A Case Study of the Controversies of the Chinese Currency Regime
Abstract
The debate on whether or not the Chinese currency is undervalued has been one of the most intensely debated economic subjects in recent times. The opinions amongst economists as well as politicians are all but homogenous. Through several different calculations, it has been estimated that the Chinese currency is undervalued, and should be appreciated, by as much as 30%. On the other hand there are several economists who think that this would cause severe damage to the Chinese economy with a clear risk of throwing it into a recession. Those who believe the latter either argue for no change from the present exchange rate policy until significant actions have been taken to sanitise the financial markets, or else that small liberalisations of the restrictions on capital flows are needed first.

We make our own extensive examination of current theories and how they apply to the specific Chinese data. For instance data on China’s trade balance and the open market actions of the People’s Bank of China to maintain the exchange rate to the dollar while at the same time trying to keep its inflation goal. We also take a deep look at the Chinese domestic markets, the financial system, the possible effects on investment levels of abandoning capital restrictions etc. Eventually, we come to the conclusion that small gradual liberalisations of the restrictions on capital flows at the same time as the country takes serious measures to deal with its weak financial system is the best medicine for China.
1. Introduction

1.1 Case introduction
During the last ten years China has been one of the world economy’s main engines. As its economic power has increased so have the concerns from other countries that it is becoming too dominant. The hardest critiques against China’s economic policies have come from the US, which is arguably the country that, more than others, has been affected by China’s evolving export industry.

Furthermore, there are concerns about how China is to sustain a high growth, something that has become increasingly important for many countries as well as the world economy. Most experts have a rather homogenous understanding of how the Chinese data looks; a strong continuous net trade surplus to the rest of the world, a huge and growing bilateral trade surplus to the USA and a huge and growing foreign exchange reserve caused by open market actions to preserve the nominal exchange rate. On the other hand that is basically all they agree on. Somewhat simplified one might say that the two main approaches to analysing the Chinese exchange rate are as follows;

1) The equilibrium exchange rate for the Chinese currency can be calculated on the basis of its trade balance exclusively and is where no open market actions are needed from the Chinese government to maintain the exchange rate. China may be able to temporarily sustain subsidizing its export industry through maintaining the low exchange rate to the dollar, but in the long run this policy is unsustainable and will hurt both the Chinese and the world economy. Furthermore it is a policy that risks provoking counteractions, like tolls on Chinese goods, from China’s major trading partners. Hence, China should take drastic measures to adjust its exchange rate to its long run equilibrium level, sooner rather then later.

2) It is not possible to calculate equilibrium exchange rates in such a complex and restricted economy as the Chinese. Given the present strong restrictions on moving capital abroad and the present high savings rate of the Chinese economy it is very possible that an ease on capital movement restrictions could result in a large Capital outflow, dramatically altering the present exchange rate expectations. Furthermore, given the present state of the Chinese financial
markets there is a big risk that China may find itself in a severe financial crisis should it appreciate too drastically and too fast.

Thus, the evaluation of the RMB\(^1\) exchange rate and of what policies China should undertake depend greatly on what importance you attribute the various arguments of those two schools.

### 1.2 Method and Purpose

The purpose of this thesis will be to examine whether a dramatic appreciation of the RMB is necessary, what impacts it might have on the Chinese economy as a whole and what strategy should be employed to manage a soft landing of the Chinese economy (that is how to manage cooling down the overheated economy without causing a financial distress).

As mentioned above, the key differences between the different schools of thought on how to evaluate those issues are in how an opening of China’s capital markets would effect investments and how well China’s financial sector could handle the setback for the export sector that would follow on an appreciation. Hence, these key differences will have to be the focal points of our investigation. But there is a lack of reliable undisputed data on exactly what would happen if the capital markets were opened and the currency significantly appreciated. Qualified guesses from renowned economists on the subject have varied greatly. One extreme is that removing the capital movement restrictions wouldn’t decrease appreciation expectations at all since the growing Chinese domestic markets would draw virtually all Chinese investment to those markets anyway. Opening up the capital markets might even draw more Investments into China in the short run since not only restrictions on capital movements out of the country, but also limitations on foreign ownerships etc would then be withdrawn (Roubini&Altig, 2005:4). The other extreme is that the resulting capital outflows could wipe out the appreciation expectations altogether perhaps even causing a depreciation of the RMB (Goldstein, 2004:16).

Because of these uncertainties we will not attempt to evaluate a “true” equilibrium exchange rate for the RMB. Rather, we will analyse the works and theories on the subject from various

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\(^1\) RenMinBi (or “People’s currency”) is the name of China’s currency, but it’s units are called Yuan (as are units of certain other currencies, american dollars are for instance called “Mei Yuan” in Chinese). There is then no such thing as 1 RMB (but possibly, if unusually, 1 RMB Yuan), but in contexts that don’t involve numbers it is usually the term RMB and not Yuan that is preferable. In English literature (including some of our reference articles) the terminologies are sometimes confused.
economists to deduct our own conclusions on what policies the Chinese government should undertake to manage a soft landing of its economy. We will begin by a quick background view of the data regarding the Chinese economic growth and related issues, then discuss some relevant theory, study the Chinese financial system (and it’s weaknesses) in greater detail, discuss the risk of financial distress and a “hard landing” (and in particular the phenomena known as a “liquidity trap”), finally we will analyse different policy possibilities and try to reach a conclusion of our own on what policies the Chinese government should implement to manage a “soft landing” of their economy.

Even though much of our later calculations will be based on the official Chinese statistics we find it wise to remind the reader that these statistics sometimes tend to exaggerate positive figures. For our purpose however, the figures work well as indicators since we do not intend to make any exact estimations.

1.3 Background

During the last 25-30 years, China has experienced a dramatic economic growth. Its persistent GDP growth has been in the region of slightly below 10 percent most years. Adjusted for PPP, this value becomes even higher. The official statistics show that the average GDP growth, compensated for PPP, for the years 1981-2002 was at 12.65 percent. Compensated for PPP China is now the second largest economy in the world after the USA, and when not compensating for PPP it is no 4 after the USA, Japan and Germany (CIA, 2005).

Furthermore a large part of this growth is derived from a rapidly growing export market for Chinese goods and services. In fact both Exports and Imports have become very large, and growing, parts of total GDP, with imports lagging slightly below exports (see graphs below).

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2 For instance, the investment bank Goldman and Sachs have due to the somewhat shaky Chinese statistics calculated their own GDP growth for China. This showed to be quite different from the official one. According to G&S China’s GDP growth for 2004 was on average 3.4%, whereas the number given by the official Chinese statistics was 7.4%. This of course is an extreme example, which has been included merely to illustrate our point about caution (Kim et al, 2004)

3 Purchasing Power Parity means that incomes have been adjusted for price differences on an index of base commodities between countries. (Blanchard, 2003:205)
China’s growth has not been completely without controversy though; particularly the huge bilateral trade surplus it has had towards the USA in recent years has been cause for some significant American concerns. There are concerns that China may be manipulating its currency to subsidize its exports and the US congress has threatened to pass bills regarding high tolls on all Chinese imports unless China complies with dramatically revaluing its currency. The Chinese trade surplus to the USA has grown dramatically over recent years and China’s total trade balance has shown a positive net surplus since the mid 90s (see figure 1 above). However, China is a net importer with a growing trade deficit, when not taking its trade with the US into account (see figure 2 below)\(^4\).

\(^4\) The main reason for the Chinese trade deficit with the rest of the world, when not counting the US, is that many components and raw materials that the export industry needs are imported.
Figure 2: China’s Trade Balances in Real Terms, year 2000 US-dollars

(Source: Ecowin, US Census Bureau, econstats)

One trouble with an export that exceeds imports over time, when domestic capital is rather strictly tied within the country, is of course how to sterilise the capital inflows. In China’s case it is rather clear that its foreign exchange reserves have grown rapidly over the last few years and also the purchases of US state bonds by the PBoC\(^5\). The graph below shows the size of China’s official foreign exchange reserves

Figure 3: China’s monetary reserve

(Source: IMF; Goldstein, 2004:19)

From the table above we can see that foreign exchange reserves increased dramatically at two points. In 1994, having depreciated the RMB rather dramatically and committed themselves

\(^5\) People’s Bank of China (or “Zhonghua Renmin Yinghang” in Chinese) is the name of the Chinese Central Bank.
to a fixed currency regime, China introduced the RMB to the open markets\(^6\) (Liu, 2004:2-3). In the early 2000s China maintained its dollar peg despite the dramatic fall of the USD (econostats, 2006) The PBoC thus had to purchase a large amount of dollar assets to keep its exchange rate goals and this resulted in a large increase of its foreign exchange reserves. The data on China’s real effective exchange rate tell a similar story for the early and mid 90s. The large one time depreciation connected to introducing the RMB to the open markets in January 1994 caused the shift in the series below. This devaluation, however, went somewhat over the mark causing rampant inflation in the mid 90s and the real effective exchange rate increased rather dramatically despite that the nominal exchange rates were rather stable. The People’s Bank of China has since 1994 held the RMB strictly tied to the USD through a policy of allowing the dollar rate to deviate no more then 0.3 percent per day. For most of this time the RMB has been pegged to the dollar at a rate of 8.28 Yuan to a dollar (1995-2005)\(^7\)(Liu, 2004:1). Despite the decline of the dollar in the early 2000s China has managed to keep its dollar peg and real effective exchange rate relatively stable. This has been achieved, not merely by printing more domestic currency to pay for the dollars (that would

\[\text{Figure 4: Real effective exchange rate in China, year 2000=100}\]

An increase stands for an appreciation

Source: Coudert, Couharde, 2005:10

\(^6\) Before that only carefully selected Chinese entrepreneurs in the SEZs and equally carefully selected Foreign Investors were allowed to trade the RMB in a resemblance of open markets (this system was known as the Swap exchange rate). For foreigners without access to the Swap exchange system a special currency known as Foreign Exchange Certificates (or “Waihuijian”) existed and could be exchanged into major foreign currencies at rates decided by the Chinese authorities, but ordinary Chinese had no access to currency exchange markets at all (Liu, 2004:1-2)

\(^7\) From July 2005 the RMB has officially been pegged to a trade weighted currency basket as well as the dollar, but there has been some significant discussion regarding the authenticity of that currency basket (see our discussion below on page 12)
have lead to rampant inflation and a rising real effective exchange rate), but also through sterilising the resulting capital inflows. That is to say: in response to the monetary base expansion, caused by purchasing dollars, the PBoC has implemented a monetary contraction (see later discussion on sterilisations).

Having now discussed data related to China’s dramatic economic growth and its continuous net export surplus, it might be of interest to the reader to know that despite its growth China still only ranks on 118th place in the world when measuring GDP per capita (PPP). In 2005, this added up to 1411USD per unit measured in current prices, this with numbers from 2005 (CIA, 2005) and an overwhelming part of the economic growth in China has been concentrated to the areas near a few big costal metropolises and early SEZs⁸. The vast majority of Chinese, however, still live in underdeveloped rural areas with very low standards of living. Hence, the above data paints a picture of an economy out of pace with itself.

2. Is the Chinese RMB (Remninbi) undervalued?

2.1 Sterilisations

When there are depreciational expectations on a currency in a fixed currency regime, the Central Bank will obviously have large problems holding speculative investors at bay. This since its foreign exchange reserves will quickly be depleted. China on the other hand is experiencing the reversed scenario. Appreciational expectations on the currency can be countered by the PBoC through using the RMB to purchase foreign exchange. When increasing the foreign exchange reserve in this way, it might seem that the PBoC’s abilities to do so are indefinite (since in theory it can issue more RMB bills indefinitely). But there are problems with holding back the increased liquidity, which occurs when the PBoC needs to pay for the foreign currency it purchases by issuing more bills. The expansion of the monetary base in turn creates inflation pressure, so it needs to be countered by issuing domestic bonds. However, bonds need to be repaid at an interest and if the interest is too low there will be no buyers. On the other hand it can be no higher then the prevailing market real interest rate (that is in the Chinese case it needs to be lower then the interest rate on dollar bonds, compensated

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⁸ Special Economic Zones were areas whose residents at an early stage were given the rights to set up and run businesses and enterprises as a part of China’s policies to experiment with market economy in a small scale. These regions were also given significant cuts on export and import limitations at an early stage (Wikipedia, 2006)
for differences in appreciation expectations). This means that the market for such domestic bonds will quickly become saturated.

This kind of open market actions to absorb liquidity is called sterilizations (Lee, 1997). However, it does not necessarily have to be done through issuing domestic bonds. One alternative to using domestic bonds for this purpose is to purchase foreign bonds and then selling them on in domestic markets. Buyers will then either use up parts of the dollar surplus (accumulated through the net export surplus and the positive net capital Investments) or exchange RMB for dollar assets at the fixed exchange rate. In either case, monetary expansion can be kept at bay in the short run. Buying US state bonds is a strategy, which China has used to an increasing degree in order to sterilize its capital inflows (Heng, 2002).

However, from the perspective of the US trade deficit to China, this means that the capital outflows sustained through the deficit are in turn loaned back to the US government at an interest, temporarily financing it’s famous “twin deficits” while at the same time helping the Chinese government continue “subsidizing” it’s export through the exchange rate.

### 2.2 The underlying balance approach

The underlying balance approach is commonly used by the IMF when analyzing exchange rates. The core of this method is that it views the equilibrium exchange rate as being where there is also equilibrium in the countries balance of payments. Furthermore, this situation can be described as one where the net capital flows used are taken as averages of the real net capital flows over recent times. The latter is done to get away sharp year to year fluctuations. In addition to this, a proxy for the current account is used; this is the underlying current account. The idea with this is that the underlying current account should weigh in the importance of lags as well as cyclical effects. The underlying balance approach then bases its calculations on that the average net capital flows should be the same as the underlying current account (Goldstein, 2004:3). It is important to note that it is only in theory that the capital and the underlying current account can be said to be that same. If this would be the case then the sum of the countries in the worlds total current account deficits should equal zero (Blanchard, 2003:385). According to Blanchard (2003:386) the world is in this case running a large current account deficit. Hence, there is a probability that there exists a quite large error in the world’s balance of payments statistics.
Furthermore, when estimates for the net capital flows (averages) and the underlying current account have been calculated a so called trade model can be used to estimate the change in the nominal exchange rate. Thus, this change would be of the kind that current and capital account would equal each other (Goldstein, 2004:5).

According to Goldstein (2004:4) China’s average net capital flows were for the period 1999-2002 approximately a 1.5 percent surplus of GDP. Furthermore, he means that the current account surplus is around 3 percent of GDP. On the other hand this is only partly of significance, because to calculate the underlying balance approach we need the underlying account; that is the current account to also take account of time-lags and cyclical fluctuations. Hence, these calculations put China’s underlying current account balance at close to 5 percent. Thus, to make the before mentioned equilibrium of underlying current account balance and the net capital flows to be achieved a 15 to 30 percent appreciation of the Chinese RMB would be needed. A real appreciation of the RMB should lead to an increase in imports and a decrease in exports that eliminates the disequilibrium (Blanchard, 2003:406). Hence, when achieving the magnitude of the appreciation, elasticities that satisfy the Marshall-Lerner conditions have been used (Goldstein, 2004:8).

A main contributing factor to the sizeable appreciation recommended is due to that China has such a large part of import incorporated into their export. This is hardly surprising since China is often referred to as the world’s workshop (due to the fact that most of the worlds low to medium quality goods is produced here; China imports large amounts of low and high tech goods and produces low and medium quality goods). The reason for this is that if the RMB appreciates then imports will become cheaper and the real effect on export prices will be less than if imports had not been such a significant part of exports (Ahrén, 2005:64). A concern with the underlying balance technique is that today’s exchange rates are influenced very little by the trade balance. Instead they are heavily influenced by the international financial streams. Thus, the underlying balance approach should work quite well with China considering its strict restrictions on financial flows, especially money leaving the country (Ahrén, 2005:66). If on the other hand China’s harsh restrictions on financial flows would to a certain extent be relaxed it would have significant impacts on the above mentioned underlying balance approach. According to Goldstein (2004:16) if this would happen then for example a 5 percent increase in Chinese holdings abroad would be more then enough to swipe today’s
misalignments of the map. On the other hand he means that this would be the wrong strategy and not a likely scenario.

2.3 The Balassa-Samuelson Hypothesis
The Balassa-Samuelson hypothesis is another way of calculating estimates for an equilibrium exchange rate than the above mentioned underlying balance approach. The basic idea behind the Balassa-Samuelson hypothesis is that rapid economic growth should lead to an appreciation of the real exchange rate (Krugman, 2006:387). The reason for this is that a rise in TFP (Total Factor Productivity) for the tradable sector will lead to increased wages not only here but also in the non-tradable sector. This is because of the wages in the non-tradable sector will rise just as those in the tradable sector causing an increase in the prices of non-tradable goods (due to domestic labour mobility between sectors). Hence, because the increase in price level will lead to increased inflation there will be an appreciation of the real exchange rate. Frankel (2004) means that what causes the misalignment in China is that they have kept their inflation down by extensive monetary sterilisation. This in turn has seemingly prevented an appreciation of its real exchange rate altogether (see graphs 3 and 4). When using the Balassa-Samuelson approach fairly similar numbers to the underlying balance approach concerning the misalignment of the RMB are achieved (Frankel, 2004:13). Frankel (2004) by using the Balassa-Samuelson hypothesis comes to the conclusion that the RMB is undervalued by at least 35 percent.

2.4 Underlying Reasons for Appreciation proposals
Both Frankel (2004) and Goldstein (2004) mention a few different reasons why China should appreciate the RMB. Both of them have, on their own, arrived at the same conclusion in one case. This is that it is in China’s best interest to initiate an appreciation. Hence, they mean that this is the best way for China to deal with the risk of an overheating economy. They both agree on that this is the best way for China to achieve a soft landing; in other words avoid rapid inflation and at the same time not put the economy in a stall/recession (Frankel, 2004:10). Both Frankel (2004) and Goldstein (2004) argue that this step should begin with an abandoning of the peg to the dollar which should be replaced by a currency basket. Furthermore, the trade band on this basket should be considerably wider then what it was to the dollar peg, a suggestion is somewhere between 5 and 10 percent.
Since their articles have been published China has adopted a currency basket instead of the old dollar peg (Chinese embassy in the US, 2006). Too some dismay though, they (China) have refused to release the exact currencies as well as their weights to their basket. What has been released is the trading band, which is still very restricted; it lies at 0.3 percent a day towards the dollar (same as before) and 3 percent against the other currencies included in the currency basket. In addition to this, the PBoC has also released the information that the currency basket consists of China’s trade partners and that their (currencies) influence on the basket depends on the size of their trade with China. Hence, the heaviest weights are the dollar, euro, yen and the won (China Daily, 2006). The commitment to the currency basket is most insecure. The band width, which determines how much the RMB is allowed to fluctuate, is still the same. Furthermore, there is something as strange as a double tie for the RMB. First of all it is tied to the currency basket but also specifically to the dollar. According to McCallum (2004:4) this should be impossible if the two pegs move in different directions. China has managed this so far by widening their peg towards the currency basket (which is now 3 percent). Eichengreen (2006:23) through a simple econometric model of basket pegging examines if the new regime has led to more flexibility. His conclusion is that for certain quarters some of the basket currencies have been significantly different from zero (that is had an impact on the RMB exchange rate). Over the whole examination period though only the dollar was of significance. The data material was not sufficient for any lengthy conclusions but it seems as if the new basket has not led to more flexibility (Eichengreen, 2006:25).

Much of today’s theory, experience and research points towards that it is much better to initiate monetary reforms during times of growth and as mentioned many believe that China needs to cool down its economy. Furthermore, Frankel (2004:12) presses that in China’s case a strong currency reserve is already reached and further strengthening it is just an unnecessary cost for China. The reason for China’s which to hold a strong currency reserve is that during the Asian crises eight years ago countries with large currency reserves were the ones that were able to ride out the storm.

Since China has its exchange rate fixed voices have been raised that a tightening of their fiscal policy could achieve more or less the same results as monetary policy manipulation. This is something Goldstein (2004:35) argues against. He means that a tightening of China’s fiscal policy is not enough to deal with the above mentioned problems of overheating. This is
further emphasised by a Goldman-Sachs research report by Kim et al (Goldstein, 2004:34). Here they conclude that even if a tightening of the fiscal policy would achieve some extra time for the Chinese ruling party to postpone changes to the financial system it is insufficient to deal with the problems in a long term perspective. The underlying reason for this is that a tighter fiscal policy fails to deal with the core of the problem (Goldstein, 2004:35). These core problems are high inflation and an excessive investment size. Furthermore, for a country like China that has enormous problems with energy distribution, inadequate infrastructure as well as numerous other areas that are in need of fiscal spending a fiscal tightening could very well prove to have many unpleasant side affects. Furthermore, Kim et al (Goldstein, 2004:34) mean that China’s current situation is not one that holds to achieve a sustainable long term GDP growth.

According to Goldstein (2004:36) the greatest threats against China’s long term growth are protectionist actions among its larger trading partners as well as a large economic set back due to the economy overheating. Frankel (2004:17) on the other hand points towards what he sees as the greatest danger against China; achieving a long term sustainable growth is that China will not be able to handle the consequences of an overheating economy which in his point of view is what China is headed for. Both suggest that the best way to handle the problems is an appreciation of the RMB. This suggestion has much to do with China’s financial system.

3. China’s Financial system
China’s financial system is complicated, to say the least. Most financial systems are complicated with considerable power to those who know how to navigate them. In the case of China there are often no clear guidelines, rules, regulations nor clear boundaries to separate the different aspects of the system (Eichengreen, 2006). Here we will give a brief overview of China’s financial system with an emphasis on its weaknesses.

3.1 China’s Commercial Banks
To begin with the four big commercial banks in China are state owned. Furthermore, the PBoC (Peoples Bank of China), which is the Chinese central bank, stands under state control as well. This raises quite a few difficulties. To begin with the state owned banks have given an excess of loans to SoEs (State owned Enterprises) for a long time. Since both parts have the same owner there has been no risk management when these loans have been granted. Hence,
the state owned banks today have an enormous amount of NPLs (non-performing loans); a NPL is when “payments of interest and principal are past due with 90 days or more” (Wikipedia, 2006). According to the economist (2004) the sum of the Chinese banks non-performing loans was 40 percent of GDP. The government has in recent times given the banks sanitation packages to rid themselves of at least part of their NPLs. According to a new report from Ernst and Young made possible by the more open Chinese financial market the NPLs amount to 900 billion USD. This is more than what China’s monetary reserve amounts to (they are around 860 billion USD) (Sandsröm, 2006).

In 2007 the Chinese banking market will be opened for outside competition. The government is in a hurry to transform the state owned banks until then. Several reforms have already been made for example an expansion of the forward market which allows all banks with a license (foreign as well) to transact RMB forwards, swap contracts with clients as well as being allowed to set their own forward rates (Eichengreen, 2006:5).

Even though the Chinese government has relaxed many of its regulations concerning the banking sector due to its commitment towards WTO (World Trade Organisation) there are still considerable problems with its banking system. First and foremost the state owned banks have limited knowledge of calculating risk on investments (Hutzler and Pottinger, 2004). For example many private borrowers receive their loans not by being eligible but through guanxi⁹. This together with the widespread trouble of corruption has led the Chinese banks to extended centralisation; many local branch offices have been closed and much of the lending decisions have been moved to bigger main offices (Eichengreen, 2006 and the economist, 2004). These kinds of changes have had effect; unfortunately these effects have been less then anticipated due to problems with weak corporate governance; the problem is that the Chinese have little experience with it and henceforth it is weak. Among other things this leads to trouble with the implementation of new policies as well as achieving a tight company structure (Tricker, 2000). The Chinese banks have tried to take measures against this by employing overseas managers and consulting agencies. The smaller banks have been more successful in the latter years, earning for example much higher returns on equity. This mainly has to do with that they have lager foreign ownership. This is to our knowledge still limited to 20 percent; on the other hand the large foreign banks have been weary of investing in the big four. This mainly

⁹ Basically it is a network system of favours and knowing the right people.
has to do with the size of the investment needed as well as the high risk involved with it (the economist, 2004).

3.2 The interest rate
Since China has a fairly fixed exchange rate the central bank has no possibility to affect the economy with the exchange rate (for example selling government bonds on the international bond market). Since all capital flows out of China are tightly regulated a shift in the interest rate becomes a very clumsy tool to deal with in this case the problem of overheating. Last time there was a rise in the interest rate (October 2004) it led to widespread bottlenecks (among other things) due to difficulties for companies to buy raw materials because they lacked money (Tan, 2004). This time around the new rise is to recent (27 April 2006) to draw any direct conclusions (Myrsten, 2006). Furthermore, the possibility to buy forwards on international currencies is not available due to the tight controls on money leaving the country. Hence, companies/banks have no possibility to hedge the risk for increased volatility in the RMB, its exchange rate or the interest rate (Eichengreen, 2006:14). Buying forwards is put simply when a buyer and a seller agree on price and a future date when that amount and the commodity will be exchanged (Ross, 2005:851).

3.3 The Equity Markets
The fixed exchange rate has led to further problems for the PBoC. First of all it has trouble sterilizing its monetary base. When the PBoC buys dollars to keep its peg it must also sell long term bonds to avoid an increase in the monetary base. The problem here is that long term bonds have to low interest which leads to no buyers. Hence, it is inevitable that the monetary base increase as well as the pressure towards higher inflation. This is worrisome when many indicators point towards that the Chinese economy is overheating. As mentioned before the interest rate has been raised recently but this becomes a very difficult weapon to use especially for a country more concerned than others about sharp declines in its real GDP growth.

China has in recent years had the world’s largest amount of foreign direct investments (econstats, 2006). This has of course been an important contributing factor to its rapid growth; even more so when considering its domestic markets alternatives to raising capital for investments. The Chinese securities market is in poor shape. To begin with the security market can be divided in two parts, one concerning equity and one concerning debt. The former in most cases leads to some kind of ownership in the company (like when one buys
stock). The latter gives a higher rate of return (due to higher risk) and can in some cases also lead to ownership (most commonly in start ups and old large companies that are trying to renew themselves where much debt is bought by risk capitalists) (Ross, 2005:25).

In recent times the Chinese stock exchanges in Shanghai and Shenzhen have had an utterly poor growth compared to the countries overall growth. The main problem of the stock markets is that the government holds 70 percent of the available shares. This leads to little volatility on the stock market as well as making it difficult for companies to raise equity from other investors than the government (Dyer, 2005). Furthermore, most of the stock is non tradable and only used by companies to retain significant ownership (Johnson, 2005). There has been more movement on the handling of debt but clear rules; guidelines and controls have led to that this has been ill functioning.

The government has been unwilling to sell its shares. Mainly for two reasons; it believes that if it sells some of its stocks it will remind the market of how much unsold/non tradable stock there is on the market. The more pressing issue is that the government does not want to leave the SoEs, many of which are ill performing, to the mercy of market forces. There is a significant risk that this would lead to quite a few bankruptcies and reform packages. These in turn could lead to an unwanted rise in unemployment (Johnson, 2005).

In conclusion one can say that the main problem of the financial market lies in that everything has the same owner. The government does not want to risk state owned banks to the exposure of a more flexible exchange rate due to fears of how this would impact on the razor sharp margins of many of the SoEs; poorer results for the SoEs may very well lead to an increase the amount of NPLs which may lead to distress in the banks. Furthermore, an expansion the stock market is sceptically viewed by parts of the Chinese government due to the risk of bankruptcy for some SoEs.

3.4 Implications of the weak financial system

Most, if not to say all recommendations that are based on some form of neutral economic theory do to some extent take the weak Chinese financial market into account. Hence, calculations of the equilibrium exchange rate for the RMB that conclude an undervaluation of the RMB by about 30 percent take this into account. The misalignment is consequentially recommended to be dealt with by a one time appreciation in the same size as the misalignment since Chinese banks would not be capable of handling a floating exchange rate.
Hence continued tight restrictions are needed on the outflow of capital. There are worries that an extensive relaxing of the outflow of capital would actually lead to that the RMB depreciated. As mentioned before: due to the high Chinese savings rate even as small a reallocation as 5 percent towards international savings could lead to depreciation (Goldstein, 2004:16). What is considered worrisome in the scenario is that the Chinese banks with their high lending would not manage to pay their clients. This would lead to further worries and may lead more massive outflows. Even with a huge monetary reserve like China’s it is impossible to withstand the free movement of the open financial market (Eichengreen, 2006:27). The latter part of this scenario has a lot in common with Asian crises during 1997-98.

4. Against an appreciation

4.1 The uncertainties of exchange rate calculations
According to McKinnon (2003:5) the above mentioned calculations, especially the elasticity models of trade, are not correct to use in this case. His argument is that a current account imbalance is based on a domestic imbalance between savings and investments. Thus, McKinnon’s point is that since the current account imbalance has its base in the domestic market a change in the exchange rate will more or less leave it unaffected. When a currency appreciates the domestic price of imported goods will decrease. Furthermore, since domestic export goods are seen as more expensive in foreign exchange their prices will go down in domestic exchange which in turn will lead to cheaper prices (domestically). Hence these two effects will leave the proportions of the trade imbalance intact (McKinnon, 2005:6). On the other hand an appreciation has two more channels to affect the economy with. An appreciation will lead to that the country seems like a more expensive place to invest in; especially to companies with significant imports and exports. This leads to a slump in investment, mainly FDI but also domestic investment. Furthermore, an appreciation leads to a loss of wealth. In the case of China they have long been achieving net dollar assets. If the RMB were to appreciate these net dollar values would reduce in value (McKinnon, 2005:7). A reduction in wealth leads to a reduction in consumption (Blanchard, 2003). Hence, an appreciation may not affect the current account balance but only the domestic market activity, that is slow it down. Furthermore, when Frankel (2004) argues that the RMB is undervalued by as much as 35 percent he misses one important point, domestic restrictions on capital and labour movement. Krugman, (2006:387) means that the Balassa-Samuelsson effect that
Frankel (2004) uses is only appropriate to use when there are no formal restrictions on domestic and capital movements. In the case of China which has large such restrictions calculations based on this method tend to be misleading (McKinnon, 2005).

**4.2 The Bench Mark Approach**

As has been mentioned before China has undergone a remarkable transformation in many areas but some areas, such as the financial sector lag behind. Thus, the PBoC has trouble relying too much on cumulative goals of interest rates and money growth. In an open exchange rate market knowledge of these indicators are of importance for the PBoC to know if monetary policy is too tight or not. Therefore it is a good indicator to use the RMB peg to the dollar as an indicator/”monetary anchor” (McKinnon, 2005:8). Monetary policy is then used to hold the peg and further usage of it in the economy is not possible. The fiscal policy can then be implemented freely but with one restriction it can not be too offensive or defensive in ways that would prevent the monetary policy from being able to hold the peg (Mckinnon, 2005:9). That is why it is called the bench mark approach because the tied exchange rate is a bench mark to be used when other estimates can not be trusted.

**4.3 The Liquidity trap**

Traditionally people want to hold more money and fewer bonds as the interest rate decreases. This leads to an increase in the demand for money. This scenario hopefully leads to increase in out put and that the wheels of the economy begin to spin faster again. If on the other hand expected returns on investments in securities or real plant and equipment are low and falling there will be a decrease in investments. Hence, there will be larger holdings in money and the before mentioned monetary policy will have limited/no effect. The interest rate we have mentioned is the nominal interest rate. One limitation of the central bank is that it can not decrease the nominal interest rate below zero. The problem is that even if a nominal interest rate will be lower it is the real interest rate that is of importance to stimulate the economy; that is the nominal interest rate minus expected inflation. If the nominal interest rate is zero but expected inflation is negative then there would be a positive real interest rate. This is what happens in the liquidity trap; even though there is an increase in money it does not effect consumption. People hold more money because they earn interest in real terms.
Looking at the problem from an IS-LM\(^{10}\) point of view one might say that the LM curve flattens out at a zero interest rate and shifting the LM curve through increasing the monetary base is of no use as long as the LM curve remains flat. Then there is the problem with expectations. As Krugman (1999) puts it: “No matter how much the monetary base increases, as long as expectations are not affected it will simply be a swap of one zero-interest asset for another, with no real effects. A side implication of this analysis (see Krugman 1998) is that the central bank may literally be unable to affect broader monetary aggregates: since the volume of credit is a real variable, and like everything else will be unaffected by a swap that does not change expectations, aggregates that consist mainly of inside money that is the counterpart of credit may be as immune to monetary expansion as everything else.” (Krugman, 1999:10).

### 4.4 The Problems of Relaxing Financial Regulations and China’s Liquidity Trap

Even though there is an apparent need to cool down the Chinese economy this is accompanied with many risks. According to some economists even a small liberalisation of China’s financial restrictions may lead to severe difficulties for the country not to mention huge appreciations like the ones mentioned earlier.

A more liberal stance towards financial restrictions could as mentioned before be a good way to cool down the Chinese economy. Furthermore, we have also said that it is good to implement changes like this when the economy is expanding. So from this perspective a relaxing of financial restrictions would seem as a good idea for China. There are some aspects that we have not yet taken in to account though. For example China today pegs most interest rates but there is one that is allowed to fluctuate quite freely, the inter bank interest rate (McKinnon, 2005:9). This interest rate is already quite low, around one percent. The problem with this is that there is market expectation/pressure on a RMB appreciation; this means that the there must be a compensation (balance) between holding interest bearing assets in dollars and RMB. Hence, due to the mentioned market expectation those holding dollars must be compensated with a higher rate of interest. In China’s case this is nothing they can control since the dollar interest is set by world markets. What China can control is their own domestic interest rate. At the present scenario the mentioned inter bank interest rate is very low, on the

\(^{10}\) The IS-LM model is an approach that doesn’t take into account things like price determination, the consequences of capital accumulation etc. But if we assume rigid prices and make an approximate model examining the equilibrium of the liquidity trap it may serve to illustrate the situation.
other hand the US interest rates are rising; this would make the present situation durable from a Chinese perspective. A liquidity tarp could be imminent for China if the US interest rates were once more to decrease. If the balance where to be broken (for example by a US decrease in interest rates) and the interest rate on RMB does not fall fast enough there will be a large inflow of “hot money” (currency speculation\(^{11}\)) (McKinnon, 2005:10). The PBoC will then be forced to buy dollars in open market actions which will increase the monetary base (remember the before mentioned problem of China sterilizing money). This in turn will lead to a decrease in the interest rate until it hits zero. McKinnon (2005:10) means that for China the most eminent part of the problem comes if China were to allow an appreciation. This he means will cause deflation which will have the consequences of a decrease in investments and an overall stagnation of the Chinese economy. Hence, the country will find itself in a liquidity trap where expensive monetary actions will be without result.

We have clarified this chain of events with an IS-LM diagram. The buying of dollars will lead to an expansion of the monetary base, hence the downward shift in the LM curve. Furthermore, if the RMB were to appreciate this would lead to a decrease in investment, hence the downward shift in the IS curve. When viewing the diagram it is evident that a further increase in LM (from LM\(_2\)) will have no effect on output (Y). Thus, the name liquidity trap; all further liquidity that is added to the market will be caught in the trap (Blanchard, 2003:461).

\[^{11}\text{George Soros has through investment/speculation on different currencies caused major turmoil and crises in several countries by targeting unhealthy financial markets and exchange rate misalignments. This has been done by investing vast amounts of money on what will happen to certain currencies (the pound, d-mark etc). If it is an appreciation investors think is what will happen there will be an inflow of money which will quickly disappear if the perceived event takes place (Pugel, 2004:432-433).}\]
4.5 The Middle Road

The recommendation of a large one time appreciation is said to best take account of China’s as well as global interests. The problem is that it fails to take account of, for one thing, the other side of the problem of NPLs. If China were to appreciate the RMB by as much as 30 percent it would mean severe troubles for the razor sharp margins of its export sector. This could very well lead to widespread troubles of bankruptcies. This would furthermore drive up the amount of NPLs to such an extent that it could damage also the banking sector.

Furthermore, the proposal of a one time appreciation does not take into account that companies in China lack the possibility of hedging against changes in the exchange rate. There is a possibility for the large international companies to do so which also includes the Chinese joint venture firms (an international firm that has some form of co-operation with a Chinese firm). The hedge can work in a way as accumulating assets “that co-vary negatively with the profits of the Chinese export enterprises” (Eichengreen, 2006:16). Furthermore, they can, to quite great extent, diversify their production locations.

We have before discussed how a relaxing of the financial restrictions may affect the Chinese banks. What we did not mention then is how an appreciation could affect them. An appreciation could have implications for China’s export driven economy. Even though China also has significant imports (which would become cheaper) the margins of many Chinese industries are razor sharp (McKinnon, 2005:5). This is not true for all industries but for many of the labour intensive SoEs it is. Hence, the even tighter profit margins may cause bankruptcies in these companies and further defaults on loans. This would lead to a further
increase in the NPLs. Furthermore, this may in turn cause trouble with the already insolvent Chinese banks. If they are burdened with even more NPLs there is a risk that they would not be able to raise enough liquidity to stay afloat. In this scenario a bank crisis would further accelerate the downward spiral. Hence, this will cause a recession or a deepening of an already existing one (Eichengreen, 2006:10).

5. Lessons from Japan

Now, how is it possible for a country to have an unemployment equilibrium real interest rate below zero and precisely what does this have to do with the issue of the exchange rate of the RMB?

Well, to answer the second question first, it involves similarities between China’s present situation and Japan’s in the past. The conditions in Japan during much of the 1990s and early 2000s have in many ways resembled those of a liquidity trap, a severe recession with a very large savings quota despite a nominal interest rate of approximately zero. What then are the similarities between the Japanese case and the Chinese one?

Of course China and Japan share a number of cultural traits and have a long common history as neighbors (although not always very cordial ones), but more to the point they share a more recent history of having managed periods of rapid economic growth coupled with huge bilateral trade surpluses to the USA. Both countries have consequentially, when those trade surpluses were large enough to be perceived as a threat, been pressured by the US to take measures to adjust those surpluses, in the Japanese case both through “voluntary” export limitations on certain goods and revaluing their currency to the dollar, in the Chinese case primarily through revaluing their currency (McKinnon, 2005:2-4).

Japan generally complied with those American requests, cooling down the growth of their strongly export oriented economy, and this may have contributed to making Japan more vulnerable to the recession that Japan experienced in the 1990s (and is still only gradually recovering from). Furthermore, a primary trigger of the crisis in Japan was the inability of the relatively inefficient financial sector to handle a bursting financial bubble (involving everything from real estate to the high tech industry). This has its background in that the Japanese financial sector was heavily burdened by nonperforming loans and the troubles in the banking sector resulted in a severe slump in the loan market which may have further
prolonged and worsened the crisis through a phenomena called a “credit crunch”\textsuperscript{12} (Ishikawa&Tsutsui, 2005:1-2,26-27).

China too has a vulnerable financial sector with heavy government involvement and a large degree of nonperforming loans to government subsidized companies and the real estate market is experiencing a huge boom which might indicate the beginning of a bubble. There are however also some significant differences between China and Japan. First and foremost there is the simple matter of size. Japan is a relatively (compared to China) small nation consisting of scattered overcrowded (although the population is dwindling) Pacific Islands. Japan has few natural resources and a limited potential in its domestic markets. Thus it is dependent on trade of goods and resources with the outside world (this did not prevent Japan from becoming the second largest economy in the world, but it does mean that the Japanese economy is extremely dependent on international trade).

The resources Japan needed to secure its industrial prowess and economic wealth; it first tried with some temporary success to acquire through conquering and occupying its neighbors by military force. It later had much greater success in establishing itself as a workshop first for relatively low quality low price products produced by industries that were initially rather heavily subsidized, and later as the competitiveness of Japanese companies increased and as wages went up gradually to begin producing high tech high quality products that could compete successfully with similar products from western countries in international markets. The Japanese success in this respect later served as a raw model for the four smaller “Asian tiger economies” Singapore, Taiwan, Hong Kong and South Korea. But the bottom line is that the Japanese economy (as well as the Asian tiger economies’), even though it has become very huge, by default is extremely dependent on its foreign trade of goods and services and that attempting to increase the demand in the Japanese domestic markets may have little or no effect if there are prevailing problems in the export oriented part of the economy.

China by contrast is a continent in its own right. While this thesis generally discusses the issue of China’s currency regime from the perspectives of its growing exports (and seemingly continuous positive net exports) and it’s growing bilateral trade surplus with the USA, it is

\textsuperscript{12} Basicly that there is a shortage on the supply side of the loans market due to the financial distress of many banks. This in turn causes a shortage of Investments which further deprecess the economy, causing more bankruptcies among heavily indebted companies which further contributes to the financial distress in the banking sector etc.
important not to forget that China is not only “the workshop of the world” but also it’s future market. The tremendous potential of the growing Chinese consumer markets is at least as much the focus of the day as the superiority of the Japanese management system was in the 1980s and bestsellers like “One billion customers” and “The Chinese century” are found on bookshelves everywhere. Rick Yan wrote an article (Yan, 1998) that generally warns business managers that they shouldn’t put aside all normal considerations of profitability in a reasonable time frame, merely because they invest in China and that the early mover advantage may not necessarily be an advantage at all times when investing in a developing changing market such as China. The latter because new reforms and an easing of restrictions may provide better opportunities for those who wait awhile and don’t tie themselves to the less profitable deals that might be the only ones available at an early stage. The fact that such advice is at all meaningful to give, should say something about the expectations on the growth of the Chinese domestic market.

One of the key differences then between China and Japan is the huge expectations (and by all means huge potentials) of the Chinese domestic markets, another the huge reservoir of low wage labor that remain in the less developed country side even as standards of living, education levels and pressures on wages are on the increase (Shenkar, 2005:45-49, 3-5).

The Chinese government is still in control of much of what is going on both on the financial markets and other “private” markets in China (it is as mentioned by far and large the biggest owner of stocks on the Chinese stock exchange for instance) and it has in many cases been able to use the “lure” of the Chinese market to get significant concessions of various kinds from the multinationals who want to set up businesses there, whether they do so as an Equity Joint Venture (Joint Venture with a domestic partner) or try their luck as a Wholly Foreign Owned Enterprise (which until the mid 90s was very unusual because of the restrictions of the Chinese markets) (Vanhonacker, 1997). The discussion on WFOEs vs EJVs is still very relevant, particularly in the financial and banking sector where substantial limitations on foreign ownership are still enacted (although they are being gradually eased see earlier discussions on the financial system).

China is not, and does not act, as a small open economy that acts as a price taker on the international markets. As such the rise of China is very different from those of the Asian tiger economies. Furthermore it doesn’t attempt in the Japanese way to specialize on production of
goods within a narrow frame of technology and labor intensity to gradually ease trade restrictions and let the gradually more competitive domestic companies gradually substitute low tech, labour intensive production for a high tech capital intensive one, instead China aims for the whole range all at once and it has the size for it (Shenkar, 2005:3-5).

If then the high expectations on China’s long term growth do prevail it may be possible for China to prevent or at least reduce the dramatic fall in domestic demand and consumption that has so plagued Japan. This also includes a case where a drastic revaluation occurs and results in a temporary severe setback for China’s export industry (nominal exchange rates can of course not influence trade balances in the long run, but in the short run dramatic shifts in nominal exchange rates may well trigger dramatic effects in the economy). The hope is that this will be achieved by China’s size (large domestic market) and the diversity of its industry. Still whether such optimistic views on the long-term growth of the Chinese domestic markets will truly prevail if China was to suffer a severe economic setback of the kind that might put it in a liquidity trap similar to Japan’s is a matter of speculation at best. The fact remains that China’s financial institutions and certainly financial markets are even less well developed then Japan’s were in the early 1990s and that the Chinese economy in general is much more restricted and regulated then the Japanese was. Clearly a huge revaluation of the Yuan should have some significant implications on the competitiveness of the Chinese export industry in the short run.

Having thus studied some similarities and differences between the situation that led Japan into it’s liquidity trap in the 1990s and China’s present economic conditions, let us return to the as of yet unaddressed question of how liquidity traps are at all possible. Given the high savings and the low interest rates, intuitively finding a marginal investment that gives a better rate of return then holding cash shouldn’t be so difficult and shouldn’t it be possible to invest abroad at a higher rate of return if the liquidity trap is geographically limited?

The answer is that, when it comes to investments abroad a currency risk is involved. In fact expectations on depreciation of a currency will equate any real interest differences between countries through arbitrage. When it comes to investing within the country it may well be possible to find investments with positive marginal products of capital. But given the high
level of saving, if we assume a “Tobin’s q\(^{13}\)” theory of investment, it would require a high value of Tobin’s q today to make investing those savings profitable, but expectations on the stock market are low (as a stock exchange crash typically is one of the starting factors for a liquidity trap) and so Tobin’s q will generally be relatively low. Furthermore, many potential investors may be heavily indebted and so unable to respond, even to very promising investment opportunities (Krugman, 1999:7).

Krugman (1999) further suggests three potential causes for the severity of the depression in Japan and suggest some possible remedies that might help against each of those causes. As we are now studying the possibilities of a future liquidity trap situation in China let us concentrate on the causes.

The first cause is very specific for Japan. It is what Krugman calls “structural problems” and regards everything from the demographic situation in Japan (with a huge number of elderly people and a very low fertility rate over time) to “waning technological vigor”. Although China very likely one day will face similar problems with demography (as a consequence of the one child policy) it isn’t quite there yet, and as for the rest of the “structural problems” they are as mentioned before specific for Japan so let us instead view the other two causes namely:

1) The collapse of the bubble economy put Japan into a self-reinforcing spiral of pessimism
2) The collapse of the bubble economy left many market actors heavily indebted and unable to find the means to invest even in what should have been very attractive opportunities.

(Krugman, 1999:7)

The first obviously suggest that the problem should be temporary at best as there is no rational ground for the pessimism to continue indefinitely and a push in the right direction, perhaps even through short lived fiscal policy means (as Japan did try continuously, putting it’s national debt at record figures) might well have done the job.

\(^{13}\) Tobin’s \(q\), is generally defined as the ratio of the market value of a firm’s assets (as measured by the market value of its outstanding stock and debt) to the replacement cost of the firm’s assets (Tobin 1969).
The second points to more delicate problems in the financial sector, particularly when it comes to a large degree of unsustainable and/or nonperforming loans having been granted, either because of exaggerated optimism before the crisis or, as is very frequently the case in China, through government actions to use a still partially government banking system to subsidize government supported companies or sectors of the “private” economy that wouldn’t necessarily have been considered solvent in a normal market economy (see earlier discussion on China’s financial system). The underdeveloped financial system thus remains the Achilles heel of China’s economy, particularly if China was to combine a revaluation of the RMB with loosening its strict controls and regulations on the financial markets.

6. Conclusions
After our above study of the different thoughts on the exchange rate related issues we agree that there are significant indications that the weak financial system and capital restrictions may be of great importance when evaluating China’s exchange rate policies. The different proposals on how to deal with this can be divided into three different strategies. The first is that a large one time appreciation will put China in an equilibrium position. This is beneficial both for the world economy as well as China’s long term growth (Goldstein, 2005). Secondly there are those who argue that China’s domestic market is too undeveloped to handle any form of large scale setbacks as may be the consequences of a large one time appreciation as well as capital market liberalizations. A sanitation of the financial markets must be undertaken first, before any such actions are taken (McKinnon, 2005). Finally, there is what can be seen as a middle road that combines the two above mentioned ideas. Here the belief is that the best way to cool down China’s economy and bring it to a soft landing by a careful liberalization of its capital markets (Eichengreen, 2006).

Our initial idea of estimating an equilibrium exchange rate fell primarily on the lack of reliable data for how investors would behave should all capital movement restrictions be lifted and as a consequence of the weak financial system. We believe that equilibrium exchange rate calculations are not feasible in the Chinese case (and any other market with such financial restrictions). Such estimates of the equilibrium exchange rate based on net capital flows and the current balance are possible. The problem in the Chinese case is that the existing data on net capital flows are from periods with extensive restrictions on capital movement. Hence, the
behavior of private investors could likely be very different in an open economy. However, some conclusions on the Chinese exchange rate policy can be deduced from our study.

The PBoC has accumulated a large foreign exchange reserve through its attempts to support the present exchange rate to the dollar by purchasing dollar assets (see figure 3). China’s growing amount of dollar reserves have gone to finance the large deficits in the USA. This is not a sustainable long term solution; the money can be put to better use within China then helping a lack of saving within the USA. Furthermore, it is not in China’s best interest to make its foreign reserves so vulnerable towards one currency.

In the Chinese case the large degree of government control and restrictions on capital movements, foreign ownership etc has made it easier for the government so far to keep speculative investors, hoping for arbitrage gains when the seemingly inevitable appreciation takes place, at bay.

China’s large continuous trade surplus towards the rest of the world must be neutralized by an equally large export of capital (either private investments or government transactions). However, Capital inflows, and the resulting liquidity increases from purchasing dollar assets, have so far been successfully sterilized through open market actions by the PBoC (see our discussion on sterilizations above). In the long run though, this is a bubble that cannot be maintained and if it bursts that would have severe implications both for the US and Chinese economies (and through those huge economies on the world economy as well).

Having thus concluded that the present situation is not stable, the question is what policies the Chinese government could implement to change things for the better. As we have argued earlier in this thesis, a huge one time appreciation may be dangerous since the following slump in demand for Chinese goods, given the mentioned weaknesses in the Chinese financial markets, may trigger a greater economic crisis. On the other hand letting inflation free to let real exchange rates reach an equilibrium that way is probably not a very good idea either.

Small gradual steps have been the policy of the Chinese authorities in the past. That would also give China the time it needs to straighten out its financial systems (get rid of the large burdens of nonperforming loans in the banking sector etc.). The problem is that small gradual
revaluations may have the perverse effect that revaluation pressure increases due to increased investments caused by expectations that there will be more (and bigger) revaluations soon and that there are arbitrage gains to be made. If speculative short term investment increase sufficiently it may cause an economic overheating (see the IS1-IS2 shit in figure 6). Hence, a dramatic appreciation would follow; the PBoC has limited means of supporting the current exchange rate while still sterilizing the capital inflows.

These short term influences may cause a dramatic appreciation that probably would lead to a slump in demand for Chinese goods and services abroad. This may cause a series of bankruptcies among companies with razor sharp margins that are dependent on the growing export sector. This in turn may then cause a long turn slump in the Chinese economy, much due to the state of the Chinese financial markets. Particularly the many nonperforming loans may trigger a bank crisis which in turn (coupled with the facts that speculative money will be withdrawn once an expected equilibrium level of the exchange rate has been reached) will cause a dramatic fall in investments. This fall will very likely be to levels lower then the present ones (see the shift to IS3 in figure 6)(since the setback of the Chinese economy in general hardly can fail to effect investment levels and since part of the present FDIs are long turn speculative investments betting on an eventual appreciation of the RMB). The question is how deep investment levels would then fall.

Figure 6: The role of expectations
We have before discussed the danger that China could end up in a similar liquidity trap as Japan, if the RMB were to appreciate dramatically. A dramatic appreciation of the RMB, be it through a relaxing of financial controls (either forced as in the case above or voluntary) or a government orchestrated one, can have at least three different effects on the IS curve. In a positive scenario the appreciation would at least lead to a small short term decrease in FDI due to that investors still believe in the potential of China’s domestic market as well as that its export industry can continue to be competitive. These positive expectations will dampen the fall of the IS curve ($IS_1 \rightarrow IS_2$). If China manages to keep up its economic growth these FDI’s will also be present in the medium to long run perspective. Hence, the liquidity trap may be avoided. The opposite scenario (negative expectations) may arise because of the following; due to the appreciation China is too expensive to invest in and better returns could be achieved elsewhere. In this case a sharp decline in FDI would lead to large shift in the IS curve ($IS_1 \rightarrow IS_3$). The reason for this is that a decline in FDI together with the problem of raising equity for investments domestically would lead to a very sharp decline in overall investments. Hence, China would move into a liquidity trap as well as a recession. The third scenario is that the first small decrease in the IS curve ($IS_1 \rightarrow IS_3$) is enough to move the Chinese economy into a liquidity trap. This could give that foreign investors cold feet and make them withdraw their financial support, which would further worsen China’s situation ($IS_3 \rightarrow IS_4$) as well as having long term implications. One of the main problems here is the difficulty of raising capital domestically to achieve domestic investments and not just foreign. A large part of this problem is the before mentioned ill functioning equity markets. On the other hand China has since 1998 had a very well functioning equity market within its system, namely that of Hon Kong. It is only recently that China has begun to see the potential of the Hong Kong stock exchange. The last three big Chinese stock introductions have all taken place on the Hong Kong stock exchange (most recently Bank of China). This is something that China has to use more. Not just by using the Hong Kong equities market but also using the “know how” around to help strengthen the mainland markets. If China manages to make full use of Hong Kong in this area it may very well be possible that it can avoid the last mentioned hazard of the $IS_3 \rightarrow IS_4$ shift.
To summarize; the solution then lies in the restrictions on the financial markets. As mentioned above the restrictions on moving capital abroad, for instance, make it very difficult to estimate a true equilibrium exchange rate (because neither the trade balance, private sector investments or government transactions are at an equilibrium level). If restrictions on moving capital abroad were eased this would result in an outflow of capital of unknown size which in turn would result in diminished expectations of appreciation and thus in diminishing investments in currency speculation. Of course this too could be dangerous, as a radical drop in investment levels also could set off an economic crisis.

But if gradual eases on restrictions of capital movements abroad are balanced against a gradual easing on the exchange rate control (by widening the currency band to the dollar for instance), allowing the RMB to appreciate (or depreciate) little by little it may be possible to eventually reach an equilibrium exchange rate under orderly conditions. That would give the Chinese some time to sort out the difficulties of the financial markets too.
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