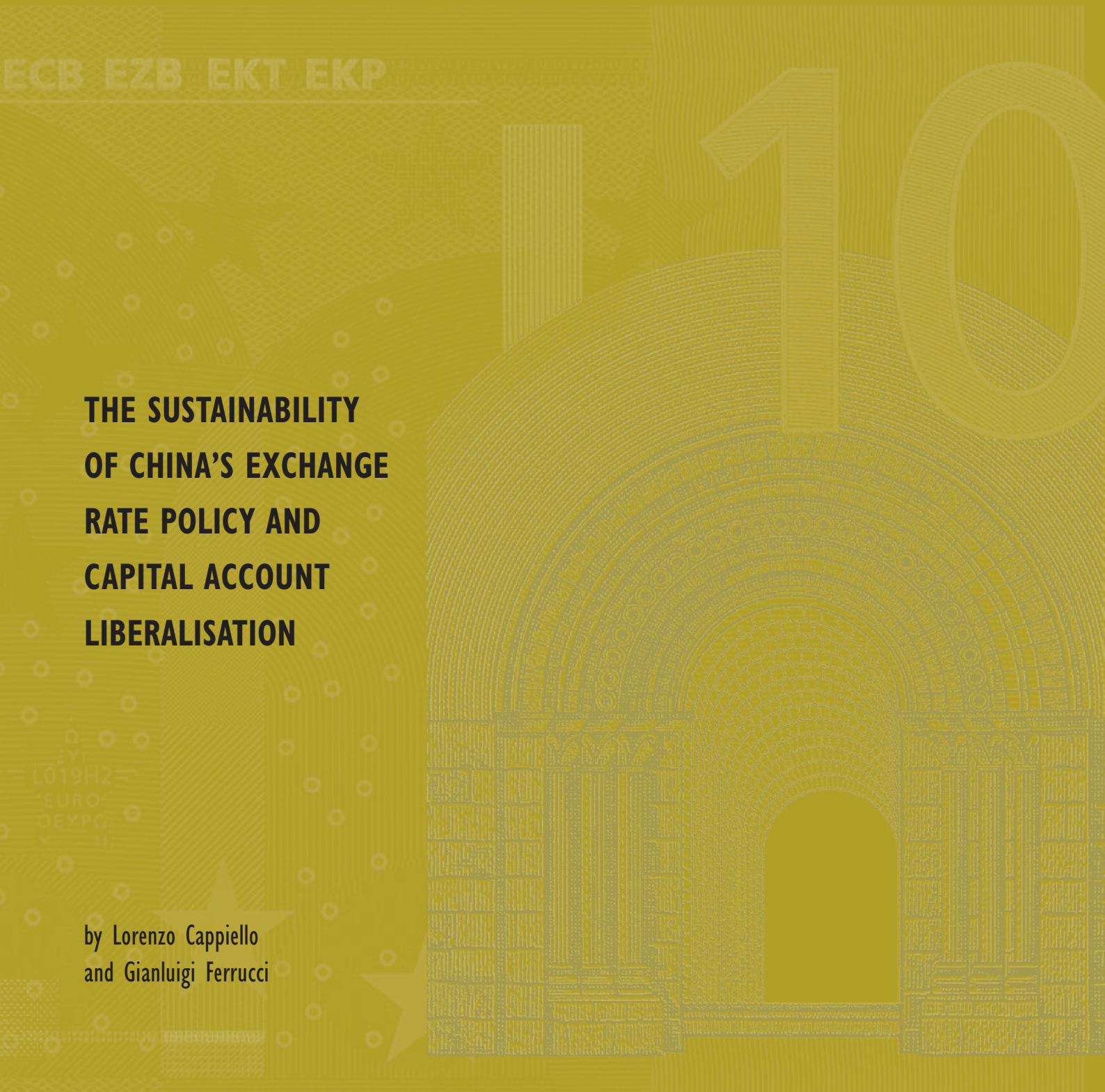
EUROPEAN CENTRAL BANK
EUROSYSTEM

OCCASIONAL PAPER SERIES
NO 82 / MARCH 2008



THE SUSTAINABILITY OF CHINA'S EXCHANGE RATE POLICY AND CAPITAL ACCOUNT LIBERALISATION

by Lorenzo Cappiello
and Gianluigi Ferrucci

EUROPEAN CENTRAL BANK

EUROSYSTEM

OCCASIONAL PAPER SERIES

NO 82 / MARCH 2008

THE SUSTAINABILITY OF CHINA'S EXCHANGE RATE POLICY AND CAPITAL ACCOUNT LIBERALISATION[1]

Lorenzo Cappiello and

Gianluigi Ferrucci

In 2008 all ECB publications feature a motif taken from the €10 banknote.

This paper can be downloaded without charge from http://www.ecb.europa.eu or from the Social Science Research Network electronic library at http://ssrn.com/abstract_id=1005850.

1 The views and opinions expressed in this paper are those of the authors and do not necessarily reflect those of the European Central Bank, its Governing Council or the Eurosystem. The authors wish to thank Lorenzo Bini Smaghi for encouraging the investigation of the link between the exchange rate, capital flows and institutions. Comments, suggestions and helpful discussions from Ettore Dorrucci, Reint Gropp, Philipp Hartmann, Rocco Huang, Simone Manganelli, Frank Moss, Lucrezia Reichlin, Alvaro Santos-Rivera, Christian Thimann, an anonymous referee and participants at an internal European Central Bank seminar are gratefully acknowledged. The authors wish to express special thanks to Giovanni Callegari for kindly providing helpful material on the current structure of capital controls in China. All remaining errors are the sole responsibility of the authors.

Address
Kaiserstrasse 29
60311 Frankfurt am Main,
Germany

Postal address
Postfach 16 03 19
60066 Frankfurt am Main
Germany

Telephone
+49 69 1344 0

Website
http://www.ecb.europa.eu

Fax
+49 69 1344 6000

ISSN 1607-1484 (print)
ISSN 1725-6534 (online)

CONTENTS

Technical note

This paper uses data available as at 15 June 2007, unless otherwise stated.

List of the main abbreviations used in the text

b.o.p.	balance of payments
CIP	covered interest parity
CPI	Consumer Price Index
EER	effective exchange rate
FDI	foreign direct investment
i.i.p.	international investment position
IMF	International Monetary Fund
PBC	People's Bank of China
UIP	uncovered interest parity
USD	US dollar

ABSTRACT

This paper deals with two related issues: the sustainability of China's exchange rate regime and the opening up of its capital account. The exchange rate discussion deliberately passes over the issue of the "equilibrium" value of the renminbi and its alleged undervaluation – typically at the heart of the current policy debate – and focuses instead on the domestic costs of the current regime and the potential risks to domestic financial stability in the long run. The paper argues that the renminbi exchange rate should be increasingly determined by market forces and that administrative controls should be progressively relinquished. The exchange rate is obviously linked to well-functioning and efficient capital markets, which require no barriers to capital flows. Thus, exchange rate reform has to be correctly sequenced with reform of the capital account to avoid disruptive capital flows. The paper discusses China's twin surpluses of the current and capital accounts and attempts to identify the drivers of this "anomalous" external position. The pragmatic strategy pursued by the Chinese authorities in the aftermath of the Asian crisis encouraged FDI inflows and favoured the accumulation of a large stock of foreign exchange reserves. Combined with a relatively weak institutional setting, these factors have been important determinants of the pattern and composition of the country's capital flows and international investment position. Finally, the paper speculates on the outlook for Chinese capital flows should barriers to capital movements be lifted. It argues that whether China continues to supply capital to the rest of the world or eventually becomes a net borrower in international capital markets – as was the case for most of its recent history – will depend on the evolution of its institutions.

Keywords: China; exchange rate policy; international investment position; capital account liberalisation; institutions.

JEL classification: F10; F21; F31; F32; P48.

EXECUTIVE SUMMARY

China's economic performance over the past quarter of a century has been one of the strongest in history. Following years of rapid expansion, China has become one of the world's largest economies, a key global exporter and an important trading partner for many developed and developing economies. It has also been a large recipient of foreign investment for some time and, recently, it emerged as a leading investor in global financial markets. Alongside the obvious domestic and global benefits, this rapid expansion has brought about a number of policy challenges, and structural imbalances have emerged both internally and externally. Currently, these imbalances relate to the risks of abundant liquidity, overcapacity in some industries and external surpluses, and appear linked – among other factors – to the tightly managed exchange rate regime, which hinders the effectiveness of monetary policy and diverts it from domestic objectives.

This paper takes a fresh look at China's exchange rate regime and links it to the ongoing debate about the liberalisation of the capital account. The exchange rate discussion deliberately passes over the issue of the "equilibrium" value of the renminbi and its alleged undervaluation – typically at the heart of the current policy debate – and focuses instead on the *desirability* of the current regime from a domestic viewpoint and its *sustainability* in the long run. Thus, the focus is shifted from external equilibrium and balance of payment adjustment to domestic imbalances and the potential implications for financial stability. The main argument of this paper is that the current exchange rate regime exacts high welfare costs from different sectors of the Chinese economy and poses long-term risks to financial stability. The Chinese economy would be better served by an independent monetary policy geared towards domestic objectives. Monetary independence requires exchange rate flexibility – not necessarily a revaluation.

Exchange rate flexibility is obviously linked to well-functioning and efficient capital markets, which entail no barriers to capital flows. Thus, exchange rate reform has to be correctly sequenced with reform of the capital account to avoid disruptive capital flows. Contrary to the predictions of the neoclassical theory, according to which a country with a low capital-to-labour ratio should borrow net capital from abroad, China is in fact a net supplier of capital to the rest of the world. Institutions have been an important determinant of the pattern and composition of the country's capital flows and i.i.p. Institutions are endogenous to society and reflect tensions among different interest groups with possibly conflicting goals. Ultimately, reforms of the exchange rate regime and the capital account will depend on which interest group eventually prevails in Chinese society.

Methodologically, the arguments proposed in this paper are based on clues and hints gathered from a variety of sources, which fit together in much the same way as a large jigsaw puzzle. As the evidence mounts, the picture becomes clearer and a reasoned judgement can be made. Under China's *de facto* pegged exchange rate regime, domestic policies are oriented to the achievement of an external target. This implies a cost in terms of loss of control over domestic monetary policy: liquidity expands and contracts to preserve the foreign exchange rate of the domestic currency vis-à-vis the anchor currency, thus making it more difficult for monetary policy to address price stability and/or activity objectives.

The People's Bank of China – China's central bank – has conducted large-scale open market operations in order to partially sterilise the domestic monetary expansion caused by foreign exchange intervention. However, sterilisation entails costs and risks, which are likely to increase more than proportionally as the stock of reserves increases. These costs may not be fully acknowledged on the balance sheet of the central bank. Furthermore, the policy of sterilised intervention has helped to generate a liquidity overhang in the financial system and a

credit boom. This, in turn, is partly responsible for the economic overheating and the build-up of excessive capacity in some sectors. In the long run, over-capacity can generate deflation and recession, which negatively affect corporate sector profitability and its capacity to service debt. Rising non-performing loans undermine the banking system and may ultimately threaten financial stability – although there is no evidence that this is currently happening in China. Moreover, the People's Bank of China needs to maintain a relatively loose monetary stance (i.e. low domestic real interest rates) in order to deter inflows of "hot money" that would add to exchange rate pressure. To achieve this, the authorities have implemented administrative controls on bank lending, which in turn create distortions and efficiency losses. Eventually, prolonged and large-scale foreign exchange intervention could also affect domestic financial stability. Chinese banks are investing increasing shares of the liquidity flowing from foreign exchange interventions into low-yielding PBC sterilisation bonds. At the same time, deposit liabilities are growing quickly and demanding a higher rate than bond yields. This may have negative implications for bank profitability and net interest income.

A flexible exchange rate regime and, by extension, an independent monetary policy might forestall these costs and risks. However, such a regime requires a fully convertible capital account. To discuss reform options, this paper identifies the key features of China's balance of payments and international investment position: a relatively low level of financial integration with the global economy, which has lagged behind trade integration; a large net foreign asset position, which is difficult to reconcile with the country's relative factor endowment and level of development; the absolute predominance of foreign exchange reserves – and symmetrically the relatively small weight of non-reserve assets – in total foreign assets, which ultimately implies a concentration of foreign asset ownership in the public sector (government, state-owned banks and enterprises); the prevalence of FDI in gross foreign liabilities and the relatively low stock of external debt, particularly short-term debt; and a significant amount of unrecorded assets held abroad by Chinese residents.

Several factors may explain the direction and composition of China's capital flows, including the adoption of an "open-door" policy to foreign investment (particularly FDI), the pragmatic strategy that prevailed in the aftermath of the Asian crisis and the focus on reserve accumulation for precautionary purposes. This paper concentrates, in particular, on the vast literature on institutions. According to this literature, institutions, which are a complementary input of capital and labour in production, are endogenous to society and are the outcome of tensions among different interest groups whose goals may conflict with one another. Thus, institutions change over time, reshaping the economic landscape of a country. This paper speculates that if the ongoing reform effort leads to an improvement in local institutions in China, fostering the protection of property rights and the presence and perfection of markets, the accumulation of foreign reserves may come to an end, FDI may cease to be the dominant component in foreign liabilities and China may even become a net borrower in international capital markets. Understandably, the process will take time and the final outcome will depend on which group in Chinese society eventually prevails.

I INTRODUCTION

China's economic performance over the past quarter of a century has been one of the strongest in history. Following years of rapid expansion, the country has climbed from being the eleventh largest economy in the world in 1990 – as measured in US dollars at current exchange rates – to the fourth largest in 2006 (the second largest if adjustments are made for differences in purchasing power). In only 15 years, real GDP per capita increased from being roughly comparable to that of India – another economy to have experienced above-average growth over the period – to almost three times that figure in 2006. China has also become one of the world's largest exporters and a key trading partner of many developed and developing economies. It has been an important destination of foreign investment for a long time, absorbing around 20% of total FDI flows to emerging economies in 2006, and recently it has emerged as a leading investor in global financial markets.

Together with domestic and global benefits, China's rapid expansion has brought about a number of policy challenges, with the emergence of both internal and external structural imbalances. In the authorities' own admission, reserve accumulation – although partly sterilised – has been one of the main drivers of abundant liquidity and above-target credit growth in the economy. This has led to risks of overheating. CPI inflation, which so far has remained contained on account of the low propensity to consume and moderate wage dynamics, has been on a clear upward trend since mid-2006. There have also been signs of overinvestment in certain sectors of the economy. These imbalances appear linked, among other factors, to the tightly managed exchange rate regime, which places a constraint on monetary policy and diverts it from domestic objectives.

Under the current de facto pegged exchange rate regime, domestic policies are oriented to achieve an external target. This implies a cost in terms of the loss of control over domestic monetary policy: liquidity expands and contracts to preserve the foreign exchange rate of the domestic currency vis-à-vis the anchor currency, thus making it more difficult for monetary policy to address price stability and/or activity objectives. Moreover, the central bank maintains low domestic real interest rates also in order to deter excess inflows of "hot money" from abroad, which would add to exchange rate pressure. As a result, the authorities have to implement administrative controls on bank lending, which in turn create distortions and efficiency losses.

This paper reviews these issues, focusing on two related topics: the sustainability of China's exchange rate regime and the opening up of the capital account. The exchange rate discussion deliberately passes over the issue of the "equilibrium" value of the renminbi and its alleged undervaluation – typically at the heart of the current policy debate – and focuses instead on the *desirability* of the current regime from a domestic viewpoint and its *sustainability* in the long run. Thus, the focus is shifted from external equilibrium and balance of payment adjustment to domestic imbalances and the potential implications for financial stability. Methodologically, the line of argument draws on clues and hints gathered from a variety of sources, which fit together much like a large jigsaw puzzle. As with the puzzle, a clear picture emerges only after all the evidence has been examined and pieced together.

The main argument of this paper is that the current exchange rate regime exacts high welfare costs from different sectors of the Chinese economy and poses long-term risks to financial stability. China's economy would be better served by an independent monetary policy geared towards domestic objectives. Monetary independence requires exchange rate flexibility – not necessarily a revaluation. Exchange rate flexibility is obviously linked to well-functioning and efficient capital markets, which entail no barriers to capital flows. Thus, exchange rate reform has to be correctly sequenced with reform of the capital account to

avoid disruptive capital flows. Institutions have been an important determinant of the pattern and composition of the country's capital flows and international investment position. Institutions are endogenous to society and reflect tensions among different interest groups with possibly conflicting goals. Therefore, any reform of the exchange rate regime and further progress in capital account liberalisation will ultimately depend on which interest group eventually prevails in Chinese society.

* * *

Historically, the renminbi's peg to the US dollar has been an important element of the stabilisation policies pursued in recent decades. Together with other structural reforms that have opened up the Chinese economy to competition and liberalised price-setting mechanisms for most goods and services, the peg has successfully helped to stabilise inflation. Whether it has also promoted external trade in the context of China's so-called "export-led" growth model is still open to debate. Structural factors affecting the intertemporal choices of consumption, saving and investment have been key determinants of China's widening trade surplus and of its "anomalous" external position.

More recently, mounting evidence suggests that it has become increasingly challenging to maintain the renminbi's hard peg to the US dollar. The policy of sterilised intervention consistently pursued by the central bank in recent years, which in turn has been responsible for the rapid accumulation of foreign exchange reserves, has fuelled strong liquidity growth in the financial system and a credit boom. This, in turn, has been partly responsible for the economic overheating and the build-up of excessive capacity in some sectors. Overcapacity entails a risk of deflation and recession in the long run, with implications for corporate sector profitability and its ability to service debt. Rising non-performing loans may undermine the banking system and ultimately threaten financial stability, although there is only fragmented and inconclusive evidence as to whether this chain of events is actually unfolding at the current juncture in China.

Sterilisation also entails some costs. So far, the direct costs have been negligible since the yields of the main sterilisation instruments have been lower than the interest rates on medium and long-term US government bonds, which is where a large part of China's official reserves is likely to have been invested. However, lending controls, combined with strong deposit growth, generate a liquidity overhang in the banking system, which largely fuels the demand for sterilisation bills. On several occasions, strong demand for sterilisation instruments pushed their yields below the rates that banks pay on deposits, raising concerns over bank profitability. Furthermore, the true cost of sterilisation is partly transferred off the balance sheet of the central bank and onto the balance sheet of the banking system.

In addition to the long-term risks to financial stability, the peg also poses a policy dilemma for the Chinese policy-maker, highlighted by portfolio equilibrium considerations based on the UIP condition. At the current juncture, relatively high interest rates would be needed to cool down the rapid growth of economy activity. However, high interest rates and the expectation of an exchange rate appreciation attract speculative capital inflows, which in turn exacerbate the liquidity overhang and foster economic activity. The paradox is that the relatively loose monetary stance that is required to keep the appreciation pressures on the exchange rate in check in fact contributes to further stimulate the overheated economy.

Thus, this paper makes a strong argument for an early move towards greater exchange rate flexibility, abstracting from the debate on renminbi undervaluation. The focus is shifted from balance of payment adjustment to domestic imbalances and the risks to financial stability. Exchange rate flexibility is in China's own interest. As the economy develops and becomes increasingly integrated with the rest of the

world, it will become inevitably more exposed to different types of macroeconomic shocks, both internally and externally. Exchange rate flexibility and, by extension, a more independent monetary policy would help the economy cope better with such shocks. This is the main reason why the determination of the exchange rate in China should be left increasingly to market forces. A corollary of this argument is that, in the long run, it is a move towards flexibility – not necessarily a revaluation – that is desirable.

The issue of the exchange rate is closely linked to the reform of the capital account. The importance of a correct sequencing of capital account reform and foreign exchange market liberalisation has already been discussed at some length in the literature. The value added of this paper is to point out that exchange rate reform and capital account liberalisation have to be accompanied by domestic reforms that aim to ensure the full protection of property rights, address the ongoing weaknesses in the banking system, promote deeper financial markets and improve corporate governance.

Currently, a move towards capital account liberalisation, combined with a pegged currency, would lead to large speculative capital inflows, given expectations of a strong renminbi appreciation. Moreover, there might be a risk that the corporate and banking sectors would overborrow from abroad. These concerns could be addressed by allowing greater exchange rate flexibility and a gradual appreciation of the renminbi. Sudden shifts and overshooting would thus be avoided. A new, credible, equilibrium level of the exchange rate could be found and uncertainty around this central parity would have to be created to discourage speculative capital inflows. At the same time, the partial opening of the capital account would be envisaged, while some restrictions on capital mobility would remain. Even if exchange markets were (partially) liberalised, effective capital controls would prevent an abrupt adjustment in the domestic currency and discourage inflows of hot money into China. If investors are confident that the currency will appreciate over time, they will buy assets denominated in that currency and cash in the profits generated by the appreciation. As long as security markets remain narrow and shallow, property rights not fully protected, the banking system weak and lacking adequate hedging instruments, the adoption of a completely free-floating exchange rate is premature in China. However, a re-pegging at a higher rate does not represent a sustainable solution in the long run, as it would only postpone the financial stability concerns that are currently associated with the peg and not deliver the independent monetary policy that domestic considerations call for.

A flexible exchange rate regime requires a liberalised capital account. To discuss reform options, the paper identifies the key features of China's balance of payments and international investment position: a relatively low level of financial integration with the global economy, which has lagged behind trade integration; a large net foreign asset position, which is difficult to reconcile with the country's relative factor endowment and level of development; the absolute predominance of foreign exchange reserves – and symmetrically the relatively small weight of non-reserve assets – in total foreign assets, which ultimately implies a concentration of foreign asset ownership in the public sector (government, state-owned banks and enterprises); the prevalence of FDI in gross foreign liabilities and the relatively low stock of external debt, particularly short-term debt; and a significant amount of unrecorded assets held abroad by Chinese residents.

Several factors may explain the direction and composition of China's capital flows, including the adoption of an "open-door" policy to foreign investment (particularly FDI), the pragmatic strategy that prevailed in the aftermath of the Asian crisis and the focus on reserve accumulation for precautionary purposes. A further explanation is provided by the vast literature on institutions, which offers a plausible key to interpreting the pattern and composition of capital flows in China. According to this literature, institutions are a complementary input of capital and labour in production. They are endogenous to society

and are the outcome of tensions among different interest groups whose goals may conflict with one another. Thus, institutions change over time, reshaping the economic landscape of a country. This paper speculates that if the ongoing reform effort leads to an improvement in local institutions in China, fostering the protection of property rights and the presence and perfection of markets, the accumulation of foreign reserves may come to an end, FDI may cease to be the dominant component in foreign liabilities and China may even become a net borrower in international capital markets. Understandably, the process will take time and the final outcome will depend on which group in Chinese society eventually prevails.

The paper is organised as follows. Section 2 discusses the role of the renminbi's peg to the US dollar in the context of China's development strategy in recent decades. Section 3 discusses the domestic costs of the peg. Section 4 makes the case for greater flexibility in the renminbi exchange rate. Sections 5 and 6 analyse China's external position and its determinants. Section 7 presents the policy implications of opening up the capital account. Section 8 concludes.

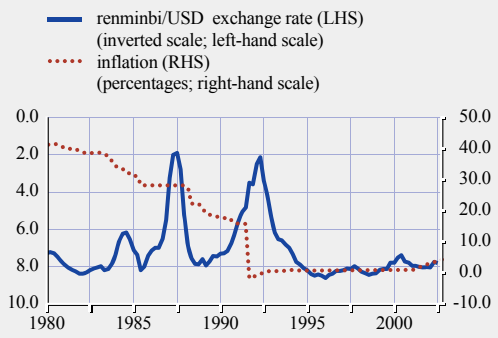
2 THE PEG AS AN EXTERNAL MONETARY ANCHOR

A stable exchange rate vis-à-vis the US dollar has been an important element of China's development strategy in the past decades. In principle, an exchange rate peg can provide an essential monetary anchor for price stability by linking domestic monetary policy to the rate of inflation of a large, non-inflationary economy. Obstfeld (2006) argues that, historically, this has been an important benefit of the renminbi's peg to the US dollar in China, where the link between monetary instruments and targets is weak and unstable, the reliability of economic and financial indicators for policy-making is questionable and financial markets are relatively thin. China has had a de facto fixed exchange rate regime since the 1980s. However, until the mid-1990s, monetary policy remained largely independent of the exchange rate and the renminbi had to adjust frequently to accommodate relatively high domestic inflation and absorb competitiveness losses (see Chart 1).

Between 1988 and 1993, a dual exchange rate system emerged, whereby the official fixed exchange rate coexisted with a market-determined rate in special foreign exchange markets called "swap centres". With the sharp depreciation of the market-determined rate in the early 1990s, the fixed official rate became increasingly overvalued. Thus, in 1994, the official rate was devalued and unified with the market rate in the swap centres. At the same time, the exchange rate policy was officially changed into a managed float, although the renminbi has been de facto pegged to the US dollar since 1995. A limited degree of flexibility was introduced as a result of the exchange rate reforms of 21 July 2005, which among other things implied a small, one-off nominal appreciation against the US dollar.[1]

Together with other structural reforms that have opened up the Chinese economy to competition and liberalised price-setting mechanisms for most goods and services, the peg has successfully

Chart 1 Renminbi/US dollar exchange rate and annual inflation



Source: NiGEM.

helped to stabilise the roller-coaster inflation of the 1980s. Chinese consumer price inflation has fallen significantly since the exchange rate reforms of 1994 and has remained relatively stable since then (see Chart 1).[2]

2.1 IMPACT OF THE PEG ON TRADE

Whether the renminbi peg to the US dollar has also served the purpose of promoting external trade in the context of China's so-called "export-led" growth model is still open to debate. According to one argument, the peg has not led to trade creation as it has not brought about exchange rate stability in effective terms, as shown for example by the large swings in the real EER (see Chart 2). Between 1994 and 1997, the real EER of the renminbi appreciated sharply as a positive inflation differential with China's major trading partners prevailed while the authorities attempted to deflate the economy. With the taming of inflation in the late 1990s, the real EER of the renminbi changed mostly on account of movements of the US dollar against the currencies of major trading partners, such as the euro and the Japanese yen.

Chart 3 shows that the volatility in non-dollar exchange rates of the renminbi has been

1 See Huang and Wang (2004) for a review of the evolution of China's exchange rate regime in the past two decades.
2 Obstfeld (2006) provides a more comprehensive discussion of the argument.

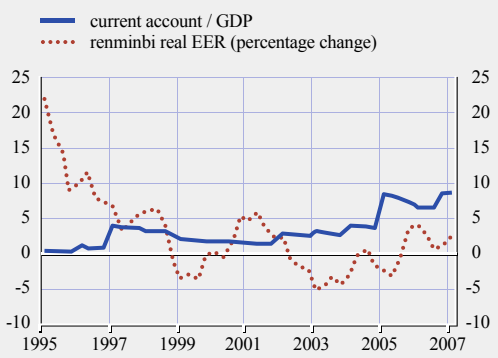
Chart 2 Renminbi real EER[1)]

(index, 1990=100)

Source: NiGEM.
1) An increase indicates an appreciation in the real EER of the renminbi.

Chart 4 Real EER of renminbi and current account balance[1)]

(percentages)

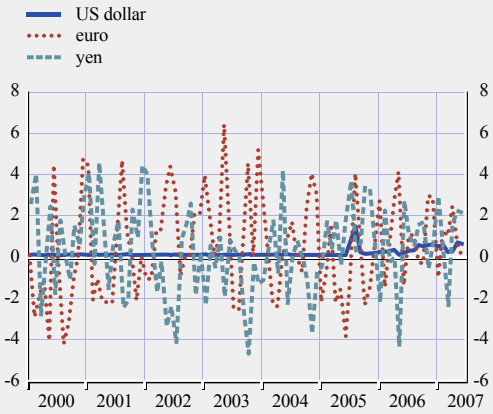


Source: NiGEM.
1) Real EER of renminbi expressed as year-on-year percentage change. A positive change indicates an appreciation.

considerable, frequently entailing, for example, bilateral monthly appreciations or depreciations against the euro and the yen of more than 4%. Thus, in view of China's substantial trade flows with Europe and Japan, the peg cannot be justified on the basis of trade-enhancing effects that supposedly work through real exchange rate stabilisation. As Obstfeld (2006) notes, "at best we have trade creation with the US (and countries pegged to the dollar) and trade diversion with respect to Europe and Japan".

Chart 3 Monthly changes in exchange rate of renminbi against major currencies[1)]

(percentages)



Source: Bloomberg.
1) Month-on-month rate of change. A positive change indicates an appreciation of the renminbi.

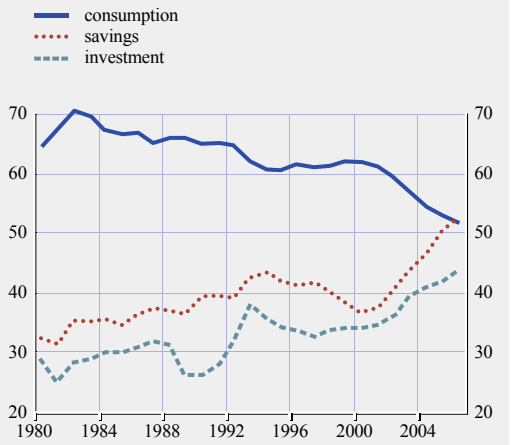
Consistent with this interpretation, Chart 4 shows that the swings in the real EER bear no transparent relationship to the behaviour of China's current account balance. Large real depreciations of the renminbi have often been associated with current account deteriorations, and vice versa. This suggests that China's current account balance is also explained by structural factors affecting the domestic saving-investment gap.

2.2 CONSUMPTION, SAVINGS AND THE CURRENT ACCOUNT

Although domestic consumption has grown rapidly in China, it has lagged behind the overall growth rate of the economy for many years. As a result, its share of GDP has fallen steadily over time (see Chart 5); in 2006 it stood at 52%, significantly lower than in, for example, the United States (86%), the euro area (78%), India (69%) and Korea (68%). The falling share of consumption in GDP has been matched by a rapid increase in that of savings. Overall, domestic savings account for around a half of Chinese GDP, one of the highest shares among economies of comparable size and level of development. As the share of consumption has

Chart 5 Consumption, savings and investment

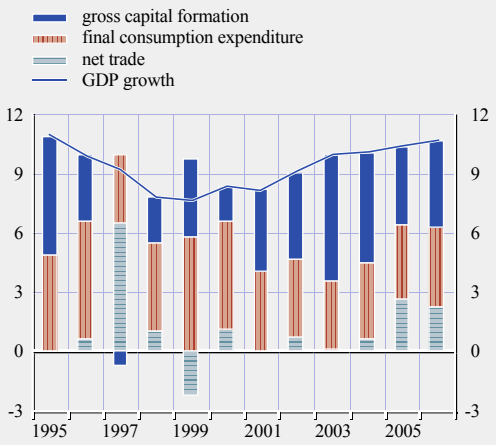
(percentages of GDP)



Source: IMF World Economic Outlook database for April 2007.

Chart 6 Contributions to GDP growth

(percentage points)



Sources: National Bureau of Statistics of China and Asian Development Bank.

fallen, China's growth has become increasingly dependent on investment and foreign demand (see Chart 6).

An increase in gross savings and a fall in consumption are not uncommon across catching-up economies, and it has been argued that a similar pattern should be expected in China. However, China's saving ratio is high by any standard, and it has been more than sufficient to finance the high and growing level of capital formation that has characterised the country's growth pattern over recent decades. With the widening of the domestic savings-investment gap, China's external imbalances have increased, as reflected in the high and growing trade and current account surpluses and rising foreign exchange reserves. The trade balance, for example, rose to a record surplus of USD 178 billion in 2006 (6.7% of GDP) from USD 102 billion in the previous year (4.6% of GDP). Moreover, as a high proportion of the country's stock of external assets are foreign exchange reserves held in US dollars, China has also become an important source of financing of the US current account deficit.

China's external imbalances have attracted much attention recently. These imbalances are symptoms of domestic structural weaknesses that relate to the country's saving and consumption behaviour. Many studies have tried to explain the structural drivers of Chinese savings. The broad consensus is that the rise in domestic savings has been caused by a combination of factors affecting both household and corporate savings, particularly: i) a decline in the share of disposable income in GDP, which has closely matched the fall in the share of consumption;[3] ii) an increase in precautionary savings due to the need to provide for healthcare, basic education and retirement, given the lack of sufficient public provision of these services resulting from the restructuring of public enterprises; iii) weaknesses in the financial system, which impose borrowing constraints and limit households' access to consumer finance; iv) demographic trends, especially the

3 In turn, the fall in the share of disposable income in GDP reflects both weak wage growth and a decline in investment income as a share of GDP. The former is related to the availability of substantial under-utilised labour resources in the economy. The latter is related to the low interest rates on bank deposits, which have been the dominant vehicle of household savings. The low-dividend policy and the narrow shareholder base have also prevented Chinese households from benefiting from the increase in corporate wealth. See IMF Regional Economic Outlook, May 2006.

fall in the dependency ratio;[4] and v) institutional factors, particularly the low dividend policy and the high level of retained earnings of Chinese corporations. A sustainable reduction of external imbalances ultimately requires an adjustment of the underlying forces driving these structural trends in both household and corporate savings.

4 According to World Bank data, China's dependency ratio was 45% in 2003, down from 67% in 1980. As a comparison, the dependency ratio in India and Mexico was 60% in 2003 (source: World Development Indicators). However, China's dependency ratio is projected to start rising again after 2010 to reach around 65% in 2050, mainly as a result of the birth control programme implemented since 1979 (the "one-child Policy"; see United Nations, World Population Prospects: The 2004 Revision Population Database).

3 DOMESTIC CHALLENGES FROM THE PEG

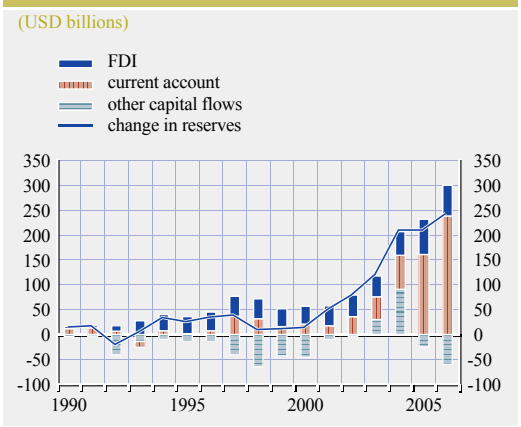
The renminbi's hard peg to the US dollar is undesirable as a long-term foundation for managing monetary policy, since it reduces the range of policy options available to respond to real shocks hitting the economy and introduces distortions in the process of adjustment to structural economic changes, such as the real currency appreciation due to the Balassa-Samuelson effect. The peg also poses a monetary policy dilemma between controlling inflation and limiting foreign capital inflows. Furthermore, there is a risk that the peg may become unsustainable in the long run. China's exchange rate arrangement leads to a rapid accumulation of foreign exchange reserves and monetary expansion, which in turn generates a liquidity overhang in the financial system. So far, this risk has been partly mitigated by central bank sterilisation intervention. However, sterilisation implies some costs, including an opportunity cost from accumulating large stocks of low-yielding liquid instruments on banks' balance sheets. Moreover, the peg favours a credit expansion, which may lead to overinvestment. This, in turn, can generate deflation and recession in the long run. Deflation affects the corporate sector, as profits fall and the real interest rate on loans increases. Non-performing loans can also increase rapidly, thereby undermining financial stability. There is no firm evidence as to whether such a chain of events may be actually unfolding at the current juncture in China. Nevertheless, the emergence of pockets of excess capacity in some sectors, the rising costs of central bank sterilisation intervention and the growing external and domestic imbalances suggest that the hard peg may have outlived its usefulness for China.

3.1 RECENT TRENDS

In more recent times, mounting evidence suggests that China is facing an increasing challenge to maintain its currency's hard peg to the US dollar. The essence of the argument lies in Robert Mundell's "inconsistent trinity" hypothesis, which postulates that it is impossible for a country to achieve simultaneously a fixed exchange rate and an independent monetary policy if capital is free to move internationally. So far, it has been possible to fix the renminbi exchange rate without overriding domestic monetary policy by imposing tight controls on the capital account and by maintaining close restrictions on the cross-border movement of capital. This has allowed a certain degree of monetary autonomy to be retained through the use of administrative measures, such as increases in the reserve requirement ratio on bank deposits and the so-called "window guidance" policy, which aims to control the growth of domestic credit to certain sectors.

However, capital controls tend to lose their effectiveness over time. Rising capital inflows, compounded by large current account surpluses, have exacerbated the trade-off between the fixed exchange rate and monetary autonomy. China recorded a current account surplus of USD 250 billion in 2006 (9.3% of GDP), on top of which net financial inflows contributed to increase further the overall balance of payments surplus. Net FDI inflows averaged nearly 5% of GDP annually in the five years prior to the Asian crisis. They have fallen since then, but were still USD 61 billion in 2006 (2.3% of GDP). Other capital flows – probably mostly speculative in nature – grew significantly in 2004 (to USD 91 billion) but were negative in the following two years (see Chart 7).

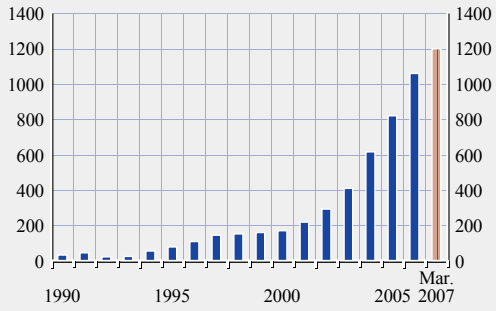
Chart 7 China's balance of payments



Source: IMF World Economic Outlook database for April 2007.

Chart 8 Stock of official reserves

(USD billions)



Sources: CEIC and IMF World Economic Outlook Database for April 2007.

Chart 10 Sterilisation debt as a share of reserves

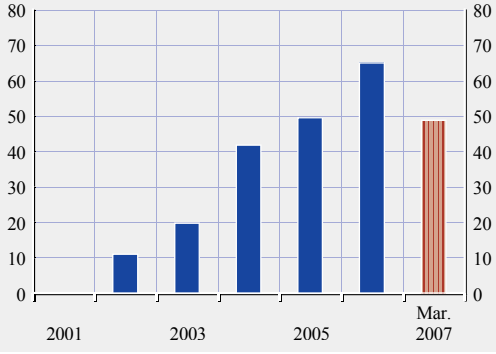
(percentages)

Source: CEIC.

Overall, the twin surpluses of China's balance of payments (a large and growing current account surplus compounded by a surplus in the capital account balance) create appreciation pressures on the renminbi exchange rate, offset by repeated official intervention in foreign exchange markets.[5] Official intervention, defined as the change in the stock of reserves, was USD 240 billion in 2006, or 9.1% of GDP, a trend that has continued in 2007. As a result of this intervention, China's stock of foreign exchange reserves has grown around eightfold since the beginning of 2000, to USD 1,202 billion in March 2007 – the largest stock in the world, equivalent to around 46% of GDP and almost 630% of overall short-term debts (see Chart 8).

Chart 9 Sterilisation ratio[1)]

(percentages)



Source: Authors' calculations based on CEIC data.
1) Calculated as ΔOfficial reserves (in renminbi using the market exchange rate) / ΔPBC sterilisation bonds.

Over time, the People's Bank of China has conducted large-scale open market operations in order to partially sterilise the domestic monetary expansion caused by foreign exchange intervention. These open market operations are normally carried out through sterilisation bills issued by the central bank and exchanged for cash with the banking system. As a rough estimate, the central bank currently sterilises around half of the increase in reserves (see Chart 9) and in March 2007 the outstanding stock of sterilisation debt was around 40% of official reserves (see Chart 10). The majority of this debt had a maturity of less than one year. Moreover, hikes in compulsory reserve requirements on bank deposits have recently complemented issuances of short-term central bank bills as a means of sterilising foreign exchange reserve inflows and of controlling bank liquidity. The ratio of reserve requirements on deposits increased from 7.5% in July 2005 to 11.5% in May 2007.

5 For a comprehensive discussion of the main challenges stemming from the twin surpluses of China's b.o.p., see also the People's Bank of China, *Financial Stability Review*, September 2005, Part II, page 17.

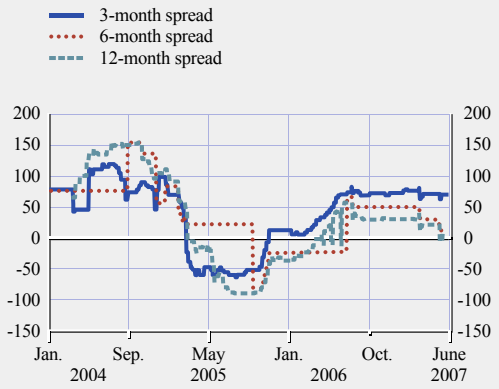
Chart 11 Primary yields of PBC sterilisation bonds and yield of 3-year US T-bill

(percentages)

Sources: CEIC and Board of Governors of the Federal Reserve System.

Chart 12 Spread between PBC sterilisation bond yield and returns on time deposits: various maturities

(basis points)



Source: CEIC.

3.2 STERILISATION COSTS

However, sterilisation entails some costs, which are likely to increase more than proportionally as the stock of reserves rises. The direct cost on the balance sheet of the central bank is given by the coupon paid on the liabilities issued to acquire reserves, net of the income generated by these reserves – which, more properly, should be adjusted for the ex post valuation effects due to exchange rate changes. This cost has been virtually nil in China so far, as the yields of the main sterilisation instruments have been lower than the interest rates on medium and long-term US government bonds, which is where a large part of China's official reserves is likely invested (see Chart 11). But there are some risks. As the total stock of sterilisation bonds increases, the People's Bank of China may have to pay higher interest rates in future, both to place new bonds and to refinance the existing stock. Moreover, an increase in domestic interest rates might be triggered, for example, by the policy response to a pick-up in domestic inflation. As the outstanding stock of sterilisation debt has an average maturity of less than one year, an increase in domestic interest rates has the potential to feed relatively quickly into sterilisation bond yields.

Most importantly, in order to manage domestic monetary conditions, the authorities have to revert to administrative controls on credit and lending, which in turn create distortions and efficiency losses. An example of this can be traced in 2005. Restrictions on bank lending alongside strong deposit growth generated a liquidity overhang in the banking system, which ultimately fuelled a large demand of PBC sterilisation bills and pushed the yields on these instruments below the rates that banks pay on deposits (see Chart 12). Thus, given these lending controls, the true cost of sterilisation is partly transferred off the balance sheet of the central bank and onto the balance sheet of the banking system, inflating the sterilisation profits of the People's Bank of China and raising concerns for banks' profitability and the stability of the financial system in the long run. Arguably, were these administrative distortions not to exist, sterilisation bond yields would be higher and the sterilisation profits of the People's Bank of China would be lower.

Moreover, the growing mismatch between the central bank's foreign currency denominated assets and its domestic currency denominated liabilities poses the risk that a renminbi appreciation would reduce the local currency value of the central bank's assets, while the

local currency value of the liabilities would remain unchanged. This could trigger potentially huge capital losses on the balance sheet of the monetary authority – although, in practice, the exact importance of this channel for the conduct of monetary policy is widely debated in the literature.

More broadly, the subordination of monetary policy to foreign exchange policy hinders progress in interest rate liberalisation, which is a key condition for the development of an effective transmission mechanism for monetary policy. The development of strong domestic institutions for independent policy-making may also be delayed, and the economy may become increasingly exposed to external shocks. This vulnerability, in particular, will become increasingly relevant as China's integration into the global economy advances.

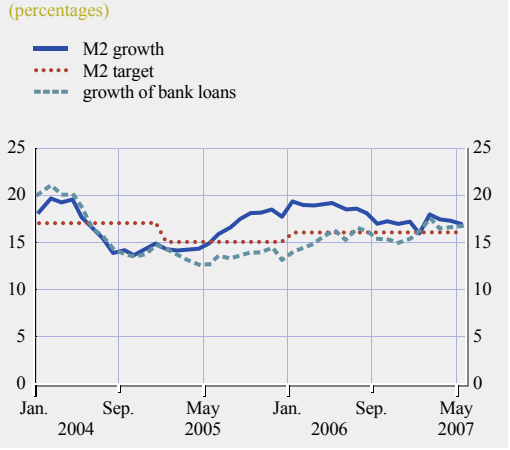
3.3 CREDIT AND INVESTMENT BOOM

Despite the increasing rates of sterilisation, these interventions – which in terms of magnitude and duration are quite unique in the history of the current international monetary system – have contributed to fuel robust liquidity growth in the economy. This growth is demonstrated by the strong rise in monetary and credit aggregates, such as bank loans and M2, which have consistently overshot the official targets (see Chart 13). In turn, abundant domestic liquidity favours a credit expansion, which may lead to an investment boom, excessive build-up of capacity and falling prices. Under extreme circumstances, overcapacity may result in deflation and recession in the long run. The corporate sector suffers from deflation, since profits fall and the real interest rate on loans increases. Non-performing loans can therefore rapidly increase, undermining through this channel also the stability of the banking sector.

Chinese investment has risen very rapidly in recent years, both in terms of level and as a share of GDP, and has become the single most important driver of overall growth, accounting for around 50% of real GDP growth over the past five years. The investment share of nominal GDP has also increased substantially in the past decade, from around 35% in 1995 to 44% in 2006 – a record high by regional standards and a level comparable to that in several other East Asian economies prior to the 1997-98 crisis (see Chart 14).

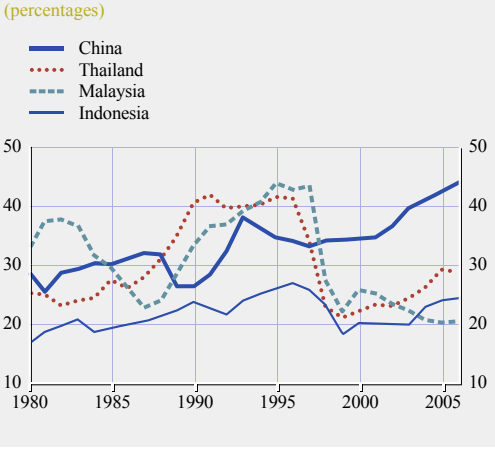
Sustained investment growth and increasing investment shares of GDP are not necessarily

Chart 13 Growth of money and loans



Source: CEIC.

Chart 14 Investment-to-GDP ratios in East-Asia



Source: IMF World Economic Outlook database for April 2007.

indicative of a risk of overcapacity. In principle, rapid investment growth may result from a rational response by the corporate sector to current and expected demand conditions. High investment shares of GDP are also common for catching-up economies. *Ceteris paribus*, fast-growing economies need comparatively faster capital accumulation to keep the capital stock constant as a share of GDP.

Indices of corporate profitability have remained broadly sound in China, whereas excessive investment should have led to overproduction, falling prices and a profit squeeze (see Chart 15). However, other indices of capital efficiency, such as the marginal product of capital, have fallen recently, suggesting that the productivity of additional investment has fallen (see Chart 16). It has been argued that such falls can be expected following a protracted period of investment growth. Moreover, although the different classification of investment across countries renders international comparisons not entirely appropriate, the marginal product of capital in China in 2006 was still comparable to the level in other countries in the region, such as Korea and Indonesia.

In a country with a low capital-to-labour ratio, a falling marginal product of capital may also signal an inefficient allocation of capital. A significant share of Chinese investment is financed through retained profits. In addition, Chinese financial markets are still in their infancy: the vast majority of financial assets are intermediated by the banking system. The equity market is relatively thin. Traded securities, such as corporate bonds, are negligible. Other financial services, including insurance, are also relatively undeveloped. This suggests that the efficiency gains in capital allocation from promoting more sophisticated financial intermediaries and products could potentially be very high.

Data at industry level suggest that the risk of overcapacity may be more material in some sectors of the Chinese economy. For example, the automobile and steel industries – together accounting for over 15% of total industrial output – have experienced rapid production and inventory growth, a shift to net exports and, at the same time, a significant fall in prices, profits and capacity utilisation rates, which taken together may be seen as evidence of excessive

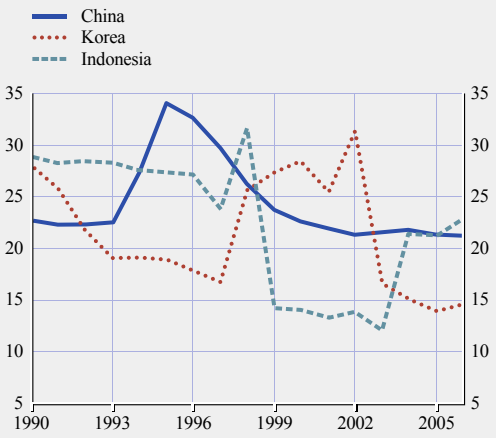
Chart 15 Net profits-to-corporate assets ratio

(percentages)

Source: CEIC.

Chart 16 Marginal product of capital[1)]

percentages



Source: Authors' calculations based on data from IMF World Economic Outlook database for April 2007.
1) Calculated as 100*(GFCF / ΔGDP), where GFCF is gross fixed capital formation. Data shown are five-year moving averages.

investment. A real estate boom in some cities (partly due to the ongoing urbanisation process) compounds the overinvestment problem. The issue may not be detected by aggregate indicators of capital efficiency (such as the marginal product of capital or indicators of corporate profitability) because the build-up of overcapacity in those sectors is partly offset by the lack of investment in other sectors of the Chinese economy, such as public and rural infrastructures, transportation and agriculture. This problem is acknowledged by the Chinese authorities, who earlier in 2005 identified a number of sectors where problems of excess capacity were acute and targeted them with administrative measures to curb further capacity build-up.[6] The latest evidence points to a slowdown in investment growth since the second half of 2006, especially in the sectors most affected by overcapacity. However, investment is still the major driver of GDP growth.

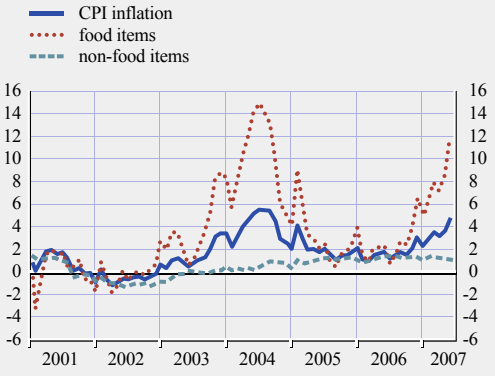
3.4 CONSUMER PRICE INFLATION AND ASSET PRICES

Under China's pegged exchange rate regime, domestic policies are oriented to the achievement of an external target. This implies a cost in terms of loss of control over domestic monetary policy: liquidity expands and contracts to preserve the foreign exchange rate of the domestic currency vis-à-vis the anchor currency, thus making it more difficult for monetary policy to address price stability and activity objectives.

Despite the abundant liquidity and the rapid economic expansion seen in recent years, inflationary pressures have remained exceptionally low in China, with the annual CPI index hovering around 2% since the current credit boom started in 2003 (see Chart 17). Headline inflation accelerated somewhat in mid-2004 and again in the first half of 2007, but in both cases the pick-up was mainly driven by the food component of the index, which has a relatively high weight in China's CPI basket. "Core" measures of inflation (excluding food) remained broadly stable, growing by less than 1% over the period. Food prices have traditionally been the most volatile component of China's CPI basket and the acceleration in food prices in early 2007 has been largely attributed to one-off factors. Producer price inflation has also remained broadly contained.

Chart 17 CPI inflation

(percentages)

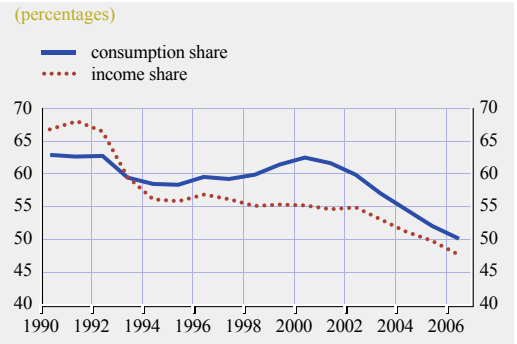


Source: CEIC.

The favourable combination of rapid economic expansion and low inflation has been mainly ascribed to the fact that substantial banking liquidity and the associated acceleration in credit growth has been largely confined to finance investment rather than consumption. Consequently, consumer demand has been relatively weak compared with output growth, as reflected in a falling share of consumption in GDP (see Chart 18). On the other hand, the ongoing investment boom has continually added to the economy's productive capacity, thereby increasing potential output and helping to ease pressures on domestic prices. Moreover, although wages have risen in recent years due to substantial underutilised labour resources, wage increases have been relatively modest compared with the growth of productivity. Indeed, wages

6 The sectors targeted were the automotive, steel, ferrous metal and electricity sectors. The measures adopted included instructions to banks to tighten lending to these sectors, measures to promote industrial consolidation and controlled start-up licences. Similar measures were also introduced in the cement, coal, aluminium and coke industries.

Chart 18 Shares of consumption and income in GDP



Sources: CEIC and authors' calculations.

as a share of GDP have fallen from around 55% in 2000 to 48% in 2006 (see Chart 18). Falling prices in sectors with overcapacity have offset the rise in services inflation and the upward adjustment in certain administered prices.

However, abundant domestic liquidity has been partly channelled into the stock market, contributing to a sharp rise in equity valuations. The Shanghai Composite Index rose by 130% in 2006 and by a further 56% in the first half of 2007, despite a number of episodes of sharp daily corrections during the period. Strong gains in equity prices have triggered concerns over the sustainability of the current valuations.

3.5 POTENTIAL RISKS TO FINANCIAL STABILITY

If sustained, China's ongoing credit expansion and build-up of overcapacity may result in deflation and, under severe circumstances, recession. The corporate sector suffers from deflation because profits fall, the real interest rate on loans increases and the real value of the debt stock increases. Non-performing loans can therefore grow rapidly, undermining the stability of the banking system.

According to some estimates, loans extended since 2002 represent around 57% of the total loan book of Chinese banks (Setser, 2005). Thus, the health of the banking system depends increasingly on the quality of the loans extended during the current lending boom. If a fraction of these loans becomes non-performing, banks could face potentially huge losses.

This problem is compounded by the existing weaknesses in Chinese banks, where profit margins are relatively thin, capital levels are low and asset quality is weak, and where risk management and control practices are still underdeveloped. Despite a recent restructuring of the three largest commercial banks (all state-owned and accounting for around 50% of total banking assets), which has lowered the ratio of non-performing loans from 17.2% of total loans in 2004 to 8% today,[7] asset quality still remains low by international standards, especially among smaller banks. In addition to non-performing loans of USD 206 billion, commercial banks have an estimated USD 270 billion of problem loans and, at end-2005, banks representing a quarter of total banking assets still failed to comply with the 8% Basle II capital adequacy requirement. According to a recent report by Fitch, the ratings agency, the Chinese government has spent around USD 400 billion (15% of 2006 GDP) bailing out state-owned banks since 1998[8] Of course, any concern regarding potential financial stability risks in China has to be weighted against the country's massive stock of foreign exchange reserves and fairly modest public debt – a position that could eventually provide significant resources for bailing out financial institutions in the event of systemic distress.

3.6 OPPORTUNITY COST OF BANKS' LIQUIDITY HOLDINGS

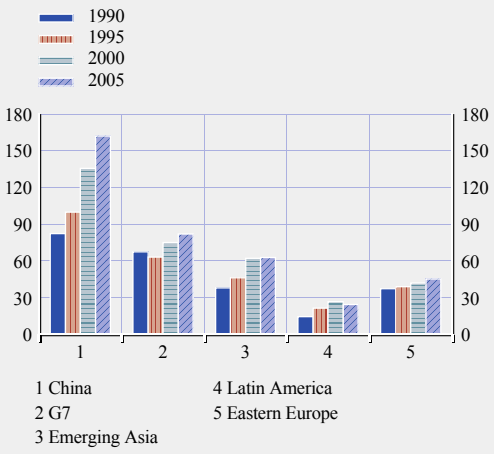
In addition to the potential risks to domestic financial stability, there is also an opportunity cost of a rising share of liquid assets on banks' balance sheets. The Chinese banking system has grown considerably since the early 1990s, in tandem with the increase in domestic savings. Deposits as a share of GDP rose almost twofold

7 This is still significantly higher than, for example, the 2% among Indian banks.

8 See China: Taking Stock of Banking System NPLs, Special Report by Fitch Ratings (30 May 2006), available online at: http://www.fitchratings.com/dtp/pdf2-06/bchi3005.pdf

Chart 19 Bank deposits-to-GDP ratio

(percentages)

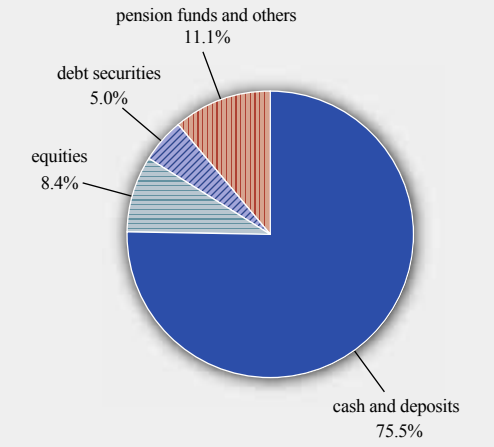


Sources: World Bank World Development Indicators, National Bureau of Statistics of China and IMF World Economic Outlook database for April 2007.
Notes: Emerging Asia includes India, Indonesia, Malaysia, the Philippines, South Korea and Thailand. Latin America includes Argentina, Brazil, Chile, Colombia and Mexico. Eastern Europe includes the Czech Republic, Hungary and Poland.

between 1990 and 2005 – faster than in any other relevant benchmark group (emerging Asia, Latin America, eastern Europe and the G7 countries; see Chart 19). In terms of level, the current share of more than 160% of GDP is substantially higher than in all other relevant comparators. This rapid expansion was partly fostered by the relative underdevelopment of other segments of the Chinese capital markets, which led households and corporations to channel the bulk of the increase in domestic private savings into bank deposits. Consistent with this, bank deposits still remain the dominant form for private individuals to accumulate savings, accounting for around three-quarters of the total stock of households' financial assets in China, compared with 50% in Japan and less than 16% in the United States (see Chart 20).

On the asset side of banks' balance sheets, the rapid expansion of deposits was associated with a steady pick-up in lending activity. However, given the existing caps and administrative controls on credit, lending growth has generally lagged behind the growth of deposits, and the loan-to-deposit ratio has fallen from 78% in 2002 to 69% currently (see Chart 21). This has helped to generate a surplus of internal funding on banks' balance sheets that the existing capital controls – particularly the restrictions on outward capital movements – prevented from channelling overseas. Consistent with this, the share of banks' foreign assets in total assets has been on a mildly downward trend during the period (see Chart 22).

Chart 20 Households' financial assets by type



Source: Goldman Sachs, based on 2005 data.

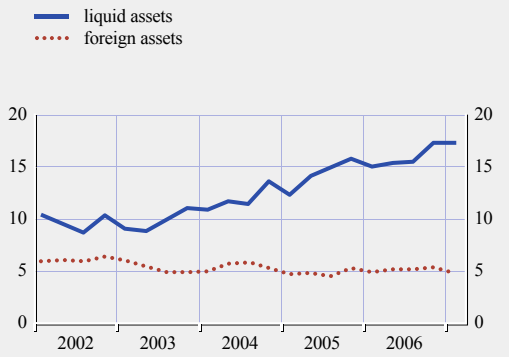
Chart 21 Loan-to-deposit ratio

(percentages)

Source: CEIC.

Chart 22 Banks' foreign and liquid assets as a share of total assets

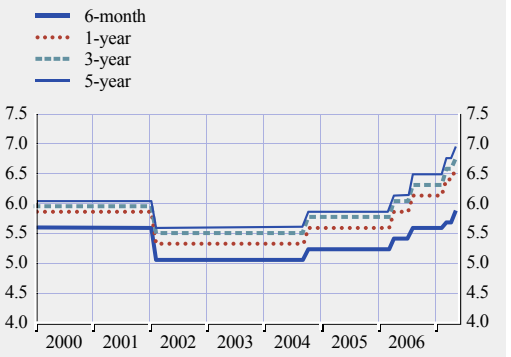
(percentages)



Sources: CEIC and authors' calculations.

Chart 24 Nominal lending rates by maturity

(percentages)

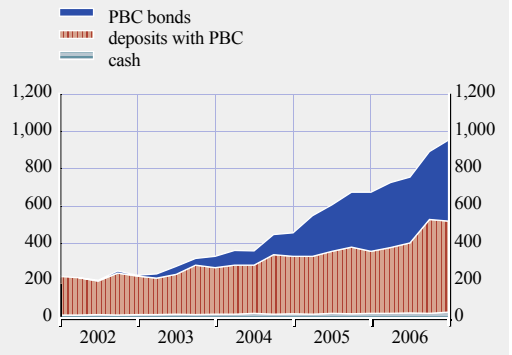


Source: CEIC.

Thus, because of lending controls and capital account restrictions, the bulk of the growth in deposits ultimately fed into banks' liquid assets, which have risen from around 10% of total banking assets in 2002 to more than 17% today (see Chart 22) – equivalent to around USD 950 billion or 37% of China's GDP in 2006. Chart 23 reports the instrument breakdown of this stock and shows that bank liquidity is almost equally split between i) deposits with the People's Bank of China (both mandatory and voluntary – the former including mostly the compulsory reserves that banks are required to set aside on deposits) and ii) PBC bills (mainly short-term central bank securities issued for sterilisation purposes). Only a tiny portion of the overall liquidity stock is held in cash in bank vaults.

Chart 23 Banks' liquid assets: breakdown by instrument

(USD billions)



Sources: CEIC and authors' calculations.

The high share of liquid assets on the balance sheets of Chinese banks therefore essentially represents the counterpart of the liabilities issued by the central bank to sterilise its foreign exchange intervention. These instruments generally yield low returns. On central bank deposits, the People's Bank of China currently pays an annual interest rate ranging from 0.99% on voluntary deposits to 1.89% on mandatory deposits. Yields on PBC bonds are somewhat higher, ranging between 2% and 3%, depending on maturity, but they are still significantly lower than, for example, current benchmark lending rates, even at the shortest end of the maturity curve (see Chart 24). Low liquidity yields clearly entail opportunity costs for banks, which in turn may create inefficiencies for depositors, borrowers and bank shareholders (at present mainly the State), and may be one important reason behind the low profitability of Chinese banks.

3.7 A MONETARY POLICY DILEMMA

According to the UIP condition, the expected change in the nominal bilateral exchange rate of the renminbi against the US dollar is equal to the interest rate differential between the

two currencies (abstracting from possible risk premia). Formally:

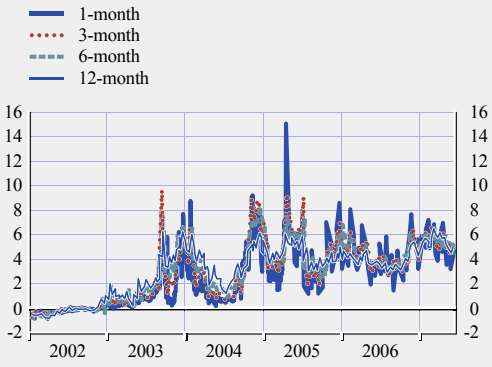
$$E_t(s_{t+1}) - s_t = i_t - i_t^*,$$

where s_t is (the logarithm of) the spot exchange rate at time t, expressed in terms of units of the domestic currency (in this case, renminbi) per unit of foreign currency (i.e. the US dollar); $E_t(s_{t+1})$ denotes the expectation at time t of the spot exchange rate at time t+1; and i_t and i_t^* represent the nominal risk-free interest rates in China and the United States respectively. Under the UIP condition, expectations of a renminbi appreciation (i.e. $E_t(s_{t+1}) - s_t < 0$) would normally result in downward pressures on Chinese interest rates, given US interest rates. Although it is widely recognised that UIP does not hold in practice, the condition can be used to highlight how, in the absence of capital controls and other market frictions, the current constellation of domestic and foreign interest rates would be consistent with large inflows of speculative capital into China. The condition also highlights a dilemma between internal and external objectives currently facing the Chinese policy-maker.

Forward contracts provide one crude measure of markets' expectations of renminbi appreciation. Chart 25 plots the expectations based on the forward premium at different maturities, derived from renminbi non-deliverable forwards traded off-shore in Hong Kong.[9] It shows that the implied one-year-ahead appreciation of the renminbi against the dollar currently ranges from 4.4% to 4.7%, depending on the contract.[10] Expectations based on forward premia are not fully accurate owing, for example, to market illiquidity and the difficulty of correctly identifying all the risk premia priced in the underlying contract. However, the magnitude of the implied appreciation appears roughly consistent with expectations derived from survey-based measures. For example, a survey of professional forecasters reported in the Foreign Exchange Consensus Forecast of March 2007 suggested an expected 6.1% appreciation against the dollar in one year.

Chart 25 Expectations of renminbi/US dollar appreciation from forward markets

(percentages)



Source: Bloomberg.
Notes: The data reported shows the inverse of the forward premia for NDF contracts at different maturities, so that a renminbi appreciation appears with a positive sign. Forward premia are expressed as a percentage and annualised.

Combining these appreciation expectations with the risk-free interest rate in the United States (currently 5.25% as measured by the Federal Funds rate) and feeding them into the UIP condition yields an implied risk-free interest rate in China of close to zero – a situation that, in turn, could degenerate into a liquidity trap.

In fact, from a theoretical point of view, UIP only holds if capital is perfectly mobile and if domestic and foreign assets are perfect substitutes – conditions that are hardly met in China owing to capital controls, higher political, sovereign and default risks relative to the United States, and the asymmetric enforcement and protection of property rights in the two countries. These frictions ensure that the risk-free rate in China can deviate significantly from the level predicted by the UIP condition.[11]

9 Given the off-shore nature of these contracts, their pricing may not fully reflect the interest rate differential between the two currencies (see Obstfeld, 2006; Ma, Ho, and McCauley, 2004).

10 Having expressed the exchange rate in terms of renminbi per US dollar, expectations of renminbi appreciation would result in a negative forward premium, and vice versa. However, for reasons of convenience, Chart 25 plots the inverse of the forward premium, so that a renminbi appreciation appears with a positive sign.

11 See Gandolfo (2000), International Finance and Open-Economy Macroeconomics, Springer, pp. 49-51.

If investors can hedge against exchange rate risk in forward markets, expectations on future exchange rates can be replaced by the forward exchange rate and the UIP becomes the CIP condition:

$$f_t - s_t = i_t - i_t^*,$$

where f_t is (the logarithm of) the one-period-ahead forward rate and the term $f_t - s_t$ is commonly referred to as the forward margin.

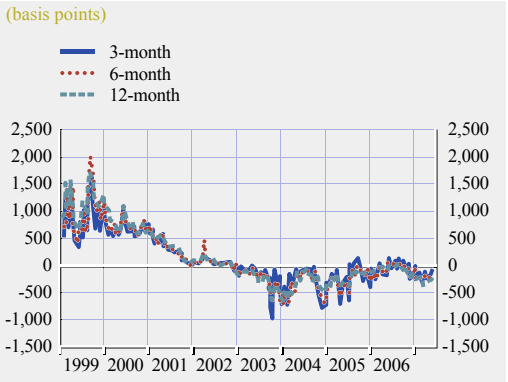
It is well known that the CIP theorem holds quite closely in open financial markets.[12] If this is the case, the forward margin is equal to the interest rate differential between the two currencies. Otherwise, an arbitrage opportunity arises, as trading strategies that would deliver a sure profit with no currency risk may be envisaged on the underlying financial assets. Alternatively, under CIP, a foreign investor is indifferent to placing money in US assets and earning the interest rate i_t^* or converting the money into renminbi at the spot exchange rate, earning the Chinese interest rate i_t, while hedging against exchange rate risk using the forward market.

However, capital controls in China prevent full capital mobility, hence the CIP may fail to hold in practice, implying that the forward premium may deviate from the interest rate differential. This deviation contains some information. Chart 26 plots the capital control premium ξ_t, defined as the deviation of the forward premium from CIP:

$$\xi_t = (f_t - s_t) - (i_t - i_t^*).$$

A negative capital control premium indicates that the covered returns on foreign assets are lower than the returns on domestic assets, i.e. rearranging the definition of ξ_t: $(f_t + i_t^*) < (s_t + i_t)$. In this case, capital controls mainly prevent foreign capital from flowing into the country – a situation that has characterised China since approximately 2003. Conversely, a positive ξ_t indicates that capital account restrictions prevent capital from fleeing the country. This situation characterised China during the late 1990s.

Chart 26 Capital control premia



Sources: Bloomberg and authors' calculations.
Note: The capital control premia are derived from the CIP condition and defined as the deviation of the forward premium from the interest rate differential. The deviation is expressed in basis points.

Thus, portfolio equilibrium considerations based on interest parity conditions point consistently to the conclusion that, in the absence of capital controls, China would attract large inflows of speculative capital. These considerations also highlight a policy dilemma between domestic and external objectives. In the current juncture, relatively high interest rates would be needed to cool the rapid growth of economy activity. However, high interest rates and the expectation of an exchange rate appreciation attract capital inflows, which in turn exacerbate the liquidity overhang and contribute to the further stimulation of economic activity. The paradox is that the relatively loose monetary stance pursued by the People's Bank of China in order to keep the appreciation pressures on the exchange rate in check in fact contributes to further stimulate the already overheated economy.

12 Perfect capital mobility implies CIP, but it does not necessarily imply UIP. For UIP to hold, further assumptions are needed, namely perfect asset substitutability, market efficiency and risk-neutral investors. See, for instance, Gandolfo (2000).

4 THE CASE FOR GREATER EXCHANGE RATE FLEXIBILITY

The rising domestic costs of the peg – reflected in the large b.o.p. surplus, the continued accumulation of foreign exchange reserves, ample domestic liquidity and the sharp run-up in equity and asset prices – clearly highlight the desirability of reforms in China both to the monetary policy framework, in order to allow greater exchange rate flexibility, and to structural policies, in order to reduce Chinese households' high propensity to save, to stimulate a more permanent increase in domestic consumption and to reduce the dependence on investment and exports as engines of domestic growth.

Greater exchange rate flexibility would be beneficial from a domestic point of view since it would improve investment decisions and boost consumers' purchasing power. Combined with fiscal reforms to reduce uncertainties surrounding the provision of basic public services, as well as financial reforms to remove borrowing constraints, it would help to address the high precautionary savings in the economy and boost consumption, thereby making Chinese domestic demand more self-sustained and less dependent on exports. Greater flexibility would also promote a more efficient allocation of resources between the tradable and non-tradable sectors, support more balanced domestic growth and be conducive to financial sector reform and capital account liberalisation, which are key policy objectives stated by the Chinese authorities.

A strong argument can therefore be made for an early move towards greater exchange rate flexibility, irrespective of whether or not the renminbi is substantially undervalued. The focus is shifted from b.o.p. adjustment – and from the contribution that this may provide to the orderly resolution of global current account imbalances – to China's own domestic imbalances. In this regard, even a large real appreciation of the renminbi would provide only limited relief to the adjustment of global imbalances. This is underscored by the literature (e.g. Edwards, 2005; Freund, 2000; Lau et al, 2004) and also by simulation results using global econometric models such as NiGEM and OEF. These models highlight that, although a renminbi appreciation would have the correct sign of reducing global imbalances, it would be no panacea for the resolution of imbalances given that the direct impact on the US current account deficit is likely to be limited, in the absence of parallel changes in the United States to raise savings.[13] Although model simulations are obviously subject to substantial caveats, these findings underscore once more that solving global imbalances requires a concerted multilateral effort.

A more important reason for recommending exchange rate flexibility in China is that it is in the country's own interest. As the economy develops and becomes increasingly integrated with the global economy, China will inevitably become more exposed to different types of macroeconomic shocks, both internally and externally. Exchange rate flexibility and, by extension, a more independent monetary policy would help the economy cope better with such shocks. This is the main reason why the determination of the exchange rate in China should be left increasingly to market forces. A corollary of this argument is that, in the long run, it is a move towards flexibility rather than a revaluation of the exchange rate that is desirable. As the experience of other countries shows, rapid economic growth and a strong external position constitute relatively favourable circumstances for making such a move.

The Chinese authorities have acknowledged the challenges arising from the exchange rate regime. They have identified the rising domestic costs of the peg and have repeatedly recognised the need for some policy adjustment. They have also stated on several occasions that, in the long

13 For a discussion of a renminbi shock on global imbalances using NiGEM, see, for example, Barrell, Holland, and Hurst (2006), "Sustainable Adjustment of Global Imbalances" NIESR, mimeo (available at http://www.iie.com/publications/pb/pb07-4/barrell.pdf). A set of renminbi simulations using OEF is discussed in Park (2005), "Coping with Global Imbalances and Asian Currencies", ERD Policy Brief 37, (available at http://www.adb.org/Documents/EDRC/Policy_Briefs/PB037.pdf).

run, growing integration with the global economy will eventually require a fully flexible exchange rate arrangement. Yet, efforts to overhaul the system have been timid so far, and the revealed preference of the Chinese policy-maker has been for a cautious approach to exchange rate reform.[14]

On 21 July 2005, for example, the Chinese of the renminbi vis-à-vis the US dollar and emphasised their resolve to move towards a more market-determined exchange rate system. At the same time, they took measures to develop the foreign exchange market and, on several occasions in 2006, they made use of the flexibility allowed by the existing fluctuation bands to enable a greater appreciation of the renminbi. Furthermore, on 18 May 2007 they announced a modest widening of the trading bands against the dollar – from +/-0.3% of the reference rate to +/-0.5% – while leaving the trading bands against other major currencies unchanged at +/-3%. This move resulted in somewhat heightened volatility in intra-day trades involving the currency but with little discernible impact on the pace of its daily fluctuation. These are steps in the right direction, but they have clearly been too limited to significantly address China's ongoing domestic and external imbalances.

4.1 CONCERNS ABOUT GREATER FLEXIBILITY

Several arguments have been put forward to explain the glacial pace of exchange rate reform in China. A renminbi appreciation may hurt China's external competitiveness, thereby reducing export growth and weakening FDI inflows. Since export growth has been an important engine of the country's spectacular economic performance in the past decades, it is feared that a weakened export capacity may jeopardise overall growth prospects. However, this cost is probably overstated. The direct impact of any renminbi appreciation on export growth is likely to be muted owing to the high import content of China's exports. Imports represent a substantial component of the domestic production process in China. Although an appreciation of the renminbi would increase the cost of processing and assembling goods in the country, it would also lower the costs of imported intermediate inputs. Therefore, a rise in the value of the renminbi is likely to have only a limited impact on China's external competitiveness. Devereux and Genberg (2006), for instance, using a two-country framework where China is assumed to use imported inputs in its production process, show that a renminbi appreciation would not generate a relevant deterioration of the country's current account surplus.

A related concern is that higher exchange rate volatility under a flexible exchange rate regime might affect FDI inflows, which have been an important determinant of China's economic expansion through technology transfers. However, empirical studies generally find that exchange rate volatility has little role in explaining FDI inflows, which are determined rather by the size of the country's domestic markets, GDP and productivity growth, political and macroeconomic stability and, more broadly, the strength of the domestic institutions (UNCTAD, 1999; Lim, 2001).

A second argument concerns the risk of deflation that may be generated by the international pressure mounting on China to appreciate its currency – similar to Japan in the late 1980s (see, for instance, McKinnon, 2005, and McKinnon and Schnabl, 2006). Portfolio equilibrium considerations related to the UIP condition explain why these pressures can push a country into deflation. During the 1980s, owing to its large current account surplus, Japan came under significant pressure to appreciate its currency against the US dollar. To guarantee

14 The policy commitments undertaken by the Chinese authorities in the context of the Multilateral Consultations on Global Imbalances with the IMF illustrate very well their awareness of the need to increase exchange rate flexibility and promote more balanced external sector developments, including the need to deepen reform of the administration of the foreign exchange market and gradually open up the capital account in line with the theoretical arguments developed in this paper. These arguments are summarised in IMF (2007), "Staff Report on the Multilateral Consultation on Global Imbalances with China, the euro area, Japan, Saudi Arabia, and the United States", available at: http://www.imf.org/external/np/pp/2007/eng/062907.pdf.

portfolio equilibrium, Japanese interest rates fell vis-à-vis US rates. Decreasing domestic rates in Japan led to an unprecedented asset price bubble (both in the real estate and equity markets) and overinvestment. In turn, the bubble fuelled further expansion of economic activity, since corporations found it relatively easy to raise funds, either directly through the equity and corporate bond markets or through borrowing from commercial banks. A share of these inflated assets appeared on the balance sheets of the banking sector in the form of collateral and increasingly backed up the lending. When the bubble burst in 1989, corporations were confronted with declining profits and banks with non-performing loans. The excess capacity that had built during the years of the asset bubble was the main cause of declining prices. Bad loans, in turn, could not be offset against collateral because of the decreasing value of these assets. Consequently, Japan sank into the stagnation and deflation of the so-called "lost decade" of the 1990s.

According to this argument, China today faces a scenario similar to that of Japan in the 1990s owing to the international pressures for it to appreciate its currency.[15] Given that US interest rates are determined exogenously and investors expect an appreciation of the renminbi, portfolio equilibrium can only be secured if the interest rate on renminbi assets falls below that on dollar assets. However, financial markets in China are currently much less developed than they were in Japan in the 1990s. Shallow financial (and in particular equity) markets imply that even if interest rates fall to low levels and subsequently feed a financial bubble, the risk of overinvestment is likely to remain limited. Nevertheless, it is also true, as happened in Japan, that a decrease in interest rates can generate excessive credit provision. Rapid lending growth in China is already causing excessive build-up of productive capacity in some sectors, which can potentially lead to deflation and, if left unaddressed, a recession in the long run. The genesis of the deflationary risk for both China and Japan lies in their external positions. In the case of China, however, excess liquidity, which fuels rapid loan growth and overinvestment, is generated by the pegged exchange rate and massive intervention in foreign exchange markets. A relaxation of the peg would permit China to gain control of its monetary policy and put an end to liquidity accumulation. At the same time, Japan's "lost decade" should be lesson enough of the need for "good global governance" in foreign exchange markets: inducing expectations of appreciation for a currency is a free lunch for speculators and may ultimately lead to deflation.

A third concern is that an exchange rate appreciation could adversely affect rural incomes. Indeed, the Chinese rural sector is widely believed to be internationally uncompetitive due to the large amount of surplus labour combined with low productivity growth.[16] Policy-makers therefore fear that a fall in domestic prices of food imports resulting from a renminbi appreciation may have significant adverse consequences for farmers. While this is a plausible concern, there is, as yet, little empirical evidence to support it. Moreover, if rural incomes were a particular area of concern for Chinese policy-makers, any difficulties generated by an exchange rate appreciation could be addressed more efficiently through fiscal transfers to affected households, rather than by delaying a move in the exchange rate. In any case, in a rapidly developing economy, the relative weight of the agricultural sector is bound to diminish over time.

Furthermore, it is feared that exchange rate flexibility may lead to financial distress in a system that, because of the protection offered thus far by capital controls, is yet to develop tools to deal with exchange rate risk appropriately. Indeed, this has proven to be a problem in several emerging economies, where sudden

15 With the Plaza Accord in September 1985, the G5 (France, Japan, the United Kingdom, the United States and West Germany) agreed to depreciate the US dollar vis-à-vis the Japanese yen and the Deutsche mark by intervening in foreign exchange markets. The devaluation of the US dollar was geared towards reducing the large US current account deficit and helping the economy to exit from recession.

16 According to estimates provided by the Chinese authorities, there are around 150 million surplus workers in rural areas. See Prasad et al (2005).

currency devaluations have imposed a burden on firms and banks with large unhedged net foreign currency positions. In theory, the situation in China is perfectly orthogonal to that in the typical emerging economy: banks typically hold net foreign assets and therefore would suffer from an appreciation of the domestic currency. However, the impact of a currency appreciation on net foreign asset positions may be different from the impact of depreciation on net foreign liabilities. Moreover, any direct effect of an exchange rate appreciation on Chinese banks is likely to be limited, given that their overall exposure to foreign exchange risk is relatively small by international standards, also owing to existing regulations requiring banks to surrender most of their foreign exchange receipts to the central bank.

Moving to the corporate sector, Chinese firms have net foreign liabilities and therefore the balance sheet impact of an appreciation of the renminbi would be positive, since the value of foreign currency debt would decline. Moreover, with the existing capital controls in place, Chinese firms and banks would generally be sheltered from sudden reversals of foreign capital flows leading to large exchange rate changes. Indeed, greater exchange rate flexibility could, in fact, facilitate capital account liberalisation by preparing the economy to deal with the impact of larger cross-border capital flows in a gradual manner. The experience of economies such as Chile and Israel confirms the importance of a correct sequencing of exchange rate reform and capital account convertibility.

Although the current overall exposures to foreign exchange risk of the Chinese corporate and banking sectors appear limited, there are indications that they have risen in recent years. According to Prasad et al (2005), banks' net foreign assets accounted for 3% of broad money and 6% of GDP in 2003, and foreign currency lending represented around 5% of domestic credit and 9% of GDP. These figures compare relatively favourably with other countries. However, between 2001 and 2003, banks' foreign currency loans to domestic residents rose by over 60%, net foreign currency liabilities by nearly 50% and total short-term external debt, which is denominated in foreign currencies, by over 50%. These trends are likely to continue as China's integration into the global economy advances.

Overall, although a renminbi appreciation would be beneficial for the Chinese economy as a whole, it would not be neutral for different sectors of the economy and would possibly have relevant distributional effects both across and within sectors. This may be an important reason why a renminbi appreciation is a highly politically sensitive issue in China.

4.2 ELEMENTS OF A POSSIBLE EXIT STRATEGY

Greater exchange rate flexibility can remedy many of the drawbacks of the tightly managed exchange rate regime that have been highlighted in the previous sections. It would allow the central bank to regain full control over domestic monetary conditions. It would provide a further adjustment channel in the face of internal and external shocks. It would prevent further build-up of liquidity in the financial system. It would promote a more efficient allocation of resources between tradable and non-tradable sectors and support more balanced domestic growth.

The Chinese authorities are aware of these benefits and have repeatedly stated their resolve to move towards increased flexibility in the medium term. However, they have also recognised that some conditions have to be in place to ensure a smooth functioning of a more flexible system. In particular, a number of institutional reforms have to be implemented in order to prepare the economic system to manage exchange rate risk. These include developing a proper foreign exchange market, where the central bank shifts from acting as a rate-setter to a supervisory role, and introducing more sophisticated hedging instruments. The financial and non-financial corporate sectors will also have to learn to adapt to increased foreign exchange risk.

A sudden move to a fully floating exchange rate regime is not advisable since, given the current appreciation pressures on the currency and the uncertainties surrounding the "equilibrium" level of the exchange rate, it would likely result in heightened volatility and possibly overshooting. Neither would a re-peg at a higher rate be a sustainable solution in the long run; at best it would postpone the issues of external imbalances currently associated with the peg and it would not deliver the independent monetary policy that China needs. Moreover, a re-peg would create expectations of further realignments. These would trigger speculative capital inflows, which in turn would compound the ongoing liquidity overhang. Hence, in the medium term, an intermediate regime should be envisaged to help smooth the transition.

Proposals have been discussed in a number of papers (Frenkel, 2004; Obstfeld, 2006). Ultimately, the regime that is adopted to help smooth the transition should satisfy the equilibrium portfolio condition given by the UIP. Notoriously, this condition states that, in equilibrium, the expected change in the exchange rate must equal the differential between domestic and US interest rates, plus a risk premium. If the expected appreciation of the renminbi is greater than that suggested by the UIP, capital inflows will ensue since investors can make an almost certain capital gain by investing in renminbi. In order to avoid this, the central bank can lower the domestic risk-free interest rate so that it becomes unprofitable to speculate on an appreciation. Alternatively, it can attempt to manipulate agents' expectations of future movements of the currency's foreign exchange, for example by creating uncertainty around the central parity. Finally, it can introduce a sufficiently high transaction cost. For instance, capital controls are de facto equivalent to a transaction cost.

5 CHINA'S EXTERNAL POSITION, FINANCIAL INTEGRATION AND CAPITAL ACCOUNT LIBERALISATION

The benefits of capital account liberalisation have been widely discussed in the literature. In theory, capital account liberalisation promotes a more efficient international allocation of capital, which enhances growth. It allows net transfers of resources, which permit consumption smoothing, risk sharing and intertemporal capital formation. It favours technology transfers from abroad and improves corporate governance. In countries with weak institutions, it signals commitment to sound macroeconomic policies. However, the concrete experience of some developing economies has been far less clear-cut regarding the beneficial effects of capital account liberalisation. The "Tequila crisis" of 1995, followed by the Asian, Russian, Brazilian and Argentine crises, was a reminder that combining a fixed exchange rate with an open capital account may provide fertile ground for a crisis. A number of theoretical studies have attempted to formalise the potential risks of liberalising the capital account when institutions are weak and macroeconomic policies are inconsistent with the requirements of the regime. These risks derive from market failures, such as moral hazard and asymmetric information, which can be prevented only with a sophisticated management of financial markets that cannot easily be achieved by developing economies. In this context, capital account openness exposes the economy to dependence on volatile foreign capital inflows that may suddenly stop, leading to financial crises (see Prasad et al, 2005; Dooley and Walsh, 2000; Dornbush, 2001; Gourinchas and Jeanne, 2006).

Historically, capital account restrictions in China have been credited for delivering a number of positive effects. They have allowed a certain degree of monetary autonomy to be retained in the face of the tightly managed exchange rate regime. They have protected the country from disruptive capital movements – both from speculative inward movements of hot money and from capital flight due to concerns for the fragile domestic banking system. They have been credited with shielding the country from vulnerability to financial contagion, e.g. during the Asian crisis – although other factors may also have played a role, including the comfortable level of foreign exchange reserves vis-à-vis short-term debt. They have allowed the composition of inflows to be steered towards more stable forms of external financing, such as FDI.

However, as China's integration in the global economy advances, it is beneficial if progress is made in terms of liberalising financial flows. There are several arguments that call for a progressive opening up of China's capital account. Xiaopu (2003) and Zhang (2005), for example, argue that a gradual process of reform of both inward and outward flows would be beneficial to China, since it would stimulate the development of domestic financial markets and improve the returns on savings. Moreover, a more liberal capital account would provide broader diversification benefits, allowing Chinese investors to hold higher shares of foreign assets in their portfolios. It would also help to redress the concentration of foreign exchange risk on the government's balance sheet currently associated with the rising stock of foreign exchange reserves, and it would allow a better allocation of foreign exchange risk among the different sectors of the Chinese economy.

The crucial argument is that capital account restrictions become increasingly porous over time, especially if the current account is already fully liberalised and trade integration is growing – as is currently the case in China. Aizenman (2006), for example, argues that the scale of financial leakage is proportional to the commercial openness of the economy. As the economy becomes increasingly commercially integrated with the rest of the world, curtailing illicit capital flows becomes more costly because it requires spending increasing resources on monitoring and enforcing the existing capital controls. Moreover, financial innovation can also raise the costs of maintaining capital controls over time. By their very nature, domestic financial liberalisation and financial innovation generate efficiency gains, but they also constrain

the effectiveness of capital controls in financial markets that are increasingly globally integrated. Market forces can thus accelerate capital account opening *de facto* and later *de jure*, increasing vulnerability to volatile capital flows and restricting policy discretion.

Indeed, there is evidence that loopholes in China's capital controls may have allowed inflows of unsolicited foreign capital, which have been speculating on a renminbi appreciation recently. For example, tighter controls on short-term foreign borrowing introduced at the end of 2005 led to a contraction of this type of inflow and a sharp slowdown in the capital account surplus in 2006. At the same time, the trade surplus rose sharply, indicating that part of these speculative capital inflows may have been routed eventually into the country disguised as trade flows. Under-invoicing of imports and over-invoicing of exports are typical forms through which trade may mask speculative capital inflows. FDI is another route through which large inflows of speculative capital may have entered China recently, notwithstanding capital controls. Foreign investors may be buying Chinese assets that are considered cheap as a result of the undervalued exchange rate. Remittances from Chinese nationals working abroad are another channel through which capital controls may be circumvented. In 2006, China was the third largest recipient of remittances after India and Mexico.

This section documents the recent trends in China's external position by presenting the international balance sheet of the country. It describes the key stylised facts concerning both the gross holdings of foreign assets and liabilities and their net balance and composition. It then highlights the implications of these features for the sustainability and efficiency of the country's external position.

5.1 RECENT FEATURES OF CHINA'S BALANCE OF PAYMENTS

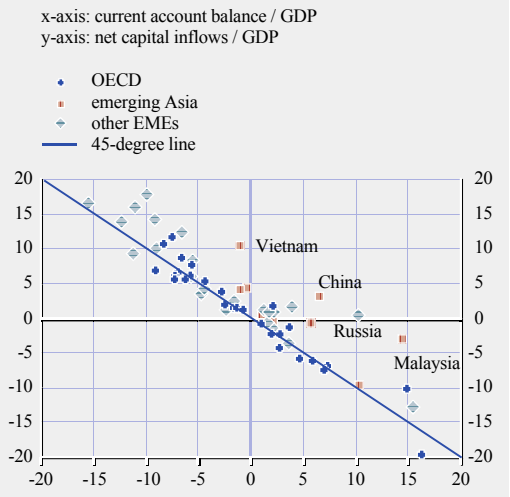
China's b.o.p. displays several peculiar features. A first peculiarity, as already pointed out in previous sections, is that the country typically combines a surplus on the current account with a surplus on the capital and financial accounts – one of the few economies in history to have done so consistently for more than a decade (Yongding, 2007). Under normal circumstances, twin b.o.p. surpluses are relatively uncommon and, in principle, they should not persist over time. In fact, large and persistent twin surpluses are fundamentally self-contradictory. By simple accounting identity, a current account surplus indicates a positive gap between domestic savings and investment. Therefore, a more usual position for a country with a current account surplus is to be a net lender on international financial markets and to run a capital account deficit. This would allow the surplus of domestic savings over available investment opportunities to be channelled abroad.

An alternative way to look at China's twin surpluses is to recall the standard accounting identity of the b.o.p., which in its most basic form states that, in every period, the sum of the current account balance (CA), the capital and financial account balance (KA), errors and omissions (EO) and the change in foreign exchange reserves (ΔRES) must be zero, i.e.:

$$CA + KA + EO + \Delta RES \equiv 0.$$

In the absence of official intervention ($\Delta RES = 0$), and assuming for simplicity $EO = 0$, the identity yields the equilibrium condition of the b.o.p.: $CA = -KA$, which states that for countries where the central bank does not intervene in foreign exchange markets, a current account surplus must be matched by a deficit on the capital and financial accounts of similar size, and vice versa. In other words, in equilibrium, countries should lie on the 45° line of an x-y chart plotting the two balances on the axes. Chart 27, which reports the external balances scaled by GDP for a selection of major developed and developing economies, shows that this is indeed the case for the OECD countries and for the vast majority of emerging market economies. China's twin surpluses, however, stand out as an exception, together with the external positions of

Chart 27 Cross section of net capital inflows and current account balance



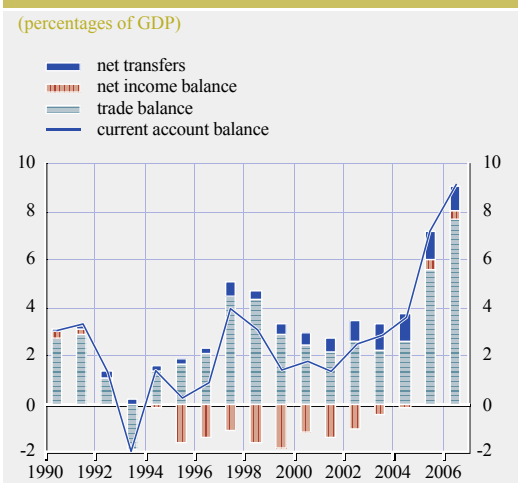
Source: IMF World Economic Outlook database for April 2007.
Note: Data shown are averages for the period 2003-06 and refer to selected countries.

a small number of economies in South-East Asia. Russia also stands out as an outlier, reflecting its role as a commodity exporter (other major oil and commodity exporters are not reported in the chart).

The size and composition of the current account balance is another conspicuous feature of China's b.o.p. Chart 28 shows that China has recorded a current account surplus almost uninterruptedly since the early 1990s. This surplus, which was relatively moderate at around 2% of annual GDP for most of the 1990s, has risen sharply since 2005 and currently stands at USD 250 billion (9.3% of GDP). In accounting terms, the main driver of the increase has been the surging trade surplus, although other items of the current account balance have also contributed to the rise (see Chart 28). The net income balance, which consists mainly of interest earnings on foreign bonds and securities held by Chinese residents net of the dividends and retained earnings that the Chinese subsidiaries of multinational companies accrue to their foreign parents, and which was negative for most of the 1990s, has recently moved into surplus. In 2006 this surplus rose to USD 10 billion, driven by the rapid build-up of external financial assets (notably foreign exchange reserves) in China's i.i.p. in recent years – a point that will be dealt with in the next section. China also receives net transfers amounting to USD 27 billion annually, mainly in the form of remittances from Chinese nationals working abroad.

Despite the recent increases in the surpluses of the net income and net transfer balances, the Chinese current account is still dominated by developments in net trade, which accounted for almost 85% of the current account surplus in 2006. The dominant role of net trade in China's current account balance stands in sharp contrast to a share of only 37% in the case of Japan – another country to have recorded a high current account surplus in the same year, both in terms of level (USD 170 billion) and relative to GDP (3.9%). Conversely, the net income balance, which was only around 4% of China's current account balance, represented more than 69% of Japan's current account. Japan's income account surplus of USD 118 billion in 2006 was one of the highest among developed economies and reflected both the country's large net foreign asset position and the high earnings on the country's stock of portfolio investment. The different composition of the current account balances in the two countries, particularly the fact that China's trade surplus in 2006 was

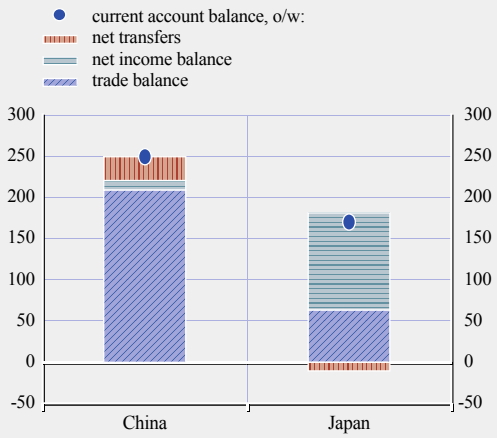
Chart 28 Current account balance



Source: IMF World Economic Outlook database for April 2007.

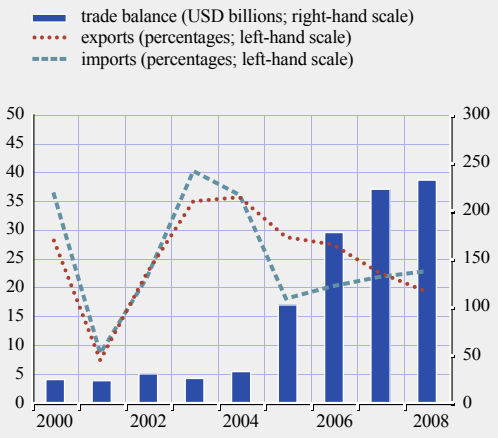
Chart 29 Decomposition of current account balance

(USD billions)



Source: IMF World Economic Outlook database for April 2007.
Note: Data for 2006.

Chart 30 Exports, imports and trade balance



Sources: CEIC and Consensus Economics.
Note: Exports and imports are expressed as year-on-year percentage growth rates. Data for 2007 and 2008 are projections from the June 2007 Asia Pacific Consensus Forecasts.

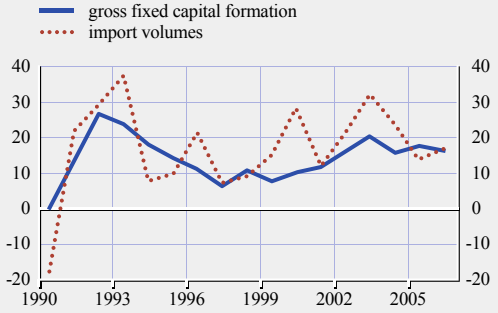
higher in absolute value than the overall current account surplus in Japan, may be one reason why China's current account is generally viewed as a greater concern than Japan's (see Chart 29).

A related issue is whether the increase in China's trade surplus observed since 2005 has been driven by cyclical factors and should be considered transitory in nature, or it has been underpinned by structural changes in the economy and is therefore likely to persist over time. Trade surpluses in excess of 7%-8% of GDP have only occurred recently in China. The rapid expansion of the Chinese trade surplus since 2005 has been mainly driven by a significant slowdown in import growth, which has lagged behind export growth by a wide margin (see Chart 30). It has been argued that the deceleration in imports may have been a fallout of the policies implemented by the authorities since 2005 to slow the rapid growth of domestic investment. These policies may have affected the trade balance because of the high content of capital goods and machinery of Chinese imports. In this sense – the argument goes – China's high trade surplus may be a transitory phenomenon linked to these policy changes and, in the medium term, the trade balance should be expected to return to levels more consistent with historical averages.

However, the evidence gathered lends mixed support to the hypothesis that policy measures to target investment may also have had an indirect dampening impact on imports, which in turn may have affected the trade balance. In favour of the hypothesis is the observation that the growth

Chart 31 Annual growth of import volumes and real gross fixed capital formation

(percentages)



Source: IMF World Economic Outlook database for April 2007.

rates of import volumes and real investment have been fairly correlated historically (see Chart 31). Against it, Chinese imports of machinery from developed economies – in particular the European Union, Japan and the United States – have continued to grow at fairly robust pace recently. Other policy measures that are intended to promote the establishment of national producers in sectors of the Chinese economy deemed strategically relevant (such as the steel and automobile manufacturing sectors) may also have had an indirect impact on net trade, dampening imports in those sectors.[17] At the same time, the import slowdown may also be the result of a structural change in the Chinese economy. In particular, increased spending on research and development, technology transfers via FDI, joint ventures with foreign capital and the dissemination of knowledge through learning-by-doing may have resulted in the increased ability of Chinese firms to produce domestically parts and components that they used to import from abroad.

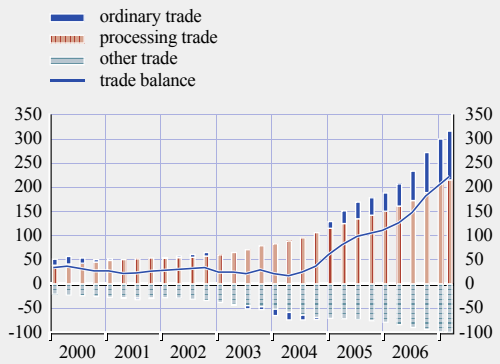
The processing trade still accounts for an important share of China's total trade (see Chart 32). However, the evidence also suggests that China is moving away from its traditional role as an assembly platform of imported inputs for re-export and that Chinese producers have started to rely more on domestically sourced components, particularly for less sophisticated products. Cui and Syed (2006) argue that, as a result of these trends, China's imports of parts and components have been increasingly driven by domestic production needs rather than final demand abroad and that, as a result, imports and exports have decoupled recently. They conclude that this increased domestic sourcing may be one important factor behind the recent increase in China's trade balance.

The key implication of this increased domestic sourcing of Chinese production and falling dependence of exports on imported inputs is that the surging trade surplus may reflect structural changes in the Chinese economy. Thus, in the absence of any major policy change domestically and protectionist backlashes abroad, the trade surplus is likely to remain high also for the foreseeable future. Indeed, most external forecasts of China's trade surplus are consistent with this view. The June 2007 Consensus Forecast, for example, projects a further widening of the trade surplus in the next two years (see Chart 30), and the IMF expects the current surplus to rise to 10% of the country's GDP in 2007 and 10.5% in 2008.[18]

The size of the capital account surplus and the composition of capital inflows is a further peculiarity of China's b.o.p. Chart 33 shows that steady net FDI inflows of around USD 45 billion per year over the past decade or so have been the country's single most important form of external financing. Conversely, net portfolio flows and other investment inflows have been more volatile. In this regard, it is interesting to note that net FDI inflows were little affected in the wake of the Asian crisis of 1997-98, whereas other forms of financing recorded net outflows during the period. FDI inflows to

Chart 32 Decomposition of trade balance by custom regime

(USD billions)



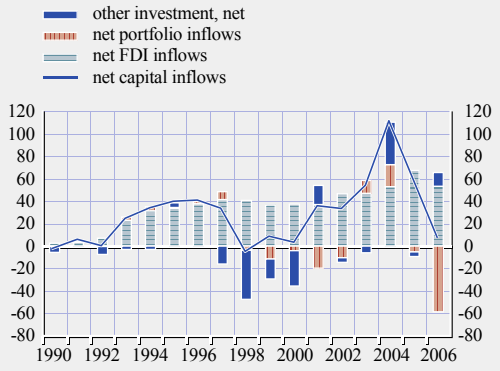
Source: CEIC.
Notes: Quarterly data. Observations are expressed on annualised basis using 12-month moving averages.

17 Preferential policies towards local manufacturers include advantageous tax treatment and financial support, preferential government procurement plans and intra-industry integration plans led by large state-owned enterprises. Specific policies are also planned at the municipal and regional levels.

18 See Statistical appendix of IMF *World Economic Outlook*, April 2006.

Chart 33 Net capital inflows by component

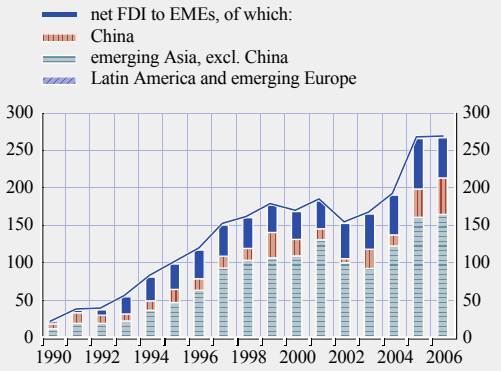
(USD billions)



Source: IMF World Economic Outlook database for April 2007.

Chart 34 Net FDI inflows to EMEs

(USD billions)



Source: IMF World Economic Outlook database for April 2007.

China have also been important relative to other developing economies, given the country's role as one of the world's largest recipient of foreign investment. Over the past decade, China has absorbed around one-quarter of total FDI flows to emerging market economies and 70% of total FDI inflows to emerging Asia (see Chart 34).

Turning to the most recent developments in China's b.o.p., "other investment" inflows – which are probably mostly speculative in nature – rose sharply in 2004 but reversed the following year (see Chart 33). Overall net capital inflows fell to a low of USD 7 billion in 2006, from USD 59 billion in the previous year, and a peak of USD 111 billion in 2004. The fall was largely due to net portfolio outflows of USD 58 billion, reportedly associated with the accumulation of external assets by domestic banks flush with liquidity. Since, under the existing regulations on capital movements, outward flows are only allowed subject to a number of restrictions (see also Table 1), the large size of these portfolio outflows in 2006 suggests that they may have been partly encouraged by the authorities in an effort to reduce the overall b.o.p. surplus and ease appreciation pressures on the currency. A moderation in external borrowing and a levelling off in net FDI inflows also contributed to the sharp slowdown in overall net capital inflows in 2006.

Preliminary data suggest that the sharp slowdown in net capital inflows in 2006 may have already reversed in the first half of 2007. Gross FDI inflows rose by around 12% in the first half of 2007, compared with the same period a year earlier. Other b.o.p. flows that are not related to FDI and to the trade balance rose even more sharply in the first half of 2007, to USD 122 billion, compared with only USD 33 billion in the same period of 2006, suggesting that short-term capital inflows may have also picked up significantly over the period. Expectations of faster renminbi appreciation, combined with soaring equity and property prices in some cities, are possibly important drivers behind these inflows. Clearly, if these trends continue in the second half of the year, overall capital inflows in 2007 are likely to surpass the record levels last observed in 2004.

The composition of China's foreign capital inflows and, in particular, the dominance of FDI within these inflows should be seen in the light of the existing capital controls, which are particularly restrictive compared with other major emerging market economies. A quick overview of these controls is reported in Table 1, which uses a simple colour code to indicate the extent of the existing regulations on specific classes of financial assets. The table highlights that the extent of

Table 1 Capital controls in China

FREE: no particular requirements or ex post registration requirements
LIMITED: allowed either to authorised institutions/enterprises only or subject to a number of exceptions
RESTRICTED: either prohibited with some exceptions or requiring particular procedures for examination and approval

		Inward Flows		Outward Flows	
		Locally by non-residents	Abroad by residents	Local emission or selling by non-residents	Purchase abroad by residents
Foreign debt	Bonds, other debt securities and bank loans				
Portfolio investment	Capital market securities			(Sale)/ (Issuance)	
	Money market securities				
	Collective investment securities				
	Derivatives and other instruments				
Foreign direct investment (FDI)	Direct investment	(Manufact.) (Fin. sector)	n.a.	n.a.	
	FDI liquidation		n.a.	n.a.	
	Real estate transactions		n.a.		

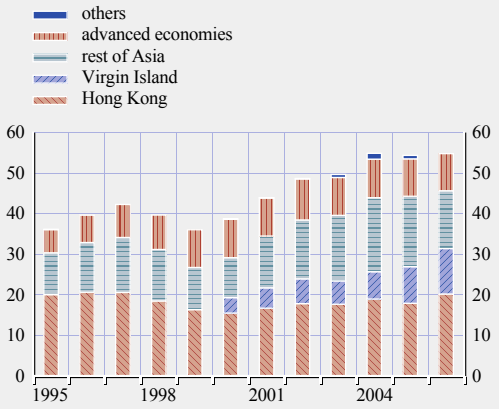
these controls varies significantly, depending on the type of assets and, in some cases, the financial and non-financial nature of the enterprise. Without going into the details of the regulations, the asymmetric nature of these controls is immediately apparent, with outward flows generally more heavily regulated than inward flows. Furthermore, controls are still significantly asymmetric today, despite several attempts to ease restrictions on outward flows over time. Outward FDI, for example, was liberalised between 2001 and the end of 2004, whereas inward FDI was liberalised in several steps as long ago as the mid-1980s (Prasad et al, 2005). Additionally, the less restrictive regime for portfolio investment outflows highlighted in the table reflects mainly the recent introduction of a pilot scheme to allow Chinese residents to purchase foreign securities through the so-called Qualified Domestic Institutional Investors programme. Under this programme, however, purchases of foreign assets by (selected) Chinese residents still require administrative approvals and are subject to overall targets set annually by the authorities. Until recently, these targets were set to relatively low levels.

Within inward flows, FDI is the class of cross-border capital movements least subject to restrictions, compared with portfolio investment and foreign debt. The relatively favourable treatment granted to inward FDI has to be seen in the light of the benefits that are normally associated with this form of external financing. FDI inflows into China are typically credited to have favoured technology transfers, increased domestic competition and raised factor productivity. They have brought capital goods and knowledge, which in turn have helped the country to develop its productive capacity. Moreover, FDI has been an important source of capital, which has contributed to finance the strong investment expansion that has characterised China's growth patterns in recent decades.

In order to attract more foreign investment, foreign invested companies in China until recently also enjoyed tax breaks and a preferential tax treatment relative to domestically funded firms. These practices were discontinued in March 2007 but, combined with the relatively more liberal approach to FDI flows under the existing capital controls, they may have been

Chart 35 FDI inflows to China by country of origin

(USD billions)



Source: CEIC.
Note: Values are based on data for utilised (as opposed to contracted) FDI.

important factors explaining why these inflows have been so conspicuous in recent years.

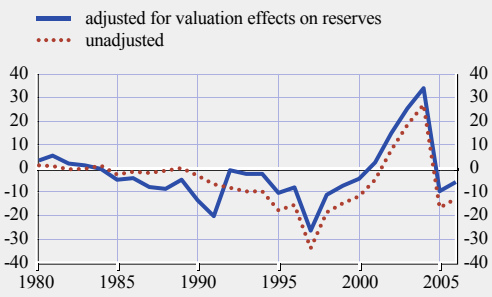
FDI inflows to China amounted to USD 55 billion in 2006. A decomposition of these inflows by country of origin shows that around 57% of the total came from Hong Kong and the Virgin Islands (see Chart 35). The status of off-shore financial centres typically attached to these regions suggests that a substantial part of the flows originating there are presumably round-tripping – i.e. they are Chinese capital channelled abroad and then back into the country in the form of FDI in order to take advantage of preferential tax treatment offered to foreign-invested companies. Getting exact estimates of the relevance of this phenomenon is extremely difficult, although it is believed that much of this round-tripping takes place through Hong Kong.[19] If this is the case, an upper-bound estimate is that a share of around one-third of all FDI inflows to China may be due to round-tripping. Of the remaining reported FDI inflows, two-thirds originates from Asian countries. Importantly, developed economies as a whole have not been particularly large investors in China thus far, and their ownership of Chinese assets is generally limited. This conclusion stands true regardless of whether one corrects or not for round-tripping (see Chart 35).

Partly offsetting these inflows, China's b.o.p. has historically recorded large errors and omissions, which may be indicative of unrecorded capital outflows from the private sector. This is a common feature in many developing countries, especially those where capital account restrictions are in place, as domestic residents try and circumvent these controls. In these circumstances, large negative outflows under the errors and omissions category are typically indicative of unrecorded capital flights, associated with the high risk of expropriation in the home country and unsophisticated domestic financial markets. In China, outflows under this category were particularly large between 1995 and 2000, suggesting that, if capital restrictions were not in place, the country could have suffered much higher outflows. Errors and omissions turned positive in 2003 and 2004, possibly reflecting a reversal of capital flight owing to speculation about a possible revaluation of the renminbi. However, they switched back into outflows again in 2005 and 2006. It has been suggested that errors and omissions may reflect, at least in part, accounting issues related to the valuation in US dollars of the reported stock of foreign debt and

19 FDI flows from the Virgin Islands are generally thought to be capital flows that have their original source in developed economies such as Japan, Taiwan and the United States, which are channelled through this off-shore centre in order to elude taxation in the source economy.

Chart 36 Errors and omissions

(USD billions)



Source: IMF World Economic Outlook database for April 2007.
Notes: Adjusted series obtained by subtracting an estimate of valuation effects on reserves from the unadjusted errors and omissions. These are estimated by comparing the reserves stock as declared by the People's Bank of China (which is adjusted for valuation effects) with the series derived from cumulating balance of payment flows (which excludes valuation effects).

official reserves. However, even if one corrects for an – admittedly crude – estimate of such valuation effects, the overall picture would remain broadly unchanged (see Chart 36).[20]

5.2 THE INTERNATIONAL INVESTMENT POSITION

Years of b.o.p. surpluses have led to the build-up of large stocks of foreign assets and liabilities in China's i.i.p. The rapidity with which such large stocks have developed has been remarkable. Gross foreign assets have grown rapidly, boosted by the continued accumulation of foreign exchange reserves. An "open-door" policy to foreign investment – particularly FDI – has also led to the accumulation of significant gross external liabilities. As external assets have grown faster than liabilities, China has developed a large net foreign asset position and the country has turned into a net supplier of capital to the rest of the world – an unusual position for an emerging economy. Moreover, as a high proportion of the country's stock of external assets are foreign exchange reserves held in US dollars, China has also become an important source of financing of the US current account deficit.

Table 2 reports China's official i.i.p. at the end of 2006, as issued by the State Administration of Foreign Exchange – the country's key foreign exchange institution.[21] However, official estimates of China's i.i.p. are only available starting from 2004. Thus, to get a broader perspective of the evolution of the country's foreign assets and liabilities since market-oriented reforms started being implemented in the late 1970s, this section also provides an in-house estimate for the years prior to 2004 by cumulating flows from the b.o.p. and applying appropriate valuation adjustments on the resulting stocks. In doing this, we follow a methodology first developed by Lane and Milesi-Ferretti (2001, and 2006), to whom we refer the interested reader for the

20 The point was raised originally by Prasad et al (2005). China's officially reported holdings of foreign bonds are marked at the historical exchange rate, while the stock of official reserves is marked to market and hence does reflect currency valuation effects. This implies that any changes in the US dollar value of reserve holdings could end up in the balance of payments under the errors and omissions category. The adjusted series reported in Chart 36 is obtained by subtracting from the unadjusted series an estimate of valuation effects on reserves, which in turn are obtained by comparing the reserves stock as declared by the People's Bank of China (which is adjusted for valuation effects) with the series derived from cumulating balance of payment flows (which excludes such valuation effects).

21 Official estimates of China's i.i.p. were first issued in mid-2006.

Table 2 China's official international investment position for 2006

(USD billions)

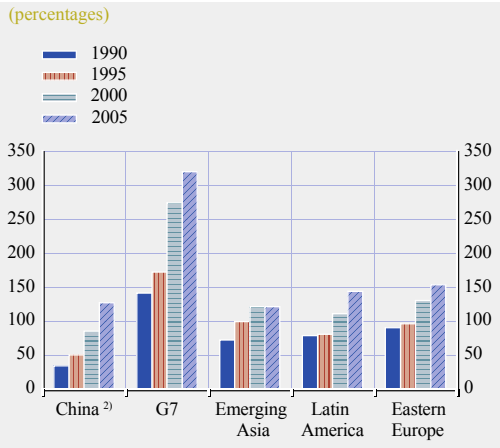
Assets		%	Liabilities		%
FDI assets	82.4	5.1	FDI liabilities	544.2	56.4
Portfolio investment, assets	229.2	14.1	Portfolio investment, liabilities	120.7	12.5
- Equity securities	*1.5*	*0.1*	*- Equity securities*	*106.5*	*11.0*
- Debt securities	*227.8*	*14.0*	*- Debt securities*	*14.2*	*1.5*
Other investment, assets	242.0	14.9	Other investment, liabilities	299.6	31.1
- Bank loans and trade credit	*230.5*	*14.2*	*- Bank loans and trade credit*	*261.4*	*27.1*
- Other investment assets	*11.6*	*0.7*	*- Other investment liabilities*	*38.2*	*4.0*
Gross international reserves	1,072.9	66.0	Other liabilities	0.0	0.0
Total assets	**1,626.6**	100.0	**Total liabililties**	**964.5**	100.0
			NFA	**662.1**	
Memo:					
GDP in USD bn in 2006	**2,630.1**				
Net foreign assets/GDP (percentage)	25.2				

Sources: State Administration of Foreign Exchange of China, IMF World Economic Outlook database for April 2007.

technical details. However, unlike Lane and Milesi-Ferretti (2006) – who also provide an historical i.i.p. database for over 140 countries, including China – we draw the underlying Chinese b.o.p. data for the i.i.p. estimate from the IMF World Economic Outlook database (Lane and Milesi-Ferretti combine data from a variety of sources) and produce estimates of China's external assets and liabilities for the period 1980-2006 (the database provided by Lane and Milesi-Ferretti stops in 2004). We also attempt a more accurate estimate of valuation changes on the stock of external debt using data on the currency composition of the long-term debt stock taken from the World Bank Global Development Finance database. Moreover, we provide a detailed breakdown of gross assets and liabilities and present an estimate of unrecorded assets held abroad by Chinese residents, obtained by cumulating error and omission flows from the b.o.p. and adjusting for valuation changes on the stocks of foreign debt and official reserves. According to these estimates, unrecorded assets held abroad by Chinese residents were significant in 2006 (USD 168 billion, or 6.4% of GDP). Table A.1 in the appendix reports the full estimates of China's external balance sheet obtained with this method. Reassuringly, these estimated stocks are broadly comparable with those from official data for the period in which the two measures overlap, both in gross and in net terms – except for minor differences concerning mainly the breakdown of gross assets and liabilities by type of financial instrument.

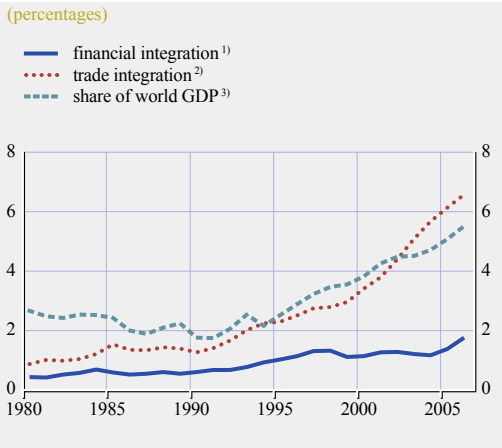
This information can be used to highlight a number of important features of China's i.i.p., both in static terms and in terms of its evolution over time. First, China displays relatively large stock positions, both in absolute value and as a share of GDP. Gross foreign assets were almost USD 1,627 billion in 2006 (62% of the country's GDP) and gross foreign liabilities were USD 965 billion (see Table 2). These large stocks have grown very rapidly from a relatively low base and in a fairly short period of time. To illustrate this point, Chart 37 reports a cross-country comparison of an indicator of financial openness, defined as the sum of gross foreign assets and liabilities as a share of GDP. This indicator has risen sharply in China in the past 15 years, from only 34% in

Chart 37 Financial openness[1)]



Sources: IMF International Financial Statistics, Lane and Milesi-Ferretti (2006) and authors' calculations.
1) Calculated as the sum of foreign assets and liabilities as a share of GDP. Emerging Asia includes India, Indonesia, South Korea, Malaysia, the Philippines and Thailand. Latin America includes Argentina, Brazil, Chile, Colombia and Mexico. Eastern Europe includes the Czech Republic, Hungary and Poland.
2) The last observation refers to 2006.

Chart 38 Financial integration, trade integration and share of world GDP



Sources: IMF World Economic Outlook database for April 2007, Lane and Milesi-Ferretti (2006) and authors' calculations.
1) Calculated as the sum of China's foreign assets and liabilities divided by the sum of world total foreign assets and liabilities.
2) Calculated as the sum of China's exports and imports of goods and services divided by the sum of world total imports and exports in goods and services.
3) Calculated as the share of China's GDP in world total GDP in current prices in US dollars.

1990 to almost 130% in 2006, and has shown a particularly sharp acceleration since 2000. China's financial openness today is comparable to the level in other emerging market economies, although it is still relatively low when compared with the G7. Furthermore, as highlighted also in Lane and Schmukler (2006), while the growth in cross-border holdings of assets and liabilities has been remarkable in China, the relative pace of financial integration – measured by the share of Chinese foreign assets and liabilities in total world assets and liabilities – has lagged behind the pace of trade integration – measured by the sum of China's exports and imports relative to the world's total – and the growth in China's share of global GDP (see Chart 38).

Table 2 also shows that there are significant asymmetries in the composition of the underlying stocks of gross foreign assets and liabilities. In particular, the vast majority of China's external assets consist of debt-type instruments (around 94%, if one counts debt securities, bank loans, trade credit and official reserves, which presumably are invested mainly in government bonds), whereas equity-type instruments (portfolio investment and FDI) represent only 6% of the total. Conversely, equity-type instruments account for around 72% of total liabilities, with debt-type instruments accounting for 28%. Thus, in terms of net position in each asset category, China has a positive net debt position and a negative net equity position, or, borrowing from Lane and Schmukler (2006), China is "long in debt and short in equity". Although this position does not highlight any obvious external vulnerability, the fact that equity-type instruments on average yield higher income streams than debt-type instruments could be one important factor explaining the relatively low net income balance of China's current account when compared with other countries. In 2006, the net income balance as a share of net foreign assets (a measure of the implicit interest rate earned by Chinese residents on their net i.i.p. holdings) was only 1.8%. In Japan and in Germany – two countries with large net foreign asset positions – the measure was 6.4% and 3.9% respectively (see Table 3). In gross terms, the implicit remuneration paid by China on its gross liabilities is broadly comparable to that in Germany, but the average remuneration on the stock of foreign assets has been consistently lower than in both Germany and Japan (see Table 3). This suggests that the low remuneration on foreign assets (particularly the low interests accrued on China's huge reserves stock) is an important factor explaining the relatively low income balance.

A further notable feature of China's i.i.p. is the high share of reserves in total foreign assets, both in absolute terms and relative to other countries, or, conversely, the low share of non-reserve assets in total assets (see Chart 39). Foreign exchange reserves accounted for around two-thirds of total foreign assets in 2006. This is an unusually high proportion, even when compared with other countries with large foreign exchange reserves holdings such as Hong Kong, Japan, Korea and Taiwan (see Chart 40). Among large reserve holders, only India has a higher share of reserve assets than China. Within non-reserve assets, the low stock of FDI assets (USD 82 billion) implies that, despite the recent increases in FDI outflows from the country, Chinese companies still remain relatively small global

Table 3 Implicit remuneration of external position

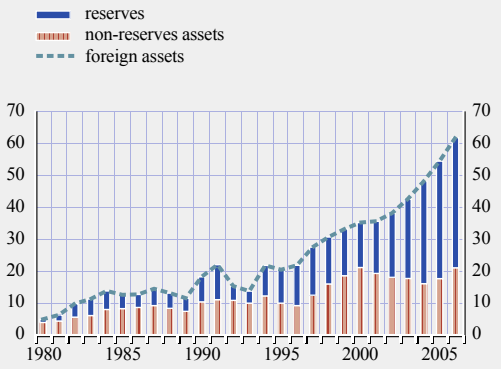
(as a percentage)

	Japan			Germany			China		
	2006	2005	2004	2006	2005	2004	2006	2005	2004
Net income balance/net foreign assets[1)]	6.4	6.3	5.0	3.9	4.9	4.8	1.8	2.5	-1.2
Income credit/gross foreign assets	3.5	3.1	2.8	4.1	4.0	3.5	3.2	3.2	2.2
Income debit/gross foreign liabilities	1.6	1.3	1.2	4.1	3.9	3.4	4.1	3.5	3.8

Source: authors' calculations.
1) A negative value indicates a net interest outflow.

Chart 39 Gross foreign assets as a share of GDP

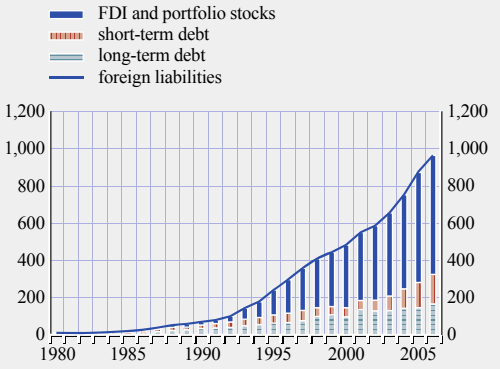
(percentages)



Sources: IMF World Economic Outlook database for April 2007 and authors' calculations.

Chart 41 Gross foreign liabilities

(USD billions)



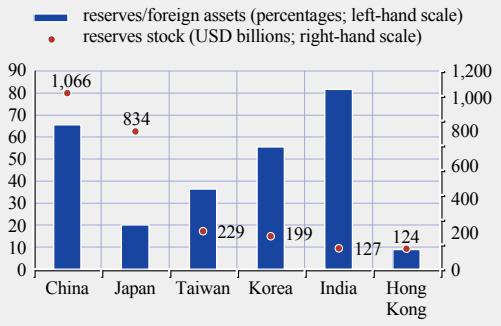
Sources: IMF World Economic Outlook database for April 2007, CEIC, and authors' calculations.

investors and account for less than 1% of the total world FDI stock. Furthermore, the stock of foreign assets held directly by the Chinese state may be even higher than suggested by the simple share of 66% of official reserves in foreign assets, because part of the non-reserve assets are actually foreign investments ultimately owned by state-owned enterprises and state-owned commercial banks.

Turning to foreign liabilities, China combines a low level of external debt (USD 316 billion in 2006) and, within this, a relatively small share of short-term debt. Since 2000 short-term debt has increased threefold, to USD 159 billion in 2006, but remains still comfortably covered by the stock of official reserves. Conversely, the large stock of FDI liabilities (USD 544 billion in 2006) makes up the lion's share of the country's gross external liabilities (see Chart 41).

Furthermore, following years of balance of payment surpluses, China's net i.i.p. balance

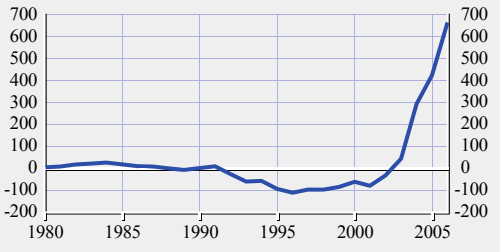
Chart 40 Reserve assets as a share of gross foreign assets in selected Asian economies



Sources: National Bureau of Statistics of China, Lane and Milesi-Ferretti (2006) and authors' calculations.
Note: All indicators are calculated using 2004 data, except in the case of China, for which 2006 data are used. Reserve assets exclude gold.

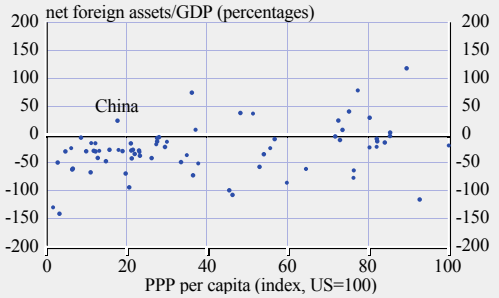
Chart 42 Net foreign assets

(USD billions)



Sources: IMF World Economic Outlook database for April 2007, CEIC and authors' calculations.

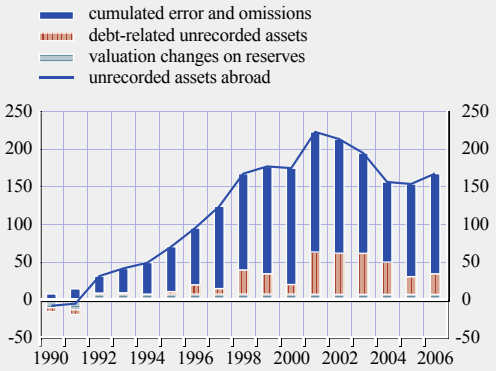
Chart 43 Cross section of net foreign assets, 2006



Sources: IMF World Economic Outlook database for April 2007, IMF International Financial Statistics and authors' calculations.

Chart 44 Unrecorded assets abroad

(USD billions)



Source: authors' calculations.

has been positive since 2003, indicating that the country is a net lender to the rest of the world (see Chart 42) – an unusual position for a country that is still relatively poor and where the ratio of capital-to-labour is low (see Chart 43).

Net foreign assets were USD 662 billion in 2006, equivalent to around 25% of the country's GDP. This large net foreign asset position was sharply up from the USD 423 billion in the previous year and is currently one of the largest in the world (see Table 4).

Finally, China also presents a large stock of unrecorded assets abroad – as measured by cumulating errors and omissions from the b.o.p. flows and adjusting for valuation changes in the stocks of external debt and official reserves (see Chart 44). According to this measure, unrecorded assets abroad have fallen somewhat in recent years, particularly in 2004 and 2005, owing to a reversal of unrecorded outflows reportedly attributed to expectations of currency appreciations. However, the overall stock still remains relatively high at around 6.4% of the country's GDP.

Overall, this analysis highlights five striking features of China's i.i.p.: i) a relatively low level of financial integration with the global economy, which has lagged behind trade integration; ii) a large net foreign asset position, which is

Table 4 Major net creditor and debtor countries in 2006

(US dollar billions)

Japan	1,806.34	United States	-2,539.63
Germany	738.75	Spain	-752.00
China	662.10	Australia	-480.27
Hong Kong	532.15	Mexico[1)]	-349.04
Switzerland	459.15	Brazil[1)]	-328.99
United Arab Emirates[2)]	221.38	United Kingdom	-520.60
Norway[1)]	201.42	Korea	-212.66
France[1)]	193.43	Greece	-237.07
Saudi Arabia[2)]	159.83	Turkey	-169.28
Belgium[1)]	119.56	Canada	-91.64

Sources: IMF International Financial Statistics and Lane and Milesi-Ferretti (2006).
1) 2005 data.
2) 2004 data.

difficult to reconcile with the country's relative factor endowment and level of development; iii) the absolute predominance of foreign exchange reserves – and symmetrically the relatively small weight of non-reserve assets – in total foreign assets, which ultimately implies a concentration of foreign assets in the public sector, either directly by the government or indirectly through state-owned financial and non-financial enterprises; iv) the prevalence of FDI in gross foreign liabilities and the relatively low stock of external debt, particularly short-term debt; and v) a significant amount of unrecorded assets held abroad by Chinese residents.

5.3 IMPLICATIONS

The features of China's i.i.p. discussed in the previous section have important implications for the country's external creditworthiness, the optimality of returns on Chinese foreign wealth, its vulnerability to external financial shocks (exchange rate changes and shifts in the US yield curve), the exposure of foreign investors to domestic shocks in China, and the country's future prospects for financial integration.

From the point of view of sovereign creditworthiness, China's external credit profile is extremely healthy, supported by the large net creditor i.i.p. of 25% of GDP, strong balance of payment surpluses, prudent levels of external debt, including short-term debt, a comfortable stock of foreign exchange reserves and a high stock of FDI liabilities, which are typically considered a safer form of external financing than debt-type liabilities. This strong external position is also reflected in the country's high sovereign ratings, which typically outperform those of most other emerging market peers. Indeed, a recent report by Fitch, the ratings agency, argued that, on a comparative basis, among the 13 rated sovereigns with gross external assets of more than USD 1 trillion at the end of 2006, nine were rated "AAA". China's "A" rating was unique in this group in that official reserves account for the vast majority of gross external assets, whereas sovereigns at the top of the rating scale tend to have much lower stocks of reserves.[22] Concerns about future developments of China's external financial position, should capital account restrictions be lifted, were quoted as a potential obstacle towards a higher rating.

But is the prevailing composition of China's i.i.p. also desirable from the perspective of the Chinese policy-maker? In particular, how should one see the fact that the majority of China's foreign assets are owned by the state? The usefulness of a large stock of reserves is that essentially it allows the smoothing of domestic absorption in response to external payment imbalances. For countries with rigid exchange rate regimes, an added benefit is that reserve accumulation may be used to stabilise the foreign exchange rate in the face of appreciation pressures. In China, the large stock of reserves can also be taken as a sign of latent demand in the economy for foreign assets, which cannot be satisfied directly by private agents because of the existing capital account restrictions, and which consequently has to be intermediated by the central bank. However, investing national wealth is not a typical mandate of a central bank. Central banks are, by definition, risk-adverse institutions that seek to maximise portfolio liquidity and therefore invest in low-risk assets yielding low returns. Thus, because of these constraints, it is not assured that China's external position is on an optimal risk-return trade-off. Moreover, by absorbing all the foreign exchange proceeds flowing into the economy by means of official intervention, the central bank is effectively providing a hedge to the rest of the economy against foreign exchange movements. This implies a concentration of foreign exchange risk on the balance sheet of the monetary authority, which leaves private agents unprepared to deal with such risks appropriately and delays the development of more sophisticated hedging instruments.

In this regard, the recent announcement of a plan to fundamentally reform China's foreign

22 See China's External Assets, Special Report by Fitch Ratings (20 March 2007), available online at: http://www.fitchratings.com/corporate/reports/report_frame.cfm?rpt_id=319022.

reserve administration and to establish a sovereign wealth fund with responsibility for managing more actively part of China's stock of foreign exchange reserves may be taken as an indication by the Chinese authorities that the current arrangement is sub-optimal. In particular, the move reveals a clear desire to earn greater returns on official reserves and to hold a more diversified portfolio of foreign assets. As we discussed in the previous section, China's (gross) foreign assets generated an average return of only 3.2% in 2006. If a more diversified portfolio of foreign assets led to a 50-basis point increase in these returns to 3.7% (which would still be lower than the average return of 4.1% in Germany in the same year; see Table 3), the net income balance would mechanically increase by USD 8.9 billion, adding – ceteris paribus – a further 0.3 percentage point of GDP to the current account surplus. In other words, the potential income stream from China's external assets provides a strong incentive to seek higher returns.

In addition to enhancing returns, a more diversified international portfolio would also help to reduce the vulnerability of China's foreign assets to external financial shocks. Official data on the currency and instrument composition of China's reserve stock are not available, but from US data on purchases of US government bonds by foreign investors it is possible to reconstruct that a large fraction of these reserves is likely invested in US government bonds. This concentration of foreign assets currently exposes the country to the risk of a shift in the US yield curve, which could reduce the mark-to-market value of these treasury instruments. Similarly, a renminbi appreciation against the US dollar would result in a fall in the local-currency value of these instruments.

Conversely, the level and composition of foreign liabilities provides a rough indication of the vulnerability of foreign investors to domestic shocks in China. In this regard, the high share of FDI and the low share of external debt in China's foreign liabilities leave foreign investors mainly exposed to macroeconomic, expropriation and political risk, whereas foreign investors' exposures to Chinese credit risk are relatively limited.

6 WHAT EXPLAINS CHINA'S INTERNATIONAL INVESTMENT POSITION?

Several arguments have been put forward to explain the size and composition of China's i.i.p.. In this section we critically review the literature on the determinants of capital flows and verify to what extent it can be adapted to the current situation in China. With respect to the stylised facts highlighted in the previous section, each model, unsurprisingly, reveals one part of the jigsaw, but none of them in isolation is sufficient to give the full picture. Nevertheless, combining the different explanations helps us understand the pattern and composition of capital flows to China.

China's large net foreign asset position is at odds with the predictions of the neoclassical theory. A country where the capital-to-labour ratio is relatively low should enjoy high returns on capital and, with increasingly integrated financial markets, receive net capital inflows. Capital should flow from rich countries (the north) to poor countries (the south), and the process should continue until the return on investment is equalised in all countries. In practice, this is not the case. The fact that the direction of capital flows is not in line with the prediction of neoclassical theory has become known as the "Lucas Paradox" (see Lucas, 1990). China fits the paradox well: by structural endowment, it is a candidate net international borrower, but in fact it is a net lender. Distortions, such as financial restrictions, and scarcity of complementary factors to capital, i.e. weak institutions and limited human capital, decrease returns on capital and prevent China from being a net lender.[23]

The model by Kraay et al (2005), for example, is one attempt to explain the Lucas paradox within the neoclassical framework. The model has three key ingredients: diminishing returns, production risk and sovereign risk. The first two factors create strong incentives to spread capital across countries. In the absence of countervailing forces, the model would predict very large capital flows moving from the north to the south, at least of an order of magnitude greater than what we observe in reality. The third ingredient provides the necessary countervailing force to bring the predictions of the theory in line with the flows that we observe in reality. In this model, sovereign risk acts as a friction so that beneficial trade opportunities are left unexploited. Dollar and Kraay (2006) calibrate a version of this model on Chinese data but find that, for reasonable values of the underlying parameters, the model is unable to replicate a net foreign asset position of the size observed in China. In fact, even assuming extreme doses of sovereign risk, the model will still predict a net borrower position for China because productivity is sufficiently high to make investment profitable in the model.

Of course, other frictions not explicitly mentioned in the simple theoretical framework of Kraay et al (2005) may be at play. For example, Dollar and Kraay (2006) argue that China's strict capital controls could have played an important role in shaping its positive i.i.p. They develop a simple empirical framework to formally test this hypothesis, but find that the model is also unable to replicate China's actual net foreign asset position and conclude that, taken in isolation, capital controls are not sufficient to explain this position in the case of China.

Dooley, Garber and Folkerts-Landau (2004a and 2004b) suggest an alternative view, known as the mercantilist hypothesis, to explain why the largest share of capital inflows in China is constituted by FDI. The argument goes as follows. Foreign companies are attracted by a large pool of relatively cheap labour and an artificially undervalued exchange rate. At the same time FDI renders the export sector internationally competitive. FDI is ultimately the

23 In a systematic empirical study that aims to evaluate the role of alternative explanations behind the Lucas paradox, Alfaro, Kalemli-Ozcan and Volosovych (2007) show that, for the period 1970-2000 and for a large set of developing, emerging and mature economies, low quality of institution is the main reason for the paradox. See also Gelos and Wei (2005) and Caselli and Fryer (2007) for further references on factors complementary to capital.

main engine of an export-led growth paradigm. In this context, China's massive accumulation of foreign reserves (especially in the form of US government bonds) constitutes an insurance for foreign companies investing in the country. Although appealing, the hypothesis of Dooley et al (2004a and 2004b) suffers from at least three drawbacks. First, an export-led growth model based on permanent inflows of FDI and a constantly undervalued exchange rate cannot be sustained forever. Second, FDI alone represents only a small fraction of less than 5% of total investment in China. Third, most FDI inflows originate in countries that export to China (rather than importing from it). With reference to the five features of China's i.i.p. highlighted in the previous section, the mercantilist hypothesis does not explain China's large net foreign asset position, its low external debt, or why barriers to capital outflows are eluded.

The pragmatic strategy that prevailed in the aftermath of the 1997 Asian crisis may also have played an important role in determining this situation. In the early stages of reform, the Chinese authorities preferred FDI to more volatile forms of capital inflows. Later on, the government gradually relaxed restrictions on foreign borrowing by corporations and in the mid-1990s declared its intention to implement capital account convertibility by 2000. However, during the Asian crisis, Chinese policy-makers perceived non-FDI capital inflows as one of the major culprits of the turmoil and therefore abandoned their intention of liberalising the capital account by 2000, focussing instead on reserve accumulation for precautionary purposes. This pragmatic approach may explain why China has accumulated large foreign reserves over time, why capital inflows are heavily tilted towards FDI, why external debt is relatively low, and even why the Chinese private sector appears to hold large stocks of unrecorded assets abroad. However, the pragmatic approach does not explain why China, which is a catching-up country short of capital, is in fact a net lender rather than a net borrower internationally. Moreover, although capital controls may discourage outward capital movements by Chinese residents, financial investment can be channelled to domestic assets. After all, exporting capital abroad in the presence of barriers is costly, and only if investment opportunities at home are missing and/or there are sufficiently high incentives abroad are domestic investors willing to bear these costs.

The peculiar structure of China's i.i.p. can also be interpreted in the light of the studies by Caballero (2006), Caballero, Farhi and Gourinchas (2006), Stulz (2005) and Shleifer and Wolfenzon (2002) on the role of (economic) institutions. Economic institutions, such as the structure of property rights and the presence of well-functioning markets, provide the necessary conditions for investing in physical and human capital and contribute to an efficient allocation of resources (see Acemoglu, Johnson and Robinson, 2005).

Caballero (2006) suggests an intriguing analysis. The key idea is that there is an imperfect link between the capital's ability to produce output and its ability to generate financial assets. The higher the capacity to produce output, the more valuable the underlying capital. However, the possibility of selling rights over that output in advance, i.e. the generation of financial assets, is related to institutional factors. While countries such as the United States have been able to match sound growth conditions with an unrivalled ability to create high quality financial assets, emerging economies may enjoy high growth but are not typically able to generate assets that appeal to international investors. China is a case in point. The country is experiencing rapid economic growth, but it is not able to sell rights over that output in international financial markets. Like any other fast-growing economy, China shows an increasing demand for financial instruments, which it does not supply. If capital was free to move internationally, domestic investors would satisfy their appetite by buying foreign assets. Owing to the restrictions on China's capital account, the central bank provides assets to domestic investors in the form of sterilisation bonds, which are collateralised with its massive international reserves.

In the same vein, Caballero et al (2006) explain the pattern observed in global capital flows in terms of the ability of certain regions to supply high-quality financial instruments and the inability of other regions to do so. Some fast-growth economies such as China do not seem able to generate local store of value instruments. Their demand for saving instruments is then satisfied abroad, notably in Europe and the United States. Higher growth potential in the United States attracts a larger share of global savings to that country.

Stulz (2005) focuses more on investors' protection and argues that the predictions of the neoclassical theory are not supported by the evidence from developing countries because of the so-called twin agency problems. Although the marginal productivity of capital is higher in emerging markets than in developed economies, the cumulative sum of net equity flows to less developed countries from 1996 to 2004 is negative. This paradox can be explained by the so-called twin agency problems, i.e. poor corporate governance and high political risk, which prevent the providers of capital from fully accruing their investment returns. The agency problem exists at firm and state level, since corporate insiders and state rulers consume private benefits. An entrepreneur becomes a corporate insider when he takes advantage of his unique investment opportunity, starts a firm and sells equities to outside investors. In a world where the twin agency problems do not exist, the cash flow would be paid out to portfolio investors in proportion to their agreed-upon rights. However, with the twin agency problems, since the corporate insiders manage the firms they have the opportunity to expropriate cash flow first. The rulers of the sovereign state can expropriate cash flow subsequently. The cash flow remaining after these appropriations is distributed as liquidating dividend.

In the same vein, Shleifer and Wolfenzon (2002) develop a model where countries with relatively better shareholder protection have more developed stock markets, larger and more valuable firms, a lower diversion of profits and higher dividends, and lower ownership concentration. When the model is applied to capital flows from rich to poor countries, it explains why these flows are limited.

While the models by Caballero (2006), Caballero, Farhi and Gourinchas (2006), Stulz (2005) and Shleifer and Wolfenzon (2002) explain why China is a net lender rather than a net borrower (contrary to what the neo-classical theory would suggest), they are silent about the composition of these capital flows. Lack of sound institutions at home justify why domestic savings are invested abroad and why this occurs via the central bank. In addition to barriers to capital flows, financial intermediaries in China would not yet be prepared to invest abroad and bear the associated currency risk. The share of savings that escapes the authorities' control is then included in the relatively large errors and omissions of China's b.o.p. Within this strand of literature, it remains to be explained why FDI constitutes a relatively large share of total liabilities.

Ju and Wei (2006) analyse the issue. While previous research lumps together financial institutions and property rights protection, Ju and Wei (2006) make a clear distinction between the two. They point out that the return on financial investment is not the same as the return on physical investment. Financial investors obtain only a fraction of the return on physical capital, since they have to share it with entrepreneurs and perhaps with government officials (Stulz, 2005). When financial systems become more developed, investors enjoy a larger fraction of the return on (physical) capital. Nevertheless, a low-cost country with an underdeveloped financial system but where property rights are sufficiently guaranteed can experience an inflow of foreign investment, even though, at the same time, it may exhibit financial capital outflows. This occurs since a relatively low level of financial development results in lower interest rates and, therefore, outflows of financial capital. At the same time, low wages render the country an attractive location for foreign investment. Low expropriation risk ensures that these investment

opportunities are not left unexploited. China is again a case in point. Its financial institutions are underdeveloped and unable to generate sufficient quantity of good quality financial assets. This creates financial outflows that take the form of a large accumulation of foreign reserves since the private sector has limited possibilities of investing abroad (errors and omissions in the b.o.p. are a further channel of capital outflows). At the same time, China encourages FDI inflows, which are facilitated by relatively low wages, and a variety of protective measures and incentives given to foreign investors willing to invest in the country.

All in all, institutions in a broad sense have been an important determinant of the size and composition of China's i.i.p. However, institutions are endogenous to the society that generates them and are the expression of tensions among different interest groups whose goals may conflict with one another. Therefore institutions change over time, reshaping the economic landscape of a country. The next section briefly discusses how institutions have evolved over time in China and their impact on the current economic developments. It also presents an assessment of the future direction of capital flows in China.

6.1 INSTITUTIONS AND CAPITAL FLOWS: POST-WWII TRENDS AND OUTLOOK

The current economic position of China, including its peculiar b.o.p. and i.i.p. structure, can be analysed through the lens of the recent literature on institutions (see, for instance, Acemoglu, Johnson and Robinson, 2005). This analysis also permits an assessment of the outlook for China's capital account if restrictions on capital flows were to be lifted.

Acemoglu et al (2005) develop a framework where differences in economic institutions are an important determinant of differences in economic development. Economic institutions include the structure of *property rights* and the *presence* and *perfection of markets*. Property rights provide the incentives to invest in physical and human capital or to adopt efficient technologies. Property rights and the mere presence of markets, together with no or limited frictions and distortions, contribute to an efficient allocation of resources. The absence of markets, on the other hand, prevents society at large from reaping the benefits of trade and generates a misallocation of resources. In recent years, China has witnessed a progressive move from a planned and centralised economy to a market and decentralised economy. This transition has stimulated factor accumulation, innovation and a more efficient allocation of resources.

Understanding the determinants of economic institutions is a key factor in determining economic development in a country. In Acemoglu et al (2005), the state variables that determine the evolution of economic institutions and, ultimately, economic performance are i) political institutions and ii) the distribution of resources. Although they are changing slowly, these state variables are not crystallised. In fact, they are endogenous to the system. Political institutions originate *de jure* political power. The distribution of resources determines *de facto* political power. The *de jure* and *de facto* political power, in turn, affect the choice of economic institutions and influence the evolution of political institutions themselves, which explains their endogeneity. Economic institutions shape the economic performance of a country, its rate of growth, the future distribution of resources and therefore the future *de facto* political power. Therefore economic institutions are endogenous since they are determined by the political institutions and the distribution of resources.

In the behaviour of the system described by Acemoglu et al (2005), there is a tendency towards persistence. Political institutions determine who holds the de jure political power, and the group that holds it tries to shape the evolution of the political institutions to ensure that it will continue to maintain its hold. Similarly, those who hold the de facto power push for economic and political institutions that ensure the *status quo*.

Chinese history since World War II (and perhaps before) can be interpreted within the framework proposed by Acemoglu et al (2005). In 1949, at the end of the civil war, the Communist Party seized power in China. Land holdings were forcibly taken from landlords and wealthier peasants and redistributed to poorer peasants. The redistribution process generated a major debate within the Communist Party. The radical faction led by Mao Zedong prevailed. Collectivisation was proposed, followed by a number of reforms that aimed to give the government control of agriculture. The ultimate goal of the plan, also known as the "Little Leap Forward," was to finance industrialisation in then rural China. This phase of nationalisation and collectivisation was characterised by the creation of a series of highly centralised economic and political institutions with a strong de jure power. The process resulted in economic failure, and widespread famine followed in 1956. Upon completion of the first Five-Year Economic Plan in 1957, which was modelled on the experience of the Soviet Five-Year Plan by Stalin, Mao Zedong started to doubt that the socialist Soviet paradigm was appropriate for China.[24] These developments cost Mao Zedong his credibility and a de facto reduction in his influence within the central government.

The economic failure of the planned-centralised system, its unmanageability for an economy in transition from a rural to an industrialised model, and its inherent lack of incentives generated waves of "administrative decentralisation" from the central to local governments and, to a lesser extent, to state-owned enterprises (see, for instance, Montinola, Qian and Weingast, 1995). The Great Leap Forward in 1958 and the Cultural Revlution in 1970 are the first two examples of this decentralisation. The Great Leap Forward, which instituted giant cooperatives, disrupted market mechanisms and again resulted in economic disaster, bringing starvation between 1960 and 1961. This favoured the emergence of more pragmatic economic policies, which were especially supported by the State President Liu Shaoqi and the Party General Secretary Deng Xiaoping. In 1966 Mao Zedong responded by launching political attacks against the pragmatists, which culminated with the Cultural Revolution in 1970. In essence, both the Great Leap Forward and the Cultural Revolution can be interpreted as Mao Zedong's actions, designed to weaken centralised institutions and ultimately regain power. Owing to the weakening of centralised institutions, in a sense the Cultural Revolution paved the way for economic liberalisation and de-centralisation in the economy. When Den Xiaoping took power in 1978, filling the political vacuum left after the arrest of the Gang of Four, he had limited de facto power. To consolidate his position and gain popular support, he promoted a wave of liberalisation and assigned more power to local governments in an attempt to raise the population's standard of living, which had badly deteriorated under Mao Zedong (who had died in September 1976). Over time, the resulting economic boom in China has shifted power to an emerging entrepreneurial middle class, especially in the costal cities of the country.

In China, the need to lift millions of people out of poverty has led to reforms encouraging forms of market economy, which include increased international openness (incentives to FDI are an example). This process has redistributed economic resources and modified the balance of the de facto political power in Chinese society, and is ultimately generating a change in the economic institutions. The recent law giving individuals the same legal protection over their property as the state is symbolic of the tension between the persistence of institutions and the shift in the de facto power to the emerging middle class. The bill was unusually contentious and, although it was supposed to be passed in 1996, was delayed due to internal resistance. The anxiety of the middle class to secure its

24 In a famous speech in 1956 ("On ten important relationships"), Mao Zedong argued that "Our territory is so vast, our population is so large and the conditions are so complex that it is far better to have the initiatives come from both the central and the local authorities than from one source alone. We must not follow the example of the Soviet Union in concentrating everything in the hands of the central authorities, shackling the local authorities and denying them the right to independent action" (see, for example, Lin, Tao and Liu, 2003).

property and its need to become more assertive are prevailing. The communist party decision to enact the law is indicative of the ongoing shift in power.[25]

In the framework of Acemoglu et al (2005), the ongoing shift in the de facto political power in China is leading to changes in economic institutions. However, it is difficult to ascertain when China will be able to fully protect domestic and foreign investors and create efficient (financial) markets. The process will take time since different economic institutions imply a different distribution of resources. This will typically result in a conflict among different groups over the choice of economic institutions. If property rights are going to be fully guaranteed and market forces allowed to operate completely freely (implying the removal of barriers to capital movements), China will be in a position to contribute to a globally efficient allocation of resources, supply "enough" reliable financial instruments and attract capital from the rest of the world, possibly becoming a net international borrower. On the other hand, if the quality of Chinese institutions does not improve, the country may still continue to receive FDI (especially if one takes into account its large pool of cheap labour and if pro-FDI policies are perpetrated) but its appetite for store of value instruments will mainly be satisfied abroad, which will continue to result in a net capital outflow.

In line with this discussion, Dollar and Kray (2006) forecast that in 20 years China will be a net debtor with a negative net foreign asset position. The authors argue that China already possesses "a low capital-labour ratio, reasonably good economic institutions and high returns on private investments". Therefore market forces should push towards significant net inflows of capital. "As China continues its reforms and liberalises its financial system, including the capital account, a significant amount of the world's wealth is going to want to move to this attractive location."

25 Interestingly, according to official Chinese data (see the Blue Book of China's Society, 2004) 30% of the registered private entrepreneurs were members of the Communist Party in 2004, compared with only 13% in 1993. Furthermore, 90% out of this 30% were already members of the Communist Party before becoming private entrepreneurs.

7 CAPITAL ACCOUNT LIBERALISATION: A WAY FORWARD

Considerations about efficient allocation of capital, economic growth and risk-sharing suggest that market forces – and not administrative controls – will gradually have to become the main driver of capital flows in China. The question is how to manage the transition from the current situation to a fully liberalised capital account. China could maintain restrictions to capital movements as long as it is necessary to meet some threshold conditions in financial development. A recent study by Kose et al (2006) shows that capital account liberalisation is beneficial to economic growth, especially for those economies above key thresholds related to the level of development of domestic financial markets, the quality of institutions and certain standards in corporate governance.[26] In addition to meeting these threshold levels, reforms of exchange rate regimes are also called for, since capital account openness does not reconcile well with a pegged currency. Although there is no doubt that, in the long run, market forces should be the main determinant of the exchange rate and capital flows, it is crucial that reforms of the capital account and foreign exchange market are correctly sequenced to avoid massive speculative capital flows.

Without implementing effective domestic financial liberalisation, capital account openness would simply provide new excessive risk-taking opportunities to banks and non-bank financial institutions. Although there is scant empirical evidence supporting the view that financial globalisation is responsible for the spate of financial crises over the last three decades (see, for instance, Kose et al, 2006), experience shows that ignoring issues related to currency risk and debt maturity mismatches leaves core institutions vulnerable to systemic risks. Massive capital inflows could lead to excessive credit expansion from the domestic banking system, exposure of banks to asset market speculation, mismatches between assets and liabilities on the balance sheets, and currency speculation via the off-shore markets. The past financial crises of the 1990s show that adequate reforms and the establishment of robust core institutions are essential in order to avoid these issues. In China, capital controls have sheltered the still immature financial system, where the banking sector lacks the know-how to manage the foreign exchange risk properly. Capital inflows in the banking system could generate a misallocation of resources, especially in an economy where credit is politically controlled and bail out is guaranteed, leaving ample room for moral hazard. Moreover, capital controls can also prevent the corporate sector from over-borrowing from the foreign financial system.

In addition to reforms intended to improve financial developments and institutions, capital account openness requires a more flexible exchange rate regime. A fixed exchange rate, combined with capital account openness, has been an important ingredient of many recent b.o.p. crises. Well-known examples are provided by the crises in Latin America and South East Asia in the 1990s. In the case of Asia, despite relatively sound fundamentals and macroeconomic policies, the financial crisis of 1997 erupted because of the structure of the external position of the affected economies. After opening their capital accounts, the composition of capital that these countries received was tilted towards short-term debt mostly denominated in foreign currency. Currency, as well as asset and liability maturity mismatches on the external balance sheets, and expectations of a worsening of the repayment capacity of the affected economies triggered a run on the currency and then the crisis. Although China is sheltered from speculative attacks on account of its large amount of foreign reserves, this experience highlights the dangers of opening up the capital account in the presence of a fixed exchange rate regime.

26 Kose et al (2006) highlight that, in addition to traditional channels, the benefits of financial globalisation are realised through a set of "collateral benefits", which include financial market development, better institutions and governance, and macroeconomic discipline.

However, the adoption of a completely free-floating exchange rate is premature in China at the current juncture, as long as its security markets remain narrow and shallow and the banking system weak and lacking adequate hedging instruments. In such circumstances, high volatility of the exchange rate may undermine the consistency of a monetary policy targeting domestic price stability. Short-term volatility and medium-term misalignment of the exchange rate under a free float will also impede sustained external trade performance in China.

An intermediate exchange rate regime between the current fixed and a possible free-floating regime could be a currency basket system. The central rate would then be linked to a basket of major currencies, including the US dollar, the Japanese yen and the euro, thereby reducing large fluctuations in the single currency-based exchange rate regime. A wide band around a central rate could also be introduced to prevent the differences between expectations of appreciation (or depreciation) and interest rates differentials from triggering capital inflows (outflows) and make speculators realise (almost) certain profits. This system, combined with capital account openness would allow the authorities to maintain a certain degree of monetary independence targeting domestic price stability. At the same time, extreme short-term volatility and medium-term misalignment of the exchange rate could be alleviated. Although such exchange rate arrangements would increase the short-term variance of the renminbi against major currencies when compared with the current fixed regime, it would both encourage hedging practices and discourage one-way bets on currency movements.

In this context, the most significant risk facing China is that speculative capital (or the so-called "hot money") inflows would likely rise significantly if capital account restrictions were fully lifted, driven by the widely held expectation of a renminbi appreciation. This would lead to a *reverse* speculative attack on the currency, involving a massive buying of renminbi assets and increased pressures for currency appreciation. The monetary authority would then face a trade-off between maintaining the peg at the cost of diverting monetary policy away from domestic objectives and letting the renminbi float. In the current juncture of weak institutions, a fully floating exchange rate regime may lead to excessive volatility and overshooting, which in turn can affect the sectors most exposed to exchange rate risks, such as exporting manufacture, and those with the lowest productivity, such as agriculture. The impact would be exacerbated by the lack of sophisticated hedging instruments.

These arguments underscore the importance of a correct sequencing of reforms of the capital account and foreign exchange market liberalisation. If capital markets were liberalised first, it is highly probable that there would be large speculative capital inflows in expectation of a large appreciation of the renminbi.[27] Therefore, China should first allow the exchange rate to reach a credible equilibrium level, while gradually opening the capital account. However, in order to have a well-functioning and efficient foreign exchange market, capital markets should also be free from administrative controls and the capital account should be more open. This analysis suggests that reforms on both foreign exchange and capital markets should proceed in tandem. From this point of view, it is quite disconcerting that, in order to ease appreciation pressures on the renminbi, the authorities have recently taken action to open up the capital account to allow greater capital outflows.

However, the possibility cannot be ruled out that capital flight may occur if the current expectations of a renminbi appreciation fade over time, given the backwardness of the Chinese financial system, where a large portion of financial wealth is held in bank deposits yielding very low returns.

27 In Section 2.7, the discussion about forward markets and short-term portfolio considerations suggests that currently there are appreciation pressures on the renminbi that, in turn, may lead to speculative capital inflows in the event of financial liberalisation.

The final question that we address in this section concerns an assessment about long-term capital movements in the event that the capital account in China becomes fully open. Our interest lies particularly in understanding whether the five stylised facts characterising the China's i.i.p. (see Section 5) could change if the capital account opens up. If the ongoing reforms substantially improve the quality of local institutions, China's net foreign asset position may turn negative (i.e. China becomes a net borrower), its share of FDI may no longer be predominant in the total amount of liabilities, the accumulation of foreign reserves will come to an end (with possibly even a decrease) and assets held abroad by residents will be recorded through the official channels. On the other hand, if institutions are not improved sufficiently, China will probably continue to be a net lender to the rest of the world and its foreign capital composition will remain more or less unaffected.

8 CONCLUSIONS

China's currency peg to the US dollar has been an essential monetary anchor for internal price stability. However, monetary stability comes at the risk of undermining financial stability in the long run. Over time, the peg has contributed to a massive accumulation of foreign reserves, which has led to a liquidity overhang in the financial system and a credit boom. Excessive credit provision fuels overinvestment, which may ultimately lead to deflation and rising non-performing loans, with detrimental consequences for the stability of the domestic banking system. The authorities are fending off these risks by (partly) sterilising foreign exchange reserves and imposing administrative controls on bank lending. However, these controls imply a de facto transfer of the sterilisation costs off the balance sheet of the central bank and onto the balance sheet of the banking system, which raises concerns for bank profitability.

The peg is undesirable and may become unsustainable in the long run. The Chinese authorities recognise the necessity to regain monetary independence (see, for instance, the 2006 IMF Article IV). However, managing the transition from a pegged to a free-floating exchange rate regime is not simple. A correct sequencing of reforms is essential to allow greater exchange rate flexibility and, at the same time, a gradual liberalisation of capital account movements (see also Prasad et al, 2005).

Opening the capital account poses a number of questions. Contrary to the predictions of the neoclassical theory, according to which China should be a net capital borrower, the country is in fact a net supplier of capital to the rest of the world. However, if domestic institutions gradually improve, China may become a net capital borrower. Institutions are endogenous to society and reflect tensions among different interest groups with possibly conflicting goals. This implies that institutions change over time, with implications for the economic performance of a country. This paper studies how institutions in China have evolved in response to the emergence of different interest groups, their impact on the economic performance of the country and the interactions between the economic outcome and the institutions themselves. Ultimately, reforms in the exchange rate regime and the capital account will depend on which interest group eventually prevails in the Chinese society.

APPENDIX

Table 5 Foreign assets and liabilities

(USD billions)

	1980	1985	1990	1991	1992	1993	1994	1995	1996
FDI assets	-0.3	0.4	3.5	4.0	7.6	11.1	14.1	17.7	21.6
Portfolio investment, assets	0.0	0.1	1.2	1.7	2.0	3.1	3.5	4.1	5.1
Other investment, assets	12.4	24.7	35.7	39.3	42.9	47.0	50.8	51.1	52.4
Gross international reserves	3.1	13.2	30.2	44.3	21.2	23.0	53.6	76.0	107.7
Total assets	**15.2**	**38.4**	**70.6**	**89.4**	**73.8**	**84.2**	**122.0**	**148.9**	**186.8**
FDI liabilities	1.1	4.0	16.2	18.8	29.9	59.7	86.5	137.5	185.7
- Debt-creating liabilities to foreign direct investors	0.0	0.0	0.0	0.0	0.0	0.0	1.1	3.0	5.4
- Net foreign direct investment, excluding debt-creating liabilities	1.1	4.0	16.2	18.8	29.9	59.7	85.4	134.5	180.2
Portfolio investment, liabilities	0.0	0.9	5.1	5.6	6.0	9.7	13.6	14.3	16.7
- Debt securities	0.0	0.9	5.1	5.6	6.0	9.7	13.6	14.3	16.7
- Equity securities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Other investment, liabilities	8.7	14.9	47.5	54.9	63.3	73.9	78.1	89.3	94.2
- Net external borrowing from commercial banks	4.0	7.9	22.4	25.6	28.4	34.6	38.0	43.4	47.2
- Liabilities to official creditors	1.9	5.6	11.2	12.4	15.8	19.7	27.4	31.8	33.8
- Other liabilities (incl. trade credits, other loans, and currency and deposits)	2.8	8.2	4.6	4.7	-5.3	-14.0	-24.0	-29.3	-33.7
- Exchange rate valuation effects on debt stock	0.0	0.2	14.6	18.4	23.1	31.9	37.1	40.2	34.4
- Discrepancy between debt stock and cumulated debt flows	0.0	-7.1	-5.3	-6.2	1.3	1.7	-0.5	3.2	12.5
Other liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total liabililties	**9.8**	**19.8**	**68.8**	**79.4**	**99.3**	**143.3**	**178.2**	**241.1**	**296.5**
NFA	**5.4**	**18.6**	**1.8**	**10.0**	**-25.5**	**-59.1**	**-56.2**	**-92.2**	**-109.7**
Unrecorded assets abroad	0.5	-9.3	-8.4	-5.5	31.2	41.4	49.0	70.6	95.3
- Cumulative error and omissions	-1.2	0.1	7.5	14.3	22.5	32.4	42.1	60.0	75.5
- Valuation changes on official reserves stock	1.7	-2.3	-10.6	-13.6	7.4	7.4	7.4	7.4	7.4
- Valuation changes on debt stock	0.0	-7.1	-5.3	-6.2	1.3	1.7	-0.5	3.2	12.5

Table 5 Foreign assets and liabilities (USD billions)

(USD billions)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
FDI assets	25.8	29.8	29.9	30.9	39.1	40.7	37.9	38.7	49.9	67.0
Portfolio investment, assets	6.7	11.8	25.3	32.8	47.8	50.1	63.0	64.9	96.7	204.4
Other investment, assets	86.4	121.4	145.8	189.7	168.9	171.9	189.9	187.9	236.8	258.3
Gross international reserves	143.4	149.8	158.3	168.9	216.3	292.0	409.2	615.5	822.5	1,062.5
Total assets	**262.2**	**312.9**	**359.4**	**422.2**	**472.1**	**554.8**	**699.8**	**907.0**	**1,205.9**	**1,592.2**
FDI liabilities	231.3	270.0	299.0	328.5	366.0	406.6	449.2	509.6	585.9	662.2
- Debt-creating liabilities to foreign direct investors	9.9	13.2	15.6	17.7	21.3	26.3	32.0	40.4	48.2	56.7
- Net foreign direct investment, excluding debt-creating liabilities	221.5	256.7	283.4	310.9	344.7	380.3	417.2	469.2	537.8	605.5
Portfolio investment, liabilities	24.5	24.4	24.9	36.4	31.9	30.0	40.5	49.2	67.8	172.7
- Debt securities	18.9	18.2	16.9	10.2	10.6	10.1	10.8	13.1	14.0	14.0
- Equity securities	5.7	6.3	8.1	26.2	21.3	19.9	29.7	36.1	53.8	158.7
Other investment, liabilities	102.2	114.6	119.3	117.9	152.9	150.0	165.9	194.0	218.9	254.2
- Net external borrowing from commercial banks	54.4	57.2	54.8	47.6	48.0	49.0	53.7	65.3	79.2	91.4
- Liabilities to official creditors	34.9	40.3	46.6	45.9	46.2	47.0	46.8	58.3	72.1	84.1
- Other liabilities (incl. trade credits, other loans, and currency and deposits)	-24.0	-40.8	-38.4	-18.1	-22.7	-25.6	-18.1	-5.3	12.0	21.8
- Exchange rate valuation effects on debt stock	29.6	25.8	29.2	29.9	25.3	24.9	28.9	32.5	31.9	29.4
- Discrepancy between debt stock and cumulated debt flows	7.3	32.1	27.1	12.7	56.2	54.7	54.6	43.1	23.7	27.6
Other liabilities	0.0	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	3.8	7.6
Total liabililties	**358.1**	**409.0**	**443.2**	**482.6**	**550.6**	**586.4**	**655.4**	**752.5**	**876.4**	**1,096.7**
NFA	**-95.9**	**-96.1**	**-83.8**	**-60.4**	**-78.5**	**-31.6**	**44.5**	**154.5**	**329.5**	**495.5**
Unrecorded assets abroad	124.1	167.7	177.4	174.9	223.2	213.7	195.1	156.5	153.9	167.8
- Cumulative error and omissions	109.4	128.2	143.0	154.9	159.7	151.9	133.5	106.5	123.2	133.2
- Valuation changes on official reserves stock	7.4	7.4	7.4	7.4	7.3	7.0	7.0	6.9	7.0	7.0
- Valuation changes on debt stock	7.3	32.1	27.1	12.7	56.2	54.7	54.6	43.1	23.7	27.6

REFERENCES

Acemoglu, D., S. Johnson and J. A. Robinson (2005), "Institutions As the Fundamental Cause of Long-Run Economic Growth", in *Handbook of Economic Growth*, editors P. Aghion and S. Durlauf, Edition 1, vol. 1, Chapter 6, pages 385-472, Elsevier.

Aizenman, J. (2006), "On the hidden links between financial and trade opening", *Journal of International Money and Finance*, Forthcoming.

Blue Book of China's Society (2004), Chinese Academy of Social Sciences.

Caballero, R. J. (2006), "On the Macroeconomics of Asset Shortages", NBER Working Paper No 12753.

Caballero, R. J., E. Farhi and P.-O. Gourinchas (2006), "An Equilibrium Model of "Global Imbalances" and Low Interest Rates", NBER Working Paper No 11996.

Cui, L. and M. H. Syed (2006), "Is China Changing its Stripes? The Shifting Structure of China's External Trade and Its Implications", Paper presented at the Trade Conference, Research Department, Hosted by the International Monetary Fund, Washington DC, 6 April 2007.

Devereux, M. and H. Genberg (2006), "Alternative approaches to current account adjustment: appreciation vs. fiscal policy," paper presented at "Financial Globalization and Integration", ECB conference, Frankfurt, 17-18 July.

Dollar, D. and A. Kraay (2006), "Neither a borrower nor a lender: Does China's zero net foreign asset position make economic sense?", *Journal of Monetary Economics*, vol. 53(5), pages 943-971, July.

Dooley, M. P. and C. Walsh (2000), "Capital Controls and Crises: Theory and Experience", paper presented at AEA Meetings, 8 January 2000.

Dooley, M. P., D. Folkerts-Landau and P. Garber (2004a), "The Revived Bretton Woods System: The Effects of Periphery Intervention and Reserve Management on Interest Rates and Exchange Rates in Center Countries", NBER Working Paper No 10332.

Dooley, M. P., D. Folkerts-Landau and P. Garber (2004b), "The US Current Account Deficit and Economic Development: Collateral for a Total Return Swap", NBER Working Paper No 10727.

Dornbush, R. (2001), "A primer on emerging market crises", NBER Working Paper No 8326.

Edwards, S. (2005), "Is the US Current Account Deficit Sustainable? And If Not, How Costly is Adjustment Likely To Be?", NBER Working Paper No 11541.

Frankel, J. (2004), "On the Renminbi: The choice between adjustment under a fixed exchange rate and adjustment under a flexible rate", Paper written for the High-Level Seminar on Foreign Exchange System held in Dalian, China, May 26-27, 2004. Available at: http://ksghome.harvard.edu/~jfrankel/On%20the%20Renminbi.pdf

Freund, C. L. (2000), "Current Account Adjustment in Industrialized Countries", FRB International Finance Discussion Paper, No 692.

Gourinchas, P.-O. and J. Olivier (2006), "The Elusive Gains from International Financial Integration", *Review of Economic Studies*, vol. 73(3), pages 715-741.

Ju, J. and S. J. Wei (2006), "A Solution to Two Paradoxes of International Capital Flows", IMF Working Paper No 06/178.

Huang, H. and S. Wang (2004), "Exchange rate regimes: China's experience and choices", China Economic Review No 15 pages 336–342.

Kose, M. A., E. Prasad, K. Rogoff, and S.-J. Wei (2006), "Financial Globalization: A Reappraisal" IMF Working Paper No 06/189.

Kraay, A., N. Loayza, L. Serven and J. Ventura (2000), "Country Portfolios", NBER Working Paper No 7795.

Lane, P. R. and G. M. Milesi-Ferretti (2006), "The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004", CEPR Discussion Paper No 5644.

Lane, P. R. and G. M. Milesi-Ferretti (2001), "The External Wealth of Nations: Measures of Foreign Assets and Liabilities for Industrial and Developing Countries", *Journal of International Economics* No 55 pages 263-294.

Lane, P. R. and S. Schmukler (2006), "The International Financial Integration of China and India", CEPR Discussion Paper No 5852.

Lau, F., Y. Mo and K. Li (2004), "The impact of a renminbi appreciation on global imbalances and intra-regional trade", *Hong Kong Monetary Authority Quarterly Bulletin*, March.

Lim, E.-G. (2001), "Determinants of, and the Relation Between, Foreign Direct Investment and Growth: A Summary of the Recent Literature", IMF Working Paper No 01/175.

Lin, J. Y., R. Tao and M. Liu, 2003, "Decentralisation, Deregulation and Economic Transition in China", London School of Economics, mimeo.

Lucas, R. E. (1990), "Why doesn't Capital Flow from Rich to Poor Countries?" *American Economic Review*, No 80, pages 92-96.

McKinnon, R. I. (2005), "Exchange Rate or Wage Changes in International Adjustment? Japan and China versus the United States", mimeo.

McKinnon, R. I. and G. Schnabl (2006), "China's Exchange Rate and International Adjustment in Wages, Prices, and Interest Rates: Japan Déjà Vu?", CESifo Working Paper No 1720.

Montinola, G., Y. Qiang and B. R. Weingast, 1995, "Federalism, Chinese Style: The Political Basis for Economic Success in Chiana", *World Politics*, 48(1), pages 50-81.

Obstfeld, M. (2006), "The Renminbi's Dollar Peg at the Crossroads". CEPR Discussion Paper No 5771.

Prasad, E., T. Rumbaugh and Q. Wang (2005), "Putting the Cart Before the Horse? Capital Account Liberalization and Exchange Rate Flexibility in China", IMF Policy Discussion Paper No 05/01.

Prasad, E. and S.-J. Wei (2005), "The Chinese Approach to Capital Inflows: Patterns and Possible Explanations", IMF Working Paper No 05/79.

Setser, B. (2005), "The Chinese Conundrum: External Financial Strength, Domestic Financial Weakness", CESifo Economic Studies, Vol. 52, 2/2006.

Shleifer, A. and D. Wolfenzon (2002), "Investor Protection and Equity Markets", *Journal of Financial Economics*, October.

Stulz, R. M. (2005), "The limits of Financial Globalisation", *Journal of Finance*, vol. 60, No 4, pages 1595-1638.

UNCTAD (1999), "Foreign direct investment and the challenge of development", World Investments Report 1999: United Nations Publication, New York and Geneva.

Wang, T. (2005), "China: Sources of Real Exchange Rate Fluctuations", IMF Working Paper No 04/18.

Xiaopu, Z. (2003), "China's capital account liberalisation: international perspective", BIS Paper No 15.

Yongding, Y. (2007), "Global Imbalances and China", *The Australian Economic Review*, vol. 40, No 1, pages 3-23.

Zhang, Z. (2006), "Capital Controls in China: Recent Developments and Reform Prospects", mimeo available at SSRN: http://ssrn.com/abstract=883647.

EUROPEAN CENTRAL BANK OCCASIONAL PAPER SERIES SINCE 2007

55 "Globalisation and euro area trade: Interactions and challenges" by U. Baumann and F. di Mauro, February 2007.

56 "Assessing fiscal soundness: Theory and practice" by N. Giammarioli, C. Nickel, P. Rother, J.-P. Vidal, March 2007.

57 "Understanding price developments and consumer price indices in south-eastern Europe" by S. Herrmann and E. K. Polgar, March 2007.

58 "Long-Term Growth Prospects for the Russian Economy" by R. Beck, A. Kamps and E. Mileva, March 2007.

59 "The ECB Survey of Professional Forecasters (SPF) a review after eight years' experience", by C. Bowles, R. Friz, V. Genre, G. Kenny, A. Meyler and T. Rautanen, April 2007.

60 "Commodity price fluctuations and their impact on monetary and fiscal policies in Western and Central Africa" by U. Böwer, A. Geis and A. Winkler, April 2007.

61 "Determinants of growth in the central and eastern European EU Member States – A production function approach" by O. Arratibel, F. Heinz, R. Martin, M. Przybyla, L. Rawdanowicz, R. Serafini and T. Zumer, April 2007.

62 "Inflation-linked bonds from a Central Bank perspective" by J. A. Garcia and A. van Rixtel, June 2007.

63 "Corporate finance in the euro area – including background material", Task Force of the Monetary Policy Committee of the European System of Central Banks, June 2007.

64 "The use of portfolio credit risk models in central banks", Task Force of the Market Operations Committee of the European System of Central Banks, July 2007.

65 "The performance of credit rating systems in the assessment of collateral used in Eurosystem monetary policy operations" by F. Coppens, F. González and G. Winkler, July 2007.

66 "Structural reforms in EMU and the role of monetary policy – a survey of the literature" by N. Leiner-Killinger, V. López Pérez, R. Stiegert and G. Vitale, July 2007.

67 "Towards harmonised balance of payments and international investment position statistics – the experience of the European compilers" by J.-M. Israël and C. Sánchez Muñoz, July 2007.

68 "The securities custody industry" by D. Chan, F. Fontan, S. Rosati and D. Russo, August 2007.

69 "Fiscal policy in Mediterranean countries – Developments, structures and implications for monetary policy" by M. Sturm and F. Gurtner, August 2007.

70 The search for Columbus' egg: Finding a new formula to determine quotas at the IMF by M. Skala, C. Thimann and R. Wölfi nger, August 2007.

71 "The economic impact of the Single Euro Payments Area" by H. Schmiedel, August 2007.

72 "The role of financial markets and innovation in productivity and growth in Europe" by P. Hartmann, F. Heider, E. Papaioannou and M. Lo Duca, September 2007.

73 "Reserve accumulation: objective or by-product?" by J. O. de Beaufort Wijnholds and L. Søndergaard, September 2007.

74 "Analysis of revisions to general economic statistics" by H. C. Dieden and A. Kanutin, October 2007.

75 "The role of other financial intermediaries in monetary and credit developments in the euro area" edited by P. Moutot and coordinated by D. Gerdesmeier, A. Lojschová and J. von Landesberger, October 2007.

76 "Prudential and oversight requirements for securities settlement a comparison of cpss-iosco" by D. Russo, G. Caviglia, C. Papathanassiou and S. Rosati, November 2007.

77 "Oil market structure, network effects and the choice of currency for oil invoicing" by E. Mileva and N. Siegfried, November 2007.

78 "A framework for assessing global imbalances" by T. Bracke, M. Bussière, M. Fidora and R. Straub, January 2008.

79 "The working of the eurosystem: monetary policy preparations and decision-making – selected issues" by P. Moutot, A. Jung and F. P. Mongelli, January 2008.

80 "China's and India's roles in global trade and finance: twin titans for the new millennium?" by M. Bussière and A. Mehl, January 2008.

81 "Measuring Financial Integration in New EU Member States" by M. Baltzer, L. Cappiello, R.A. De Santis, and S. Manganelli, January 2008.

82 "The sustainability of China's exchange rate policy and capital account liberalisation" by L. Cappiello and G. Ferrucci, March 2008.

ISSN 1607-1484