the central bank with an effective transmission mechanism of monetary policy[53]." A nation-wide inter-bank market was launched in 1996.

On the other hand, the capital markets provide the economy with sources of long-term financing. In China the capital markets have been lagging behind. It has not been uncommon for short-term funds to be used for financing of long-term assets. The development of China's capital markets will be necessary to provide the economy with long-term funding and to diversify the financial system. Development of markets of direct financing, like the stock and bond market, will be necessary to decreases the system bias towards the banking system (see table 3).

Table 3: Financing Structure of Domestic Non-Financial Institutions

	Volume of Financing (100 million yuan)		As a percentage of total financing (%)	
	2005	2004	2005	2004
Financing by Domestic Non-Financial Institutions	31507	29023	100.0	100.0
Bank loans	24617	24066	78.1	82.9
Equity	1884	1504	6.0	5.2
Government securities	2996	3126	9.5	10.8
Corporate bonds	2010	327	6.4	1.1

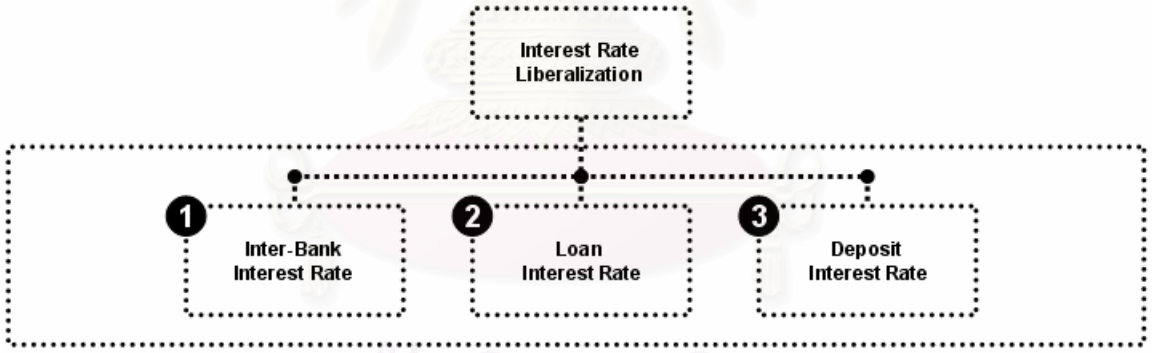
Source: People's Bank of China

[53] Wu J. (2005)

2.4.2. Financial liberalization

The Chinese authorities have taken various steps towards financial market liberalization. Those steps are mainly introducing more market-oriented practices, freeing interest rates, opening to foreign competition and liberalizing exchange rate controls[54]. The competition between the domestic financial institutions was gradually strengthened and since 2000 the foreign financial institutions were stepwise allowed to enter the Chinese financial market.

The interest liberalization process is necessary to enable the competing market participants to set the price for borrowing and lending of funds. The liberalization is planed to have the following sequence: inter-bank interest rates will be liberalized first; loan rates will be liberalized before deposit rates; foreign currency rates before domestic currency rates; rates in rural areas before urban areas. Furthermore, preference will be given to large loans and deposits, and to long-term accounts.



The very first measures towards financial liberalization started in 1996, when the interest rates in the inter-bank market were liberalized. "The liberalization of inter-bank market rates has the least political and social exposures, since it does not have a direct effect on the public. Therefore, it serves as a perfect test to preparing market players and consumers for further interest rate reform.[55]" Controls on foreign currency loans and deposits started to be removed in 2000. Further, in 2004 the upper limit for loans in domestic currency was lifted, but not the lower limit. Similarly, in the same year, the lower limit on RMB deposits was lifted, but not the upper limit.

[54] García-Herrero, Gavilá, and Santabárbara (2005)
[55] Imanm (2004)

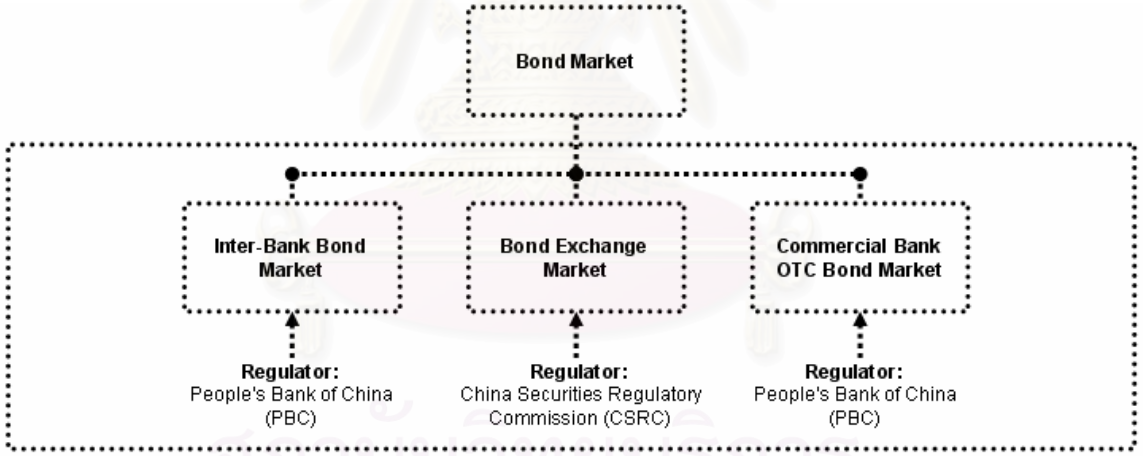
Table 4: China's Interest Rate Regimes

Type of Interest Rates		Interest Rate Regime
Inter-Bank Interest Rates		Deregulated, Market Rates
Loans Interest Rates	**FX**	Deregulated rates, Market Rates
	RMB	Regulated without upper limit
Deposit Interest Rates	**FX**	Deregulated for amounts > US$ 3 million
	RMB	Regulated without lower limit

Source: Imanm (2004), García-Herrero, Gavilá and Santabárbara (2005)

2.4.3. Fixed Income Markets

The Chinese bond market is already the third largest in Asia, surpassed only by Japan and South Korea[56]. Despite its notable size, the market is in its early stage of development. The bond market consists of three sub-markets: the inter-bank bond market, the bond exchange market, and commercial bank bond OTC market.



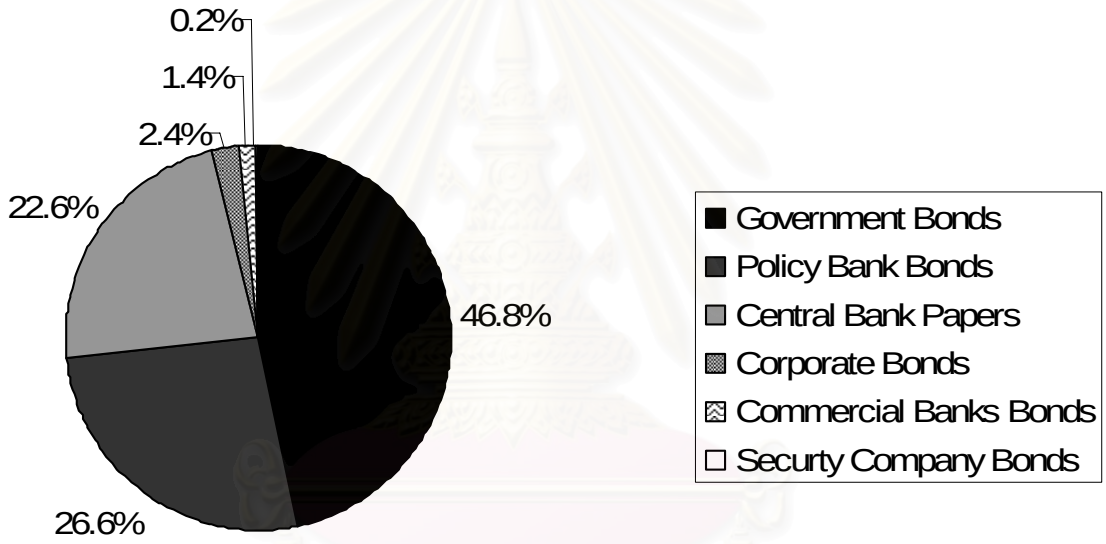
The inter-bank bond market serves mainly the commercial banks (for their liquidity adjustments) and the central bank (for open market operations). The bond exchange market is conducted through the Shanghai Stock Exchange and the Shenzhen Stock Exchange. The notable difference between the two markets is that individuals can not invest in the inter-bank bond market, and commercial banks and the central bank are not involved in exchange bond market. In order to enable trading between commercial banks and individuals China has set up a third market dubbed

[56] Zhen, Ji (2005)

the commercial bank OTC bond market. This market enables the commercial banks, institutional and individual investors to trade bonds between each other.

The main issuer of bonds is the government and government related institutions. Government related bonds, such as treasury bonds, policy bank bonds, and central bank papers, account for more than 95% of the whole market. The share of commercial bonds, such as corporate bonds, commercial bank bonds, and security company bonds, is well bellow 5% of the whole market. The figure below represents the balance structure of the Bond Market in China during the first four years since 2000.

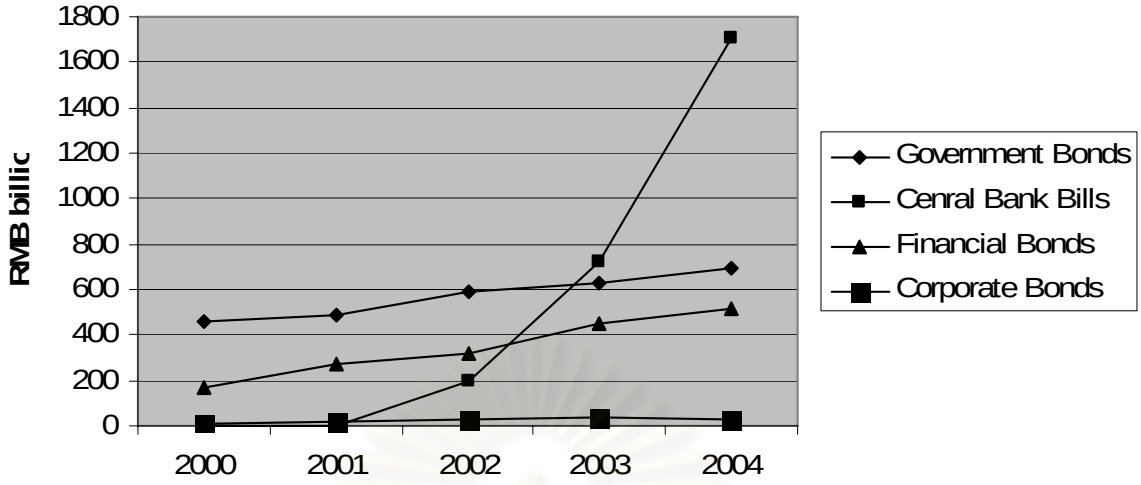
Figure 2: Balance Structure of the Bond Market: 2000 - 2004



Source: Zheng, Ji (2005)

For analytical presentation it is useful to divide the bonds into four broad categories: government bonds, central bank bills, financial bonds (commercial banks bonds, policy banks bonds and security company bonds) and corporate bonds. During the period starting in 2000, the People's Bank of China became increasingly active in open market operations, in an attempt to slow down the growth of the money base. As depicted in figure 3, the People's Bank of China eventually ran out of government bonds and started to issue its own bills.

Figure 3: Development of the Bond Market: 2000 - 2004



Source: Zheng, Ji (2005)

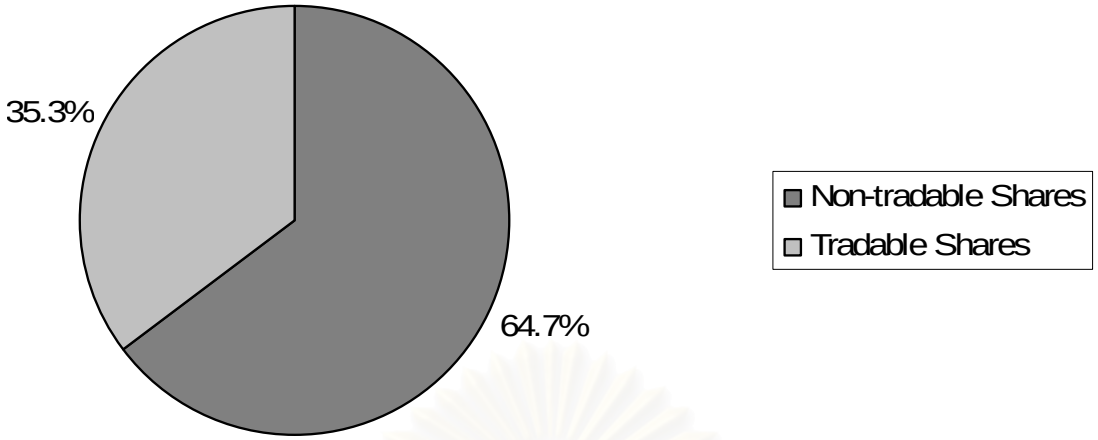
2.4.4. Stock Market

The Chinese stock market developed in the early 1990s when Shanghai Stock Exchange and Shenzhen Stock Exchange were set up. It underwent a phase of massive growth during the first decade of its existence and a period of long-lasting depression since 2001, when the market started to be bullish. Apart from the domestic stock market, many Chinese companies have been listed in stock exchanges outside mainland China, especially in Hong Kong.

The most outstanding feature of the Chinese stock market is a complicated shares structure. The shares are divided between tradable and non-tradable shares. Non-tradable shares as their name suggests can not be traded on the stock exchanges. This leads to a serious price distortions and exploiting of minority shareholders. China Knowledge Press (2005) uses the example of the company UF Soft to describe one of such cases: "after the IPO[57], while major shareholders held 75 million shares by investing RMB 84 million, public investors held 25 million shares by investing RMB 917 million." Furthermore, the period of payback[58] for non-tradable shares was 2 years, while for tradable shares it was 76 years[59].

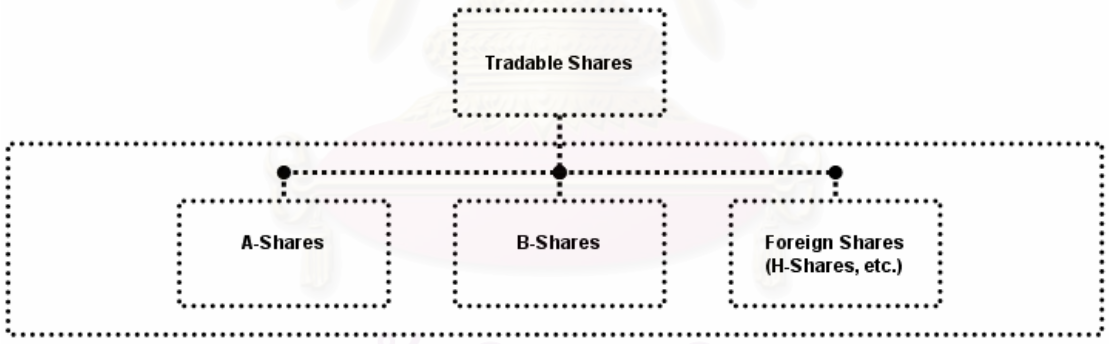
[57] Initial Public Offering
[58] Non-compounded and without taking interest rates into consideration;
[59] China Knowledge press (2005)

Figure 4: Number of non-tradable shares and tradable shares



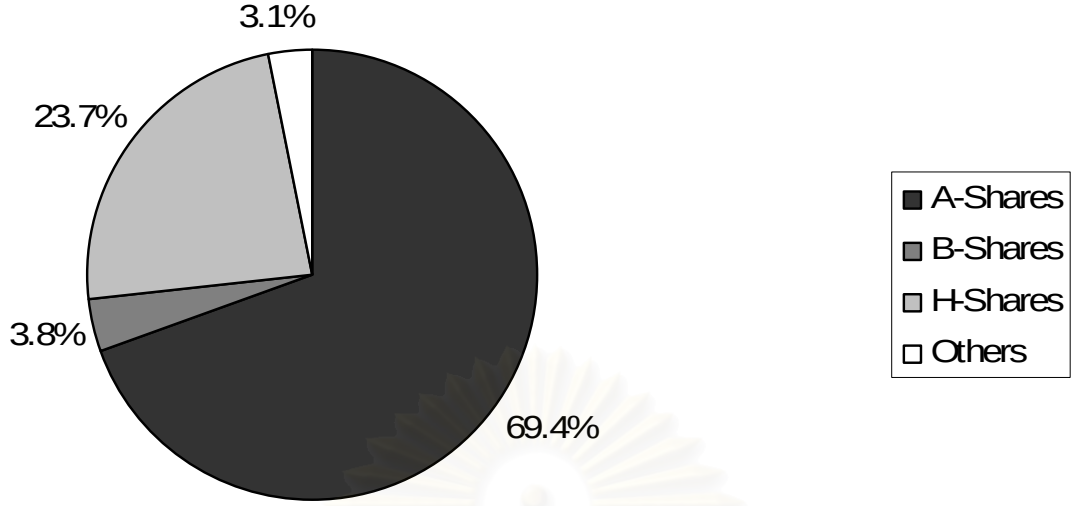
Source: China Securities Regulatory Commission (April 2005)

The tradable shares are further subdivided into A-shares, B-shares and foreign shares. A-shares are RMB-denominated tradable shares, which are listed in domestic stock exchanges. B-shares are shares denominated in foreign currencies, which are listed in domestic stock exchanges. On Shanghai Stock Exchange B-Shares are denominated in US dollars, while on Shenzhen Stock Exchange B-Shares are denominated in HK dollars.



Besides domestically listed A-shares and B-shares, many companies have been listed on stock exchanges outside mainland China. Most of the foreign capital has come through Hong Kong Stock Exchange. Stocks of Chinese companies listed in Hong Kong are dubbed H-shares. Besides listing in Hong Kong, many companies have been listed in New York Stock Exchange, Singapore Stock Exchange and other stock exchanges.

Figure 5: Total funds raised between 1991 and 2004[60]:



Source: China Knowledge Press (2005)

BOX III: CHINA'S STOCK MARKET AND FINANCIAL SYSTEM

China's stock market is probably the most puzzling part of the financial system. It is likewise praised for its fast development as blamed for its various problems. To gain a better understanding of this market I conducted an interview with Mr. Zhuang Quyi[61] during my research trip to China in March 2006.

What main differences do you see between Chinese stock markets and stock markets in the rest of the world?

The Chinese stock market bears many unique characteristics compared to the rest of the world. It developed only recently in the 1990s during the ongoing transformation of the planned economy to market economy. The majority of listed companies are state-owned enterprises. Private companies were given only little possibilities to participate in the domestic stock market. The long-term value investment has been insufficient, while speculative short-term trading has played the

[60] The data for 2004 are as at end-October 2004.

[61] Mr. Zhuang Quyi is specialist on Chinese investment banking. He has gained plentiful experience with the Chinese financial system from the positions of a securities analyst and financial journalist.

dominant role. Another peculiarity of the Chinese stock markets is that it is comparatively closed to the outside world.

What financial institutions are active in Chinese stock market and how did the industry develop?

The main financial institutions that are active in the stock markets are security companies, trust investment companies, and fund management companies. Before 2001 the stock markets were predominantly bullish and security companies developed fast. Trust investment companies engage in various investment activities, not only in security investment. However with the bullish market for almost 10 years, many trust investment companies invested heavily in the stock market. After 2001 the market became suddenly bearish and many security and trust investment companies became insolvent and bankrupt. On the contrary, the fund management companies developed in particular after 2001, they collect management fee for their services and are less dependent on the overall market climate. The stock market decline after 2001 encouraged many investors to change from equity markets to commodity markets.

What is the experience and impacts of the economic and financial development of your native Zhejiang province?

Zhejiang province has been one of the fastest developing parts of China. Together with the fast economic growth, the enterprises needed to gain funds for their expansion. Especially private enterprises had problems to gain funds. First, the banking system has been regulated and risk-averse. Second, new listings on the domestic stock markets was restricted by quotas and favored state-owned enterprises. That is why many local enterprises tried to gain funds at foreign stock markets. Many Zhejiang enterprises were listed in Hong-Kong stock exchange. Some companies were also listed in other foreign exchange markets (e.g. Singapore, NASDAQ). Other important consequence of the shortage of funds has been the development of unofficial sources of financing, especially for small and medium private companies.

What do you see as the most important challenges the stock markets will face in the future?

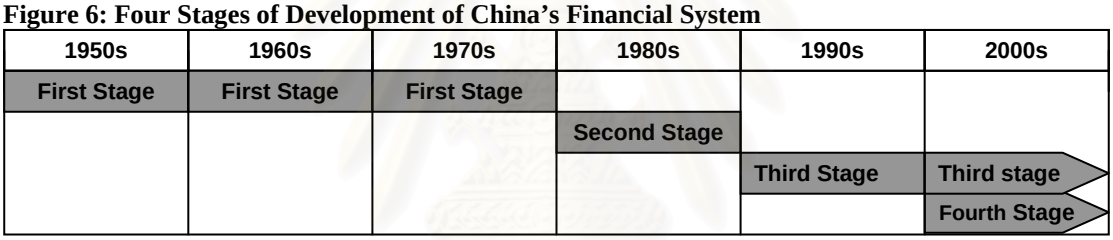
The Chinese stock markets are in their early stage of development and will face many important challenges in the future. While speculation is necessary to maintain liquidity, it is important to put more attention to value-orientated investment. Profitable, efficient, and transparent enterprises are crucial for the development of any stock exchange market. It is important to encourage “good” enterprises to get listed on the domestic stock exchanges. Furthermore, emphasis should be given on development of financial derivates. For example it is very difficult to open a short position on the domestic stocks. New financial derivates like options will enhance the market turnover and give the investors new tools for their risk management. Opening the domestic stock markets is another important challenge. Chinese stock market will have to succeed in international environment, and be prepared to survive international financial shocks.

Shanghai: March 29, 2006

2.5. Conclusions and Recommendations

The above described financial system developed gradually in four stages. In its initial stage, under the planned economy, the People's Bank of China exercised all functions of the financial system. In the second stage, which started approximately in the 1980s, a new financial structure with numerous financial institutions came into being. In the third stage, which started approximately in the 1990s, a reconstruction of the newly invented financial system has started. This reconstruction extends to the current days. Approximately since the beginning of the new century a forth stage of the financial develop has started. In the forth stage the financial industry is to be gradually opened to foreign and domestic private investments. The share of domestic private and foreign ownership is expected to increase and the financial system is expected to be gradually liberalized.

Figure 6: Four Stages of Development of China's Financial System



Source: Author

China's financial system has always been characterized by specialization of the financial institutions. The first kind of specialization developed during the second stage of development, when the main banking institutions where specialized by economic sectors. For instance, the Agricultural Bank of China specialized in the agricultural sector; the Bank of China specialized in international economic transactions etc. The specialization by economic sector was mitigated during the third stage. However, as the capital markets have been developing, specialization by financial services has gained in importance. Commercial banking services and investment banking services were strictly separated. Under the current system commercial banks can not engage in investment banking services and vice versa. Further, China's financial sector is also specialized regionally. Certain financial institutions (e.g. City Commercial Banks, Credit Cooperatives) operate under geographical restrictions.

Chinese economist Jinglian Wu recommends that China needs to "switch from specialized banking to universal banking[62]". Wu argues that commercial banks should be allowed to conduct investment banking services, because "the experience of developed countries shows that universal banking is a trend of development[63]". In contrary with Wu, my analysis shows that China should not rush towards universal banking. Given the depressed capital markets, bankruptcies on the side of many investment banking companies in China, and questionable corporate governance of some banking institutions, it would be simply to risky for the fragile banking sector to introduce investment banking. Prior to the introduction of universal banking it is important to seriously reshape the capital markets. Since 2001, the equity market is in a bad shape and a continual downtrend. Further, Chinese banks are allowed to trade bonds and bills on the inter-bank market, and they do not need to enter the stock exchange market for this reason.

Dominant state ownership in the banking sector has been long seen as a serious drawback on the development of the financial industry. As Xianxin Zhao puts it, "you can draw white lines across the body of a horse and make it look like zebra, but this can never actually transform it into a zebra. Similarly, since corporate governance is determined by endogenous ownership, it is difficult to improve the performance of state-owned banks' corporate governance without effective ownership restructuring.[64]" While this is surely true, there is also one good thing about state-ownership: namely whatever bad happens to the state-owned banking system the state as the majority owner will back the banks up. Should the banks go private, the government will be less inclined to finance mistakes made by the private owners and might let the banks go insolvent or bankrupt. Bankruptcy or insolvency on the side of financial institutions might then exert shocks (e.g. banks runs, outflow of hot capital) throughout the financial system. While generally speaking private ownership has positive impacts on corporate governance, it is important to conduct the ownership transformation very carefully.

[62] Wu J. (2005)
[63] Wu J. (2005)
[64] Zhao (2004)

The economy of China is characterized by “financial dualism”, which means that beside the official formal financial institutions there is a significant number of unofficial informal financial institutions. According to Zhang Chenghui there is a “great risk possessed by excessive growth of informal sector[65]”. Informal financing is indeed out of reach and control of financial supervision. However, it would be misleading to see its existence or growth purely as a threat for the economy. Informal financial sector has done a lot of good for China’s economic development, by fueling necessary financial resources there, where official financial institutions were too inflexible. Especially small and medium private enterprises were literally built up from informal financial sources. The informal financial sector substitutes for many deficiencies of the official financial sector and has often a positive impact on the country’s economic development. The share of informal financial sector will gradually decline, with progressing financial reform, financial liberalization and a maturing economy.

The development of stock markets gained momentum in the early 1990s. The rapid growth of the market in the first decade took many by surprise: “The advent of the stock markets has been faster than anticipated. Some development policy advisors made a suggestion during the late 1980s that China ought to develop a capital market in the late 1990s or the early 20th century.”[66] Contrary to these recommendations, China had already established the Shanghai Stock Exchange in 1990 and the Shenzhen Stock Exchange in 1991. The growth of the stock markets in the first decade of 1990s was so amazing, that it was easy to oversee its plentiful problems. Behind the promising figures “the stock markets have been plagued by the financial problems of the SOEs for quite a long time. When the SOEs run into financial difficulties, banks have been asked to lend ‘policy loans’ to sustain their operations. Instead of letting the SOEs go bankrupt, government-owned banks have been playing the role of financier by allocating the valuable national resources to the unprofitable SOEs.”[67]

[65] Zhang (1999)
[66] He (2005)
[67] Ling, Yau (2005)

General wisdom suggests that companies seek to get listed on the stock exchanges in order to gain long-term funds for their promising expanding operations. In the late 1980s and early 1990s the financial institutions were tightly controlled by the government and thus the government could simply insist on allocating any necessary funds to SOEs through the existing financial system. Why did the Chinese authorities go through the hassle of creating the stock markets and listing the SOEs at domestic stock exchanges? The reasoning is somewhat reverse: "The original intent was to improve the reform of China's SOEs. Theoretically, it was held that 'absence of owner' is the main problem of SOEs; after being listed, the small shareholders who buy stocks with their own money will care about the value of their assets, so they will actively supervise the listed enterprises' managers and thus the governance problem of SOEs can be resolved. The state as majority shareholder can take a free ride of the small shareholders' supervision efforts and the governance problem of 'absence of owner' would thus be resolved."[68]

The introduction of the stock markets did not bring the expected results in terms of improved corporate governance. The small investors have limited powers over the company. Their supervisory costs are likely to be higher than the return that such supervision could bring. Small investors are therefore likely to invest in enterprises by which they believe that the majority shareholder's supervision is sound. As a result the Chinese stock markets became fueled by speculations rather than long-term investment. Eventually in 2001 the stock market started to suddenly deteriorate. "The inevitable plunge of stock prices afterwards trapped not only most retail investors but also the entire society. "[69] The big bullish market turned into a big bearish market and has not recovered since. The Chinese authorities are now facing the question of what to do next.

China is now in a situation of fast economic growth and a deteriorating stock market for a period of over four years. It is easy to conclude that the problem lies in the structure of the stock market and listed enterprises. The most often proposed remedies are: to strengthen the supervision of the stock market and/or decrease the government's share on SOEs. The investors' confidence in domestic stock markets

[68] Lin (2004)
[69] Wu J. (2005)

has declined. Many Chinese enterprises are seeking to be listed abroad. Large reform of the system is therefore inevitable. The Chinese authorities are already conducting activities in order to transform the non-tradable shares into tradable shares. For the development of the stock markets in China it is crucial to have the vast majority of the listed enterprises generating acceptable profits and dividends and this might take a while. The reform of the weak stock market is conducted in circumstances of opening the domestic financial industry to foreign companies, changing the exchange rate regime, domestic financial liberalization, and external financial liberalization.

CHAPTER III
MACROECONOMIC FRAMEWORK

3.1. Introduction to Macroeconomics Framework

Exchange rate policy is probably the most controversial and least understood part of economics – especially when we speak about determination of optimal exchange rate. What should be the optimal exchange rate value of the Chinese currency? There are as many answers as economist. Unfortunately: None of the answers are flawless!

Before we believe an economist's answer to the question of optimal exchange rate for the Chinese yuan, we should examine the credibility of the economic science in forecasting the equilibrium exchange rate value. The credibility of economics in this field reads as follows:

> *"There may be more forecasting of exchange rate, with less success, than almost any other economic variable. Although measures such as real interest-rates differentials, differential rates of productivity gains, and chronic external deficits are often employed to explain exchange rate behavior, none has been found to be consistently useful in forecasting exchange rates even over substantial periods of one or two years"*[1]

> *"I will now give you a forthright statement about where the dollar must go: I don't know. However, there is one thing I do know: Secretary Baker doesn't know either. Neither does Chancellor Lawson, and least of all does Ronald McKinnon. The fact that nobody knows is the current dilemmas of international monetary policy."*[2]

This is not a proof but just an example of how confused the world of exchange rates really is. How could we trust an economist that says: "I know what the exchange

[1] Greenspan (2002)
[2] Krugman (1993)

rate value should be!" Apparently if s/he would know to determine the exchange rate value, s/he would rather invest heavily in foreign exchange market, then waist time on writing academic papers. The disillusion about the current international monetary system has probably let the Nobel Prize economist Robert Mundell towards proposing a return to a certain variation of the gold standard[1].

Morris Goldstein and Nicolas Lardy form the Institute of International Economics (IIE) in Washington D.C. have started to propose "a revaluation of the renminbi of 15-25%"[2] already in the year 2003. Fred Bergsten from the same institute is calling for "an immediate 20 to 25 % appreciation of the renminbi"[3]. And John Williamson also form IIE argues that China has missed its chance to revalue its currency in a step by step manner and "…it is now too late for that. At this stage there is no reasonable way of avoiding a substantial one-shot move, which is certainly what one would have to expect as the first move of a floating rate"[4].

On the other side of the debate, Harvard University economist Richard Cooper counters: "A revaluation of Chinese currency, far from alleviating global imbalances, would run the risk of precipitating a financial crisis"[5]. Stanford University economist Ronald McKinnon states: "I contend that these critics [referring to proponents of renminbi (a) appreciation, and (b) free floating] are wrong in both aspects. Their 'conventional wisdom' is based on faulty, although widely accepted, theorizing that fails to come to grips with how the international dollar standard works"[6].

It is easy to see, that the debate has no clear winners and if we do not want to be caught in the renminbi exchange rate quarrel, we have to take the middle way and accept that: The decisions about the best exchange rate value are far too complex and full of normative judgment. Especially, with the dollar being the dominating currency for international transactions, the dollar value itself literally mirrors the social, political and economic fundamentals of the world's 180+ economies. However, there seems to be a beam of light that could lead us out of this confusion: Adam Smith's

[1] Mundell (1997)
[2] Goldstein, Lardy (2003)
[3] Bergsten (2005)
[4] Williamson (2005)
[5] Cooper (2005)
[6] McKinnon (2005)

overwhelming invisible hand of the market. If it is too difficult to set the optimal value, why don't we leave it up to the market forces? The answer of the MIT economist Paul Krugman speaks for itself:

> *"For the most of my professional career, I believed that free floating exchange rates represent the best system available. ... I have now changed my mind. Based on the view I now have on how floating rates work in practice, I am now an advocate of an eventual return to a system of more or less fixed rates subject to discretionary adjustment. … In effect, I am arguing that the exchange rate is too important a price to be left wholly at the mercy of the exchange rate market."*[7]

William Cline from the Institute for International Economics also raises doubts about the self-regulating power of the foreign exchange markets:

> *"As suggested by the move of the dollar in the wrong direction in 2005, market forces with no guidance cannot always be counted upon to work in an equilibrating manner."*[8]

What conclusions can we make about the Chinese state of affairs? One conclusion is that the proponents of the significant appreciation of the renminbi are at least as many and as influential as the opponents of the significant appreciation. A second conclusion is that the foreign exchange market is not as rosy as Milton Friedman's efficient market hypothesis wants us to believe.

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[7] Krugman (1993)
[8] Cline (2005)

3.2. Current-Account Balance and Saving-Investment Balance

In this part I will attempt to derive a macroeconomic relationship between underlying Current Account Balance (CAB) and underlying Saving–Investment Balance (S–I). While this restates basic macroeconomic relations, I decided to include it in here for two reasons: first, it is a good place to introduce the terminology; and second, to clarify the foundations of the more complex model that is derived in the next part.

The aggregate output in a closed economy is determined as shown in equation (1). To simplify the model we will abstract from government income and expenditures. In a closed economy Gross Domestic Product (Y_p) and Gross National Income (Y_i) are equal to the sum of Consumption (C) and Investment (I).

(1) Aggregate output : $Y_i \equiv Y_p \equiv C + I$

Note: Yi – Gross National Income, Yp – Gross Domestic Product, C – Consumption, I – Investment;

In the contemporary world, "there are no open and closed economies – only open and closed economists[9]". To put the model into an open economy perspective we have to incorporate international transactions. What are the impacts of the international transactions on the aggregate output? There are two different answers: first one for the Gross Domestic Product (Y_p); second one, for the Gross National Income (Y_i).

(2a) Gross Domestic Product : $Y_p \equiv C + I + (EX - IM)$

(2b) Gross National Income : $Y_i \equiv C + I + CAB$

Note: Y_i – Gross National Income, Y_p – Gross Domestic Product, C – Consumption, I – Investment. EX – Export in Goods and Services, IM - Import in Goods and Services, CAB – Current Account Balance;

Equation (2b) is a more comprehensive measure of the national economy. The difference between the Gross National Income and the Gross Domestic Product consists of Net Foreign Financial Income (NFFI) and Net Foreign Financial Transfers (NFFT).

[9] Orlin (1991)

(3) $Y_i - Y_p$: $CAB - (EX - IM) \equiv NFFI + NFFT$

Note: Y_i – Gross National Income, Y_p – Gross Domestic Product, EX – Export in Goods and Services, IM - Import in Goods and Services, CAB – Current Account Balance, NFFI – Net Foreign Financial Income, NFFT – Net Foreign Financial Transfers;

Further, we need to introduce national saving identity. National saving accounts for that part of the national income that is not spent on consumption.

(4) National Saving : $S \equiv Y_i - C$

Note: S – National Saving, Y_i – Gross National Income, C – Consumption;

Combining equation (4) for National Savings (S) with equation (2b) for Gross National Income (Y_i), we will get a different perspective at the Current Account Balance (CAB) as shown in equation (5):

(5) Current Account Balance : $CAB \equiv S - I$

Note: CAB – Current Account Balance, S – National Savings, I – Investment;

Equation (5) represents a crucial macroeconomic identity. It combines the underlying Current Account Balance (CAB) with the underlying Saving-Investment Balance (S–I). In the following part I will use this identity to derive a macroeconomic balance approach model of exchange rate determination. The conclusions that can be made at this stage are show in table 5.

Table 5: Saving-Investment Gap and Current Account Balance

Negative S-I gap	**S<I**	⇔	**CAB<0**	Current Account Deficit
Positive S-I gap	**S>I**	⇔	**CAB>0**	Current Account Surplus
No S-I Gap	**S=I**	⇔	**CAB=0**	Current Account is Balanced

Source: Author

It is important to note that the causality in equation (5) runs both ways. Current account balance does not determine saving-investment gap more than does the saving-investment gap determine current account balance. To borrow a metaphor from Alfred Marshall's 'Principles', we can not tell which blade of scissors does the cutting: "it is the interaction of the two that does the work[10]." All we can say, is that in any given period in time saving-invest gap will equal current account balance.

[10] Marshall (1905)

3.3. Macroeconomic Balance Approach

Macroeconomic Balance Approach of Exchange Rate Determination employs two macroeconomic balances in order to determine the optimal exchange rate: the Current Account Balance, and the Saving–Investment Balance. This model was not given enough attention in the contemporary macroeconomic theory. In particular low attention was given to the graphical interpretation of this model, and its application for interpretation of exchange rate policy.

The measure of exchange rate used in this model will be the Real Effective Exchange Rate (REER). The Real Effective Exchange Rate measures the price competitiveness of a country against its major trading partners.

(6) Real Effective Exchange Rate : $REER \equiv \sum \{\alpha_i \times [P / (ER_i \times P_i^*)]\}$

Note: REER – Real Effective Exchange Rate, P – Domestic Price Index, P^* – Foreign Price Index, ER – Domestic Price of Foreign Currency, α – Trade Weight;

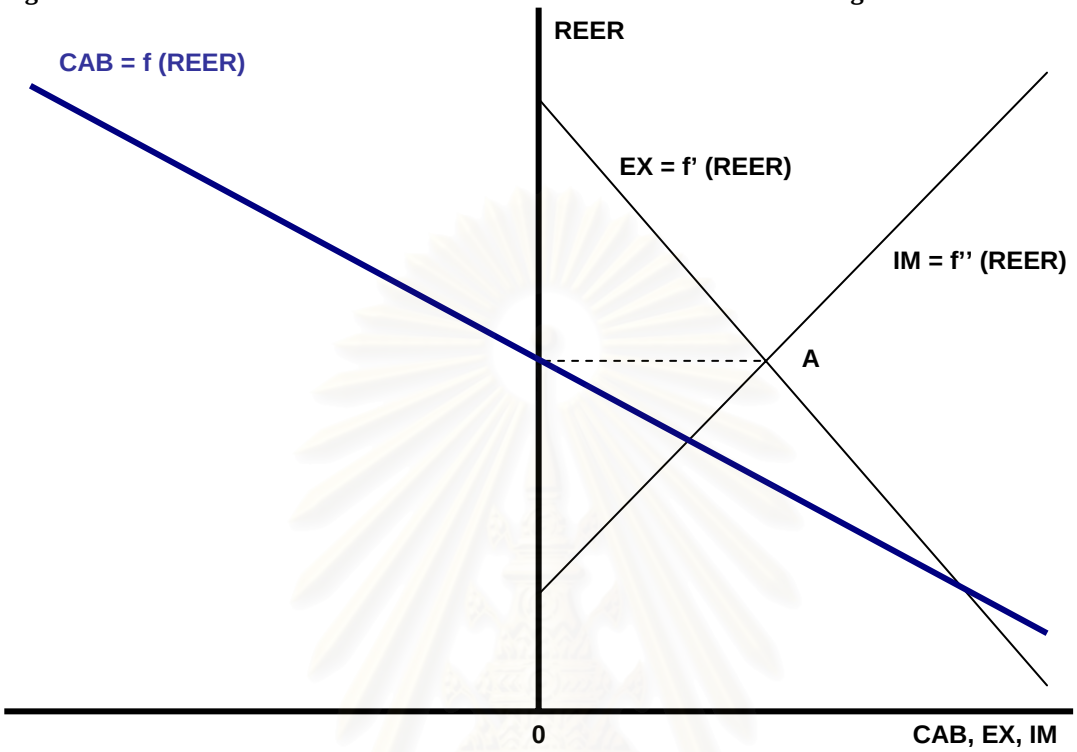
If the Real Effective Exchange Rate (REER) increases the price competitiveness of the domestic economy decreases. Price competitiveness of the domestic economy decreases when (a) the domestic prices increase by more than the foreign prices or (b) when the domestic price of foreign currency (nominal exchange rate) decreases. Similarly, when the REER decreases the price competitiveness of the domestic economy will increase.

3.3.1. Current Account Balance and the Exchange Rate

The country‘s current account balance (CAB) tends to decrease when the Real Effective Exchange Rate (REER) increases. On the other hand, should the REER decrease, the countries CAB tends to increase. Thus the current account balance is negatively related to the Real Effective Exchange Rate (REER) as shown in figure 7. This is because with lower REER the domestic economy’s tradable products become more competitive (upward pressure for exports) and the domestic buying powered in terms of foreign goods decreases (downward pressure on imports). To derive the relationship between CAB and REER we model the function CAB = f(REER), under

ceteris paribus conditions (other things equal). Later we will remove this assumption to show how the current account balance responds to structural changes.

Figure 7: Current Account Balance as a function of Real Effective Exchange Rate



Source: Author

As depicted in figure 7, with REER moving down, the exports (EX) have a tendency to increase. On the contrary, the imports (IM) increase when the REER is moving up. At point A, the country's total exports will equal country's total imports. By subtracting imports from exports we would get country's trade balance. Figure 7 depicts the Current Account Balance (CAB) that is the Trade Balance plus Net Foreign Financial Income (NFFI) and Net Foreign Financial Transfers (NFFT). Exports (EX) and Imports (IM) account for the main share of the current account transactions. In figure 7 we assumed that NFFI and NFFT are close to zero.

Changes in domestic prices, foreign prices or nominal exchange rates will cause a shift along the current CAB line. However, if changes other than changes in prices occur, /for example technological progress, increase in educational level, increase in productivity that is not met by increase in wages/, the CAB line will change its position. Increase in competitiveness, which does not result from price and

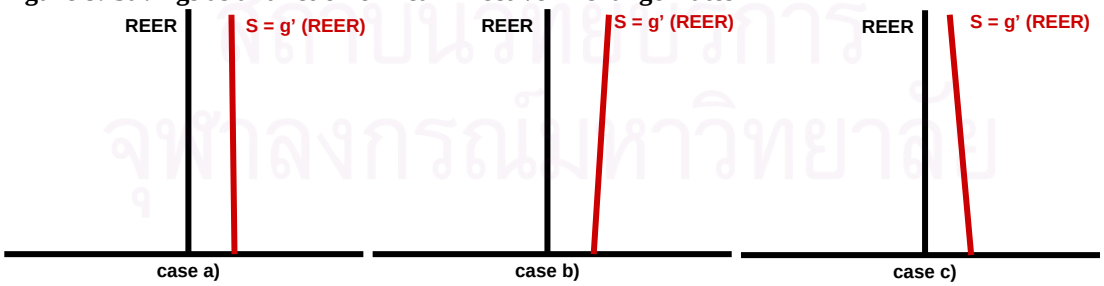
nominal exchange rate changes, will cause an upward shift of the CAB line. Decrease in competitiveness will cause a shift downward.

3.3.2. Saving–Investment Balance and the Exchange Rate

In this section I will attempt to describe the relationship between the Exchange Rate (REER) and the Saving-Investment Balance (S–I). What will be the impacts of changes in Real Effective Exchange Rate (REER) on saving and investment behavior of the country's citizens? Compared to the Current Account Balance (CAB) the answer will be a bit more complex.

The overall national saving "does not typically respond to the changes in exchange rate[11]". Thus, as show in figure 8 – case a,) the overall national savings should be depicted as horizontal line, parallel to the REER axis. However, there is a possibility of small changes in saving behavior as a response to the changes in Real Effective Exchange Rate (REER). For example, when the prices of foreign goods decrease (REER increases), people will be tempted to consume more foreign goods and their consumption increases. The impact on saving rate then depends on the price elasticity of the foreign products. In figure 8 – case b) /case c)/ is depicted a case of inelastic /elastic/ price elasticity of demand for foreign goods. To sum up, the overall saving rate typically does not respond or does respond only little to changes in Real Effective Exchange Rate (REER) as depicted in figure 8.

Figure 8: Savings as a function of Real Effective Exchange Rates



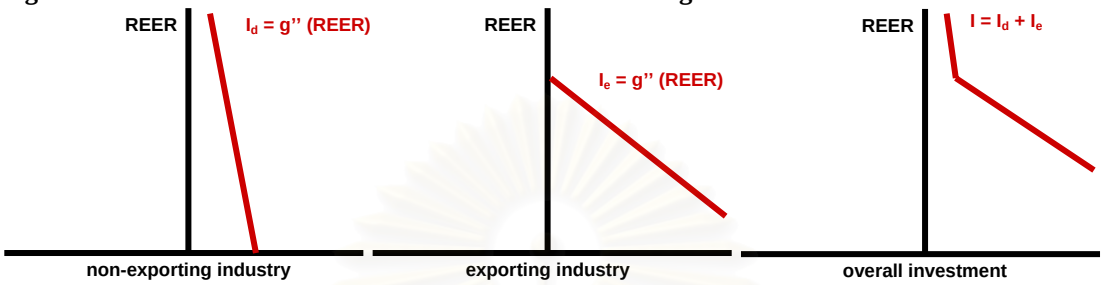
Source: Author

Investment behavior changes with the change in Real Effective Exchange Rate (REER). Investment rate of enterprises that produce for the domestic market will be

[11] Rosenberg (2003)

affected by changes in REER relatively less. On the other hand, investment rate of exporting enterprises will be affected relatively more. With a decrease in REER the price competitiveness of the economy will increase and so will the incentive to invest. The response of investment behavior to the changes in REER is depicted in figure 9.

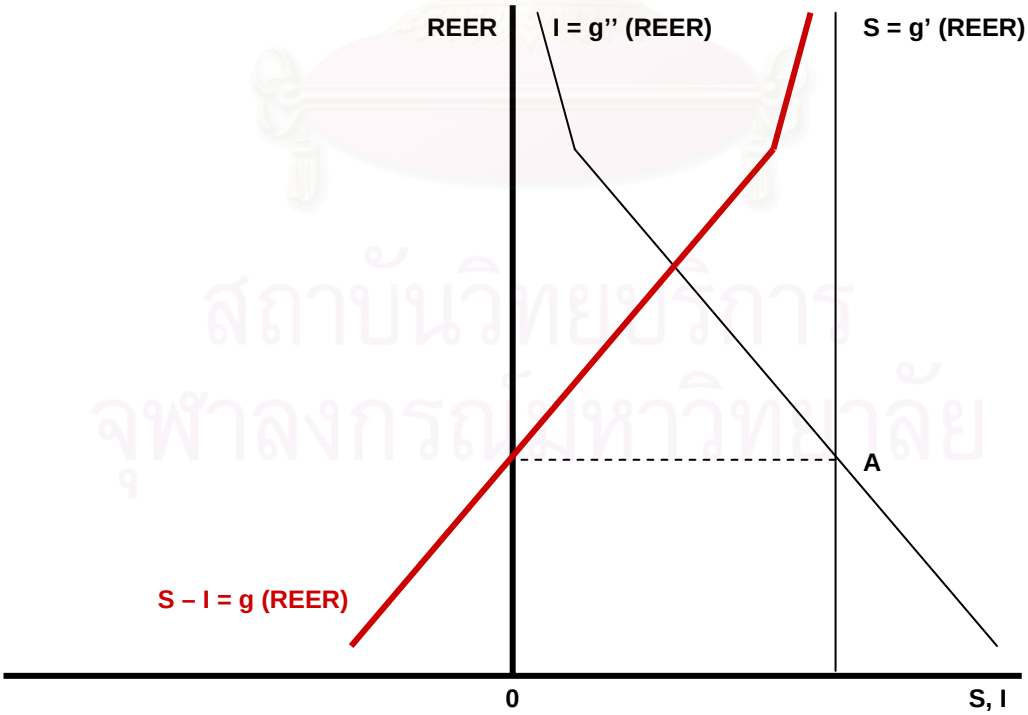
Figure 9: Investment as a function of Real Effective Exchange Rates



Source: Author

Saving–Investment Balance (S–I), as a function of Real Effective Exchange Rate (REER), can be obtained by combining the saving function and investment function as show in figure 10. As depicted by the figure, with an increase in REER, the Saving–Investment Gap decreases and vice versa. In the point A the Saving – Investment gap is zero.

Figure 10: Savings–Investment Balance as a Function of Exchange Rates



Source: Author

Changes in the domestic prices, foreign prices or nominal exchange rates will cause a shift along the current S–I line. A shift of the line to the right or to the left will be caused by a structural change of saving or investment behavior. For example a decrease in investment or government spending will cause a shift of the S – I line to the right and vice versa.

3.3.3. Macroeconomic Balance and the Exchange Rates

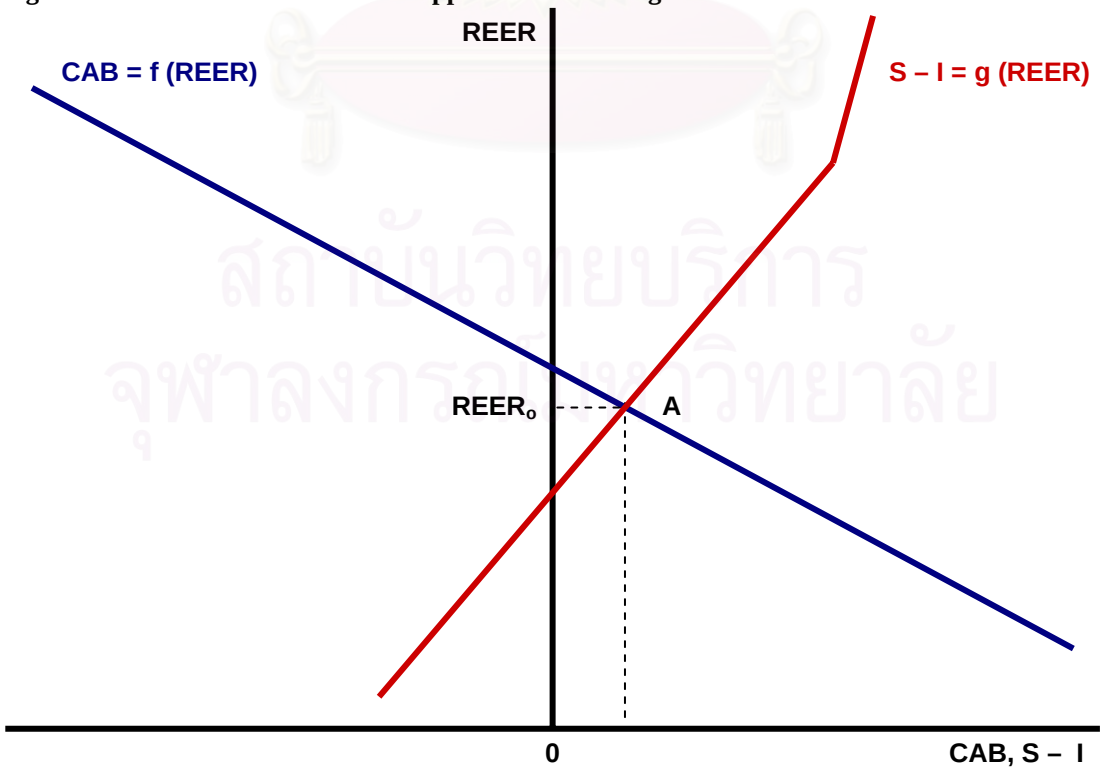
Macroeconomic Balance Approach of Exchange Rate Determination, as its name suggests, makes use of the identity between Current Account Balance (CAB) and the Saving–Investment Balance (S–I). In order to derive its results it employs two behavioral relationships. Thus, the model is determined by one identity and two behavioral relationships as shown below. Graphical representation of this relationship is depicted in Figure 11.

(6) Macroeconomic Balance Approach of Exchange Rate Determination

: (a) $CAB \equiv S - I$, (b) $CAB = f(REER)$, (c) $S - I = g(REER)$;

Note: CAB – Current Account Balance, S – Saving, I – Investment, REER – Real Effective Exchange Rate: $REER \equiv \sum \{\alpha_i \times [P / (ER_i \times P_i^*)]\}$, where P – Domestic Price Index, P^* – Foreign Price Index, ER – Domestic Price of Foreign Currency, α – Trade Weight;

Figure 11: Macroeconomic Balance Approach of Exchange Rate Determination



Source: Author

The Current Account Balance (CAB) is equal to the Saving–Investment Gap at point A and the optimal exchange rate is $REER_o$. In this illustrative case the Current Account Balance will be in surplus and there will be an excess of savings over investments. One important observation that can be made from the figure is: The current account equals zero at a different exchange rate than does the saving–investment gap. In other words, this illustrative economy depicted in figure 11, can not move to balanced current account (zero saving investment gap) purely by changes in domestic or foreign prices, or by changes in nominal exchange rate. In order to achieve a balanced current account and zero saving–investment gap structural changes (such as change in saving investment behavior) or foreign exchange interventions must occur. I will generalize this observation in the following section.

3.3.4. Structural Changes in the Economy and Exchange Rates

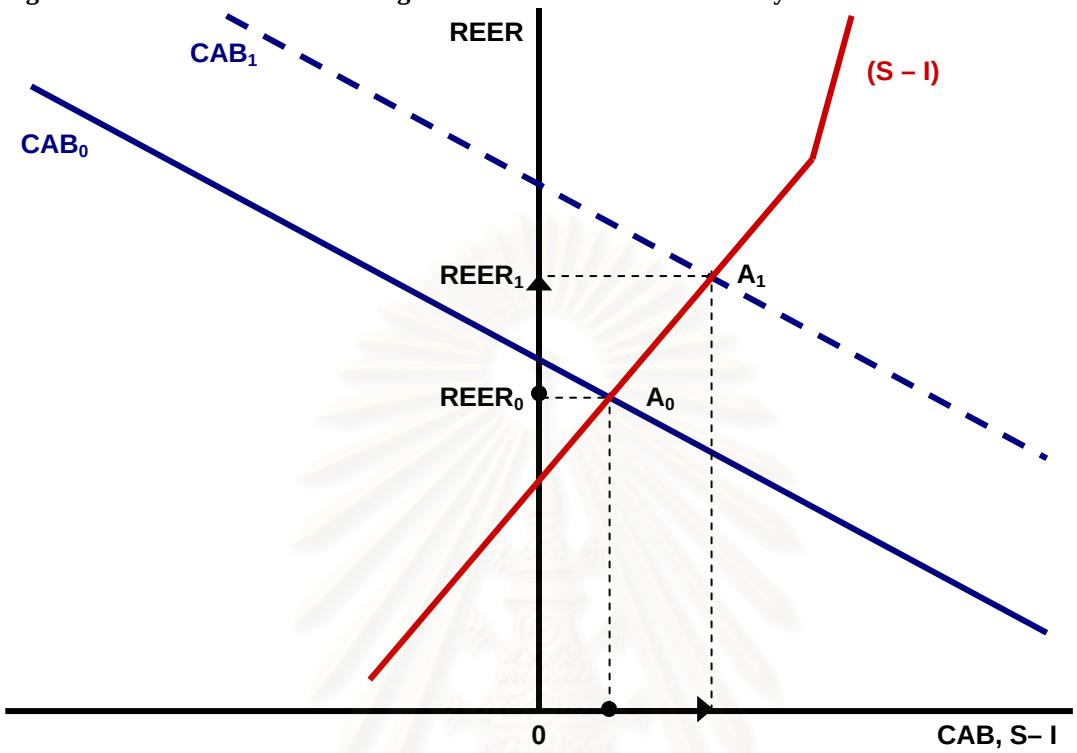
In this section I will attempt to describe how structural changes in the economy influence the optimal value of Real Effective Exchange Rate. I will use two examples of structural changes: first, a technological improvement in the economy that will have an impact on the CAB line; second, an increase in investment rate, that will have an impact on the S–I line.

Structural changes with an influence on Current Account Balance line result from a change in structural competitiveness of the economy. Such changes represent for example an increase in technological advancement of the economy. In this case the CAB line will move to the right, to accommodate economy's ability to export more products (figure 12). Consequently, the Current Account Balance / Saving-Investment gap will increase and the Real Effective Exchange Rate will increase.

Structural changes with influence on the Saving–Investment Balance (S–I) result from changes in saving and/or investment behavior. For example, when the investment rate increases relative to the saving rate, the S–I line will move to the left. Structural increase in investment rate can result for example from higher investor

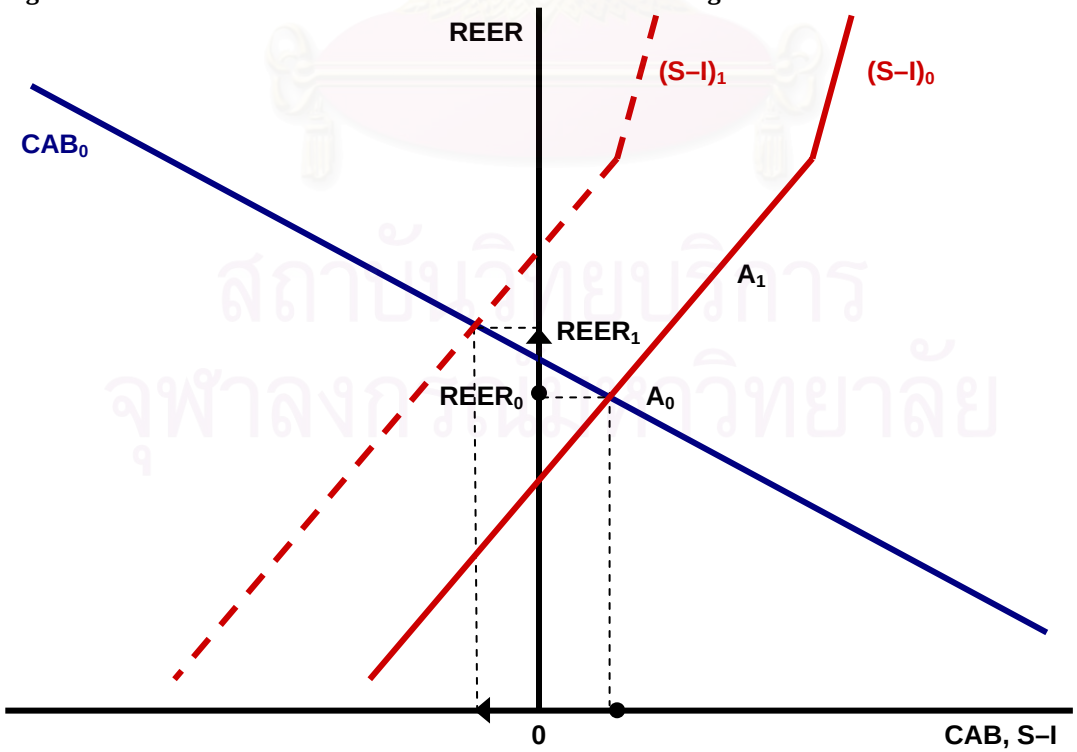
confidence (figure 13). Consequently, the Current Account Balance / Saving-Investment gap will decrease and the Real Effective Exchange Rate will increase.

Figure 12: Increase in the technological advancement of the economy



Source: Author

Figure 13: Increase in the investment rate relative to the saving rate



Source: Author

3.3.5. Financial Account and Central Bank's Interventions

The double entry system of the Balance of Payments (BOP) directly implies that the sum of current account transitions and financial account[12] transactions (leaving nothing out) is zero[13]. Changes in Current Account Balance (CAB) will, as a rule of BOP accounting, always imply changes of the same size and opposite direction in the Financial Account Balance. The transactions recorded in the Financial Account represent change in holding of Foreign Assets of the Central Bank and/or Foreign Assets of Other subjects of the economy. Minus entry in the Financial Account Balance represents rise of the foreign assets, plus entry represents fall in foreign assets. The relationship is described formally in the following equation.

(8) Financial Account Balance : $CAB = -FAB = \Delta FA = \Delta FACB + \Delta FAO$

Note: CAB – Current Account Balance, FAB – Financial Account Balance, FA – Foreign Assets, FACB – Foreign Assets of the Central Bank, FAO – Foreign Assets of Other Subjects;

According to Geert Almerkinders the central bank's market intervention represent: "a sale or a purchase of foreign currency by the domestic monetary authorities which is explicitly aimed at changing the exchange rate of the domestic currency vis-à-vis one or more foreign countries"[14]. The ambiguity of this definition comes from the word "explicit": First, surely any selling or buying of foreign currencies by the central bank influences the demand and supply of the exchange rate market – not only "explicit" purchases or sales; Second, monetary authorities not always "explicitly" announce reasons behind their sales and purchases of foreign currencies. To avoid this ambiguity, the Central Bank's market intervention will be further considered as any purchases or sales of currency on the foreign exchange markets. Net foreign interventions will result in an increase or decrease in the net Foreign Assets of the Central Bank (ΔFACB).

If the central bank wants to stabilize or fix the exchange rate at an undervalued level it must conduct interventions by absorbing foreign currency from

[12] In the following Financial Account will be used as a synonym for Capital and Financial Account.
[13] In the 'standard BOP presentation'. Note that in the 'analytical presentation' this statement does not hold.
[14] Almerkinders (1995)

the foreign exchange market. The interventions will artificially eliminate excess supply of foreign currency, stabilizing or fixing the value of domestic currency at a lower level that the optimal value of REER. The other way to look at it is that, some of the foreign currency – received due to current account transactions – was not realized on the foreign exchange market because it was absorbed by the central bank.

If the central bank wants to stabilize or fix the exchange rate at an overvalued level it must conduct interventions to increase the insufficient supply of the foreign currency by decreasing its holdings of its foreign exchange reserves. This situation might lead to speculative attacks on the currency. The speculators will bet that the monetary authority will eventually run out of the foreign exchange reserves. Note that in case of an undervalued currency the speculators can not bet against the foreign exchange reserves – they would rather bet against the Central's Banks ability to meet domestic monetary targets.

3.4. Conclusions Macroeconomic Framework

The Current Account Balance and Saving–Investment Gap are widely used in economics. Its application for international economics and finance are however highly questionable. For example, Paul Krugman does not like the current account versus saving–investment gap 'mysticism': "The trade balance is, by definition, equal to the difference between saving and investment – and therefore, says McKinnon, Mundell, and the Wall Street Journal, the exchange rate has nothing to do with it."[15] Indeed there is something odd about it: how can savings and investment determine the trade deficit without the exchange rate playing an active role in it?

In this macroeconomic framework I attempted to show what role the exchange rate does play in this relationship. I believe that Krugman's criticism of McKinnon and Mundell is unjust. The main problem in this dispute is the question of: What determines what (table 6)? According to Krugman changes in exchange rate will cause changes in CAB≡S–I. In other words, change in exchange rate will trigger structural changes in the economy. According to the other view, that is also inherent for this macroeconomic framework, changes in CAB≡S–I cause changes in exchange rate and not the other way around. That is to say: structural changes must be made prior to the changes of exchange rate.

Table 6: Structural changes and Real Effective Exchange Rate

"What determines what?" dispute:	
REER → CAB≡S–I	The exchange rate determines structural changes.
CAB≡S–I → REER	Structural changes determine the exchange rate.

Source: Author

It is easy to see where Krugman's rhetoric leads: "Restoring the original environment [speaking about dollar] isn't enough to restore the original results.… It will need a period of compensatory undervaluation to regain the markets it has lost."[16] Is he trying to say that disequilibrium exchange rate is necessary in order to achieve economic equilibrium? In other words, when the national economy seems to be in an

[15] Krugman (1993)
[16] Krugman (1993)

external disequilibrium such as high current account deficit, it will be necessary to undervalue the currency because fairly priced exchange rate is not enough to put the economy in equilibrium. This would probably lead countries to try to solve their economic problems with competitive devaluations rather than structural economic changes.

Yet, I am not arguing that competitive undervaluation would be unfair or any of the sort of normative reasoning. My positions is (and I believe this is also the position of Ronald McKinnon) that, according to the macroeconomic framework, currency undervaluation will no lead an improvement of external disequilibrium. This is because a change in real effective exchanger rate has contradictory impacts on current account and investments. If the real effective exchange rate decreases against the country's fundamental economic indicators (this implies increase in price competitiveness of the economy): The current account deficit will have a tendency to decrease, and the saving–investment gap will have a tendency to increase (this is because undervalued currency implies higher price competitiveness and higher investments). But saving investment gap equals current account deficit, it can not increase on one side of the equation and decrease on the other side. Thus, undervaluation/overvaluation will cause a tug-of-war between trade balance and investment with questionable results. My personal guess is that the results will be heavy interventions by the monetary authorities with the effects of running out of foreign exchange reserves (overvalued currency) or out of domestic monetary targets (undervalued currency). Eventually everybody in the country will start to worry about sustainability of the monetary policy more that about structural economic changes. Significant undervaluation causes disillusion and subsequent appreciation. Significant overvaluation causes disillusion and subsequent depreciation.

I hope that I was able to show that there is an ongoing debate between economist that believe that changes in exchange rate will induce structural changes and economist that believe that this is not possible. This debate is omnipresent in the Chinese case: There is a group of economists that believe that the U.S. economy has certain structural problems that can be solved by depreciation of the dollar against the renminbi. Then there is other group that says the renminbi exchange rate has nothing to do with U.S. external imbalance and internal structural reforms are necessary.

Finally, there is a third group of economists that believes that there current account deficit of the U.S. is sustainable and it is a result of the current international monetary system and increasingly globalized economy.

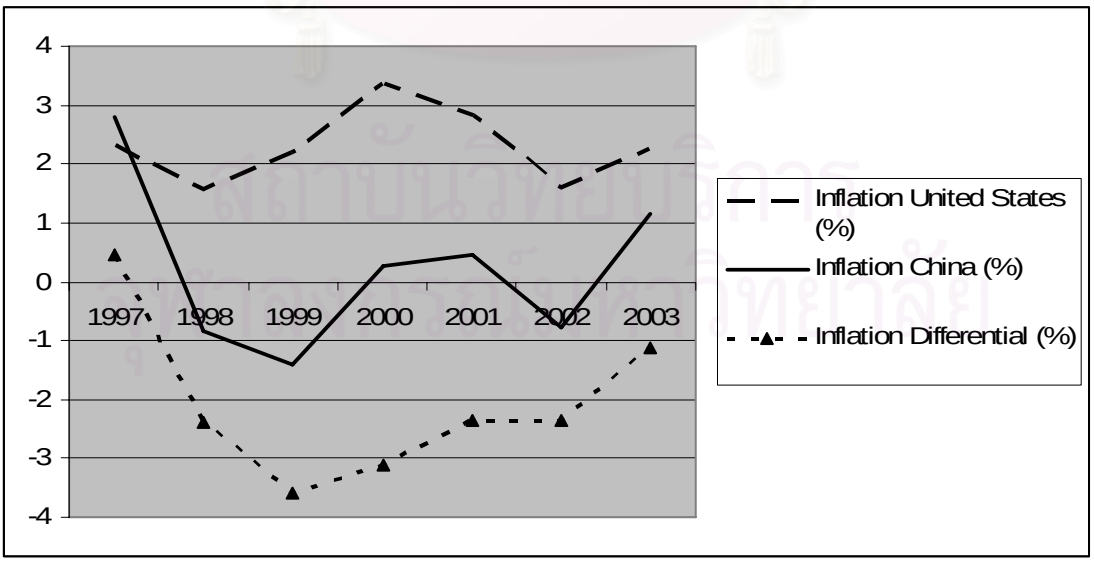
What are the implications for China? On the external front, the debate about the U.S. trade deficit is nothing new. It started in the 1980s, when China's market economy was only in a stage of infancy and continues until now. China should not get caught up and frustrated by this debate, but rather continue to conduct its monetary policy base of its own domestic fundamental economic indicators. I will be concerned with those fundamental economic indicators in the next chapter. On the domestic front, the internal tag-of-war game between China's saving-investment gap and current account balance has already begun and China needs to face the question in what direction and how fast should it conduct the reform of the foreign exchange rate regime.

CHAPTER IV
CHINA'S FOREIGN EXCHANGE REGIME

4.1. Introduction to China's Foreign Exchange Regime

China has adopted a managed-floating regime in 1994 when the official rate was set to 8.7 RMB per dollar. Under the new regime the RMB began to appreciate until reaching the rate of 8.28 RMB per dollar in 1997. During the Asian financial crisis the RMB has been de facto pegged to the dollar and remained at 8.28 RMB per dollar until July 2005. Despite the nominal peg, RMB continued to appreciate against the dollar in real terms due to a low inflation and deflation during that period. Consumer price index inflation differential suggests that between 1997 and 2003 the RMB appreciated against the dollar by roughly 14% in real terms (figure 14). On July 21, 2005 the RMB was slightly revalued to 8.11 RMB per dollar and allowed to float under a managed floating with reference to a basket of currencies[1]. Under the current system RMB is allowed to rise or fall by 0.3% a day against the dollar. Thus in theory the RMB can rise or fall against the dollar by roughly 6% a month and close to 100% a year. This indicates that China has adopted relatively flexible managed foreign exchange system that gives the monetary authority ample maneuvering space.

Figure 14: Consumer Price Index Inflation in China and United States



Source: World Development Data (2005)

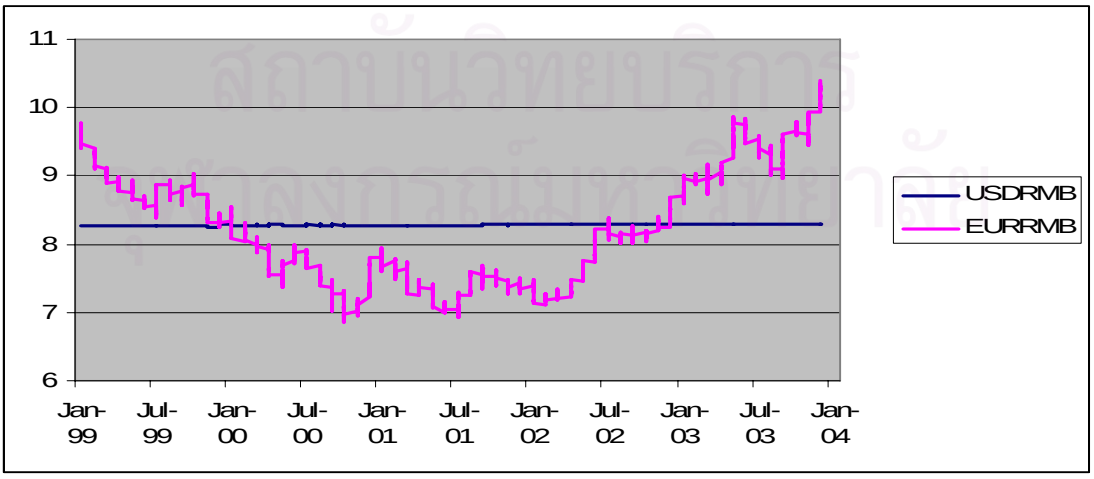
[1] According to the Morgan Stanley estimation, the dollar has a weight of 43 per cent, the yen 18 per cent, the euro 14 per cent and won 8 per cent. Source: ESCAP (2006)

However, the authorities have kept the nominal RMB/USD exchange rate relatively stable, allowing the RMB to appreciate against the U.S. dollar by no more that 2% since the revaluation in July 2005. Some scholars have suggested that the stability of the RMB against the U.S. dollar is against China's own interests:

> *"What is beneficial for China is a relatively stable exchange rate in effective terms, but not necessary in terms of its exchange rate against any particular currency. … Why is the stability of the effective exchange rate more beneficial to China than of the rate against the U.S. dollar? The answer is obvious. China trades not only with the United States but with many other countries, such as Asian and European countries among others. … As a result, Chinese traders are exposed to unexpected fluctuations in prices of traded goods and services under the current regime."* [1]

The argument that China benefits more from the stability in effective terms than from the stability against the dollar is based on overestimating of the impacts exchange rate fluctuations have on trade balance. Indeed the RMB has been fluctuating against all major currencies, but the dollar. For instance it has been fluctuating against the Euro (figure 15) as much as did the dollar; however, this does not seem to have negative impact on the development of the Sino-European trade.

Figure 15: Stable RMB/USD exchange rate and fluctuating RMB/EUR



Source: www.oanda.com, own calculations

[1] Otani (2005)

The little impacts of exchange rate fluctuations on trade balance after the Bretton-Woods era had been discussed by Krugman: “Huge swings in exchange rate have had only muted effects on anything real. … Exchange rates can move so much precisely because they seem to matter so little. … Exchange rates do not affect trade flows or aggregate prices as much as one might expect.”[2]

I contend against the conventional belief that it is of an immense benefit for China (or any other country) to stabilize its exchange rate towards its major trading partners – that is to say stability in effective terms. Those who think in terms of trade remain in the old Bretton Woods system, where, since exchange rates were stable, what mattered was the trade.

Indeed, the fast development of China’s trade sector has increasingly linked the Chinese economy with the rest of the world through exports and imports of goods and services. China is nowadays not lacking productivity growth, or technology advancement. The disadvantage that China has is that despite its ever rising exports and imports it does not have an internationally fully convertible currency to settle those trades. As a consequence, trade with China must be settled in an internationally convertible currency. Given the dominating role of the dollar in the current international monetary system, the currency of international settlements in most cases is the dollar. Generally speaking, China has two currencies: the RMB for domestic settlements and the dollar for international settlements. What really benefits China is the stability against an internationally convertible currency; stable RMB/USD rate is in the utmost interest of China. Until China will be prepared to introduce a fully convertible RMB one should not expect much fluctuations of the RMB against the dollar.

[2] Krugman (1993)

4.2. Foreign Exchange Market Distortions

An answer to the question of undervaluation of China's currency does not require complicated economic models. All that is necessary is a simple market demand and supply framework. The law of supply and demand is simple: If the price is too low the quantity demanded will exceed the quantity supplied. If the price is too high the quantity supplied will exceed the quantity demanded. In China's foreign exchange market the facts point at a clear cut case of currency undervaluation. The behavior of market participants (excluding the central bank) is illustrated in figure 16[3].

Figure 16: Demand and supply for RMB and foreign currency

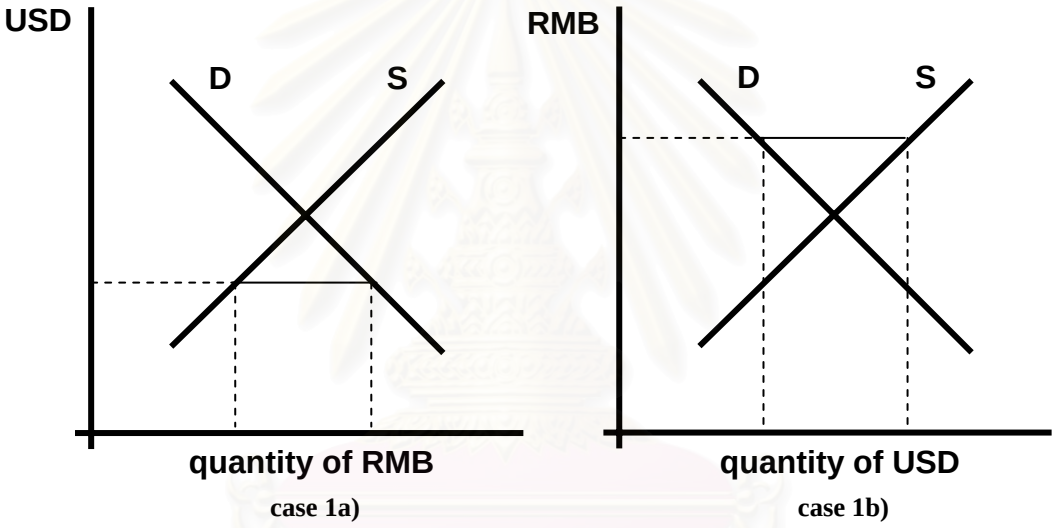
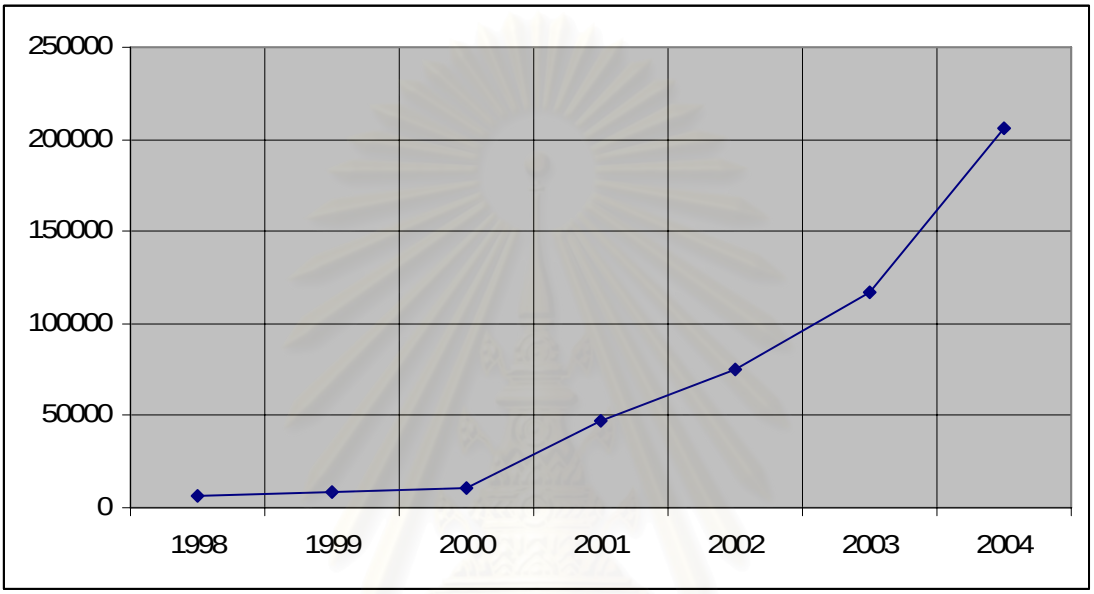


Figure 16a) and 16b) represent a different view of the same market. Case 1a) depicts a market of units of RMB that are priced in foreign currency: the quantity of RMB demanded in exchange for foreign currency is greater that the quantity supplied, suggesting an undervaluation of RMB against the foreign currency. Case 1b) represents a market of units of foreign currency priced in RMB: The quantity supplied of the foreign currency exceeds the quantitative demanded, suggesting an overvaluation of the foreign currency against the RMB.

[3] The elasticity of demand and supply in this example are only illustrative.

What happens to the excess supply of foreign currency? With no market interventions[4] excess supply of foreign currency would result in an appreciation of the undervalued RMB. With market interventions the excess supply results in increase of foreign exchange reserves. Figure 17 depicts yearly increase in China's foreign exchange since 1998.

Figure 17: Annual Increase in China's Foreign Exchange Reserves (billion USD)



Source: IMF (2005)

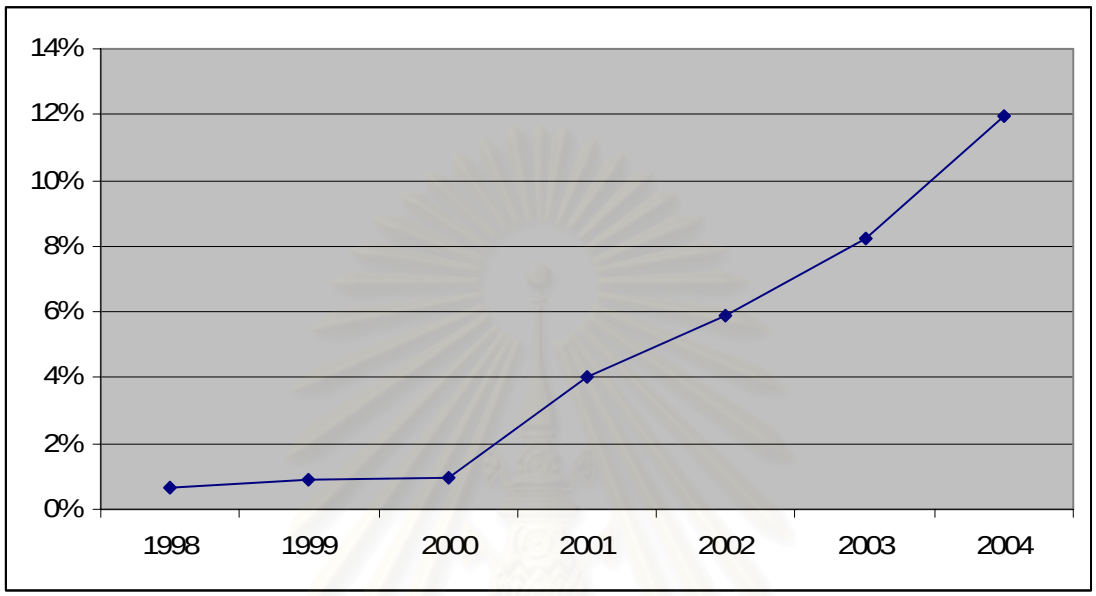
Market simply demand and supply framework shows that the renminbi is out of line with market price: ceteris paribus, without market interventions the renminbi would appreciate. The answer on the question if the RMB is undervalued is most certainly yes.

Figure 17 also shows that until the year 2001 the market innervations were only mild. Supply and demand for RMB was basically balanced. However, since 2001 the demand for RMB picked up rapidly: Already in the year 2004 the central banks interventions were 2000% higher (in nominal terms) than in the year 2000. This rapid increase in market interventions has left everybody suspicious: Did the real factors causing appreciation (e.g.: technology advancement, product growth, low real wages)

[4] Market interventions are used as a synonymous for net change in foreign exchange reserves. (Market transitions are conducted by market participants in order to settle international transitions. In contrast with market transitions, market interventions are conducted by the monetary authority for monetary policy reasons. The monetary authority's net purchases and sells directly influence the interplay of supply and demand of currency market.)

slumber for many years and then picked up drastically in 2001/2002? The answer is most probably no. There must have been some other big changes in one direction in 2001 and onwards (e.g. financial flows reversal, trade liberalization).

Figure 18: Annual Increase in China's Foreign Exchange Reserves (%GDP)



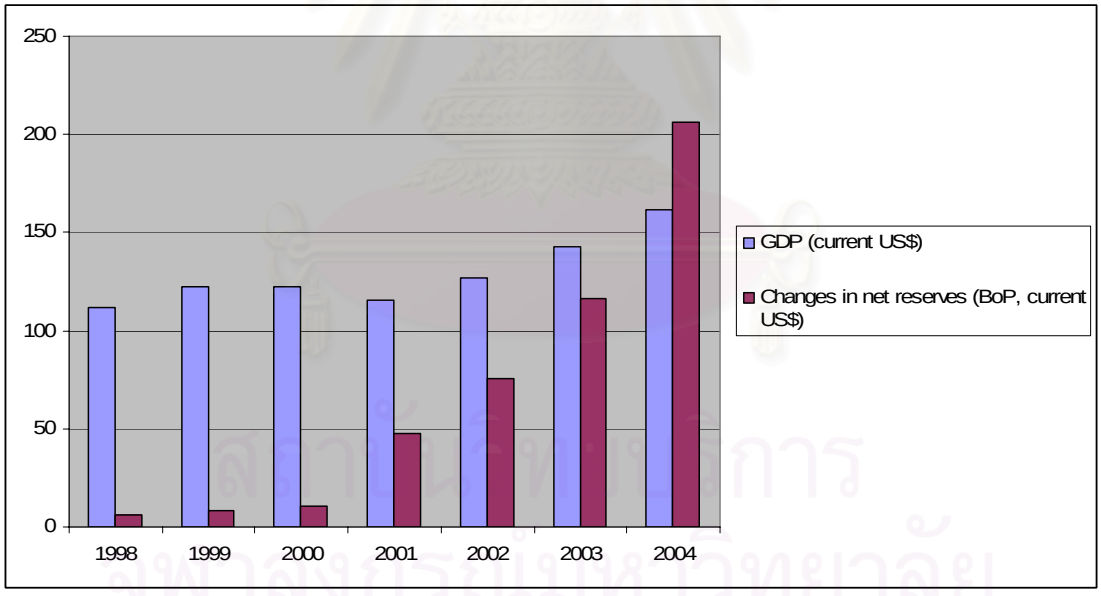
Source: World Bank (2005), IMF (2005), Own Calculations

The market interventions in China have risen to unprecedented levels. Figure 18 depicts China's annual increase in net foreign exchange reserves as a share of the country's gross domestic product. In 2004 the increase in foreign exchange reserves rose to over 12% of the gross domestic product. Due to this fact, and due to China's growing share on the world economy, many policymakers and prominent economist have started to suggest that China's foreign exchange market distortions are causing imbalance in the global economy.

4.3. Global Economy Imbalances

To get a feel of the amount of market interventions conducted by the People's Bank of China during one year it proves useful to conduct a comparison with some real variables such as GDP. Figure 19 portraits a comparison between annual gross domestic product of Thailand with the amount of foreign exchange market interventions that were conducted in China during one year. The increase in China's annual net reserves has surpassed the gross domestic product of Thailand in 2004. In other words if the Chinese were to literally import the whole annual gross production of Thailand they would still end up with an excess supply of foreign currency. Similar to China, ASEAN countries are also know for accumulating foreign exchange reserves (among other reasons because of the bad experiences during the Asian Financial crisis). However, since 2000 until 2004 China has accumulated over six times more foreign exchange reserves as ASEAN (5).

Figure 19: Thailand's GDP and China's FX Interventions (billion USD)



Source: Combined from IMF (2006), World Bank (2005)

This intuitively leads to the question: Are China's foreign exchange policies and large market interventions leading to global economy imbalances? In other words: Is China playing unfair while the other nations are keeping to the rules of the internationally monetary system? The studies that where conducted on this matter show that China is playing only a minor to mild role in the global imbalance; The

international imbalances are rather shared by a vast number of nations. For example William Cline calculated that the correction of the U.S. current account deficit would need an appreciation of a vast number of currencies as portrayed by table 7.

Table 7: Remaining Appreciation of the currency against the U.S. dollar

No.	Country/Region	Remaining Appreciation*	CA Surplus (%GDP)**
1.	Singapore	92.1%	31%
2.	Hong Kong	74.5%	11%
3.	Saudi Arabia	73.9%	14%
4.	Venezuela	72.7%	13%
5.	Japan	62.4%	3%
6.	Malaysia	60.6%	13%
7.	Taiwan	51.1%	NA
8.	Israel	45 .1%	0%
9.	**China**	**43 .3%**	**3%**
10.	Thailand	42 .6%	6%
11.	Switzerland	41.6%	14%
12.	Philippines	41.8%	4%
13.	Indonesia	41.4%	4%
14.	Sweden	36.1%	8%
15.	India	31.5%	1%

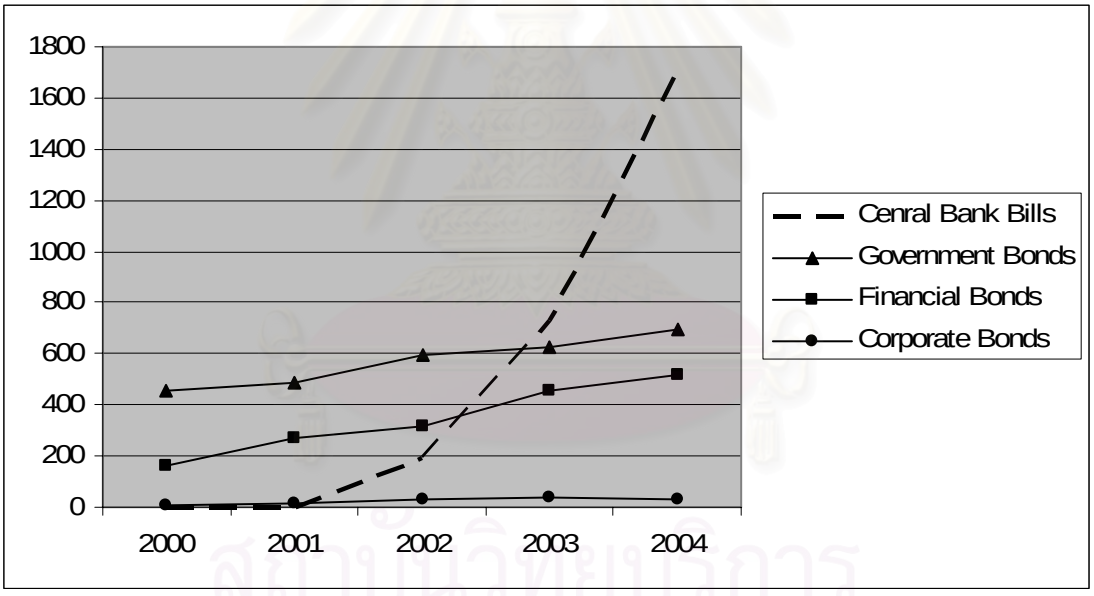
Source : *=Cline (2005)~2005 data, **=World Bank (2005)~2003 data.
Note : Only countries with remaining appreciation greater than 30% where included.

This example indicates the true face of the renminbi story: If we are looking only at China we will come to a conclusion that the renminbi is significantly undervalued. If we are looking at all countries altogether, we will find out, that China is far from leading the list. (Further, there is another important indication: It is rather difficult to believe that such a vast number of countries would manipulate their currency or play unfair against the U.S. I rather incline to the conclusion that the imbalances in global economy are result of: a) the present international monetary system with dollar being the must have reserve currency, and b) saving, investment and fiscal imbalances of the U.S. economy, with other countries taking only participatory roles.)

4.4. Domestic Money Market Distortions

China is running a continuous increase in foreign exchange reserves. From the point of view of the foreign exchange market an increase in reserves and undervalued currency is more sustainable than decrease in reserves connected with overvalued currency. From the point of view of the domestic money market the logic is somewhat reversed. While defending an overvalued currency leads to distortions in the foreign exchange market, defending undervalued currency leads to distortions in the domestic money market. An increase in foreign exchange reserves gives rise to the domestic base money and through money multiplier inflates the economy. To fight inflation the central bank must conduct sterilization – operations aimed at decreasing the money base and/or monetary aggregates.

Figure 20: Development of the Bond Market: 2000 – 2004 (billion RMB)



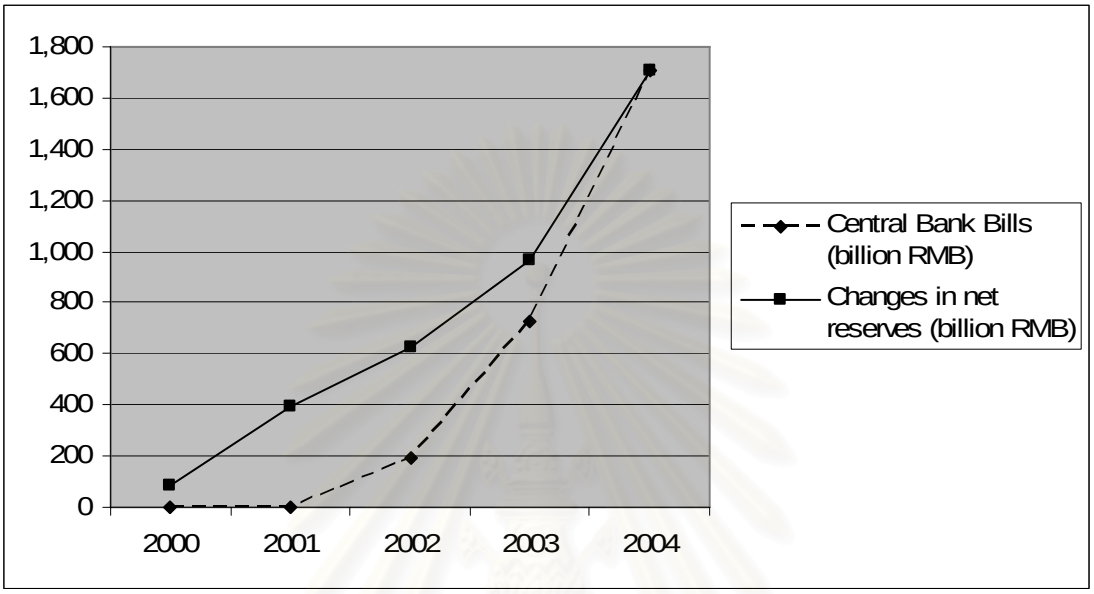
Source: Zheng, Ji (2005)

Figure 20 shows that the People's Bank of China indeed became increasingly active in domestic money markets. To stabilize the money markets the Peoples Bank of China started to issue its own bills. Even if these inflationary pressures can not be attributed only to the accumulation of foreign exchange reserves, the increase in reserves itself played a leading role in the ongoing money market shake up.

The domestic money market interventions and the changes in foreign exchange reserves demonstrate a similar pattern. This relationship is depicted in

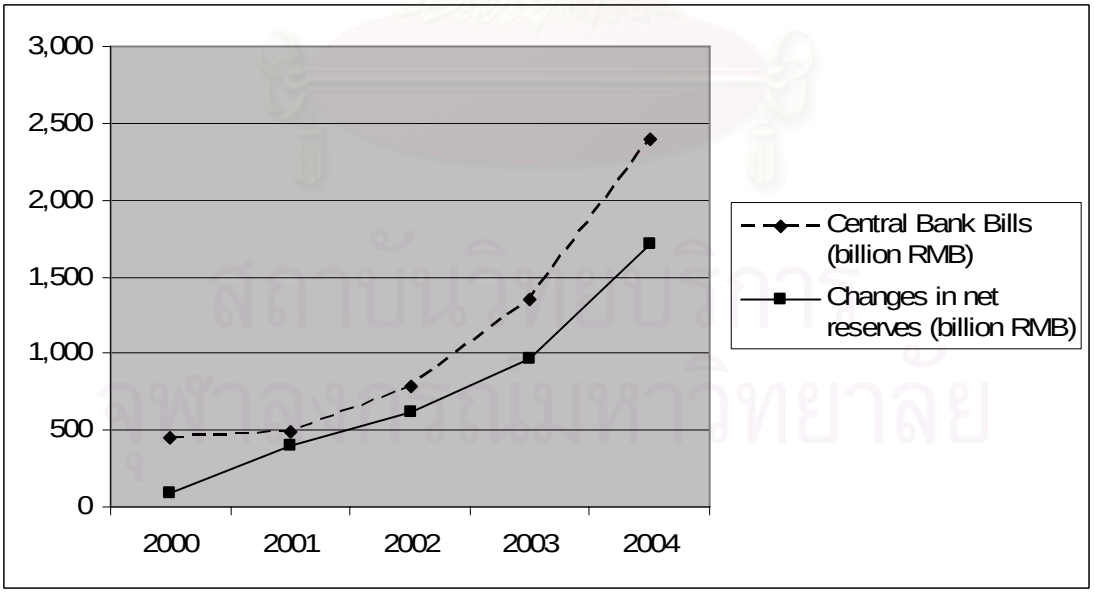
figure 21 and figure 22. Note that People's Bank of China conducted sterilization through its own bills as well as through treasury bonds. That is why figure 22 better represents the sterilization operations of the central bank.

Figure 21: Foreign Exchange Interventions and Central Bank Bills (excluding Government Bonds)



Source: IMF (2005), Zheng, Ji (2005), own calculations

Figure 22: Foreign Exchange Interventions and Central Bank Bills (including Government Bonds)



Source: IMF (2005), Zheng, Ji (2005), own calculations

It is worth noting that the relationship depicted in figure 21 and figure 22 is very strong. If only Central Bank bills are included the correlation with the increase of

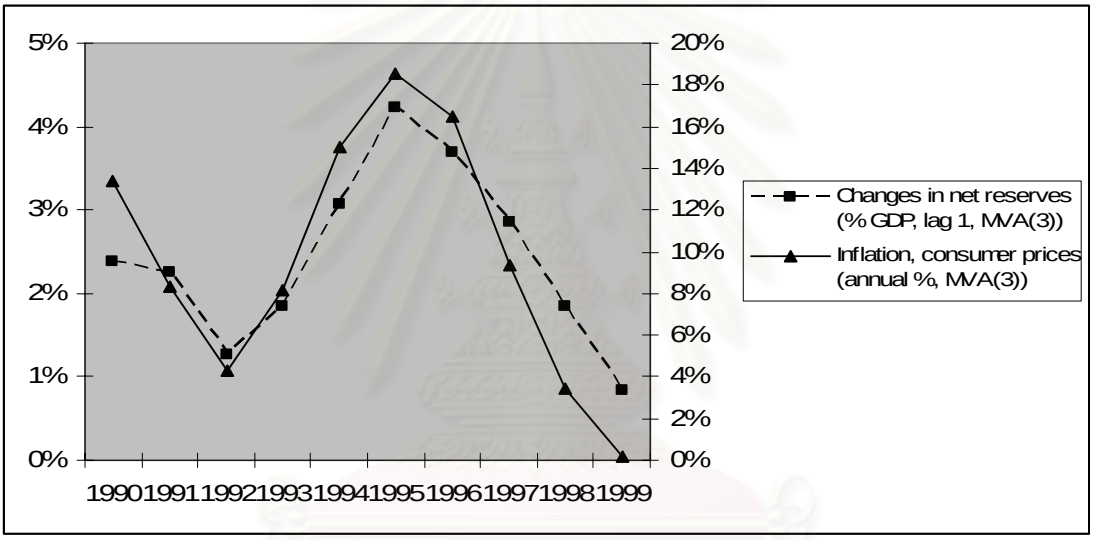
foreign exchange reserves is 96%. If in Government bonds are included in addition to the Central Bank bills, the relationship is on astonishing 98%. As also shown by the figures, the money market and foreign exchange market operations are of comparatively similar magnitudes.

The People's Bank of China is now sterilizing over 10% of China's GDP. Shall this continue, at a certain point the banks will not be willing to buy central bank bills anymore. It is for them more profitable (and indeed their main business) to lend money to the private sector that can pay higher interest rates. Thus, to lure more money the central bank will be forced to increase the interest rates. Higher interest rates are linked with two effects. First, an increase in capital inflow, which in turn gives rise to the reserves, which in turn further increases the amount that needs to be sterilized. Second, interest hikes will decrease corporate profits, and slowdown economic activity, with many probable side effects (e.g. deterioration of the domestic stock market).

4.5. Sterilization and Economic Activity

The impact of a significantly undervalued currency is inflationary pressures. Figure 23 shows the impacts of a change in foreign exchange reserves on inflation in China during the 1990s. It can be seen from the figure 23 that hikes in net change of foreign exchange reserves led to hikes in inflation. For example in 1995 the large increase in foreign exchange reserves is connected with an inflation of more than 16%. The correlation between inflation (with 1 year lag) and change in foreign exchange reserves between the years 1987 and 2003 is 60%[5].

Figure 23: Change in net reserves (%0GDP) and Inflation (%) in China in the 1990s



Source: World Bank (2005), Own calculations

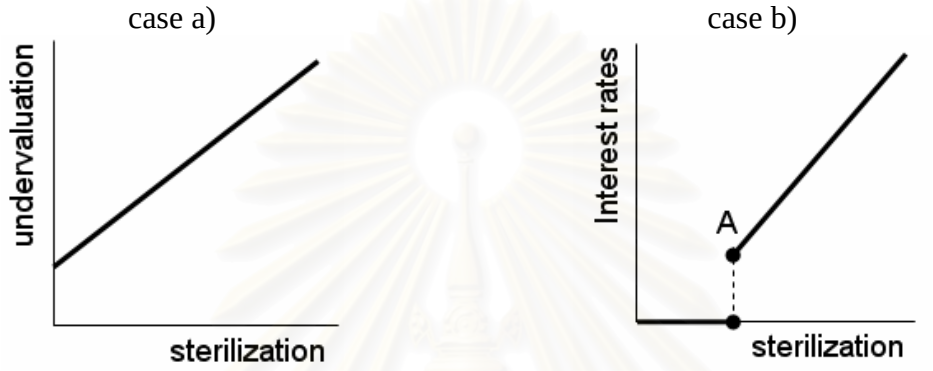
In theory and practice a country can neutralize inflationary pressure by tighter monetary policy and/or fiscal policy. This is indeed what has been happening in China in the recent years. The Chinese monetary authority has been sterilizing the increase in foreign exchange reserves by open market operations. If inflation can be controlled with sterilization what impacts will the undervalued currency have on the economic activity?

In this part I will try to summarize the impacts of sterilization on economic activity. My assumption is that the inflationary pressure is fully sterilized. Thus undervaluation will cause sterilization as depicted in Figure 24 – case a). The

[5] After applying an 3 period moving average to smoothen the fluctuations, the correlation between net increase in foreign exchange reserves and inflation is close to 95%.

relationship between sterilization and interest rates is depicted in Figure 24 – case b). Until point A, the sterilization will not lead to an increase of interest rates. This is because the money market participants demand a certain amount of low risk papers at the prevailing rate. However, if the banks need to sterilize more than that amount, it must increase interest. Further it is assumed that rising interest rates negatively influence economic growth.

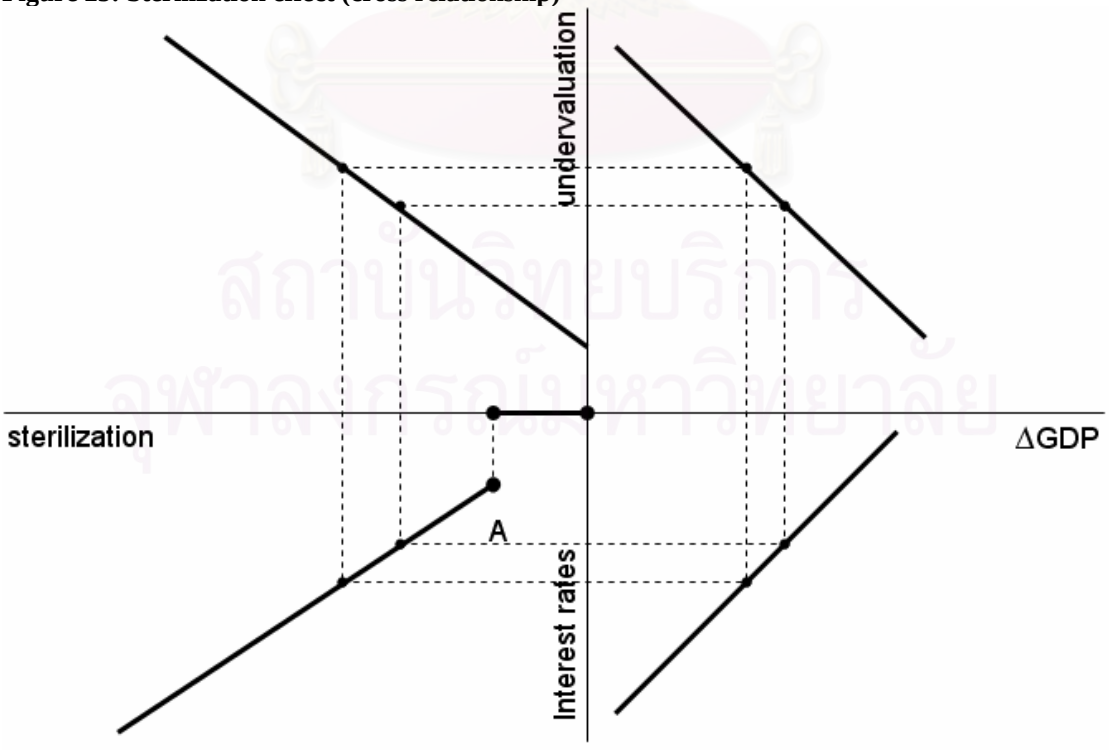
Figure 24: Sterilization, Undervaluation, and Interest Rates



Source: Author

Consequently, the impacts on economic activity resulting from significant undervaluation and excessive sterilization are depicted in figure 25.

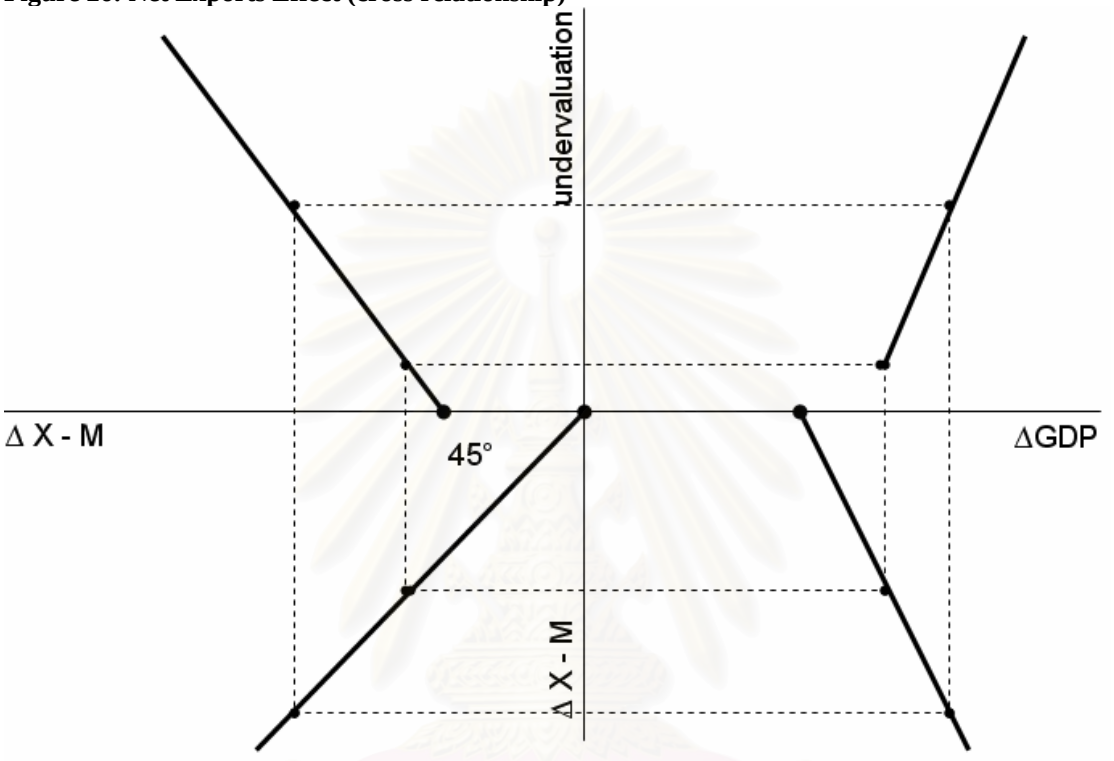
Figure 25: Sterilization effect (cross relationship)



Source: Author

Excessive sterilization will have a negative impact on the economic growth, as the domestic demand deteriorates. However, recall that the sterilization was conducted to maintain the currency at an undervalued level. Thus, economic growth will be pulled by external demand as demonstrated in figure 26.

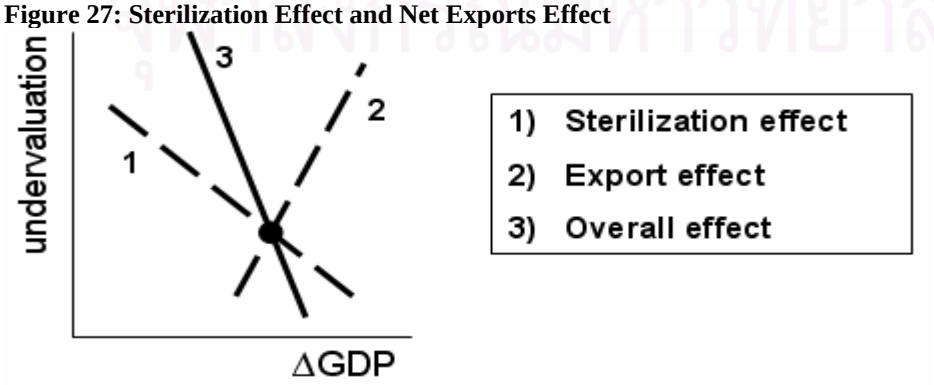
Figure 26: Net Exports Effect (cross relationship)



Source: Author

In sum, with an undervalued currency and sterilization, the economic activity will be pushed down by lower domestic demand and pulled up by higher external demand. The net outcome depends on the elasticity of sterilization effect line and net export line (figure 27).

Figure 27: Sterilization Effect and Net Exports Effect

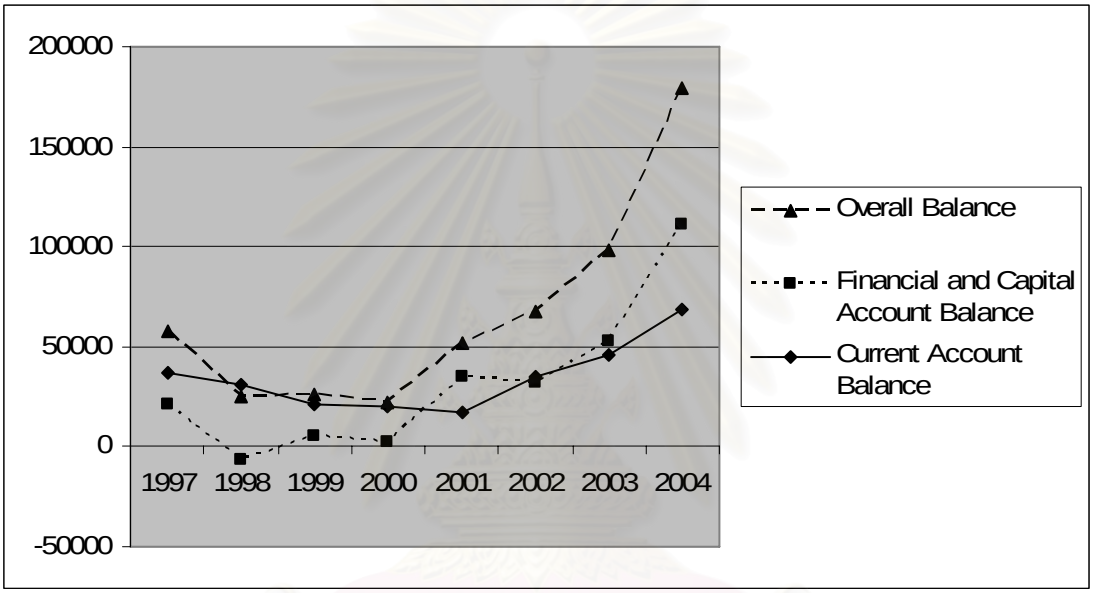


Source: Author

4.6. Twin Surplus in Balance of Payments

The rapid increase in China's foreign exchange reserves, distortions in the foreign exchange market, and ever rising sterilization in domestic money market are a result of the fact that China is running a surplus on both current and financial accounts. As a result, the overall balance must be always positive; this is what gives rise to the reserves. This situation is demonstrated in figure 28.

Figure 28: China's Balance of Payments (billion USD)



Source: International Monetary Fund (2005)

Under standard economic assumptions one would expect the Current Account Balance and the Financial and Capital Account Balance to offset each other. A surplus of one account should be balanced by a deficit in the other account, and the overall balance shall tend towards zero. Zero overall balance was, however, in contradiction with China's economic goals. First, China was committed to export led growth, which suggests policy objective of Current Account Surplus. Second, As Yongding Yu reveals: "the government sets an undeclared target for foreign exchange reserves"[6] that he estimates to be around 200 billion US dollars. To achieve this double objective (current account surplus, relatively fast increase in reserves) the only available policy is set to a target for the financial account balance. The target should be close to zero

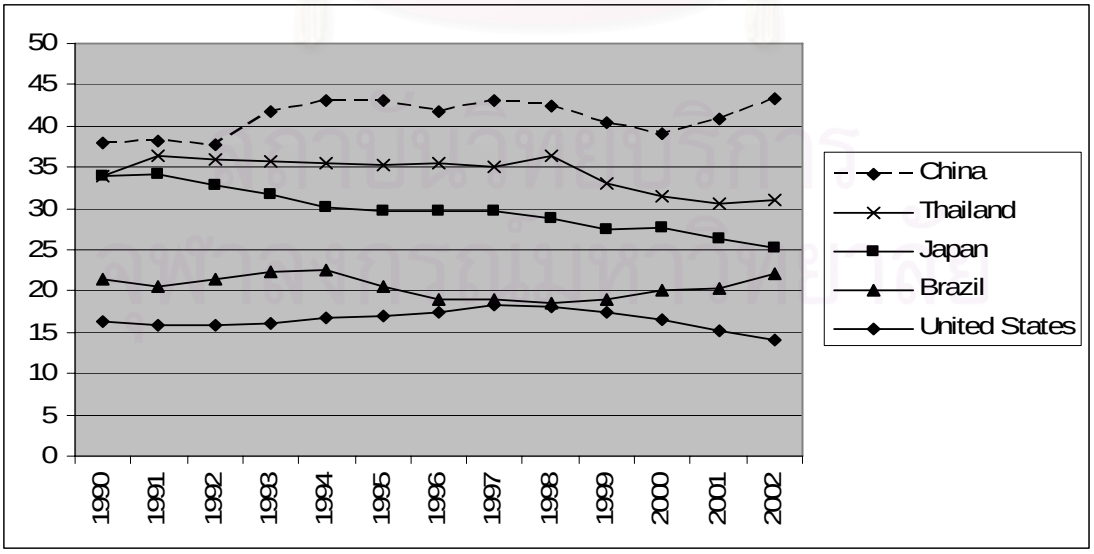
[6] Yu (2001)

(relative to current account) or positive financial account balance. This can be done when the capital controls favor capital inflow relative to capital outflow.

Yongding Yu also suggested that "China is likely to allow the RMB to appreciate" and "after hitting the target of $ US 200 billion for foreign exchange reserves, China is likely to abandon the implicit policy goal of "twin surplus"[7]. However this did not happen for various reasons. First, an appreciation could undermine the policy of export led growth. Second, in economics more is always better then less (the axiom behind utility functions). To have foreign exchange reserves of say 350USD simply sounds better than 200USD even if that is already quite a lot. Third, there is an uncertainty about the impacts of RMB appreciation on exporting enterprises. Fourth, the capital market started to deteriorate in 2001. To loosen the capital outflows would probably accelerate the downfall of the markets. Fifth, there is probably an array of dozens of other explanations. Whatever the reasons, the RMB stayed undervalued and the financial account stayed relatively less flexible to financial inflows.

There is something improper about the Chinese financial account surplus. In particular, China is a high saving country, it does not lack funds. Figure 29 compares China's saving rates with some other countries.

Figure 29: Saving Rates (%GNI)

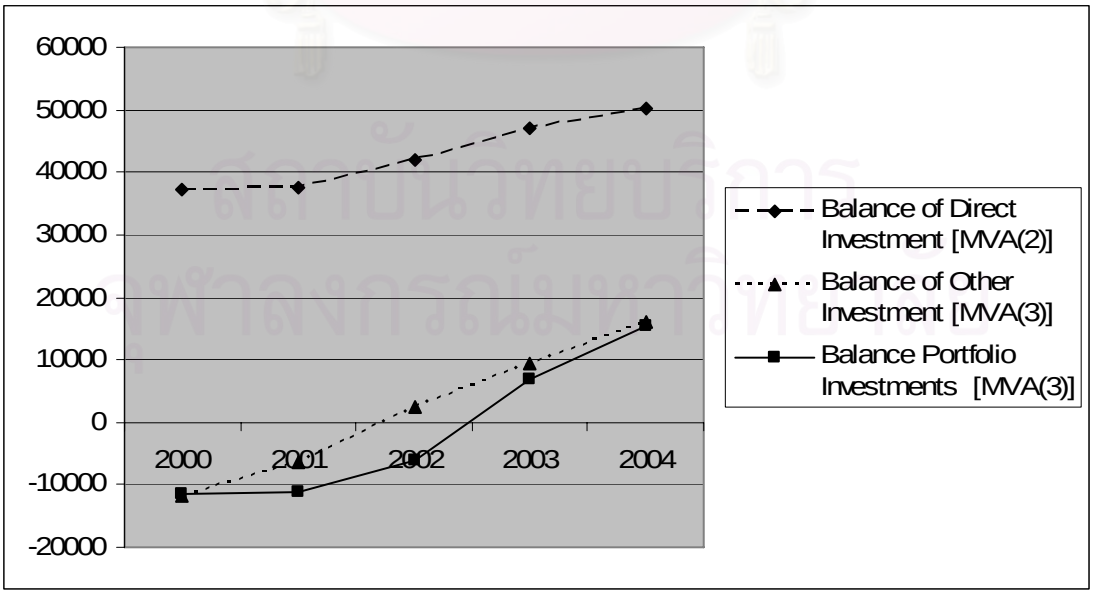


Source: World Bank (2005)

[7] Yu (2001)

Despite the high saving rates the financial account inflows increasingly overwhelmed the outflows (more than Chinese authorities ever expected) leading to unprecedently high overall balance surplus and resulting in accumulation of foreign exchange reserves. Apart from the handcuffed financial outflows, the financial inflows started to accelerate in 2001. While not attempting to be comprehensive, I offer three explanations for the hikes in financial account surplus. First, the accession to WTO at the beginning of the new century seemed to have positive influence on FDI inflows. Foreign Direct Investments are not only related to financial transfers, but are also related to technological know-how, and market power transfers. China's high saving rates can only substitute financial transfers, but not for the other transfers. Second, the domestic stock market in China has deteriorated, as already mentioned earlier. As a result many domestic companies decided to get listed in foreign stock exchanges such as Hong Kong, Singapore and the United States. This gave rise to portfolio investments inflows. Third, the appreciation of RMB started to be encouraged by foreign policymakers and economists. Consequently, economic agents with an option (note that with capital controls not everybody has an option) converted their foreign assets into RMB assets more than usual. In other words foreign economic agents would increase their liabilities in the Chinese economy, while Chinese economic agents would decrease their assets abroad in favor of RMB assets.

Figure 30: Direct Investments, Portfolio Investment, Other Investments (Net Inflows, USD)

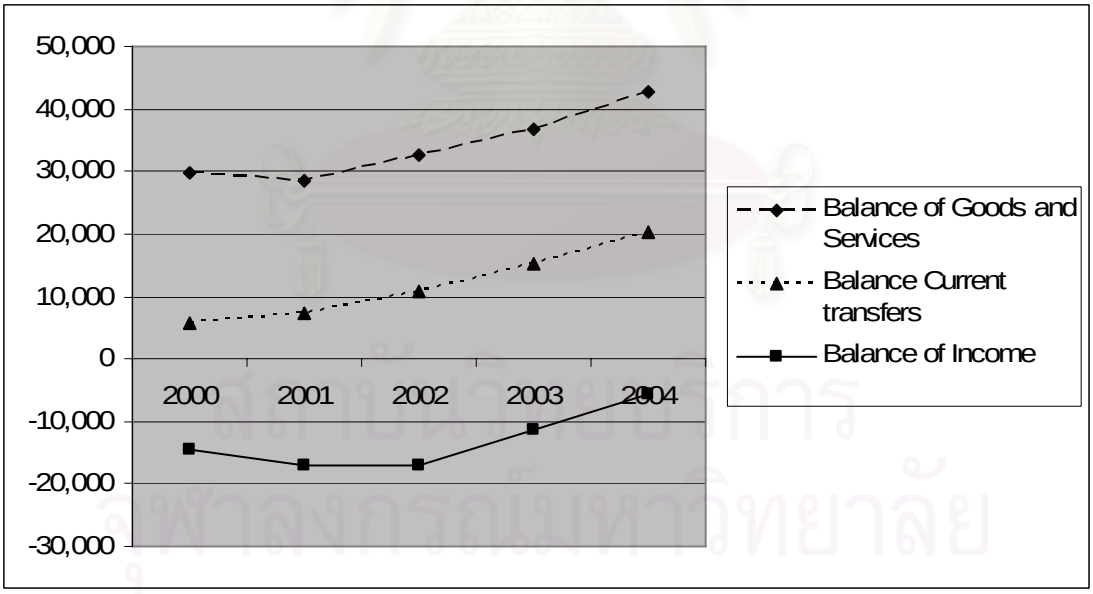


Source : International Monetary Fund (2005), Own Calculations

The development of the Financial Account since 2000 (after the Asian Financial Crises) is demonstrated in Figure 30. Financial account surplus is the sum of net Direct Investment, net Portfolio investment, and net Other Investment (such as accounts in banks). All these balances have portrayed a rising trend (moving averages has been used to smooth out annual fluctuations).

The Current Account Surplus has also been on a rise, although the increase was not as dramatic as in the case of Financial Account Surplus. While not trying to be comprehensive, the Current Account Surplus can be contributed to: First, the undervalued currency that has positive impact on external demand for Chinese products. Second, to the WTO accession that relaxed the trade barriers and improved investor confidence. Third, to the expectations of RMB appreciation that are the most likely driving force in the hikes in net transfers (and to certain extend also in trade balance). Fourth, net income from abroad started to pick up (e.g. interest rate payments).

Figure 31: Trade Balance, Balance of Income, Balance of Current Transfers (USD)



Source : International Monetary Fund (2005)

The development of the Financial Account since 2000 (is demonstrated in Figure 31. Current Account surplus is the sum of those three balances. All these balances have portrayed a rising trend. The Current Account Surpluses together with the rise in Financial Account Surpluses account for the accumulation in China's Foreign exchange reserves.

4.7. Conclusions and Recommendations

On July 21, 2005 Chinese authorities conducted a reform of the foreign exchange regime. The RMB was revalued to 8.11 RMB/USD and allowed to float under a managed float. Under the current system RMB is allowed to rise or fall by 0.3% a day against the dollar. Thus in theory the RMB can rise or fall against the dollar by roughly 6% a month and close to 100% a year. This indicates that China has adopted a relatively flexible managed foreign exchange system that gives the monetary authority ample maneuvering space.

Despite the relative flexibility, China has kept the RMB stable allowing it to appreciate against the dollar by no more than 2% in ten months. Some scholars have suggested that the super-stable exchange rate between the dollar and the RMB is inappropriate for China. For instance Otani asserts: "What is beneficial for China is a relatively stable exchange rate in effective terms, but not necessary in terms of its exchange rate against any particular currency."[8]

Until China introduces a fully convertible currency the second best choice is to stabilize RMB exchange rate against the U.S. dollar.

I contend that China needs to stabilize its exchange rate against an international convertible currency and not in effective terms. Given the dominating role of the U.S. dollar in the international monetary system the currency of choice is not surprisingly the dollar. It is in China's best interest to introduce a fully convertible currency in the future, but until then the second best choice is to stabilize RMB exchange rate against the dollar. One should not expect any large fluctuations in the RMB/USD rate any time soon.

The market supply and demand framework suggests that RMB is significantly undervalued. The People's Bank of China must intervene in the market by absorbing the excess supply of foreign currencies. While in 2004 the excess supply was roughly 1% of the GDP, in 2004 it jumped to about 12% of the country's GDP. A rapid

[8] Otani (2005)

increase in foreign exchange reserves gives rise to inflationary pressure. In order to fight inflation the People's Bank of China started to issue its own bills. The correlation between central bank bills and net increase in foreign exchange reserves is on astonishing 96%.

Undervaluation of the RMB plays a leading role in the ongoing domestic inflationary pressure and consequent large scale sterilizations.

The empirical evidence shows that between 1987 and 2003 the correlation between a change in foreign exchange reserves and inflation has been roughly 60%. A country can neutralize the inflationary pressure from an undervalued currency by tighter monetary and/or fiscal policy. There is a certain space between sterilization and increase of interest rates, after reaching the edge of that space, sterilization will cause an increase in interest rates and impact on domestic economic activity.

According to a model proposed in this paper, sterilization will cause a decrease in the growth rate of domestic demand. On the other hand, an undervalued currency will have positive impacts on the growth rate of external demand. In sum, with an undervalued currency and sterilization, the economic activity will be pushed down by lower domestic demand and pulled up by higher external demand. Chinese authorities are facing a trade-off between domestic spending led growth and export led growth (table 8). The current reforms suggest that Chinese authorities have decided to avoid this trade-off by slightly appreciating the RMB with unclear prospect of solving the problems resulting from undervaluation.

Table 8: Trade-off between export led growth and domestic spending led growth

Policy Options		**Impacts**	
Objective	**Appreciation**	**External Demand**	**Domestic Demand**
First option: Export led growth	Insignificant Appreciation	Positive impacts	Decrease
Second option: Domestic demand led growth	Significant Appreciation	Negative impacts	Streaming or Increase
Third option: Balanced growth	Slight Appreciation	Unknown impacts	Unknown impacts

Source: Author

The imbalances in China's economy are a consequence of an inconsistency between a comparatively well developed trade sector and a comparatively underdeveloped financial sector. While the trade sector calls for confidence and more flexible foreign exchange regime, the financial sector calls for cautiousness less flexibility. As a result China is running an unsustainable twin surplus in the balance of payments.

The imbalances in China's economy are a consequence of an inconsistency between comparatively well developed trade sector and comparatively underdeveloped financial sector.

To stabilize the balance of payments the authorities shall decide between two policy options (table 9). The first policy option is to target a current account deficit and financial account surplus. This option requires significant currency appreciation and is potentially harmful for the well being of the trade sector. The second policy option is to target a current account surplus and financial account deficit. This option requires gradual liberalization of financial outflows and is potentially harmful for the financial sector.

Table 9: Policy options for dealing with unsustainable overall balance surplus

Policy Options			Impacts	
Objective	**Appreciation**	**Financial Outflows**	**Trade Sector**	**Financial Sector**
First option: CAB<0, FAB>0, OB→0	Significant Appreciation	No Liberalization	Negative Impacts	Shielded
Second option: CAB>0, FAB<0, OB→0	No Appreciation	Liberalization	Shielded	Negative Impacts
Third option: CAB→?, FAB→?, OB→?	Slight Appreciation	Slight Liberalization	Unknown Impacts	Unknown Impacts

Source: Author

The problem with these two policy options is that both have potentially negative consequences for the whole economy as problems from the negatively impacted sector spin off into other sectors. The Chinese authorities have avoided taking either way, and decided to take a third option of slightly appreciating and slightly liberalizing the financial outflows. This option is merely fighting the causes, but not the source of the problem. Only time can show whether this policy will lead to a gradual meltdown of imbalance, or will cause their further accumulation. While

in theory taking small steps might ease the problem, in practice it might give further rise to appreciation expectations and add up to inflationary pressure.

The ability of the monetary authority to control market sentiments is of utmost importance if China wants to stabilize its foreign exchange markets.

Generally speaking, the RMB will be undervalued as long as there are prevailing appreciation expectations. Global investor Soros (2002) emphasizes: "Instead of moving towards equilibrium, financial markets left to their own device, are liable to go to extremes and eventually breakdown." The ability of the monetary authority to control market sentiments is of utmost importance if China wants to stabilize its foreign exchange markets. Expectations must become a critical intermediate goal of Chinese policy mix.

Productivity increase in the trade sector was balanced by an increase in real wages. Undervaluation is a direct consequence of policies that favor financial inflows relative to financial outflows.

It became a conventional believe that the undervaluation of RMB is caused by gradual increase in productivity of the tradable sector and that the tradable sector is now enjoying an unfair advantage of an undervalued currency. I contend that this conventional belief is faulty on two accounts. First, as shown by McKinnon (2005), the productivity growth was balanced by an increase in real wages. Second, the currency undervaluation is a direct consequence of China's policy of financial account controls that are relatively open for inflows and relatively closed to outflows.

China has high saving rates, and rapid growth of the economy, but is deficient in internationally competitive financial institutions that would be able to attract funds without administrative controls on financial outflows.

The Chinese stock markets have been developed too early and based on questionable objectives. As a result the markets started to deteriorate in 2001 after a few seemingly successful years. China has high saving rates, and rapid growth of the economy, but is deficient in internationally competitive financial institutions. As a

consequence, internationally uncompetitive equity markets are unable to attract sufficient funds without the help of administrative controls of financial outflows. If China decides to retain those controls it must appreciate its currency, inflate its economy, or increase interest rates. If China decides to ease the controls, its exchange rate can be stabilized at the currently prevailing level.

If China decides to ease the administrative controls of financial outflows, its exchange rate can be stabilized at the currently prevailing level. Else, it will have to appreciate its currency, inflate its economy, or increase interest rates.

The fragile banking system does not posses a threat to financial stability as long as it is fully guaranteed by the government. Gradual decrease of state-ownership that will be accompanied with a decrease in government responsibility is a potential source of shake ups in the financial system. Given the weak performance of capital markets, a move towards universal bank, as suggested by Wu (2005), is strongly discouraged. Table 10 summarizes some implications between the foreign exchange regime and financial system.

Table 10: Financial account liberalization and Appreciation pressure

Objective	Financial Outflows	Appreciation
Protect Fragile Capital Markets	Not Liberalized	Necessary
	Liberalized	Unnecessary
Retain Low interest rate	Not Liberalized	Necessary
	Liberalized	Unnecessary
Retain Low inflation	Not Liberalized	Necessary
	Liberalized	Unnecessary

Source: Author

This paper is among the first in this field to assert a significant implication between current account balance and development of the Health Care System and the Social Security System. Successful development of the Health Care System and the Social Security System will cause a drop in precautionary saving of the citizens. As a consequence the saving-investment gap will tighten and the current account surplus decreases. Decrease in savings will also positively influence domestic demand led growth as consumptions increases. Thus, a fast development of these systems is strongly encouraged not only for social reasons, but also increasingly for economic reasons.

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