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**MONETARY AND EXCHANGE RATE POLICIES IN THE CHINESE
DEVELOPMENT STRATEGY**

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Firma dello studente

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When I started to think about the composition of my master thesis I was in a really different situation. The winter exam session was almost over and, thanks to the big effort that I put in the last semester, I was able to get enough credits to start this thesis. The desire to do a great job and to conclude in the best way possible my university course was big and the same was the curiosity to explore some fields and arguments that I did not know well.

So, when I saw among all the available themes the possibility to write a thesis about the Chinese situation, I immediately decided what would have been my argument, driven by the curiosity toward a reality that I did not perfectly know and by the interest developed in these years for macroeconomic topics.

However, before I could even start to work on my thesis, something unexpected happened and it is not an exaggeration to say that my life changed in few days. I was preparing the last exam of the session, personal finance, when I heard about a job opportunity that I should not avoid to take into consideration. So I sent my curriculum and the day after the last exam I did the job interview. Seven days later I started what is becoming one of the most interesting experiences of my life.

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concentrate totally on my work even when sometimes I wanted to think or do something else, such for example to the end of my studies, which was so near but sometimes it seemed unreachable.

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INTRODUCTION

In the last few decades, one of the biggest changes that interested the international economic scenario is the economic result that some emerging markets gained thanks to the rapid development of their national economies. Some among these are for example Russia, Brasil and India, however, none of their progress are comparable with those made by China.

Starting from a situation in which its economy was completely closed and state-addressed with a financial system composed of a single bank which operated both as a commercial intermediary and a Central Bank and which was completely subjected to the control of the government, in 1978 China started its process of internationalization and transformation toward a market-oriented economy.

In particular, chinese authorities reorganized the financial system, creating new four banks and endowing the People's Bank of China, which became to all effects the Central Bank of the Country, with more independence and new instruments of monetary policy to influence interest rates, inflation and the echange rate.

Moreover, other important steps that characterized the internationalization of the chinese economy that is worth to mention are of course the entrance of the Country in the Word Trade Organization in 2001 and the inclusion decided by the Intenational Monetary Fund of the Renminbi – the chinese currency – in the Special Drawing Rights Basket of currencies.

However, even if some important progress have been made by chinese authorities to internationalize their economy and mostly their currency, this process was anything but linear and above all it is not finished yet. In particular, some aspects deserve to be investigated, as for example the different exchange rate regimes adopted and their strategical use to accompany the development of the economy and the position of China in what it is commonly known as the Impossible Trinity, since chinese authorities made some very particular choices with respect to the level of openess and controls of their capital market.

Specifically, it is fair to state that the purpose of giving to the chinese Renminbi an international role surged long before the reform of 2005 that saw the chinese authorities, at least formally, to abandon the fixed exchange rate regime and the peg with the dollar. Besides this, chinese polycimakers let understood the intention to deregulate also the capital market, however, in 1997 the Asian financial crisis showed the possible effects of a sudden deregulation and of the lack of stability of the exchange rate and the path of internationalization was abandoned.

In the subsequent period, another growth strategy has been privileged and the exchange rate has been kept stable and fixed to the dollar - in a regime commonly known as the dollar peg – at a level that by the majority of the chinese commercial partners was considered undervalued.

This strategy was undoubtedly pursued in order to exploit the advantages of a weak currency, first among all the possibility to sell home made products abroad at a lower cost for foreigners who use a stronger currency, a strategy previously followed also by other asian emergent and developed Countries, such as South Korea, Taiwan, Thailand, Japan and Singapore (Eichengreen 1998).

In fact, according to the International Monetary Fund Working Paper published by Longmei Zhang in 2016 about progress and prospects of the Renminbi internationalization, the huge economic success reached by the chinese economy in the last two decades – which registered an average growth of the Gross Domestic Product of about ten percentage points and a level of per capita income that tripled in twenty years – was based principally on the export sector with a current account surplus peaking at 10 percent of the GDP.

Thus, an exchange rate fixed at a level of 8.2777 yuan per dollar, an heavily regulated capital market and an underdeveloped financial system with a predominant banking sector also in the field of rising credit for enterprises and canalizing private savings, made China, despite its entrance in the World Trade Organization occurred in 2001, an economy which could not be considered a market-oriented one.

However, the pressures of some commercial partners – and in particular of the United States which were accumulating a huge current account deficit against China – and the continuous inflow of capitals into the Country despite its controls on capital markets – forced the chinese authorities to revise their considerations on the exchange rate regime adopted and lead to the exchange rate reform of 2005, which saw the abolition of the dollar peg and the introduction of a new basket peg, in which other currencies such as the euro and the japanese yen were included and in which the Renminbi could fluctuate around a central parity decided day-by-day by the market and no more fixed at a predetermined level.

This reform did not mark the abolition of the exchange rate stability in favor of a fully flexible rate, however, in the subsequent years, the Renminbi appreciated of about 25% with respect to the dollar and the adoption of a managed floating exchange rate was certainly an important step in the roadmap of the internationalization of the currency, resumed with the 2005 reform and accelerated with the occurrence of the Global Financial Crisis in 2008 which, on the contrary of what it is commonly expected, gave an important impulse to this process.

In fact, as it will be discussed in the last chapter, at that time the main concern of the chinese authorities was no more the possibility of boosting the export sector through an undervalued currency, but their huge exposition toward dollar-denominated assets, which represented the principal component of the chinese foreign reserves, threaten by the fear of devaluation of the dollar after the occurrence of the Global Financial Crisis, the failure of some important financial institutions and the slowdown of the north american economy.

They understood that, in order to solve the problem of the over-exposure to the dollar-denominated assets, stated the impossibility of diversifying ex-post their foreign reserves, they should try to gain an international position also in the financial market, with a currency that may be considered a reserve one itself.

Thereafter, linked to the issue of the exchange rate stability, there is the second aspect that will be deepened in the first and in the third chapter, which is precisely the attitude of the chinese monetary authorities toward the openness of their capital market, their initial strict controls and their subsequent decision to deregulate it slowly and not suddenly as it is suggested by the so-called “Washington consensus”, a way followed during the recent past by the majority of the advanced and emergent economies.

At the base of the choices made by the chinese monetary authorities in terms of liberalization of their capital market, in addition to the lesson learned by the experience of other asian emergent Countries, there is the mundellian concept of the “Impossible Trinity”. In particular, this theory states that there are three main desirable goals that a Country may reach with its monetary policy, but it is impossible to achieve all of these three at the same time.

For this reason, monetary policy authorities have to choose two out of three between the following: exchange rate stability, capital account openness and independence of the monetary policy. During time different Countries made different choices, however, the chinese case is particular because among all other emergent economies, which, as anticipated above, decided to give up their monetary independence in favor of a currency pegged to a stronger one and an open capital market, the asian Country in question preferred to keep its capital account relatively closed and under strict restrictions imposed by the government.

This choice has been made not only to preserve the effectiveness of the monetary policy, but also and above all considering the benefits and costs of an open capital market. In particular, the absence of controls on capital markets and capital mobility help to protect citizens and firms against the cyclical effect of the economy in a Country. Indeed, being able on investing in foreign firms’ branches and on holding foreign claims, households and business are able to hedge against the risk of shocks that may occur in their home Country and they can also obtain higher rates of return at the same level of risk. Moreover, it seems that, in an hypothetical world

with perfect developed and liquid capital markets, capital mobility may favor a better allocation of resources, even moving capitals from well-developed Countries to emergent ones, thus letting the first to earn higher returns on their investments – since usually interest rates are higher in emergent markets – and the second to obtain resources to implement growth, investments and reforms.

However, there exists also another side of coin, which seems to have prevailed for chinese authorities in the definition of their attitude toward the imposition of controls on capital markets at least until the Global Financial Crisis. In fact, some of these benefits - and especially the optimum reallocation of resources - are valid only under extreme assumptions (such as the absence of asymmetric information) which usually are not valid worldwide and even if for the chinese case in particular it is evident that the financial system and the capital market are still not well developed, asymmetric information is an important problem not only for some emergent Countries, but it affects markets internationally given above all geographical distances and different cultures (eichengreen and Mussa 1998).

Moreover, despite what it is commonly thought, technological information sometimes does not help to solve this problem but on the contrary it contributes to exacerbate it. In fact, even if it stimulates financial transactions thus developing the internationalization of financial markets, it also enlarges the problem of the dependence of international markets on investors' reactions, which are increasingly more erratic and guided by news that sometimes may be incomplete or not fully reliable.

Thus, this situation gives more weight to one of the costs of capital account liberalization which should be taken carefully into account especially by emergent economies. Indeed, one of the biggest problems of the absence of capital controls is the fact that inflows and outflows of capitals, and in particular short-term capitals, are driven largely by feelings and interests of investors and this is of particular concern for Countries which may be forced to face sudden reversals of attitudes and outflows that may trigger financial crisis and macroeconomic instability.

However, even if some Countries (including China) for several years gave more weight to the costs of financial liberalization and decided to keep closed their capital markets, the de facto situation does not always reflect the de iure decisions taken by policymakers. Macroeconomic stabilization, the multilateralization of trade, the information technology revolution that made easier for people to access financial markets and the wide use of illegal channels of investments favored an always greater capital mobility despite the regulations that still persist in some Countries. Thus, authorities, and even chinese ones, had to change their attitude toward capital market liberalization.

As a consequence, the position with respect to the Policy Trilemma of those Countries who still tries to maintain capital controls changed. However, even in this scenario, China did not give up its monetary independence, rather orienting itself more toward a flexible exchange rate – even because of the pressure imposed by some important commercial partners and, after 2008, because of the objective of internationalization of the currency.

About all this concepts and about the development faced by China in these recent decades, a lot of studies and papers have been written, in order to describe the progress of the Country in its process of internationalization and transformation from a fully centralized economy to a market-oriented one, but also to investigate the effects of the reforms and in particular of the changes in the exchange rate regime and of the appreciation of the Renminbi that occurred after the adoption of the basket peg.

The principal and more complete sources about the issue of the exchange rate in China are undoubtedly the working papers published by the International Monetary Fund, which report some theoretical considerations and studies about the empirical evidence made by different Chinese and international researchers. Some examples are the attempt to estimate the Chinese equilibrium exchange rate made by Steven Dunaway and Xiangming Li and their consideration about the absence of consensus on the issue of the undervaluation of the Chinese Yuan and the work of Zhang Langmei about the imbalances created by the dollar peg and the maintenance of a weak currency in China until 2005.

Other newsworthy essays about the issue of the exchange rate stability and the internationalization of the currency are the works of Wei Guo, Enrico Gloria and Uddin, Baddou and Mohd, which deal with the impact of the appreciation of the currency on the export sector and so on the competitiveness of China in the international market, considering not only the implications of the theoretical contraposition between benefits and costs of having a weak or a strong currency, but also including the empirical evidence on the Chinese case before and after the abolition of the dollar peg and the appreciation of the Chinese Yuan.

On a relatively new and unexplored field of the literature stands the work of Imad Moosa, titled “Forecasting the Chinese Yuan-US Dollar Exchange Rate under the New Exchange Rate Regime”, about a de facto adoption of a crawling peg after the reform of 2005, despite what has been announced by the Chinese authorities about the new exchange rate regime.

Maurice Obstfeld, instead, in his essay about the future of the Renminbi’s link with the dollar, gives a look at the perspectives of the Chinese monetary policy and describes an ideal way to delink the value of the currency from the dollar, with a two-steps approach which should grant flexibility to the exchange rate and should be the continuation of the path undertaken with

the 2005 exchange rate reform and should be accompanied by the fully convertibility of the currency – a process not completed yet.

A look at the past on the contrary is given by Richard Burdekin and Pierre Siklos, who investigate the People's Bank of China's rule in the monetary policy conducted in the Country since the last decade of the Twentieth Century and also by Yen Nee Lee who describes the monetary tools used and recently introduced by the People's Bank of China and its role in controlling the money supply and the interest rate.

Remaining in the field of the banking sector, Giuseppe Iannini and Corrado Gotti Tedeschi consider the financial side of the economy and describe in depth the structure of the banking system and how it influenced the mighty growth of the Country and the role of the Big Four in giving credit to citizens and firms and in canalizing their savings. Even Marco Pagano, in his essay titled "Financial Markets and Growth", describes the role, the strenghts and weaknesses of financial intermediaries in China and, after a theoretical introduction about the link between financial development and growth, shows some evidence for the chinese case.

Always looking at the working papers of the International Monetary Fund, it is worth considering the work of Tamim Bayoumi and Franziska Ohnsorge about de facto inflows and outflows of capitals in the chinese Country despite its regulation and the possibility with related benefits and challenges of a future capital account liberalization. In the same field there are the works of Chang Chun, Zheng Liu and Spiegel Mark and Ehlers Torsten and Packer Frank, which deal with the link between the capital account liberalization, the currency internationalization and the past experiences of other emergent Countries as well as the current situation and perspectives for the chinese economy.

Finally, another important argument to be mentioned is the so-called Impossible Trinity, which is of particular importance for the chinese case, since, as it was mentioned above, this Country placed itself in a very unusual position with respect to the decisions made by other emergent economies, choosing to keep its monetary independence and its exchange rate stability at the expense of the openness of its capital market. All this concepts are well described in the work of Rey about the international channels of trasmission of the monetary policy and the Mundellian Trilemma.

In this paper some of these texts and other sources of the literature are cited, in order to create a complete description of the recent monetary history of China, of its current situation with respect to the process of internationalization of the currency and the progress made in order to give flexibility to its exchange rate, of the impact of the reforms and the appreciation of the Renminbi and of the current issue of the capital account liberalization and of the Country's position with respect to the Policy Trilemma.

Thus, this paper is organized as follows. In the first chapter it is presented the structure of the chinese financial system and in particular its development from the presence of a unique bank with commercial and central bank functions to the constitution of the so called Big Four and their predominant role in a system which is still considered bank-based, stated the little relevance of the role of the capital market with respects to the functions conducted by banks and financial intermediaries.

Moreover, there is a description of the monetary tools used by the People's Bank of China and of its decisions in terms of inflation mangament and accumulation of foreign reserves, since another particular feature of the chinese economy with respect to the other emerging markets and to the developed ones is the huge accumulation of foreign reserves and in particular of dollar-denominated assets.

In the last part of the first chapter the problem of the Impossible Trinity is presented first of all from a theoretical point of view and secondly with respect to the specific decisions made by the chinese authorities in terms of exchange rate flexibility, independence of the monetary policy and capital market openness.

In the second chapter the specific issue of the exchnage rate regime and the changes and reforms made by chinese authorities in the last twenty years are addressed: after an introduction about the benefits and costs of a weak currency that stimulates the export sector and a strong currency that helps the Country to gain an international role in the world financial markets, the period of the dollar peg, the exchange rate reform of 2005 and the susbequent crawling peg are described with a paragraph dedicated to the empirical effects of these changes and in particular to the appreciation of the chinese Renminbi.

The third chapter is dedicated to the description of the different phases of the internationalization of the Renminbi, since, even if it is hard to imagine, this process started long before the adoption of the dollar peg and the phase of the undervalued currency and, after an interruption caused by the surge of the Asian financial crisis, it started over with the occurrence of the Global Financial Crisis of 2008 which gave to the chinese authorities, despite the difficulties that even China had to face, the occasion to gain importance in international markets.

Finally, some aspects of the internationalization of the Renminbi are deepened, such as the necessity for the exchange rate regime to gain more flexiliby and the issue of the liberalization of the capital account that, despite the progress made, is still under some controls imposed by chinese policymakers.

CHAPTER 1

THE PEOPLE'S BANK OF CHINA

1.1 The structure of the financial market in China: the role of the “Big Four” and a bank-based approach in transition

1.1.1 The constitution of the chinese financial sector and the predominant role of the Big Four

In the last fifty years, the chinese economy has experienced a huge transformation, not only from the point of view of the surprising levels of growth of its Gross Domestic Product, but mostly for the reforms and the changes that commuted this economy from a fully-centralized and closed one to an increasingly open and market oriented emergent Country.

However, even if it seems that chinese authorities are working to align the economic structure of their Country to the ones of the other developed Nations, China still presents some peculiar characteristics that differentiate it not only from the most important market economies, but also from the other emergent Countries in transition. Some of these aspects are for example the choices made by the chinese authorities in terms of monetary policy and their capital market restrictions and, moreover, one of the most important differences which still reflects some traits of the chinese centralized economy is the composition of its financial sector and the strict dependence of the Central Bank, the People's Bank of China, with respect to the chinese government.

With the constitution of the People's Republic of China in 1949, all the enterprises and the financial institutions, including the People's Bank of China, became State's property and the situation remained unchanged for almost thirty years. Until 1978 the People's Bank of China was the only bank of the Country and it had the dual function of central bank and commercial bank. Moreover, it was entirely controlled by the Ministry of Finance and bereaved of any kind of independence.

However, 1978 is the year in which even in China occurred the so-called “divorce” of the Central Bank from the Ministry of Finance, even if after that event the People's Bank of China remained under the control of the government and so it gained only a partial independence. Furthermore, in the period after the beginning of the transition of the chinese economy from a completely centralized one to at least a partial market-oriented economy,

which started exactly in 1978, four new banks were born in the Country in order to substitute the People's Bank of China in its commercial functions.

In particular, these four new banks are: the Agricultural Bank of China, the Bank of China, the People's Construction Bank of China and the Industrial and Commercial Bank of China. The first three sprang out in the period immediately after the beginning of the reforms and they respectively oriented their activities to the agricultural and rural areas of the Country, to the specialization in the currency transactions and to the real estate sector. The fourth was created only in 1984 and its creation constituted the so-called group of the "Big Four" which still represents the core of the chinese banking sector after almost thirty years from its constitution.

During the following twenty years after the creation of the Big Four, China saw the development of other financial institutions and in particular of the Regional Banks and the Credit Cooperatives; however, from the data of the first years of the 21st Century, it is evident that, even if the entrance of some new financial intermediaries in the financial system caused a greater competitions between banks, the reform of the banking sector favored first of all the reinforcement of the state-owned banking sector (and so the presence of the Big Four) and only after that it gave some space to the new entries, such as the local banks and some non-banking intermediaries and foreign financial institutions like some common investment funds - between which the first two were Guo Tai and Nan Fang - and some Qualified Foreign Institutional Investor Funds.

Indeed, with respect to the volume of the assets in the bank credit system which is measured in 16.932 billions of RMB of which 10.086 are constituted by loans and with respect to the volume of the deposits which is almost 14.412 billions of RMB, the Big Four dominated on the other commercial and foreign banks with the highest values in the system (Sau 2008).

Figure 1.1.: State-owned Banks and Private Banks in China 2000-2005 (billions of RMB)

Types of Banks	Assets	Deposits	Loans Granted	NPL (%)
<i>2004</i>				
• State-owned Banks	• 16.932,1	• 14.412,3	• 10.086,1	• 15,57
• Private Banks	• 4.697,2	• 4.059,9	• 2.885,9	• 4,93
• Foreign Banks	• 515,9	• 126,4	• 255,8	• 1,34
• Urban Credit Cooperatives	• 171,5	• 154,9	• 97,9	• --
• Rural Credit Cooperatives	• 3.101,3	• 2.734,8	• 1.974,8	• --
<i>2003</i>				
• State-owned Banks	• 16.275,1	• 13.071,9	• 9.950,1	• 19,74
• Private Banks	• 3.816,8	• 3.286,5	• 2.368,2	• 7,92
• Foreign Banks	• 333,1	• 90,7	• 147,6	• 2,87
• Urban Credit Cooperatives	• 148,7	• 127,1	• 85,6	• --
• Rural Credit Cooperatives	• 2.674,6	• 2.376,5	• 1.775,9	• --
<i>2002</i>				
• State-owned Banks	• 14.450,0	• 11.840,0	• 8.460,0	• 26,1
• Private Banks	• 4.160,0	• 3.390,0	• 2.290,0	• --
• Foreign Banks	• 324,2	• --	• 154,0	• --
• Urban Credit Cooperatives	• 119,0	• 101,0	• 66,4	• --
• Rural Credit Cooperatives	• --	• 1.987,0	• 1.393,0	• --
<i>2001</i>				
• State-owned Banks	• 13.000,0	• 10.770,0	• 7.400,0	• 25,37
• Private Banks	• 3.259,0	• 2.530,7	• 1.649,8	• --
• Foreign Banks	• 373,0	• --	• 153,2	• --
• Urban Credit Cooperatives	• 128,7	• 107,1	• 72,5	• --
• Rural Credit Cooperatives	• --	• 1.729,8	• 1.197,0	• --

From: *Sau 2008*

1.1.2 Bank-based approach and market-based approach: empirical evidence on a system in transition

However, these data not only communicate the low level of competition in the chinese financial sector, but underline also another important aspect of the structure of the chinese economy and of the behavior of its agents. This is referred to the level of deposits that chinese consumers pay-in in the state-owned banks and it is thus related also to the way in which chinese enterprises finance themselves during their constitution and during their business life and to the more general aspect of the orientation of the whole chinese economic system, which is considered a bank-based system in transition.

First of all, it is worth mentioning the fact that, before the constitution of the Big Four, the low level of savings of chinese citizens was deposited in the only financial intermediary present in the Country and so in the People's Bank of China. Whereupon, after the elimination of some restrictions on the private property, the rising of some little private or hybrid firms and the creation of the three national stock exchanges in the 1990s, constituted a new channel for savings to be deposited.

Nowadays the level of savings grew considerably with respect to the pre-market-oriented reforms situation, however, despite the growing importance of the Shanghai Stock Exchange, the Shenzhen Stock Exchange and the Hong Kong Stock Exchange, which are the three national stock exchanges mentioned before, the majority of savings of private citizens is still addressed to the banking sector (Gotti Tedeschi 2006).

Apart from this, another feature that shows the predominance of the banking sector in China is the way in which chinese enterprises finance themselves. Chinese businesses are divided in three categories: the state sector firms, which are enterprises owned by the government, the listed sector firms, that are listed business of the private sector, and hybrid sector firms, that are non-listed private ones. For the first two categories the most important source of financing is indeed the credit disbursed by the banking sector, and in particular from the state-owned Big Four, the second one is the self-financing, which is a direct collection of funds, and only after them there are the direct issue of shares and bonds and the Foreign Direct Investments (which should acquire more importance in the future if China will continue to open its financial market).

Finally, with respect to the system in general, it is worth understanding which is the orientation of the chinese economy with respect to the choice between a bank-based system and a market-based system.

The first one, also called the “bank-based view”, emphasizes the role of the financial institutions, and in particular of the institutions of the banking sector, in the development of a modern economy, since they provide information to the system about the agents and the enterprises that want to operate in the financial system and that obtain some credit from it and so they perform – or at least they should do - a screening and a monitoring function on the agents that operate in the economy.

Instead, the “market-based view”, is more oriented to let these functions to the non-banking financial sector, in which shares, bonds and private equity are traded, because, as long as capital markets are liquid, efficient and widespread, according with this approach they are the best instrument to overcome the problems related to the relationship that can arise between banks and enterprises and that can cause favorable behavior toward less worthy businesses and furthermore they are a better instrument to help the creation and the financing of new firms, to allocate resources toward truly deserving enterprises and to create disincentives for the opportunistic behavior.

However, finding the optimal financial structure of a Country and so identifying the better view within these two, is not a static concept and it is contrariwise true that it can change over time according to the situation of the Institutions within which markets operate, to the level of development and the presence of imperfections of the market themselves and to the structure of the business of the Country, which can be traditional or may be constituted for the most part by innovative businesses.

This consideration is particularly important to understand the Chinese situation which is characterized by incomplete capital markets and high information costs and information asymmetries between enterprise managers (especially of state-owned enterprises) and potential investors, and so which needs a banking financial system that, at least from a theoretical point of view, diffuses information, runs savings, diversify the risk and facilitates the financing of firms.

Moreover, it is important to mention that China is still in a transition phase both from an economic point of view and a legal point of view and so in its case it is better to first boost up the financial system following a bank-based approach and only after that starting a transition toward a market-based financial system (Saarela 2017).

However, these theoretical considerations are not enough to really understand if China is actually following this approach and so if it is actually in a situation in which its financial system is still a bank-based one with gradual movements toward a more market-oriented economy.

First of all, it should be considered a measure that gives some information about the dimension of the financial market with respect to the capital market and one helpful tool is

indeed the measure of the total bank credit with respect to the Gross Domestic Product (bank credit ratio) which for the chinese case, according to the measures provided by Lino Sau in his work about the chinese financial market structure, is even greater than one and so it shows the dominance and the importance of the banking sector in the chinese economy.

Another measure to be considered is the ratio between the capital market and the Gross Domestic Product (market capitalization ratio), which, with a value of 0.24 which is one of the lowest among Countries, shows an opposite situation and confirms the dominance of the banking sector on the capital market.

To further implement the analysis, it is worth considering even some “structural indexes” such as for example the logarithm of the ratio between the float supply ratio¹ and the bank credit ratio or the the logarithm of the market capitalization ratio and the bank credit ratio. It is evident that China is one of the Countries with the lowest values and so that it is characterized by an evident dominance of the banking sector, especially from the part of this sector which is state-owned.

Figure 1.2: Comparison between bank-based and market-based financial systems

	Ratios	Anglo-Saxon System	French System	German System	Scandinavian System	Mean	China
Dimension indexes of the banking system and of the stock market	Bank credit ratio	0,62	0,55	0,99	0,49	0,73	1,11 (0,24)
	Overhead cost ratio	0,04	0,05	0,02	0,03	0,03	0,12
	Market capitalization ratio	0,58	0,18	0,55	0,25	0,47	0,32
	Float Ratio	0,31	0,07	0,37	0,08	0,27	0,11

From: Sau 2008

¹ The float supply ratio is the value of stocks that are traded on the stock market with respect to the GDP.

1.2 Decisions of the People's Bank of China: monetary policy, foreign reserves and inflation targeting

1.2.1 The People's Bank of China's monetary tools

The People's Bank of China is the Central Bank of the Chinese economy. As other Central Banks of emerging and advanced economies, it controls the monetary policy and it has as its primary objective the maintenance of price stability – and so the control of inflation – and the support of growth exactly through the management of the monetary policy.

However, despite the majority of the Central Banks of the other emergent and developed countries, the People's Bank of China is not an independent institution, in fact, even if in 1978 the so-called “divorce” from this Institution and the Ministry of Finance of the Chinese government occurred, it is still under strict control of the State Council, which influences in this way the monetary policies of the Country.

The primary tasks of the People's Bank of China are of particular importance to the Chinese economy and in particular it deals with the creation, the emission and the circulation of the national currency, the Renminbi – which unit is the yuan – the regulation of the bonds' market and of the interbank loans' market, the accumulation or the reduction of foreign reserves and the management of gold reserves and of the State Treasury.

After this short introduction on the tasks of the Chinese Central Bank, it is worth to deep the discussion on some aspects that may have a substantial impact on the trend of the economy, such as the tools used to manage the monetary policy, the regulation of the interest rate and of the inflation and the level of foreign reserves.

Monetary policy refers to the way in which the Central Bank manages the supply of money and the level of the interest rate in the economy and, during the last decades, the People's Bank of China used different instruments to regulate it, introducing over time new tools and reducing the utilization of others.

In particular, until 1998, the People's Bank of China's preferred instrument was the so-called “credit plan” which let this financial institution to control the money supply and the banks' lending of the entire system through the imposition of credit controls which reflected the government plans since the bank credit was the main source of financing available in the Country at that time.

Moreover, it is worth mentioning that, in that period – and even after and until 2015 – interest rates were under strict control of the People's Bank of China, which influenced in this way the cost of borrowing and the cost of deposit for firms and private citizens and regulated

them to smooth the demand of capital over time, raising them to eliminate an excess demand and lowering them to favor it when it was too low (Xiong 2012).

Despite maintaining the controls imposed on interest rates as a way to regulate monetary policy, with the beginning of the twenty-first Century the People's Bank of China abandoned the instrument of the credit plan in favor of the direct lending to commercial banks. In the same period it was introduced also the reserve requirement ratio which is the amount of money that banks must hold in the form of compulsory deposits in the People's Bank of China and that is determined by the reserve base and the reserve ratio, that depends on the liabilities present in the financial institutions' balance sheets and on the percentage decided by the Central Bank.

Whereupon, in 2003, the People's Bank of China started to use Open Market Operations which are useful to introduce or remove liquidity from the financial and so from the economic system and hence to control money supply and interest rates on a short-term basis. In China these operations consist of two processes called repurchase and reverse repurchase agreements.

Repurchase Agreements are operations with which the Central Bank sells treasury bonds or, in the case of China, bills issued directly by the PBC, to the other banks of the systems and in this way it reduces the money supply; on the contrary, when it establishes Reverse Repurchase Agreement it buys these bonds increasing the money supply – this last case is a form of lending of the Central Bank toward the other banks of the system in exchange of collaterals.

Even after 2003 the People's Bank of China continued to use the requirement ratio as a monetary policy tool which is useful to steer money market rates, since the holding of the reserve is compulsory for the financial institutions of the system and so it increases the demand for credit toward the Central Bank from those institutions who need to meet this requirement and do not dispose of the necessary liquidity in that moment, thus facilitating the Central Bank to control the level of the interest rate.

This is also an useful tool to reach the inflation target, since, if the Central Bank decides to increase the reserve requirement ratio, and so the level of compulsory deposits that banks must hold in its balance sheet, the consequence is that this decision reduces the liquidity in circulation and so it is useful during period of high inflation.

The People's Bank of China continued also to impose strict controls on the benchmark interest rates and in particular on the one-year lending and deposit ones, influencing in this way the costs that the other banks of the system apply for lending money to firms and individuals. Only after 2015 it let the other banks of the system to depart from the level decided by the government.

Therefore, the combination of these instruments can be seen as an indicator of the orientation of the monetary policy of the People’s Bank of China and so of the chinese government. For instance, if the Central Bank reduces the compulsory reserve ratio or decreases the level of interest rate, it means that it is implementing an expansionary monetary policy (these measures are usefull to increase the liquidity in circulation); on the contrary, if it aims at reducing the money supply it means that it is implementing a tight monetary policy which is necessary for example in periods of high economic growth or in periods of high inflation.

Figure 1.3: Monetary policy instruments of the People’s Bank of China

Period	Main monetary policy instruments
1986Q1–1997Q4	1. Credit plan for banks' lending; 2. Various interest rates.
1998Q1–2002Q3	1. Central bank's refinancing to banks; 2. Various interest rates; 3. Reserve requirement ratio.
2002Q4–2010Q4	1. Open market operations (central bank securities); 2. Various interest rates; 3. Reserve requirement ratio.

From: Xiong 2012

Another way to influence the liquidity in circulation is the acquisition by the People’s Bank of China of the commercial loans that the other banks of the system make to business and families, throught a relatively new introduced tool called rediscounting. This is the option that the PBC gives to the other banks to rediscount the existing loans, buying them and so giving to the financial institutes that have made the supply some extra liquidity. Moreover, this measure does not only influence the level of liquidity in the system, but also the borrowing costs in the banking system, since the People’s Bank of China obviuosly charge an interests rate on the funds that lend to financial institutions.

Other two instruments used by the PBC to lend money to the other banks are the Standing Lending Facilities and the Medium Term Lending Facilities, which are loans that have longer maturities with respect to the fund supplied by Open Market Operations. These lending channels have, respectively, a maturity from one to three months and from three months to a year and so they let the PBC to influence the level of liquidity and the interest rates for medium and longer term loans; however, to receive these funds, banks need to guarantee assets with a specified credit rating as collateral that, for Medium Term Lending Facilities, may be government bonds or highly-rated small companies’ loans.

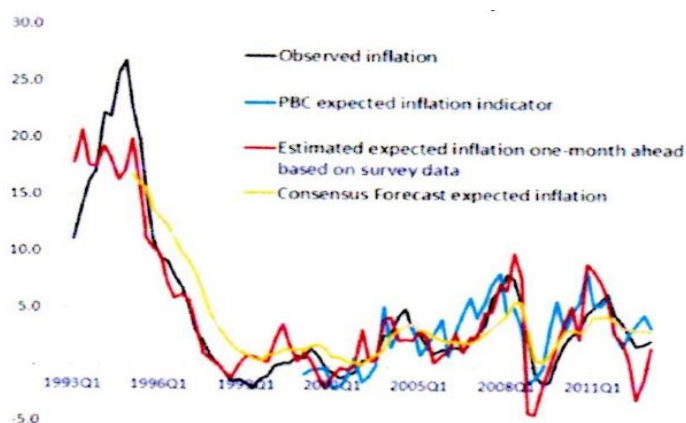
The newest and more recently monetary policy tool introduced in China and used by the PBC to influence money supply and the level of interest rates is the Pledged Supplementary Lending which consists in the injection of funds not to all the financial institutions but only to selected banks that then have to supply loans to specific sectors. In this way the liquidity introduced in the system is ducted directly toward those sectors that the government intend to stimulate or develop (Nee Lee 2018).

1.2.2 Inflation management and accumulation of foreign exchange reserves

As it is discussed above, the People’s Bank of China varied widely over time the combination of tools used to manage its monetary policy, moreover, it changed also its orientation toward some aspects of the economy, such as the inflation managing. It is known that chinese monetary authorities, such as other asian monetary policymakers, do not officially target inflation, however, there are evident differences in the average levels and spikes of inflation between the last decade of the twentieth Century – characterized by a persistent inflation with an average level of 8.4% - and the first decade of the twenty-first Century – characterized by lower levels with an average of 2.3% - that let presume a different orientation of the People’s Bank of China toward this economic indicator.

These changes signal of course that, after the entrance of the Country in the World Trade Organization and the raising importance of its role as an international market, the People’s Bank of China started to attach greater weight to inflation in the determination of its monetary policy, with a more contractionary approach to fight the increasing pressure on prices after 2002 (Giardin, Lunven and Ma 2017).

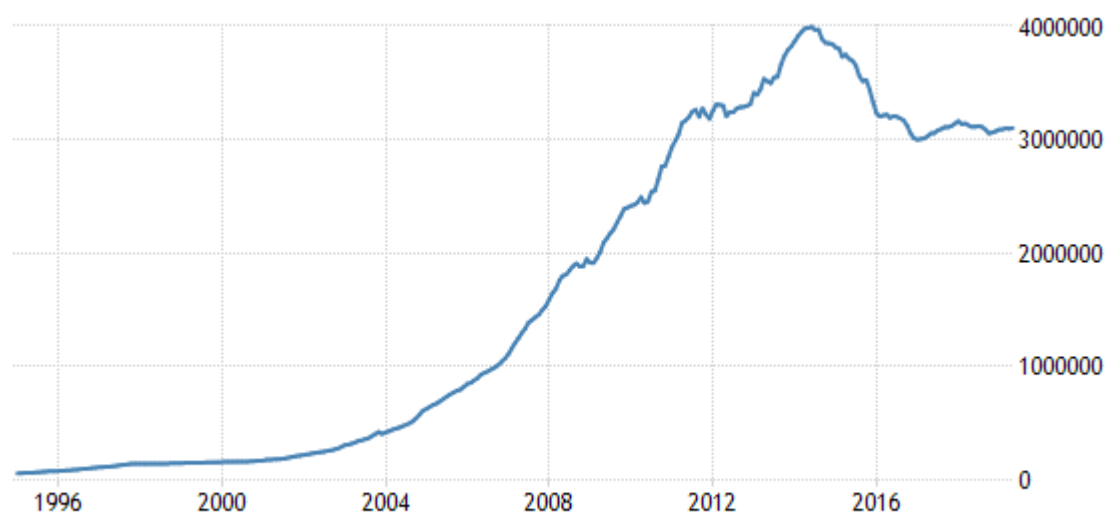
Figure 1.4: Inflation and estimating inflation expectations



From: Giardin, Lunven and Ma 2017

Finally, it is worth considering another feature of the monetary policy of the People's Bank of China which is the huge rise of the level of foreign reserves that China experienced in the last decades and especially in the period after the entrance of the Country in the World Trade Organization in 2001. This policy falls in a context in which, in a situation where the financial globalization seems to drive the developing Countries towards a reduction of the exchange rate stability and a reduction of their monetary independence exposing them to more volatile capital inflows and outflows, almost all emergent economies responded increasing their level of foreign reserves, as they see them as an insurance against the financial markets' turbolences and the challenges that they have to face due to the financial globalization.

Figure 1.5: China Foreign Exchange Reserves



From: Trading Economics Data

Usually, foreign exchange reserves are used by Central Banks in order to avoid a depreciation of their currency, since when a currency is facing a devaluation pressure and financial operators start to sell it, the Central Bank of that Country, if it has an adequate level of foreign reserves, can sell them and buy the national currency, absorbing in this way the excess of money supply and defending the exchange rate level.

However, this does not seem to be the chinese case, since, after the reform of the exchange rate in 2005, the Renminbi did not experienced a downward pressure, but, on the contrary, its value moved only in one direction and precisely it appreciated constantly at least until the beginning of the financial crisis. Indeed, rather than being an insurance instrument, it is more plausible that for China the accumulation of foreign resevers was caused by the fact that, after the shift from the dollar peg to a managed floating exchange rate regime where the

parity of the yuan against the basket of other currencies is decided by the market, investors rise their expectations for an appreciation of the Renminbi – which actually occurred – and brought their capitals into the Chinese economy, creating inflation pressures and even more expectation for further appreciation of the currency, forcing the People's Bank of China to accumulate foreign reserves in order to not vary the quantity of money in circulation and at least slow the appreciation of the currency.

This is particularly evident from the data of the years 2008-2012, which correspond with the period of the financial crisis, during which, despite its commitment to let the exchange rate fluctuate freely around the parity decided by the market, the People's Bank of China started to reintervene in the foreign exchange market, exactly to slow the appreciation of the currency, in order to help the export sector which was slowing its growth due to the difficulties of the European and American markets, which are the principal partners of the Chinese export sector.

1.3 The impossible trinity and the differences between China and the other emergent Countries

1.3.1 The Impossible Trinity: a theoretical introduction

A feature that characterizes the choices made by Chinese authorities and that diversifies the Chinese economy from the other emergent markets – especially from Countries of Latin America that under this aspect chose opposite policies – is the relative low openness of the capital market and the choice to deregulate it gradually and not suddenly.

This characteristic of the Chinese economy is clearly evident if we consider the Mundellian idea of the Impossible Trinity that, despite the new challenges that most of the economies are facing in the twenty-first Century due to the always greater globalization and interdependence, is still a valid framework to describe the challenges that policy makers face in the regulation of their economy.

The Mundell-Fleming model of the Impossible Trinity, known also as the Policy Trilemma, is derived as an extension of the IS-LM Keynesian model in the context of an open economy. Its principal statement is that there are three main desirable policy goals that can be achieved by economic authorities, however, only two of them can be obtained together and it is impossible to attain all of them at the same time.

In particular, these three goals are: the monetary independence, the exchange rate stability – that is, having a fixed exchange rate regime – and financial integration – which mean open financial markets.

The impossibility to achieve all of them together is explained by Mundell by considering a small Country and simplifying its choices by considering either a pure float or a fixed exchange rate regime and either a perfect capital mobility or financial autarky.

If the Country wishes to have an open and integrated capital market, it has to give up the exchange rate stability if it wants to maintain the control of its monetary policy and so it has to adopt a floating exchange rate regime. This can be explained with an example of an open market operation implemented by the Central Bank: in fact, under a fully free floating exchange rate regime, an expansion of the domestic money supply reduces interest rates – as the Central Bank buys bonds in order to increase the money in circulation and the price of these titles decreasing their interest rate and so it affects the cost of lending and borrowing of the other banks of the system. Such decrease in the interest rate drives home and foreign investors' capitals outside the Country, resulting in capital outflows that make the domestic currency to depreciate.

Thus, in a Country that chooses to give up the possibility to fix its exchange rate and that chooses to have open capital markets, the monetary policy is effective (at least in the short-run when the domestic prices haven't adjusted yet).

Instead, if the Country aforementioned decides to maintain the exchange rate stability through the adoption of a fixed rate regime and decides to keep open its financial markets, its monetary policy interventions are no more effective. This happens because theoretically, under a credible fixed exchange rate regime, if domestic and foreign bonds are perfectly substitutes, the domestic interest rate should equal the foreign one. So, if the Central Bank increases the supply of money, investors triggers the sale of domestic bonds, driven by the downward pressure on the domestic interest rate. In these circumstances, the Central Bank must satisfy the excess demand of foreign currency that investors want to use to buy foreign bonds that became more profitable, and it has to do it at the official exchange rate, therefore selling the foreign currency required and buying back the excess supply of domestic currency it had increased.

This means that, with perfect capital mobility and under a fixed exchange rate regime, the monetary policy of the Central Bank is not effective – in this example the attempt to increase the money in circulation failed due to capital outflows – and the only effect of an open market operation is the changing of the composition of the domestic and foreign assets balance sheet of the Central Bank itself.

Conversely, the following example describes the situation that more reflects the decisions of the Chinese policymakers before the introduction of the exchange rate reform of July 2005, the abandonment of the fixed exchange rate regime that pegged the Renminbi to the dollar and the consequent gain – even if little – in the flexibility of the exchange rate. The third alternative is in fact the choice of maintaining a fixed exchange rate regime and the monetary policy independence relinquishing the financial integration and so opting for a non-completely open capital market. In this context the monetary policy of the Central Bank is effective and – to continue in line with the examples above – an expansion of the money supply does lower the interest rate, since giving up the financial integration is a way to delink the domestic interest rate to the foreign one, preventing the arbitrage opportunities that investors face in a context without capital controls in which they can move their capital from Country to Country according to the most profitable investment opportunities.

1.3.2 Different Countries make different monetary policy choices

During the recent history, different Countries placed themselves in different positions of the triangle with respect to the others. To briefly describe some examples it is worth mentioning the Countries that formed the eurozone, which, since the beginning of the last decade of the twentieth Century, improved their exchange rate stability and their financial integration, losing their independence of monetary policy; instead the United States decided to maintain the monetary policy independence and to combine an open capital market with a flexible exchange rate, giving up in this way the exchange rate stability.

It is also interesting to mention the alternatives chosen by some emergent Countries, as it is evident that not all of them followed the same implementation of monetary policy goals. In fact, during the last decade of the twentieth Century, when the Chinese authorities were still imposing controls on their capital markets, some emerging economies such as the Latin American Countries, followed a totally different strategy and, according to what is known as the “Washington consensus”, they decided to suddenly liberalize their capital markets.

Among them it is resounding the case of Argentina which was facing problems of hyperinflation, difficulties in financing its public debt in the international market and lack of confidence in the stability of its currency and its Institutions. For this reason it decided to suddenly open its capital market, through a campaign of privatizations and encouragement of Foreign Direct Investments, in order to increase capital inflows to finance its debt. However, in order to do that Argentina needed to increase also the investors’ confidence in its currency and it chose the way of the currency board, pegging the Peso with the Dollar and in this way completely giving-up its monetary independence.

Instead China, the Country that is of our interest in this discussion, made different decisions with respect to all the Countries just mentioned and, at least until the reform of the Renminbi exchange rate, did not sacrifice neither the exchange rate stability, as the yuan was pegged to the dollar, neither the monetary independence and decided contrariwise to maintain some controls on capital flows, slowing the opening of its financial market.

However, from the beginning of the twenty-first Century, even China, like all the other emergent and developed Countries and despite its low degree of market openness, had to deal with an increasing growth of cross-border capital flows and with an unprecedented volatility of these flows that lead to a dilemma for Chinese monetary policy authorities on which position to take with respect to the choices of the impossible trinity.

In particular, after 2005, when these increasing flows of capital forced Chinese authorities to decide whether to sacrifice the exchange rate stability or the monetary

independence with the opportunity to finally open their capital market, they decided to orient their position on the triangle of the impossible trinity towards a managed floating exchange rate thus sacrificing the first one instead of the second.

1.3.3 The chinese case: empirical evidence on its position with respect to the Policy Trilemma

To better understand the impact of international capital inflows that tried to force China's capital markets to open despite the regulation imposed by the government on the choices made by chinese policymakers, it is worth taking into consideration the so-called Diamond chart method, implemented by Aizenman and tapped by H. Jian, C. Shaoyi and S. Yanzhi in their study titled "Capital Inflows and the Impossible Trinity in China" published on the Journal of International and Global Economic Studies that not only describes the position taken by China with respect to the policy trilemma in different periods of time, but investigates also the role assumed by the accumulation of foreign reserves carried on by the People's Bank of China sterilization policies since they seem to be able to mitigate the effects of the impossible Trinity.

First of all, it is important to distinguish between three types of capital inflows that can enter into a Country, since they have different volatilities as they react differently to the macroeconomic events that affect the Country or its economic partners. These three different type of capital inflows are: Foreign Direct Investments, Portfolio Investments and other investments.

In particular, Foreign Direct Investments are private investments made by foreign individuals or, more often, firms that aim to acquire an enterprise of the Country of destination or a branch of it, to take control of the business and obviously to earn a return. Usually these kind of investments are long-term oriented, since it is hard to withdraw once provided.

Foreign Direct Investments are different from Portfolio Investments, which are more short-term oriented and so more volatile, since they consist in the purchase of equities and securities of a foreign portfolio and they do not involve the desire of being involved in the management of the company acquired but only the objective to earn a return.

Until the beginning of the last decade of the 20th Century, all these three categories of foreign investments were very low in China, due especially to the restrictions imposed by the Chinese government in the capital market and so in that period it was clear that Chinese authorities, unlike the other emergent Countries, positioned their economy with respect to the

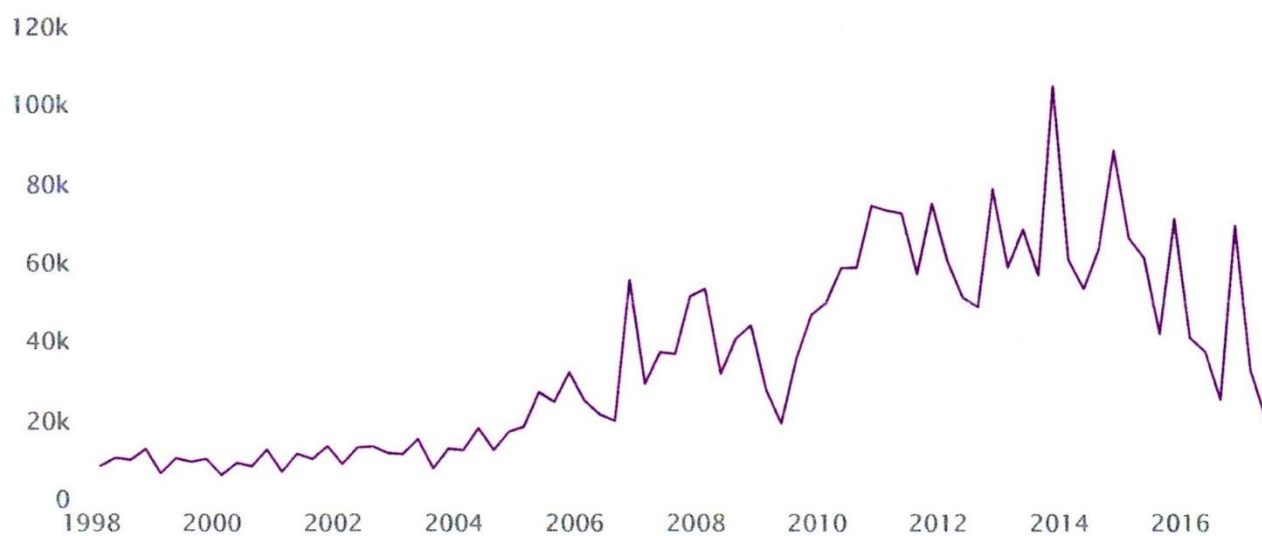
impossible trinity in a way to maintain their monetary independence and the exchange rate stability.

However, from 1990s to today and especially in the period after the entrance of the Country in the World Trade Organization and the implementation of the exchange rate regime reform, capital inflows in China experienced a steady growth, even if with some differences in terms of importance and volatility between the three categories and this phenomenon created some challenges for the chinese authorities to maintain their position in the policy trilemma.

In particular, due to some tax relief policies and to the opportunity that foreign business investors saw in the low chinese labour costs and in an internal market with high development potentials, Foreign Direct Investments were the kind of capital inflows that grew more in this period, with an approximately constant rate and with few fluctuations, even during the period of the Financial Crisis started in 2008 when the other investments experienced a rapid decline, since they are quite irreversible and so they are a long-term investment.

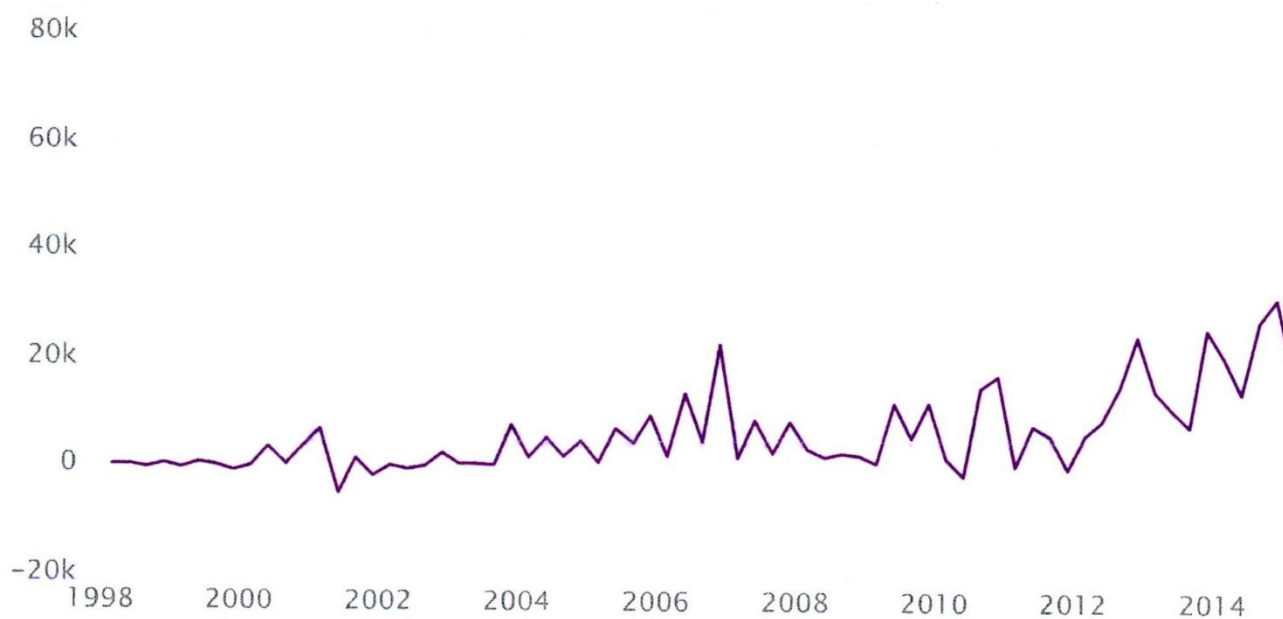
Instead, the other two categories – the Portfolio Investments and the so called “other investments” – are more prone to fluctuations as they are driven by the investors’ seeking of making short term profits, and so by interest rate differentials and expectations of financial agents on the appreciation or depreciation of the currency. For this reasons, they only started to rise significantly in China after its entrance in the Word Trade Organization at the beginning of the twenty-first Century, as the chinese commercial partners, and in particular the United States of America, started to make pressure on the chinese monetary authorities since they argued that the competitiveness of the chinese market was caused mainly by the undervaluation of the Renminbi thanks to its fixed exchange rate with the dollar and so they pushed for a revaluation of the currency through the adoption of a floating exchange rate regime. However, these kind of investments are more speculative than growth-oriented and indeed, after an important increase during the Renminbi’s appreciation period, they dropped suddenly after the beginning of the financial crisis to start to rise again when the United States implemented some expansionary monetary policies – as for example the Quantitative Easing started in 2009 – aimed at reducing their interest rate in a way to boost the domestic economy, and so the interest rate differential between USA and China attracted investors again.

Figure 1.6: China's Foreign Direct Investments



From: Trading Economics Data

Figure 1.7: China's Portfolio Investments



From: Trading Economics Data

So, since a Country cannot maintain simultaneously its monetary independence and a fixed exchange rate with an open capital market, inflows of money that gradually grew during the last two decades changed the position of the chinese economy in the triangle of the impossible trinity.

Jian, Haoyi and Yanzhi tried to measure these changes in their study aforementioned, by measuring the level of monetary independence, the exchange rate stability and the level of capital market openness, during different periods. In particular, they used the difference between interests rates across Countries as a proxy for the level of monetary independence which is defined as:

$$MI = 1 - \frac{corr(i, i^*) - (-1)}{1 - (-1)}^2$$

and is a measure that ranges between 0 and 1, with 0 indicating a Country without monetary independence and 1 indicating a Country with a high level of monetary independence.

Moreover, to measure the exchange rate stability they follow the approach ideated by Aizenman, who used the formula of the normalized annual standard deviation of the monthly exchange rate between the home Country and the base Country, utilizing the measure of the Renminbi's values against the dollar, with higher values indicating a more stable exchange rate:

$$ERS = \frac{1}{1 + \frac{std(exchrates)}{[dlog E_t/dt] + 0.01}}^3$$

Finally, to measure the capital openness of the chinese economy, they used a “de facto” measurement which is able to capture the effects of controls on capitals but also the flows that enter or exit from a Country despite the restrictions imposed by the government, since it uses the sum of the annual gross stock of foreign assets and the annual gross stock of liabilities with respect to the Gross Domestic Product of a Country:

$$CMO = \frac{FA + FL}{GDP}$$

Since this measure has to be compared with the previous two, also this index is normalized in order to let it lie between zero and one with higher values indicating higher levels of capital market openness.

As it is written before, even from the results obtained by Jian, Haoyi and Yanzhi, it is evident that chinese market openness increased gradually until 2009, however, the overall

² i is the chinese interest rate while i^* is the U.S. money market rate.

³ The denominator represents the absolute value of the year-on-year depreciation rate.

openness of capital markets was limited, since chinese authorities were aware of the negative effects that the volatility of some foreign investments such as the Portfolio Investments and the “other investments” may have on an emerging market without a robust and well developed financial system and so they decided to open gradually and, until now, not completely their capital market. This particular feature is the main difference between China and other emergent economies that decided to suddenly open their capital market, giving up their monetary independence or their exchange rate stability as discussed above.

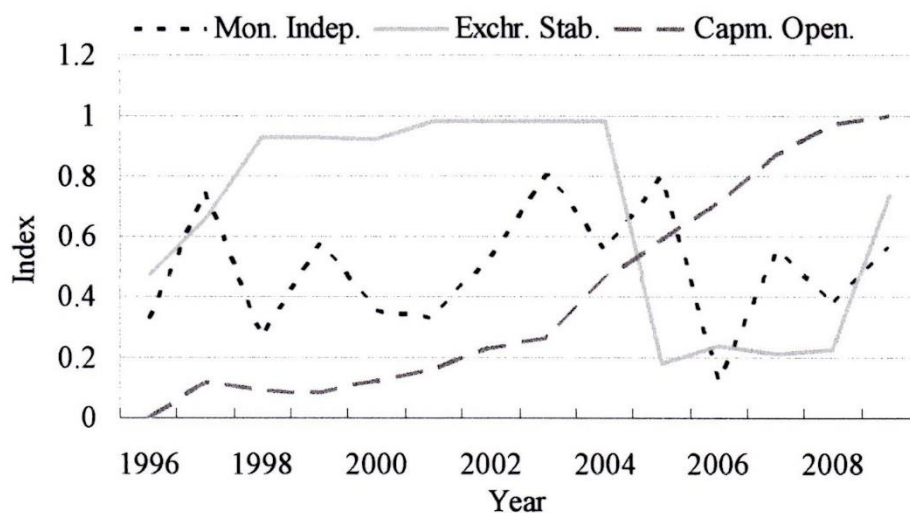
It is precisely for this reason that the position of the chinese economy with respect to the impossible trinity has to be investigated between the choices of maintaining the monetary independence or the exchange rate stability, giving for granted the fact that capital markets were and still not are fully open, even if their openness increased considerably with respect to the situation where China was still a fully centralized and closed economy.

So, even if the index of China’s capital market openness increased gradually from 1990s to 2009, the Country maintained its monetary independence whose index fluctuated tightly without an obvious one-way trend and what changed significantly was the level of the exchange rate stability that, after an initial increase in the period from the adoption of only one exchange rate to the reform of 2005, dropped suddenly after the adoption of the new exchange rate regime, to increase again in 2009.

This means that chinese authorities, when they started to face the challenges caused by the increasing flows of capitals after the entrance in the World Trade Organization, decided to sacrifice their exchange rate stability, passing from a fixed rate regime with the Renminbi pegged to the dollar to a more flexible exchange rate regime in which the value of the Renminbi against a basket of currencies would have been determined by the market and they maintained their monetary independence, instead of sacrificing this last one and just continuing to maintain the peg of the national currency with the dollar only at a different level.

However, when the economic crisis began in 2008, the capital inflows reversed for a short period into capital outflows and the chinese economy suffered a slowdown of its growth due to the decrease in the exports toward Europe and United States, the government decided to intervene again in the foreign exchange market in order to reverse or at least slow the appreciation of the Renminbi and so the level of exchange rate stability rose again.

Figure 1.8: The evolution of the Impossible Trinity Index in China



From: Jian, Haoyi and Yanzhi 2011

After showing the changes in the decisions taken by the Chinese authorities with respect to their monetary independence, exchange rate stability and financial market openness, there is a last consideration that has to be made about the impossible trinity in China, since, as it is shown in the previous part, another particular feature of the Chinese economy is the huge accumulation of foreign reserves made by the People's Bank of China in the last decades.

In fact, if a country wants to maintain its currency value, it has to accumulate foreign exchange reserves as an insurance against future expectations for depreciation and so speculations against its currency, especially if it has a flexible exchange rate regime and an open capital market and so it is prone to the fluctuations of the inflows of money into the country. Moreover, foreign exchange reserves may help to mitigate the impossible trinity, since they let a country to maintain its monetary policy independence and in the meantime to have an open capital market and to control the level of its exchange rate.

However, this is not properly the case of China, since it does not have a fully open capital market and it did not face in the recent past downward pressures on its currency. Indeed, after the adoption of the new managed floating exchange rate regime, the national currency experienced movements of its value only in one direction and it started to appreciate gradually thus causing a growth of capital inflows, especially of the short-term and more volatile foreign investments, since investors expected a further increase in the value of the currency.

This capital inflows caused an excess demand for domestic liquidity and so it seems that one of the reasons for the accumulation of foreign reserves is that they are more a consequence of the fact that Chinese policymakers were concerned for the pressure of further appreciation of the Renminbi that these inflows may cause.

This attitude is even more evident from the beginning of the financial crisis, when chinese policymakers started to reintervene in the exchange rate market, not fixing again the Renminbi to a determined level against the dollar, but expanding the foreign exchange reserves to prevent unwanted exchange rate fluctuations and in particular an appreciation.

CHAPTER 2

MANAGING THE EXCHANGE RATE IN AN EMERGENT COUNTRY

2.1 The trade-off between the export net growth with a weak currency and a stable financial market and the possibility to become a reserve currency

2.1.1 A weak currency and the benefits of the competitiveness of the export sector

Some important Chinese economic partners have claimed for several years that the Chinese yuan, with its value fixed at a level of 8.28 yuan per dollar, was undervalued during the period of the fixed exchange rate and that this was an enormous advantage in terms of competitiveness for Chinese industries and thus it was the principal cause of the huge surplus of the Chinese current account of the balance of payments.

Effectively, the level of the exchange rate and the exchange rate regime adopted are most of the time a strategic choice made by monetary authorities of a Country, depending on the needs of their economy. Thus, it is not surprising that, since China is an emerging market which, at least in the first phases of its expansion, was built on a manufacturing industrial fabric with a very low developed internal market, the Chinese monetary policy authorities and the People's Bank of China strived to maintain their currency undervalued, in order to boost the exports as a developing channel for their economy.

This strategy has indeed several advantages, related both to the export sector and to the development of the internal market.

To understand why, it is worth considering the concept of purchasing power parity which states that the relative price of a bundle of domestic goods and a bundle of foreign goods at the going nominal rate of exchange does not change. So, according to this concept, a "weak" currency would not lead to any benefit for the Country because of the adjustment of prices that follows a devaluation or a depreciation of the currency and makes them no more convenient for the external consumers. In other words, the high level of the domestic inflation makes the bundle of domestic goods worth the same in terms of money with respect to the bundle of goods of the Country that has a stronger currency.

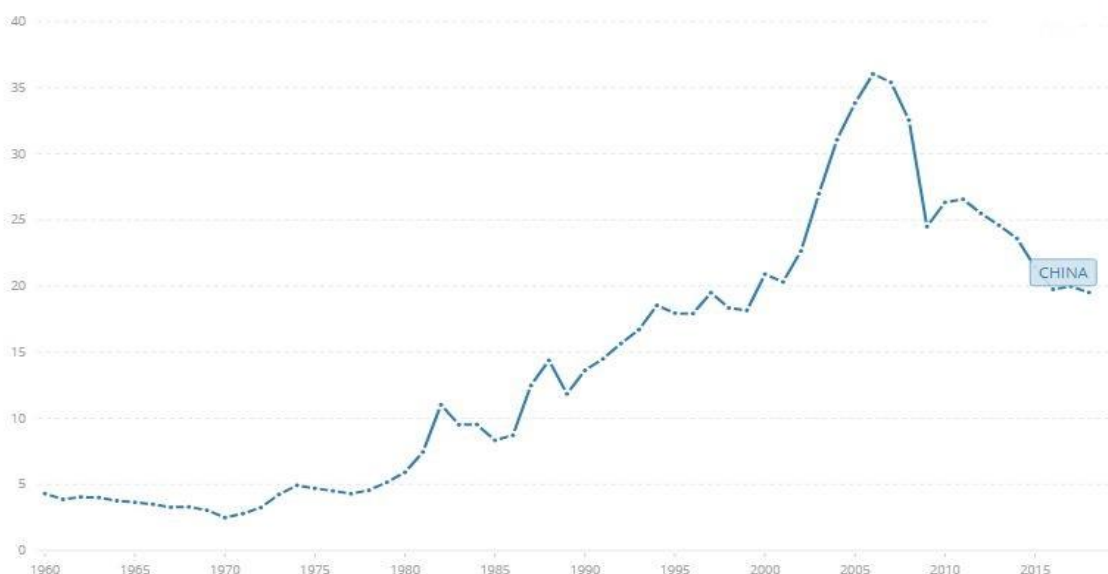
However, the concept of purchasing power parity is valid under some extreme assumptions, such as for example that prices adjust immediately after an increase or a decrease in the money supply or a change in the value of the exchange rate and that there exist perfect capital markets.

So, since in reality not all these assumptions are always true – for example prices of different goods adjust differently with commodity prices being more reactive than wholesale and consumer prices that are more sticky – usually the concept of Purchasing Power Parity holds only in the long run, with a short period in which there are differences in the values of bundles of goods between Countries according to their different levels of exchange rate.

Moreover, for the chinese economy, it should be considered the fact that capital markets are subject to some controls and that the exchange rate regime is not a fully free floating one. For these reasons it is understandable why chinese authorities decided to keep their currency undervalued for a long period of time, that coincides with the phase in which they had the need to boost the exports of the Country, since an undervalued currency, if the concept of Purchasing Power Parity does not hold in the short run, makes the home-made products more convenient for foreign consumers and so it is an important factor that contributes to the growth of the export sector.

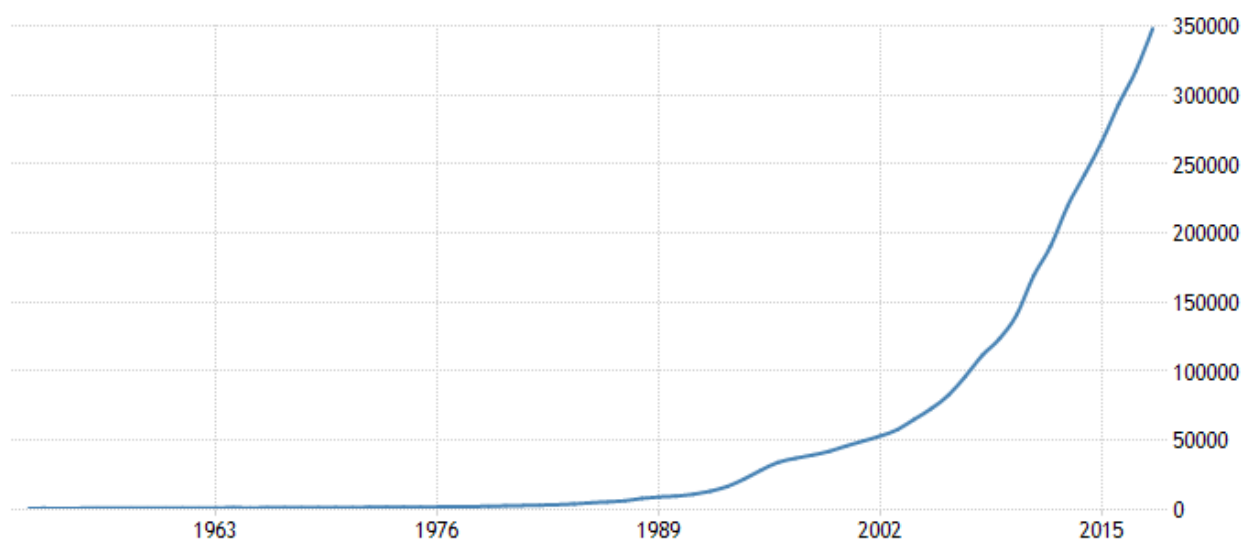
Moreover, this convenience for foreigners is on the other side of the coin a disadvantage for home consumers who want to buy goods from abroad. They will find these foreign products more expensive and thus they will prefer to buy on national markets, boosting in this way also the growth of the internal market that in the first years of this Century in China was still underdeveloped and characterized by low levels of consumption. This depends on the fact that having a weak currency reduces the purchasing power of citizens with respect to the external market, but does not affect it with respect to the internal market, making them preferring the second one.

Figure 2.1: Exports of goods and services (% of the Gross Domestic Product)



From: Trading Economics Data

Figure 2.2: China Consumer Spending



From: Trading Economics Data

2.1.2 A strong currency and its role as an international reserve

However, there is a trade-off between having a weak currency and thus - at least in the short run - boosting the export sector and having a strong currency which for example can be considered a reserve one.

A strong currency is indeed a currency which has a growing or at least a stable value with respect to the other currencies during time, which operates in a context of low inflation and political stability and thus which can be considered a safe-haven assets and it is negotiated worldwide. The concept of a strong currency is also correlated to the level of openness of capital markets, since a Country who aspires to have a strong currency should not impose controls on its capital markets, as this is a factor that prevents investors to hold that currency due to the fear of not being able to implement the operations desired.

A strong currency is thus a currency that is held by investors since its value is tendentially stable or increasing and since it is accepted in international transactions – as for example the US dollar – and used as an official reserve currency by other Nations.

Obviously, if a weak currency helps a Country to boost its export, a strong one is an obstacle for the export enterprises; however, on the contrary, it constitutes an advantage for the import sector, which is fundamental especially for Countries who need to import raw material, precious metals and goods related to the energy sector and to the petrol sector since

they do not or have not the capacity to produce them by themselves. Indeed, a strong currency, at least in the short run, makes these products more convenient for the home Country, which would have been obliged to buy them in any case and so it is better-off than having an undervalued currency.

Moreover, if a Country adopts a strong currency it does not mean that it will lose its competitiveness on the export sector in any case, since the demand for goods and services produced in that Country may not be driven only by the price convenience, but there are also other factors that are determinant in the competitiveness, such as the concept of the “made in” or the level of technology used.

As mentioned above, another advantage of having a strong currency is that there is the possibility that this currency is included in the basket of reserve currencies reviewed every five years by the International Monetary Fund.

Thus, being a reserve coin means that the majority of the other governments will keep at least a portion of their foreign reserves in that currency and that it will be more easily accepted in the international transactions making more convenient for the issuing Country to buy these products on the international market, since it will not have to pay the transaction costs for the exchange of the currency. Moreover, another advantage of having a strong coin is that it will be traded in the majority of the financial markets, thus making more convenient not only to buy goods such as raw materials or gold, but also to borrow thanks to the lower interest rate applied.

After having kept its currency undervalued for a long time, even China seemed to be intentioned to internationalize it and in this sense it is of fundamental importance the reform of the exchange rate that will be described in the next part and that let the Chinese Yuan to appreciate constantly at least for the first ten years after the reform.

In line with these efforts, even if the Chinese government still imposes some controls on the capital market, in 2015 the International Monetary Fund included the Renminbi into the basket of reserve currencies, which is now composed, with different weights, by the U.S. Dollar, the euro, the Japanese Yen, the Chinese Yuan, Australian Dollar, Swiss Franc, Canadian Dollar and the G. B. Pound.

2.2 From a fixed exchange rate system to a crawling peg system: the reform of 2005 and the revaluation of the Renminbi

2.2.1 The fixed exchange rate regime and the dollar peg

The Chinese exchange rate regime and the value of the Renminbi against the dollar have been a long debated issue and a source of conflict between China and other countries because of the importance that the Chinese economy has been achieving in the last decades and so because of the effects that its monetary policy has not only on its internal market but also in the international markets and on the balance of payments of other Nations, especially of those who trade with China and of those who are its competitors on the export sector.

However, if it is sure that the monetary policy of a country like China can be a concern for other economies, it can be also stated that the decisions that have to be made on this theme have an enormous importance especially for China itself which seems to consider its monetary policy as a strategic vehicle to govern and address its economy. This can be stated also considering the history of the exchange rate regime of the Chinese Renminbi and in particular the most recent one, which saw important changes in the orientation of the monetary policy authorities that reflect the importance of the trade-off between a weak and competitive currency and a strong one which has the possibility to become a reserve currency.

China's exchange rate has a complex and variegated history since the Renminbi was introduced as the official currency of the country in 1949; however, to investigate the effects that the internationalization of the Chinese market and so of this currency had on the economy of the country, it is worthwhile to take into account only the recent changes of the exchange rate regime, within the period that is commonly known as the "market-oriented period" which started in 1994 when the two exchange rates coexisting in the country were unified.

Thereafter, since 1994, the Chinese Renminbi was pegged to the dollar, which means that Chinese authorities chose to fix the price of the home currency with respect to the dollar to a settled value.

This is an example of a fixed exchange rate regime, in which the value of the currencies of two or more countries – in this case the countries involved are China and the United States – are fixed on the basis of a predetermined parity (around which, in some cases, they can fluctuate even if only for narrow intervals).

The Central Banks of the countries involved are obliged to maintain the exchange rate fixed, selling or buying foreign exchange reserves in order to prevent the value of the currency to fluctuate more than what it is allowed.

This means that the daily variation of the exchange rate is half-note or even nil and so the uncertainty of the future value of the exchange rate. This is the principal advantage of a fixed exchange rate regime, since it allows firms and individuals to trade with other Countries without the possibility of facing losses that can arise when the exchange rate is flexible.

So, from 1994 to 2005, chinese authorities fixed the exchange rate of the Renminbi to the dollar at a value of 8.28 Renminbi per dollar, which, as explained above, was considered by some Countries belonging to the International Monetary Fund such as the United States themselves and some european Nations, an undervalued parity that favored China in the foreign trade.

For this reason, they started to make pressure on chinese authorities in order to push them to revalue the Renminbi or to pass from the fixed rate regime to a floating one so that the value of the currency would have been determined by the market and, the 21st July 2005, chinese monetary authorities announced the revaluation of 2,1% of the yuan against the dollar and the following change of the rate regime from the dollar peg to a basket peg, which is a particular kind of managed floating exchange rate.

2.2.2 Basket peg and crawling peg systems

The basket peg is a particular kind of floating exchange rate regime, even if it is not a fully free floating one, since the exchange rate is free to float only within a pre-determined interval. In a basket peg, such as the one of the Renminbi adopted after the reform of 2005, the currency is pegged to a basket of foreign currencies, with different weights decided depending on the importance that the Countries involved have as commercial partners. The central parity is no more fixed by the monetary authorities but it is determined by the market and, since it refers to several currencies and no more to only one, this exchange rate regime has the advantage to avoid the over-exposure of the domestic coin to the movements of a single currency.

However, sometimes Countries do not really practice what they declare, so, before analyzing the impact of the revaluation of the Renminbi that actually followed the exchange rate regime changes in the years after 2005, it is worthwhile to make some considerations on what the chinese authorities actually did, despite of their announcements. In fact, although the Chinese government claims that China's exchange rate regime is a basket peg, there is evidence that it is actually following a discretionary crawling peg against the dollar.

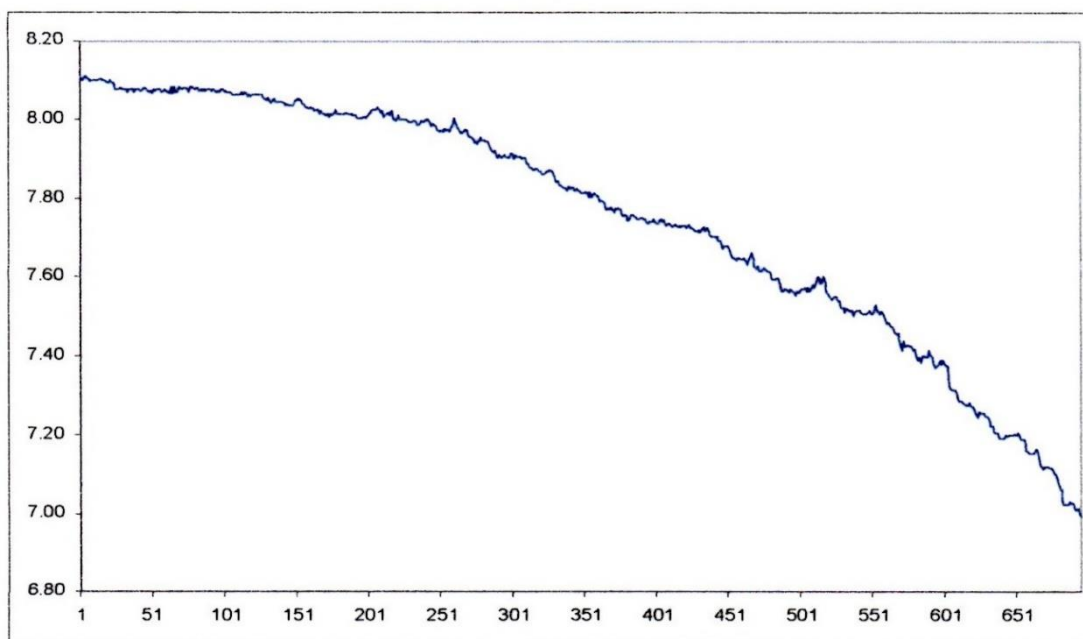
This empirical evidence is well shown by the research of Imad A. Moosa, published on the International Journal of Business and Economics and titled “Forecasting the Chinese Yuan-US Dollar Exchange Rate under the new Chinese Exchange Rate Regime” which fits inside the new strand of research in international finance on the exchange rate regime verifications that aims at investigating the differences between the “de facto” and the “de iure” regime as it is well known that the outcome of a financial decision taken today is often influenced by the value of the exchange rate that will prevail in the future and so it has to be understood which is the effective exchange rate regime adopted by a Country despite its announcements and intentions.

China has announced the shift from the dollar peg regime, in which the exchange rate was fixed at 8.28 yuan per dollar to a basket peg in which the currency would have been allowed to float within a three percent band and the parity would have been fixed by the market; however, from an ex-post point of view it is quite obvious that China did not follow what it had announced and this is well explained by the aforementioned work of Imad A. Moosa who uses two forecasting models, one based on a basket peg and the other based on a crawling peg – that is the real regime that seems to be followed by Chinese authorities after the reform – to show which is the best between the two in predicting the yuan-dollar exchange rate.

To generate the empirical results relative to the two models, Moosa uses daily data covering the period from August 3rd 2005 to May 7th 2008, which is the immediate time span between the reform and the beginning of the financial crisis, taken in order to capture the effects of the shift in the exchange rate regime but not the effects on the exchange rate that may have been caused by the worsening of the world economic scenario in the subsequent years.

He obtained five different time paths of the yuan-dollar exchange rate. The first one, which covers the entire sample period, shows an appreciation of the yuan against the dollar: the vertical axis measures the number of yuan that can be bought for one dollar, so a downward trend of the path corresponds to an appreciation of the Chinese domestic currency, since, from 2005, the number of yuan obtainable with one dollar decreased.

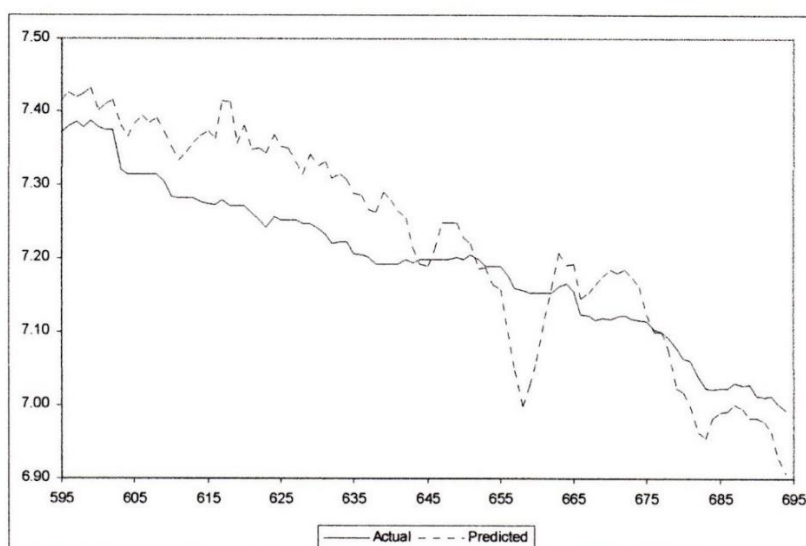
Figure 2.3: The Yuan-Dollar exchange rate over the Sample Period



From: Moosa 2008

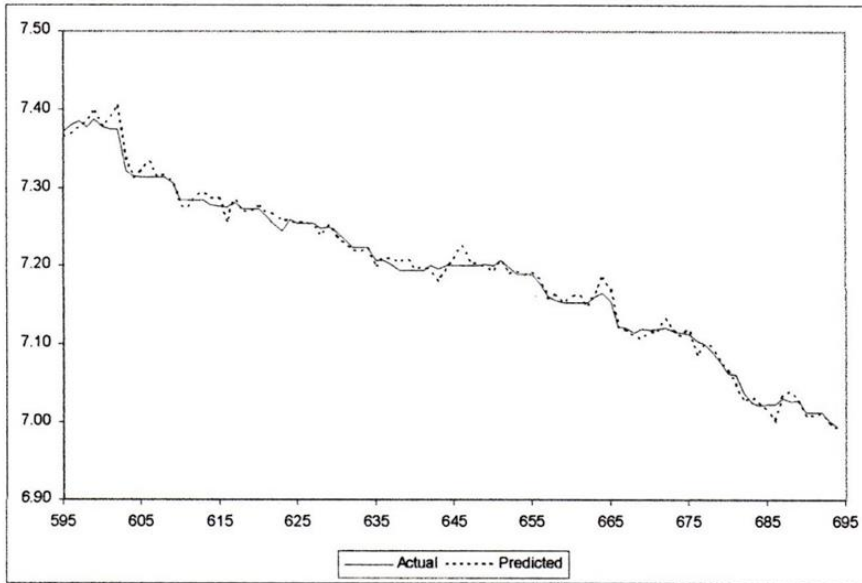
The other four graphs display the actual and predicted values of the exchange rate for the two exchange rate regimes considered: the basket peg and the crawling peg, for one-period-ahead estimations and five-period-ahead estimations: it is clearly evident that the crawling peg model's estimates are more accurate with respect to the actual values of the exchange rate.

Figure 2.4: One-period ahead forecasts (Basket peg model)



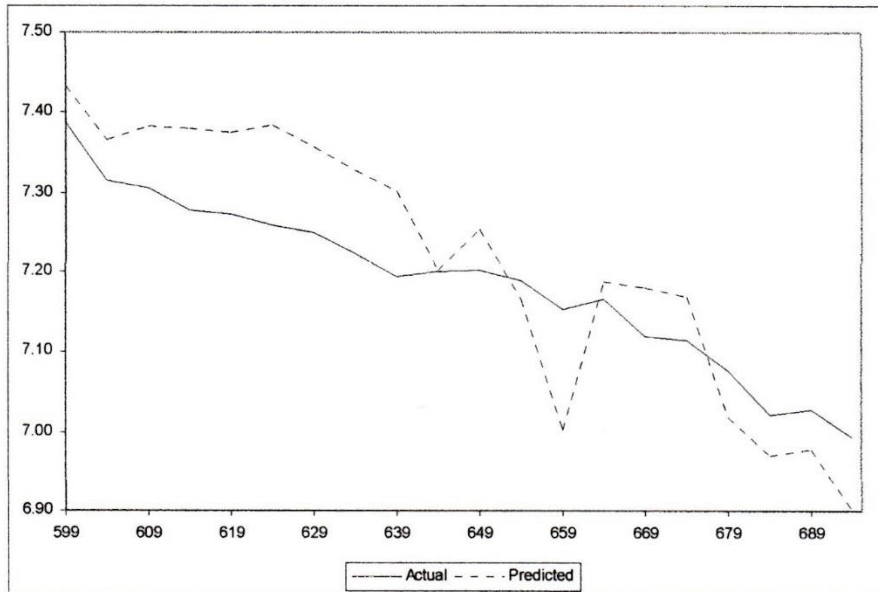
From: Moosa 2008

Figure 2.5: One-period ahead forecasts (Crawling peg model)



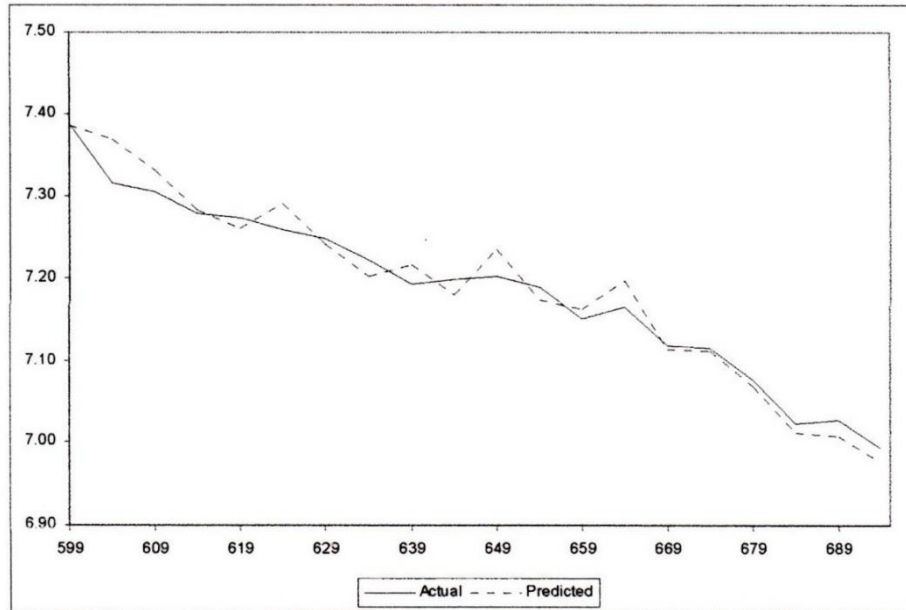
From: Moosa 2008

Figure 2.6: Five-period ahead forecasts (Basket peg model)



From: Moosa 2008

Figure 2.7: Five-period ahead forecasts (Crawling peg model)

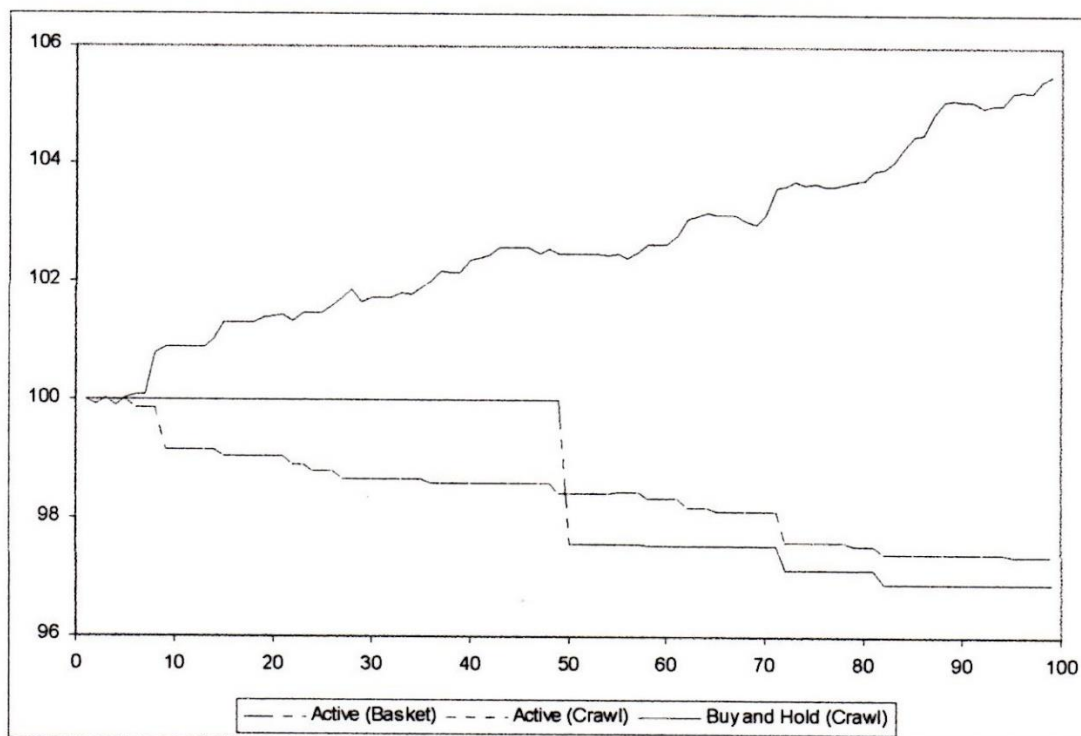


From: Moosa 2008

Another way to understand if China is actually following a basket peg regime, is to formulate an hypothetical trading strategy that is optimal in this regime but it is not appropriate for the crawling peg one. Also this exercise is implemented by Moosa who simulates an hypothetical trader that starts with a budget of 100 yuan and buys or sells dollars depending on what the forecasts on the exchange rate signal about an appreciation or a depreciation of the currency. Obviously, the optimal strategy is to buy the dollar when the signals forecast an appreciation and to sell it when it is expected to depreciate, however, this strategy is not the optimal one for a crawling peg regime, in which it is better to buy a determined quantity of dollar at the beginning of the period and hold it until the end.

Comparing the results of these two strategies applied to the two different regimes (active strategy under the basket and under the crawling peg and buy-and-hold strategy under the crawling peg) and their cumulated profits or losses, shows that the most profitable one is the buy-and-hold strategy meaning that it is reasonable to think that China, after the reform of 2005, actually followed a crawling peg system instead of the announced basket peg regime.

Figure 2.8: Profits and Losses generated by Trading on the basis of Forecasts



From: Moosa 2008

2.2.3 Empirical evidence on the effects of the exchange rate regime reform and of the Renminbi appreciation

Howsoever, made this considerations, it is interesting to investigate how changes in the exchange rate regime affected the economy, the growth and in particular the exports of China.

The interest showed by some of the most important economic players about the exchange rate value of the Renminbi since the entrance of China in the World Trade Organization is justified by the increasingly more importance of the role of this emergent economy in the export market. In fact, trade partners like the United States of America have claimed that the chinese huge surplus in the balance of payments was caused by the undervalued currency which let them to gain advantages in the export of goods versus other Countries whose consumers find them cheaper.

After the reform of the 21st July 2005 to the end of 2013 the Renmbinbi has appreciated against the dollar of about 25% in nominal terms, however, this is not enough to state that the changes in the monetary policy carried out by chinese authorities were sufficient to rebalance

the trade surplus because, despite of what the theory says, it is not obvious that an appreciation of the currency has an effect on the empirical values of exports and growth.

Overall the results of the literature that investigates on this issue are mixed and failing to provide evidence for policy conclusions. However, in most of the cases this is due to the fact that a too much broad period is considered. Since 1978 China became a more market-oriented economy and its political authorities started to abandon the centrally-planned way of orienting the economy of the Country, so, taking into consideration the data about the impact of the exchange rate movements on exports and growth before this watershed is not informative, since international trade were planned by the government and so imports and exports were not responsive to the chinese real exchange rate. However, even considering the entire sample from 1978 to recent times can conduce to misleading conclusions, since only from 2001 – the date of the entrance of China in the World Trade Organization – the chinese volume of net exports became really sensitive to the changes in the real exchange rate.

Another limitation of the existing literature that aims to investigate the effects of the changes in the chinese exchange rate regime, is that almost all the papers do not distinguish between the different kind of imports and exports. Indeed not all goods that are imported or exported are produced or assembled in the Country that final sells them and for this reason an important distinction has to be made between ordinary products and processing products. Processing products are for example goods that are exported before their final assemblation – and so whose production is completed outside the exporter Country – or components that are imported and assembled in the Country into exportables; ordinary products instead are final goods whose production is entirely completed in the seller Country and so which are not subject to further processing in another Country. This distinction is important because for the first category it is not clear which is the effect of the changes in the exchange rate on their trade volumes since they are not completely produced in the market to which the analysis is referred.

An interesting reference in the literature that takes into consideration these aspects in the estimation of the changes of the Renminbi's exchange rate is the work of Wei Guo, "Impact of Renminbi Appreciation on China's Trade Balance: from Empirical Evidence" published on the American Journal of Industrial and Business Management in 2017. In this paper the author constructed a vector autoregression (VAR) model to investigate if the appreciation of Renminbi has really reduced China's trade surplus and corrected global imbalances using data from march 2000 to march 2012 and considering also a subsample from july 2005 to the end of the period in order to isolate the effects of the exchange rate reform and of the 25% Renminbi's appreciation. In addition he also estimated not only imports and exports equation taking into

consideration the specification discussed above but also the trade balance equation to better show the Renminbi appreciation's effects on the trade balance.

In particular, the impact of the Renminbi exchange rate on China's trade balance is studied through the estimation of three equations: the trade balance equation in which domestic demand and foreign demand are considered as factors that affect the trade balance directly and foreign direct investments are used as a control variable, and the export and import equations which show the impact of the Chinese's exchange rate changes on each of these two aspects of the trade balance separately.

Each of these equations is then run for the entire sample – from March 2000 to March 2012 – and for the subsample – from July 2007 onwards. This division is important because, as it is shown in the results, the Renminbi appreciation has little impact on China's trade balance in the longer period, however in the subsample period its effects have found to be significant. In particular, the appreciation of the real effective exchange rate has negative effects on the ordinary trade balance (composed by ordinary exports and ordinary imports) which can be attributed to the reform of the exchange rate regime of July 2005. This difference in the results between the two periods considered can be indeed explained by the fact that, even if the new exchange rate regime adopted after the reform was not a real floating one, the transition between the fixed dollar peg and the new crawling peg that let the Renminbi to fluctuate in a band around its parity defined by the market increased the volatility of the exchange rate and so its impact on trade, especially for the ordinary component.

Moreover, it is interesting to notice that also the processing part of the trade balance did respond to the change in the value of the Chinese currency, however, it did it in the opposite side of the ordinary part: processing exports responded in the same way as ordinary imports, since most of them are assembled using imported components and processing imports responded as ordinary exports since they are then intended to be assembled into exportables and so their demand decreases after an appreciation.

Figure 2.9: Results for the Trade Balance Equation

Variables	Dependent variable			
	Full sample		Subsample	
	Ordinary trade balance	Processing trade balance	Ordinary trade balance	Processing trade balance
C	-0.300218 (-0.257770)	2.538638 (4.051535***)	3.644332 (2.304417**)	-1.260060 (-1.112290)
LREER	-0.302212 (-1.597939)	-0.026982 (-0.265180)	-1.655933 (-8.720253***)	0.661797 (4.865134***)
LFD	0.554739 (3.246520***)	-0.885465 (-9.632174***)	1.120039 (2.955842***)	-0.547733 (-2.017904**)
LDD	-0.044052 (-1.144149)	0.072801 (3.514619***)	-0.345880 (-6.193919***)	0.185136 (4.628226***)
LFDI	0.034450 (2.635452**)	0.003461 (0.492178)	0.021051 (1.404312)	0.002868 (0.267066)
R2	0.185787	0.567141	0.604039	0.343263
Adjust R2	0.162357	0.554685	0.583199	0.308698
D.W. statistic	0.284133	0.581014	0.846577	0.803770

t statistics are displayed in the bracket, * indicates significance at 10% level, ** at 5% level and *** at 1% level.

From: Guo 2017

Figure 2.10: Results for the Export Equation

Variables	Dependent variables			
	Full sample		Subsample	
	Ordinary exports	Processing exports	Ordinary exports	Processing exports
C	4.525107 (2.007187**)	3.088918 (1.911786*)	6.893703 (0.560200)	21.69102 (1.637122)
LREER	-0.385679 (-1.159730)	-1.276276 (-5.354877***)	-1.653554 (-1.090865)	-4.114242 (-2.520886**)
LFD	0.750532 (-1.841141*)	0.719392 (2.462392**)	0.132580 (0.048560)	-1.710894 (-0.582011)
LVATREBATE	0.274022 (10.62125***)	0.147207 (7.961437***)	0.638526 (2.098798**)	0.606956 (1.852933*)
LFDI	1.000619 (36.13018***)	1.017300 (51.25358***)	0.521055 (4.722793***)	0.488476 (4.112152***)
R2	0.934748	0.958760	0.275736	0.251819
Adjust R2	0.932771	0.957510	0.233132	0.207808
D.W. statistic	0.602348	0.555774	1.811235	1.822269

t statistics are displayed in the bracket, * indicates significance at 10% level, ** at 5% level and *** at 1% level.

From: Guo 2017

Figure 2.11: Results for the Import Equation

Variables	Dependent variables			
	Full sample		Subsample	
	Ordinary imports	Processing imports	Ordinary imports	Processing imports
C	-4.402227 (-2.485496**)	10.73444 (11.02233***)	-4.363266 (-0.792790)	16.13707 (2.940725***)
LREER	1.473299 (3.594884***)	-2.383799 (-10.57833***)	1.675906 (1.274790)	-3.442143 (-2.62604***)
LDD	0.402990 (4.264724***)	-0.080306 (-1.545611)	0.528942 (1.291226)	-0.057558 (-0.140923)
LFDI	1.057041 (31.22388***)	0.985843 (52.96104***)	0.497083 (4.573963***)	0.476230 (4.395058***)
R2	0.885636	0.954583	0.226372	0.265382
Adjust R2	0.883203	0.953617	0.196231	0.236760
D.W. statistic	0.401736	0.286238	1.803281	1.873898

t statistics are displayed in the bracket, * indicates significance at 10% level, ** at 5% level and *** at 1% level.

From: Guo 2017

It is for this reason that, if the classification of imports and exports between ordinary and processing is not taken into consideration, results can be misleading and of difficult interpretation, instead, even if it is still difficult to fully understand if the global imbalance has been corrected through the appreciation of such an important currency as the chinese yuan, at least it is possible to understand which was the effect of the swift from a fixed exchange rate regime that set the value of the currency to a managed floating one that let at least partially the market to determine the value around which the Renminbi can fluctuate on the different components of the chinese trade balance and so on the Country's imports and mostly exports, which is the aspect that most concern China's competitors.

These results confirm also that there exist a trade-off between the convenience of having a weak currency that at least in the short period and if prices are quite sticky is usefull to boost the export sector and a strong one that is less efficient under this aspect but has the advantage of beign considered an international currency and a reserve one and they confirm that chinese authorities do face this trade-off and are involved in it, since they seem to be oriented through an increasing favorable attitude for the internationalization of their currency, especially after its inclusion in the basket of the world foreign reserves by the International Monetary Fund in 2015.

CHAPTER 3

FUTURE PERSPECTIVES

3.1 The financial crisis and the internationalization of the Renminbi

3.1.1 Before and after the Asian Financial Crisis: different chinese policymakers' orientations

Despite the several interventions in the monetary policy carried out by the People's Bank of China during the Financial Crisis in order to slow down the appreciation of the Renminbi and to gain competitiveness and give strength to the export sector which was damaged by the difficulties of the European and United States markets, this period was also the first occasion that Chinese authorities saw to start the internationalization of their currency.

The internationalization of the Renminbi is only a phase, even if one of the most important, of the project that Chinese authorities have been following since the last decade of the Twentieth Century, when they started to integrate their economy with the rest of the World's ones and they initiated that process aimed at transforming the Country from a planned economy to a market oriented one.

One of the fundamental steps of this process was for example the entrance in the World Trade Organization, occurred in 2001, which helped the Country to participate in the international division of labour; however, what is really important to achieve the goal of being perfectly integrated with the rest of the World, is to participate fully in the financial system and, despite what is commonly thought, China tried to start this proceeding already in 1994, when Chinese monetary policy authorities developed a roadmap which should have brought in few years to the liberalization of the capital account and to the full convertibility of the Renminbi, a fundamental ingredient for a currency to be considered international (Yongding 2014).

However, the occurrence of the Asian financial crisis of the 1990s caused an inversion of tendency in the Chinese monetary policy, that brought the government in the first decade of the Twenty-first Century to primarily pursue high level of growth and high level of competitiveness in the export sector, with the Yuan pegged to the dollar at a level that was commonly considered undervalued instead of continuing to develop its process of internationalization.

Despite the association between financial liberalization and financial crisis sometimes may be deceptive since it is often hard to bring back the beginning of an economic crisis to a

single cause and since crisis and financial instability there exist also in Countries with relatively closed capital markets or low inflows of capitals (some african Nations are an example), there are several cases in which financial liberalization played a significant role in exacerbating financial crisis or in aggravating macroeconomic problems and instability.

This happens because it is not always true that capital mobility and financial liberalization are able to better allocate resources between Countries. Sometimes it may happen that, after the liberalization of the capital market, an emergent economy may experience a period of inflows of capitals, during which this continuous inflows may create an expectation for appreciation (or revaluation if the exchange rate is fixed) of the currency, thus attracting even more capital inflows. This situation may favor the creation of assets bubbles and it is particularly dangerous since it can be followed by a reversal attitudes of investors that may decide to suddenly take out of the Country their capitals. If this happens, a Country with a flexible exchange rate may be able to face this situation by selling its foreign exchange reserves, thus reducing the supply of money in circulation deriving by the massive selling of home-currency-denominated assets and so avoiding or at least reducing the depreciation of the currency; instead, in a Country with a fixed exchange rate, the sudden exit of capitals may trigger an unsustainable increase of interest rates and it can even make impossible to maintain this regime, thus causing a potentially harmful and unwanted devaluation of the home-currency.

Indeed, learning by the experience of the other asian Countries that had to face huge capital outflows, devaluation of their currencies and financial instability that exacerbated the crisis of the last decade of the Twentieth Century, chinese policymakers interrupted the process of opening of their capital account, pegged their currency to the dollar and pursued high levels of economic growth through the advantage in the export sector gained by the undervaluation of the Renminbi.

Moreover, during this period, just because the currency was considered undervalued and the principal commercial partners of the People's Republic of China started to make pressure to the monetary authorities so that they adopt a floating exchange rate regime, investors started to expect an appreciation of the currency and chinese authorities decided to maintain controls over capital inflows that only few years before they wanted to remove.

This attitude, which was aimed principally at limiting the short-term capital movements, continued even after the reform of the exchange rate regime and the adoption of the crawling peg that caused an appreciation of the Renminbi and which was characterized by a central parity chosen by the market and no more by monetary policy authorities.

The decision of maintaining these controls, which were more restrictive on the investments with a short-time horizon, was principally related to the attempt of reducing the

risk related to the speculative short-term movements of capital, which may occur for example in the presence of expectations for appreciation of the currency, such as was the case of the Renminbi after the adoption of the crawling peg. These speculative inflows of capital are dangerous for the economy, since, as it is just explained before, they may feed speculative bubbles and cause financial instability if bubbles crash.

3.1.2 The occurrence of the Global Financial Crisis and the challenges that inspired the Renminbi internationalization process

However, with the occurrence of the Global Financial Crisis in 2009 the situation changed and the main fear of the Chinese government was no more the presence of hot money that flowed in and out of the Country, but the fact that the People's Republic of China held more than 400 billion dollars of US Government-sponsored enterprise bonds (Yongding 2014).

In fact, despite the principal problem for the majority of the Countries involved in the crisis in that period was the exposure to financial derivatives such as mortgage-backed securities and collateralized debt obligations, this phenomenon was limited in China; however, the Country had to face the possibility of a dollar devaluation – which became reality when the Federal Reserve started the Quantitative Easing measures and expanded its balance-sheet - which could have brought to massive capital losses in the Country's foreign exchange reserves that amounted at about 2 trillion of dollars and were poorly diversified.

Anyway, knowing that an ex-post diversification was impossible since the amount of dollars owned by China at the beginning of the crisis was huge and selling them would have meant to make the fear of deal with capital losses in the foreign reserves become true, some Chinese authorities, and in particular the Governor of the People's Bank of China, saw in this scenario an opportunity to propose a reform of the international monetary system with the final goal of creating an international reserve currency unbound from individual economies and in particular from the United States, thus helping the People's Republic of China to reduce its exposure to foreign exchange reserves denominated in dollars.

Another way that Chinese authorities explored to reduce their exposure to the US dollar-denominated assets they owned was the strategy of diversifying their foreign reserves not selling dollars and buying other reserves denominated in different currencies, but pooling their reserves together with the ones of the other Asian Countries, thus creating a regional amount that allows all these Countries to hold less foreign currency in order to defend their own ones.

However, both these two initiatives remained only an idea and were not realized by international and regional policymakers both because they were technically complicated and because of the conflict of interests between the different economies in the international but also in the Asian regional scenario.

It was exactly in this situation in which Chinese authorities understood that the two possible solutions they had to overcome the problem of their over-exposure through dollar-denominated reserves were impracticable, that the idea of the internationalization of the Renminbi surged and found a favorable ground to grow rapidly.

This idea was helped to growth also by the scenario that the majority of developed and developing economies were facing after the beginning of the financial crisis and in particular after that some important financial institutions failed due to solvency problems, since these collapses and the fear of the failure of other institutions caused a liquidity shortage and the reduction of the interbank credit which in turn helped to increase the international acceptability of the Renminbi since the Chinese financial institutions were not much exposed such as other American and European banks.

The financial and economic instability has been a big issue for the majority of the advanced economies since the lack of trust in the interbank market which followed the events just described and the resulting credit crunch toward firms and families caused a slowdown of all the major economies, however, even the developing countries suffered from the effects of the financial crisis and in particular they experienced huge capital outflows and liquidity deficiencies, due to the fact that most of them did not have appropriate capital controls able to avoid or at least to alleviate this scenario and just to face this problem they signed some currency swap agreements with the People's Republic of China, which, consequently to its huge and continuous gathering of foreign reserves in the previous years, had the biggest amount in the World.

Swaps are agreements which involve derivative contracts where two parties, in this case two central banks, exchange the cash flows or the liabilities derived from two financial instruments. Already at the end of 2008 the People's Bank of China signed its first swap contract denominated in Renminbi with the Bank of Korea for a total amount of 200 billion yuan. In the following period the People's Bank of China signed other swap agreements with the Central Banks of Malaysia, Russian Federation, Indonesia and Argentina and with the Hong Kong Monetary authorities, increasing in this way the international acceptability of its national currency.

3.1.3 Internationalization as a market-driven process

The problem of the over-exposure to the dollar in the foreign exchange reserves and the liquidity shortage caused by the occurrence of the financial crisis especially in some emergent markets were the two main reasons that helped to launch the process of internationalization of the Renminbi which, even if supported by some measures adopted by the government and by the People's Bank of China, is considered a market-driven process, since it gained strength principally by the occurrence of some macroeconomic events out of the control of the Chinese authorities.

Moreover, it is true to say that the Renminbi internationalization is more a market-driven process than a government driven-process even for other two main reasons not linked to the events that followed the financial crisis but still linked to the macroeconomic scenario of the beginning of the Twenty-first Century.

First of all, as it was discussed in the previous chapter, after the pressure put on the Chinese authorities by some Chinese important economic partners such as the United States of America, China has implemented an exchange rate regime reform that caused the appreciation of the Renminbi of almost 25% in less than ten years. Even if the Renminbi is still considered undervalued with respect to other currencies by some economic players (but not by the International Monetary Fund that in 2015 stated that its value was adequate), the continuous appreciation of that currency and – most importantly – the continuous expectations for appreciation of economic agents, encouraged foreign exporters to settle their trades in Renminbi.

Secondly, it is important to mention the fact that, thanks to the presence of the Association of Southeast Asian Nations and to the free trade agreement settled among its members in 2009, since the beginning of the Century and mostly after the establishment of this agreement, the trade between the People's Bank of China and the South East Asian Countries saw an important increase and passed from 55 billion dollars to 360 billion dollars in only nine years and encouraged both China and the other Countries involved in the transactions to use the Chinese yuan as a settlement currency (Zhang and Tao 2014).

However, trade settlement in Renminbi, even if perhaps the most important, is only one of the new roles assumed by the Chinese currency in its process of internationalization. In fact, according to Chinn and Frankel (2005), to be considered international, a currency should assume also other functions such as to become a store of value for the governments of the other Nations (which start to include the currency in their international reserves), to be considered a unit of account, according to which private firms and citizens denominate their trade and

governments peg their local currency, and, last but not least, to be a medium of exchange not only for the private sector and its trade and financial transactions but also for public institutions that use currencies for foreign exchange interventions.

This means that a currency, to be considered international, should be used not only for transactions between residents of the issuance Country but also for transactions that involve non-resident and foreigner governments. This process for the Chinese yuan is only at the beginning even if it had increased enormously after the occurrence of the financial crisis and important progress has been made in trade settlements denominated in Renminbi, cross-border direct investments and even cross-border financial transactions, even if the Chinese financial and banking system is not fully developed and it is still under strict control of the government authorities.

Different researchers made the attempt to estimate the level of internationalization that the Renminbi has reached in the past ten years and some indexes have been developed to compare the progress made by the Renminbi with the situation of the other currencies already considered international, such as the US-dollar, the euro and the Japanese yen.

An example is the one developed by the People's Bank of China Study Group in 2006 which has been then amplified by Chen and Hu and by the Renmin University of China Institute of International Currency for the years 2009, 2010, 2011 and 2012. They considered all the characteristics that a currency and a market need to be considered international, such as for example the level of convertibility of that currency, its presence on the composition of foreign reserves of other Countries, the amount of trade settlements denominated with it, the fact it is included or not in the basket of SDR currencies of the International Monetary Fund and the eventual restrictions on transactions and investments still present in the issuer Country's capital market.

For the first year they set the dollar at a benchmark value of 100, compared to which the euro was at 40, the Japanese yen was at 28,2 and the Renminbi was only at 2.

Figure 3.1: Comparison of Measurements of Renminbi Internationalization

Year	Renminbi	US dollar	Euro	Yen
2006	2%	100%	40%	28.2%
2009	0.02%	52.79%	26.92%	3.6%
2010	0.23%	53.33%	25.58%	4.34%
2011	0.45%	54.18%	24.86%	4.56%
2012	0.87%	52.34%	23.72%	4.78%

From: Zhang and Tao 2014

This results show that the process of internationalization of the Renminbi is still at the initial phase and lot has to be made to continue in this direction, mostly considering the fact that this process is market-driven and thus its future developments will reflect also the growth's perspectives of China but also the development of its financial market, the foreign confidence in the stability of prices and, most importantly in the stability of the convertibility regime which is a critical point for the chinese case since the Renminbi is still not fully convertible.

Nevertheless, even if this process is only at the beginning and it is still impossible to understand the magnitude that its benefits and costs will have on the chinese economy, as it was mentioned before, the progress already made in only few years are in any case impressive.

Besides the fact that the 11% of the total trade settlements are now denominated in Renminbi, with the huge part made by the settlements through Hong Kong, other important facts to be mentioned are that already in 2012 the amount of cross-border direct investments denominated in Renminbi was about 284 billion and that, after the permit given by the People's Republic of China to domestic financial institutions but also to foreign enterprises and domestic non-financial institutions to issue chinese yuan-denominated bonds, the total value of these issuances increased from 20 billions to 270 billions in only one year from 2011 to 2012 (Zhang and Tao 2014).

Moreover, as it was anticipated above, after the outbreak of the financial crisis, the Renminbi gained at least in its asian area of influence the status of reserve currency for those emerging countries such as Malaysia, North Korea, Cambodia and Russia that suffered from liquidity shortage and decided to sign swaps agreements with the People's Republic of China to overcome this problem. The amount of Renminbi held by these Countries is still very low and it is around only five percent of their total amount of foreign exchange reserves, however, these Countries gave the occasion to the People's Bank of China to increase considerably the amount of Renminbi involved in swap agreements.

Finally, it is worth mentioning the fact that, from 2011, the use of Renminbi as a trade settlement currency has increased a lot in particular thanks to the constant growth of the People's Republic of China, which will be a key driver for the increase of the availment of the chinese yuan in trade agreements (Yongding 2014).

3.2 Benefits and challenges of the Renminbi internationalization: capital account liberalization and flexibility of the exchange rate regime

3.2.1 Benefits of the Renminbi internationalization process

It is now clear that the chosen approach to internationalize the Chinese yuan is a gradual approach that will take several years and that will require reforms with implications for the whole economy. It is still too early to be able to state which have been the benefits and the costs that this process brought to the People's Republic of China, since, even if some important developments have been made in few years following the attempt to make the Renminbi an international currency, the internationalization is still at the beginning and its phenomenon has a limited scale yet. However, it is possible to make assumptions on which may be the possible benefits and the possible costs in the future and to draw a roadmap of the principal stages that the Chinese authorities should follow to encourage and sustain the market-driven process of internationalization of their currency.

First of all, some benefits linked to the internationalization of a currency are of course the same as the ones linked to the theory of the optimal currency areas and to the concept of a “strong” currency as opposite to a “weak” one. In particular, according to the theory of the optimal currency areas, Countries with the same medium of exchange (i.e. the same currency) do not face the risks typical of international trades, such as for example the exchange rate risk, which is eliminated by the fact that Countries do not have to take into account the possibility that the exchange rate at the end of the transaction may be different from the one at the moment of the settlement of the agreement since they have the same coin. In the same way, if a Country uses its currency as invoicing settlement one, its firms will face a reduced exchange rate risk and thus this will be a great impulse for the trade sector.

Another advantage linked to the process of internationalization of the Renminbi and that concerns both the private sector and the government institutions is that it would allow them to be able to borrow at a lower cost. In particular, thanks to the increased foreign demand of Chinese yuan denominated securities, firms and financial institutions will be able to borrow at a lower cost in the domestic financial market and they may also obtain loans or be able to issue bonds on the offshore market (even if this last possibility depends also on the level of restrictions that the government will maintain or not on the credit obtained from abroad).

The government instead, will derive its benefits from what Cohen, Zhang and Tao uses to call the “monetary privilege of macroeconomic flexibility” which is no more than the

possibility of selling own currency-denominated government bonds and treasury bills which may help to raise funds from foreign investors at a lower cost.

On the contrary, the benefit linked to the development of the financial market which should follow the internationalization of a currency is more debated above all for the case of China, which do not present a well-developed financial market with adequate levels of depth and breadth since it is not clear if the evolution of this sector may be helped by the process of internationalization of the home currency or it should be a pre-requisite in order to boost and sustain the process itself.

Moreover, there is an important issue related to the development of the financial sector that an emergent Country should take carefully into account in the process of internationalization of its currency. Indeed, one of the most important pre-requisite for having a currency that may be considered international is exactly the liberalization of the capital market, since investors, to trust in the fully convertibility of a currency and to keep it as a store of value and as the currency of denomination of investments, have to be sure to be able to trade it (and so to buy and sell it and its denominated assets) without restrictions imposed by the government.

For this reason, while accomplishing the internationalization of its currency, a Country should take into consideration the conditions of its financial sector. As it is explained before, it is not always true that an open capital market and an increased volatility of capitals are able to better reallocate resources and to perform their function of insurance for citizens and firms against the cyclical trend of the home economy. This is particularly true when the financial sector is not well-developed and it does not have an adequate management plan for risk and there exists information asymmetries between agents. In this situations, if the capital market is suddenly opened without adequate reforms, it will be prone to investors' feelings that may feed assets bubbles or in the worst case suddenly take back their investments, especially if they are short-term oriented and reversible, thus causing financial instability and even financial crisis.

This may be particularly true even because in a financial system which does not have an adequate supervision in term of risk-taking, financial intermediaries such as banks may be tempted to take an excessive level of risk in their investments (as for example financing with debt risky operations with high returns) and institutions may be tempted to accumulate excessive foreign debt thanks to the inflows coming from abroad. In this case, if the situation of sudden reversal of investors' attitude described before does verify, the absence of restrictions on capital flows seriously aggravates the problems already caused by a financial system characterized by this management.

Finally, the last benefit that it is worth to mention is also the answer to one of the reasons that pushed the chinese authorities to give strenght and sustain the process of

internationalization of the Renminbi during the financial crisis. As it was explained in the previous section, after the bankruptcy of some important american financial institutions, the difficulties faced by the financial sector and the decision of the Federal Reserve to start some unconventional monetary policies, chinese authorities were worried that, due to a devaluation of the dollar, China would have had to face some important capital losses on its foreign exchange reserves which were poorly diversified and principally consisted by dollar-denominated assets.

As other emergent Countries, China accumulated a huge amount of foreign reserves, which can be used as a sort of insurance in case of an external shock affecting the Country. However, if the majority of its foreign reserves is denominated in US dollar this can be a considerable risk factor, since in this case China is in a situation in which one of its most powerful macroeconomic tool against the occurrence of adverse events is linked to the conditions of only one foreign economy. Moreover, even if the value of its dollar-denominated reserves was not in danger, the People's Bank of China could not be considered as a lender of last resort of foreign currency since it cannot print it and it can rely only on the amount previously accumulated which was limited though enormous.

Thus, as it had been hoped during the financial crisis, in order to solve the problem of a over-reliance on the US dollar, the emergence of the Renminbi as a reserve currency may help the People's Republic of China, and consequently even other Asian Countries, to reduce their demand for foreign exchange US dollar-denominated reserves and thus to diversify their risk.

3.2.2 Costs and challenges

However, as well as the benefits just exposed, the process of internationalization of a currency involves also some costs and challenges for the issuance Country, especially if it is an emergent market.

One of the challenges that China has to face is the fact that one of the requisite for a currency to be international is to be fully convertible and to be traded in highly liquid and open markets, thus, since there still are some restrictions on the investment possibilities of households and foreign agents, to further develop the process of internationalization chinese authorities should trace a roadmap for a gradual capital account liberalization even if this process can be quite risky in terms of financial stability and vulnerability to external shocks especially for an emerging economy with weak regulatory institutions and less developed financial markets.

In fact, even if China has been following a process of transformation of its economy from a centralized one to a more market oriented structure for almost thirty years, its financial market has still a limited scale of expansion and a limited openness. In particular, according to some statistics released by the Bank for International Settlements and by the same People's Bank of China, the share of the chinese financial market is still too small with respect to the share of financial markets of other Countries issuers of currencies considered international (Zhang and Tao 2014).

Furthermore, it is fair to mention the fact that not all the benefits discussed, and in particular some of them related to the problem faced by the Country during the financial crisis, are immediatly solvable with the internationalization of the currency. An example is the problem of the over-exposure to the dollar which caused concerns on possible capital losses on the foreign exchange reserves. Renminbi internationalization was presented as a solution which could overcome the problem of the little diversification of the foreign exchange reserves and of the over-reliance on the US dollar. However, by now it is clear that the process of internationalization is gradual and even after almost ten years by its beginning it is still on its initial phases so it was impossible that it could consitutite a usefull solution at the time when the problem of the fear of dollar depreciation occurred.

It is for this reason that some economists think that the internationalization of the Renminbi was not primarily aimed at solving the problem caused by the instability of the financial conditions occured in 2008 such as the exchange rate risk and the risk of capital losses caused by the over-exposure to the dollar denominated foreign exchange reserves, but rather as a strategy that some chinese policymakers used to loosen the state control over the economy, making the currency more dependent on market forces and thus reaching some objctives that are necessary to achieve the internationalization of the yuan and are more characteristic of a market economy, such as the liberalization of the capital account (The Wall Street Journal 2011).

However, if these are only assumptions, it is certain that, for a Country with the characteristics of the chinese economy, a fundamental step to reach the internationalization of the currency is exactly the capital account liberalization. This was an objective that chinese authorities planned to reach already long before the crisis gave them the opportunity to launch their currency at an international level and that was then abandoned when the Asian financial crisis occurred at the end of the last Century.

3.2.3 Capital account liberalization and exchange rate flexibility

However, controls on capital inflows, the restrictions on the real estate sector, the non-fully convertibility of the Renminbi in some transactions and the limited possibility for citizens to invest abroad (they can do it only through the “Qualified Domestic Institutional Investors”) and for non-residents to borrow or to invest in the so-called A-share market (they can invest only in the B-share market, which are shares denominated in foreign currency but they cannot invest in A-share market which are shares denominated in Chinese yuan, unless they do it through the aforementioned Qualified Domestic Institutional Investors), are incompatible with the aim of internationalizing the Renminbi.

About this argument, the same authorities of the People’s Bank of China released some declarations in which they aimed at an acceleration of the capital account liberalization (even if they did not mention the risk that this measure can involve for a not fully developed economy such as the Chinese one). Moreover, they also stated that “the liberalization of the interest rate, the exchange rate and the capital account can be implemented at the same time” and that “without the liberalization of the capital account there will be no liberalization of the interest rate and the exchange rate”, expressing their view according to which the gradual removing of the remaining capital controls is a fundamental prerequisite for an interest rate and an exchange rate that are fully market determined which are in turn a requisite for the final objective of the internationalization of the Chinese yuan.

To make a little theoretical digression, the concept of “capital account liberalization” is literally the process of easing restrictions on capital flows – suddenly or gradually – across a Country’s border. The capital account is the part of a Country’s balance of payments that includes capital flows such as Foreign Direct Investments, Portfolio Investments and bank borrowing from a foreign Country. The flow of capitals from a Country to another is a phenomenon that increased a lot in the second half of the last Century and that affected both advanced economies and developed Countries which gained important benefits from the inflows of capital in their markets, but also suffered period of instability and faced crisis caused by the excessive mobility of capital (which is the main reason why Chinese authorities were reluctant to remove some capital controls, since they aimed at reducing the short-term capital movements that can bring financial instability).

At least at a theoretical level, it is possible for a Country to maintain some restrictions on the inflows and outflows of capitals through official channels and usually these measures are implemented for several reasons. First of all it is common even for some developed economies to skim short-term capital inflows and to privilege more stable forms of investments from

abroad, such as the Foreign Direct Investments, which are a more stable and long-term oriented since they are hardly reversible once implemented.

Moreover, another reason still linked to the desire to limit the capital movements which are driven by investors' short-term interests, is the presence of a banking system which is fragile or not fully developed, such as in the Chinese case. In this situation, maintaining capital controls and preventing residents to invest abroad is a way to avoid exodus of capitals through more profitable foreign investment opportunities both in normal circumstances but mostly if the Country is hit by some adverse macroeconomic events.

Finally, there are some cases of economies that adopted a fixed exchange rate regime and decided to maintain capital controls since the free movements of capital in and out of a Country can make it difficult for its authorities to keep this exchange rate regime and above all, as it was discussed in the previous chapters, the presence of a fixed exchange rate and an open capital account make the monetary policy ineffective.

However, there are even several reasons to liberalize the capital account which are mainly summarized by the fact that the free movements of capital, at least theoretically and in a context of perfect information, should lead to optimal allocation of resources and thus should reduce market distortions created by capital controls.

Anyhow, this argument, which was considered the only side of the coin to take into account until the event of the Asian financial crisis, should be considered carefully since, in the last decade and considering the experiences of some Latin American and some Asian Countries that experienced huge capital outflows that triggered their already fragile economic conditions, it became obvious that our world is not perfect whereas it is characterized by asymmetric information and market distortions that prevent an optimal allocation of resources under a system of fully free capital accounts.

Another benefit of capital account liberalization is that in theory it should make citizens and firms able to hedge against the risk of the cyclical economic process of their home Country, using foreign financial instruments and investing in foreign business or opening foreign branches in the case of firms, thus linking their economic status not only to the conditions of their Country, but also to the conditions of foreign markets, which usually are not perfectly symmetric one with the other.

Finally, always considering the idea that capital mobility may favor a better reallocation of resources, an argument heavily used during the last Century to promote capital account liberalization was that it should help developed economies' investors to achieve higher rates of returns on their investments (since they are able to acquire also emergent Countries' assets which usually have higher rates of returns) and most importantly should help the development

of emergent Countries themselves, since inflows of capitals give them new liquidity for investments favoring job creation and growth.

However, even this argument has some critical issues, since it is evident that usually investors finance emerging economies only when they already show macroeconomic soundness and good economic perspectives and ignore them, or, in the worst of the cases bring back their capitals, if adverse macroeconomic shocks hit these Countries, thus exacerbating rather than reducing their economic problems and creating financial instability due to the higher volatility of capital inflows and outflows.

These observations have been absorbed also in the macroeconomic orientation of the IMF, which admitted that “it is necessary to carefully manage and sequence the liberalization process in order to minimize concomitant risks” and of some Countries that, during the more recent financial crisis, decided to restore some capital controls, in order to face the risks brought by capital volatility (Yongding 2014).

It is exactly in this situation that chinese authorities again made a different choice from the one of their contemporaries and declared that a gradual opening of the chinese capital account was in their agenda.

In particular, according to the International Monetary Fund report, the People’s Republic of China has already made some important steps versus the liberalization of its capital account, since it increased the number of Renminbi-denominated Quiaified Foreign Institutional Investors which allow foreigners to invest in Renminbi-denominated assets, it opened to foreign central banks and institutions to the possibility of investing in the domestic bond market and to the possibility to freely buy and sell chinese yuan for trade related purposes and for some financial transactions (even if some short-term investments are still restricted, since they are the major source of short-term capital volatility risks).

Moreover, in addition to the question of the capital account liberalization, another challenge that may complicate the process of internationalization of the Renminbi is the problem linked to the concept of the Impossible Trinity, which has been exposed theoretically and specifically for the case of the chinese economy in the previous chapters. This problem arises becuase, since the process of internationalization of the chinese yuan requires a more open capital account and it seems that chinese authorities want to move their actions in this direction, unless that chinese policymakers decide to liberalize also the exchange rate they will loose the Country’s monetary policy independence.

Thus, even if at the current state the independence of the monetary policy and the ability of the People’s Bank of China to influence money supply and domestic interest rates are not in danger since the Country still has some strict capital account restrictions, if China will really

pursue the road of the capital account liberalization as it seems it wants to do, to maintain its monetary independence, which for a Country with such level of control of the political institutions on the economy and on the whole society may be a desirable objective, it will have to give up the exchange rate stability in favor of a more flexible exchange rate regime with an exchange rate free to move and a currency no more pegged to the dollar or to other “strong” currencies.

The principal problem linked to the possibility that Chinese authorities will act in order to make their exchange rate fully flexible and to the fact that they are planning to further liberalize their capital account, is the occurrence of an ulterior appreciation of the Renminbi which is already following this path and which will continue with the process of internationalization due to the increasing demand for Renminbi-denominated assets by foreign investors. This situation, if realized and persistent during time, may force China to face a loss of competitiveness in its export sector and, much more important, to face a Renminbi-denominated assets bubble. This latter event in particular is exactly the same risk that every economy that decides to open its capital account (or internationalize its currency) risks to face and it would be quite dangerous for the stability of the Chinese economy, since, after a period in which investors rely on the appreciation of the currency and in which they will continue to buy Renminbi-denominated assets pushing up their prices and strengthening more convictions for appreciation, there could be a moment, corresponding to the bubble collapse, in which they revert their thinking causing a great depreciation of the currency and a period of financial instability for the Renminbi issuer Country.

Howsoever, there are some solutions that can be implemented to reduce the risks related to the liberalization of both the capital account and the exchange rate. Even if the roadmap that Chinese authorities will follow is still not clear, it is possible to say that a feasible remedy to the loss of competitiveness of the export sector due to the currency appreciation may be a strategy which aims at reinforcing the competitiveness of the Country through other channels rather than an undervalued currency, such as for example a higher technology innovation or a higher product quality which may be favored by the capital account liberalization itself, since one of the benefits of Foreign Direct Investments, inflows of capitals and a more open economy, is that they facilitate the acquisitions of technology and resources from abroad.

To deal with the problems of financial instability, exposure to external shocks and creation of assets bubbles instead is more difficult, however, an adequate supervision and regulation of firms' and financial institutions' behaviour may help to reduce the risks related to the process of capital account liberalization.

In particular, Countries such as China that do not dispose of a deep, liquid and bare of asymmetric information financial market and of a well-developed banking sector with an adequate strategy of risk management, should liberalize carefully and not suddenly their capital market, accompanying this process with the commitment of an adequate development of the financial sector.

In particular, there are some possible strategies that China may pursue to manage the risks related to its capital account liberalization and its currency internationalization. First of all, Chinese monetary policy authorities should make market agents to understand the first defense against the risk of volatility of capitals is an adequate risk management operated by the market participant themselves. Corporate agents must avoid to take excessive risks and banks must carefully manage the assets in their balance sheet and avoid to rely heavily on the leverage instrument that consists in financing acquisitions and lendings with debt in order to acquire higher returns on capital.

Moreover, since in the Chinese case risk-management techniques are still not well developed and banks' and financial institutions' behaviour is mostly addressed by the government directives, an important role in maintaining financial stability during the process of capital account liberalization should be performed by monetary policy authorities themselves which should give prudential regulation an important role in the definition of their strategy such as for example in order to discourage excessive short-term borrowing (especially if denominated in foreign currencies), limiting banks' open net foreign currency positions or taxing short-term capital inflows in order to avoid an over-exposure of market agents to foreign investors' capitals (which are not measures that are considered to the sort of capital account restrictions since they do not prohibit international currency transactions but only help market agents to smooth and regulate these transactions themselves). Besides, another way to reduce the volatility risk of the capital account liberalization is to favor foreign investments that are more long-term oriented at the expense of that inflows that are short-term oriented and reversible and more related to the feelings and the convenience of investors. This may happen by continuing to pursue a strategy that Chinese monetary authorities are already implementing, thus removing controls before on Foreign Direct Investments and only after on Portfolio Investments and other investments.

Furthermore, in order to avoid sudden capital outflows from the Country during the process of capital account liberalization, Chinese monetary policy have to stop suppressing domestic interest rates to sophisticated low levels, especially considering the fact that expansionary monetary policies implemented by European Countries and United States will not continue forever and, supposedly, when their economies will restart to grow at a normal level

their interest rates will be risen. Under this aspects important progress have been made by chinese authorities who abolished ceilings and floors on banks' lending and deposits rates and established a deposit insurance system aimed at supporting banks affected by the raising of competitiveness caused by capital account liberalization (Kwan 2017).

CONCLUSIONS

Looking at the chinese experience of the last forty years, it is evident that the Country is following a roadmap aimed at internationalizing the economy and commuting it from a planned structure to a market oriented one. As it is explained in this paper, fundamental steps were made since the chinese authorities decided to make a change in the running of the economy in 1978, starting from the reorganization of the banking structure of the Country, passing through the gradual removal of some capital controls and aspiring to the objective of internationalize the Renminbi, the chinese currency.

However, even if impressive progress were made since the beginning of the process of internationalization and opening of the chinese economy toward the rest of the world, there still are important steps to be achieved. Critical for the continuation of the transformation of the economy are the issues concerning the flexibility of the exchange rate and its *de iure* and *de facto* dependence on the dollar, and the controls that still remain on the chinese capital market, which, unlike the markets of other emergent Countries, did not experience a sudden opening as it is suggested by the so-called “Washington consensus”.

Anyway, before concluding with some considerations about the future perspectives of the chinese economy in terms of the flexibility of the exchange rate and openness of its current and capital account, it is worth summarizing what has been explained until this point since the chinese economy is peculiar with respect both to the advanced and to the other emergent markets.

As it is written above, the year that signed the turning for the chinese economy is 1978, which is the year of the “divorce” between the only bank that existed in the Country and the Ministry of Finance. However, even after that divorce, the People’s Bank of China, which used to perform both commercial and central banking functions, did not gain a substantial independence and remained under strict control of the government, which, through it, was able to control and influence the monetary policy and the economy of the Country.

After 1978 four new banks were created in China and this event signed the birth of the group of the Big Four, composed by four state-owned banks that in the following years substituted the People’s Bank of China in its commercial functions.

Furthermore, besides these financial institutions, other regional banks, credit cooperatives and even some foreign financial institutions - such as the Gou Tai and the Nan Fang investment funds - sprang out in the Country; however, the group of the Big Four remained the core of the chinese banking sector, thus making the low competition between

financial intermediaries a particular feature of a system which is considered a bank-based structure in transition.

Another feature of this system is the distribution of savings of private citizens. Before the introduction of the four commercial banks, the level of savings was very low and people could deposit them in the only financial intermediary present in the Country, which was the People's Bank of China. Whereupon, with the transformation of the economy the situation changed: the level of savings increased considerably and the removal of some restrictions on the private property, the subsequent development of some private firms and the creation of three national stock exchanges – the Shanghai Stock Exchange, the Shenzhen Stock Exchange and the Hong Kong Stock Exchange – in the last decade of the twenty Century opened new channels where savings could be canalized; however, despite these developments, the majority of savings of private citizens is still addressed to the banking sector.

An important consequence is that the business sector depends heavily on the banking system, since the principal source of financing for both state-owned and private firms is the credit provided by banks, while self-financing, collection of funds, direct issue of bonds and shares and Foreign Direct Investments are only secondary sources for raising funds.

This confirms the view according to which the Chinese system is a bank-based system, that relies heavily on the role of providing information and credit to private agents and enterprises and of screening and monitoring the agents of the market that banks should do.

However, the fact that the principal source of financing and providing information is performed by financial intermediaries that in the Chinese case are for the majority owned and controlled by the government represents also one of the biggest problems of the Chinese financial system, since with this approach state-owned firms are favored in the grant of the credit both in terms of priority and interest rates with respect to private firms, even if they are on average less productive (Liu, Spiegel and Zhang 2019).

Remaining in the field of the banking system, as it is explained in the previous chapter, after the creation of the Big Four, the People's Bank of China stopped exercising its functions of commercial bank to become at all effects the Central Bank of the Country and in its role it continued to influence the monetary policy through the creation, the emission and the circulation of the national currency, the management of the foreign reserves, of the interest rates and of the bonds' and the interbank loans' markets.

To reach its objectives, as other central banks around the World, it uses some monetary tools, which anyway in the Chinese case evolved during time according to the different attitudes of the People's Bank of China and to its prevailing targets.

An example is the so-called “credit plan”, which was the preferred monetary policy instrument used by the People’s Bank of China until 1998 and which was used to influence the banks’ lending to firms and private citizens through the imposition of credit controls according to the government development plans for the Country.

Other monetary policy tools introduced by the People’s Bank of China and used in the following years after the abandonment of the credit plan, were the reserve requirement ratio (useful in period of high inflation), the Open Market Operations used to introduce or remove liquidity from the financial system and the Pledged Supplementary Lending, which is the new tool introduced by the People’s Bank of China and that consists in the injection of funds to some selected banks to be subsequently provided to some specific sectors of the economy.

Apart from this, another important feature of the People’s Bank of China is its strict regulation of interest rates and so of the cost of lending and borrowing for banks, firms and private citizens, which, until 2015, were established by the Central Bank. Only after this year banks were allowed to depart from the level of the benchmark rate decided by the government.

Particularly important and characteristic of the orientation of the People’s Bank of China is the managing of the inflation and of the foreign exchange reserves. With respect to the first indicator it is worth mentioning the fact that, even if chinese monetary authorities do not officially target inflation, they aimed at reducing it after their entrance in the World Trade Organization and their always greater importance as an international market.

On the contrary, the level of the foreign exchange reserves started to increase since the beginning of the twenty-first Century and did not stop this trend, creating a huge accumulation of foreign denominated assets, especially in dollars. Usually, this attitude of hoarding foreign reserves is typical of the emerging economies, since they represent an insurance against the possibility of facing a devaluation of the national currency; however, this does not seem to be the chinese case, as the asian Country did not face the risk of seeing its currency devaluating, but, on the contrary, the Renminbi followed a one-way trend of appreciation since the reform of 2005 and the abandonment of the dollar peg. Therefore it is more reasonable to think that the huge accumulation of foreign reserves was caused by the intervention of the chinese policymakers in the foreign exchange market since, even if they wanted to give more flexibility to the Renminbi, they did not stop to intervene in the market just to try to avoid an excessive appreciation of the currency.

However, if this attitude helped to slow the Renminbi appreciation especially during the financial crisis when chinese authorities wanted to assist the export sector strained by the difficulties of the chinese principal commercial partners such as Europe and United States, it also caused one of the biggest problems that the Country had to face just during the Great

Recession. In particular, this huge accumulation of foreign reserves were made without diversifying foreign currencies of denomination of the assets acquired causing an over-exposure of China toward the US dollar. For this reason, after the difficulties of some United States' financial institutions and the decision of the Federal Reserve to implement some unconventional monetary policies aimed at increasing the money supply and reducing interest rates, chinese monetary policy started to be afraid of facing the danger of a strong dollar devaluation and the possibility of experiencing capital losses on their dollar-denominated foreign reserves.

Moreover, this problem represented also the opportunity to restore the process of internationalization of the Renminbi that was announced even before the reform of the exchange rate and then abandoned when the Asian Financial Crisis occurred. In fact, after understanding that an ex-post diversification of their reserves was impossible and after the failure of the attempt to pull together all the foreign reserves of the asian Countries, chinese policymakers understood that a solution, even if it would have been effective only in the long-run, could have been the strategy of making their currency an international mean of payment and a store of value.

All these developments fit in a situation of wider changes that do not regard only the intention of making the chinese yuan an international currency, but also the attitude of the chinese authorities toward some fundamental concepts, such as the stability and the value of the exchange rate and the possibility of maintain or not some controls over the capital markets.

To start from the beginning of the story, it is worth to mention that, after the shelving of the process of internationalization of the currency occurred with the surge of the Asian financial crisis, China started to follow another strategy in order to boost its levels of growth through the development of the export sector. Therefore, in 1994, they unified the two different exchange rates that there were in the Country and fixed their currency to the dollar at a level of 8.28 Renminbi per dollar.

This decision has been taken following the theory according to which having a weak currency is the best solution for a Country who needs to boost its export sector and to protect its internal market from the competition of foreigners. In fact, stated that the concept of Purchasing Power Parity - according to which the relative price of a bundle of domestic goods and a bundle of foreign goods at the going nominal rate of exchange is equivalent - is valid only under extreme assumptions that are not valid for the chinese case, having a weak currency make more convenient for foreigners to import chinese goods and less convenient for residents to import from abroad, thus boosting the export sector but also the internal market, which in China was

underdeveloped and characterized by very low levels of consumptions before the fixing of the exchange rate at a low level with respect to the dollar.

However, the trade-off between the advantages of having a weak currency and the advantages of a having a strong one, such as the possibility to use it as an international mean of trade and a store of value for foreign citizens and foreign governments, the awareness that the success of the chinese export sector in the last years was not only based on the competitiveness created by the low level of the exchange rate, the aim of continuing on the path of internationalization and opening of the economy and the pressures made by some commercial partners such as the United States, brought the chinese authorities to implement the reform of the 21st July 2005, where they abandoned the dollar peg and announced the intention to establish a basket peg with a parity decided day-by-day by the market and the inclusion in the basket of all the currencies of the Countries that trade with China.

After the adoption of this new exchange rate regime, even if it does not represent a real passage to a fully floating regime since the Renminbi is still pegged to foreign currencies and allowed to fluctuate with limitations around the central parity, the chinese yuan did appreciate of almost 25% until 2013. Thus, different researchers tried to estimate from an ex-post point of view the effects that this appreciation had on the export sector and to verify or not the theoretical statements on the advantages of a weak currency.

Despite general results of literature are mixed and fail to provide some precise evidence, an interesting reference that helps to make some conclusions on the chinese experience is the work of Wei Guo titled “Impact of Renminbi appreciation on China’s Trade Balance: from empirical evidence” and cited in this paper to provide some empirical support after the theoretical introduction on the exchange rate regime reform. In its work Guo chooses to consider only a short period from 2000 to 2012 in order to catch only the data related to the time during which import and exports were really sensitive to the changes of the exchange rate and the effects of the reforms.

Moreover, Guo made also an original distinction between different kind of imports and exports which is not present in the past literature and that differentiates them between ordinary and processing products which are, respectively, goods that are assembled entirely in the Country that then sells them abroad and goods that are not.

This distinction between ordinary and processing products and the selection of a different and shorter time span with respect to the past works of the literature, gave to Guo the possibility to obtain some precise results and in particular he found that, especially in the subsample period from 2005 onward, the appreciation of the real effective exchange rate had

negative effects on the ordinary trade balance attributed to the appreciation of the Renminbi but also to its higher, even if still narrow, volatility.

This results are in line with the theoretical prediction of a trade-off that apparently even Chinese authorities do face between the possibility of gaining an advantage in terms of competitiveness fixing (or even maintaining in a flexible exchange rate regime) the exchange rate at a low level and the possibility to have a strong currency that may be used for trade settlements and as a foreign reserve or an asset of investment.

However, it is fair to state that, even if the appreciation of the Renminbi seems to have a negative effects on the volumes of the export sector, China is now in a phase of its development during which it can sustain its exportations even through other channel rather than the competitiveness gained with the adjustments of the level of the exchange rate. In fact it can rely on an increased product quality and on the availment of an advantage technology.

Therefore, as well as the necessity of gaining flexibility in the exchange rate regime, the process of internationalization of the Renminbi requires also an open capital market, which in China is still some under controls. In particular, some limitations that market agents face are: the impossibility for banks to sell and buy foreign currencies over a certain amount, the imposition for enterprises to report their foreign currency purchases, the necessity of approval for some kind of overseas investments and the possibility for citizens and foreigners to buy some kind of shares only through the Qualified Foreign Institutional Investors.

The process of capital market liberalization would be surely usefull in sustaining the internationalization of the currency, since to use a currency as store of value and a mean of trade, investors and financial institutions have to be sure to be able to trade it without restrictions, but it may also have some benefits for Chinese citizens and enterprises.

First of all, as it is explained in this paper, foreign investments are an instrument of portfolio diversification, since they let market agents to expand the number of assets that they can acquire and they also make them able to diversify their risk not only in terms of investments but also in terms of economic cycle, since they link their welfare not only to the economic condition of a single Country but to more different and often uncorrelated markets. Moreover, capital mobility is a way for emergent economies to obtain liquidity from developed markets, which in turn gain an higher rates on their investments. Finally, there are some kinds of foreign investments, such as FDI, that let the Country of destination to gain benefits not only in terms of money but also in terms of know how, creation of jobs and acquisition of new technology.

Nevertheless, these benefits may hide even some issues that can result very harmful for an emergent Country with an underdeveloped and not provided of an adequate risk management financial system. Thus, in a market pervaded by asymmetric information, the allocation of

resources favored by the absence of capital controls may not be optimal and the market may become prone to the investors' feelings. This situation, for the Chinese case, can be very dangerous since the Country is now facing a period characterized by continuous capital inflows attracted by the expectation for appreciation of the Renminbi and by its process of internationalization. This can become harmful not only because the continuous entrance of capitals in a Country where the allocation of resources is not optimal (an example is the influence of the government in the decisions of which firms should be financed by banks and obviously the majority of funds are addressed to state-owned enterprises even if they are on average less productive) may finish to feed speculative bubbles, but also because it can be suddenly reverted in a scenario characterized by a sudden outflows of capitals if investors change their expectations. A repentine outflows of capitals is detrimental for every economy, however, it is more dangerous for a Country with an exchange rate that is not fully flexible since the maintenance of the basket peg in the presence of high pressures for devaluation may become impossible.

For this reasons, China should open its capital market carefully and at the same time pursuing the objective of adopting a flexible exchange rate regime but also solving the numerous problems of its financial and banking system.

First of all Chinese authorities should implement effective prudential regulations useful to deal with the risks of an increasing volatility of capitals such as the prediligence for a long-term maturity debt and the taxation of short-term capital inflows, in order to favor the entrance of more stable forms of capital less likely to be easily reversed. An example of inflows that are less volatile than other kind of investments are the Foreign Direct Investments, which bring the critical issue of the foreign acquisition of some Countries durable goods, but also the possibility to acquire new technology and experience from abroad from a form of investment which is less risky in terms of the possibility of being reverted with respect to Portfolio Investments or other investments. Thus, controls on this kind of capital inflows may be removed firstly and, only when the consolidation process of the financial system is achieved, even the other controls on different forms of short-term investments may be relaxed.

However, not only Chinese monetary policy authorities should follow the strategy of prudential regulation, but also market participants themselves should understand the important role they have as a defense against the risk brought by the increasing volatility of capitals. In fact, one of the most dangerous situations of capital outflows is the case in which these capitals were used to acquire debt of home banks and sovereign institutions. Thus institutions should be careful to the level of their foreign debt and banks must manage narrowly their balance sheets avoiding to finance too much of their investment with debt rather than with own capital.

Finally, another way to reduce volatility in financial markets is to support the action of institutional investors since their strategy are less erratic than the strategies of private investors, more subjected to information asymmetries and guided by news and interests.

Only with these cautions and accompanying this gradual process of liberalization to the achievement of a fully flexible exchange rate, chinese authorities will be able to reduce the risks associated with an open capital market and to reach without too much costs their final objective of making the Renminbi an international currency, used as a mean of exchange but also used in trade settlements and in financial agreements, a store of value and a widespread foreign reserve.

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