Macroeconomic Conditions in the Mainland of China

Key points:

- *Economic conditions in the Mainland have important implications for Hong Kong. This note provides a summary of the current concerns about macroeconomic imbalances, and reviews the recent debate on some policy issues that have implications for the outlook.*

- *Against the backdrop of accelerated growth and increased inflation, concerns have been raised about a rapid expansion in fixed asset investment and bank credit. The authorities have implemented a combination of monetary, administrative and prudential measures, particularly to tighten banks' lending to some overheated sectors. These measures are appropriate because a relaxed lending stance and other irregularities have probably been the main cause of the problem.*

- *The recent developments point to a mixed picture about the outlook. On the one hand, prices of some investment goods have eased, and growth of broad money and credit slowed considerably. On the other hand, headline CPI inflation has continued to rise. An analysis of monetary and financial conditions suggests that inflation may rise further. Specifically:*

  ⇨ *A money gap—defined as the difference between M2 and an estimated demand based on economic growth and inflation—indicates a significant monetary overhang, which may add to inflationary pressure in the period ahead.*

  ⇨ *Real interest rates have declined markedly and are negative by some measures. The real effective exchange rate (REER) of the RMB has also depreciated. A monetary conditions index—a weighted average of the two—eased by about 6 percentage points (real interest rate equivalent) in 2002 Q1-2004 Q1.*

⇨ *Fiscal policy has maintained an expansionary stance, although the strength of the stimulus moderated somewhat in 2003.*

- *Thus, the current situation poses significant challenges to macroeconomic policy management. There has been a debate about whether interest rates should be raised. While interest rates play a less important role in the monetary policy transmission mechanism in the Mainland than in more developed economies, structural changes and reforms have raised the sensitivity of investment to changes in cost of capital on an aggregate basis. Concerns about a widened interest rate differential attracting further inflows have also declined in recent months.*

- *It seems that developments in some key macroeconomic variables such as CPI inflation, and money and credit growth in the next few months will have an important bearing on whether the PBoC will raise benchmark interest rates. In this context, our analysis on the magnitude and timing for any interest rate adjustments is hampered by a lack of understanding of the monetary transmission mechanism in the Mainland, as well as the role of fiscal policy in the consolidation efforts.*

I. Introduction

1. Recent developments in the Mainland of China (the Mainland) have raised concerns about macroeconomic imbalances and appropriate policy responses. Real GDP growth has accelerated since early 2003 notwithstanding a temporary slowdown in Q2 last year due to the impact of SARS, inflation has picked up, and the trade account recorded a significant deficit in Q1 2004. In particular, concerns have focused on the rapid growth in fixed asset investment and bank credit. Views tend to differ and there is a heated debate about the current situation, and policy measures to ensure a soft landing of the economy.

2. Developments in the Mainland have important implications for the rest of Asia including Hong Kong, given the increasing economic and financial integration in the region. Balanced and sustainable growth in the Mainland is conducive to the maintenance of monetary and financial stability in Hong Kong. This paper provides a summary of the analysis of recent developments in the Mainland economy conducted at the HKMA, and considers some policy issues and their implications for the outlook.

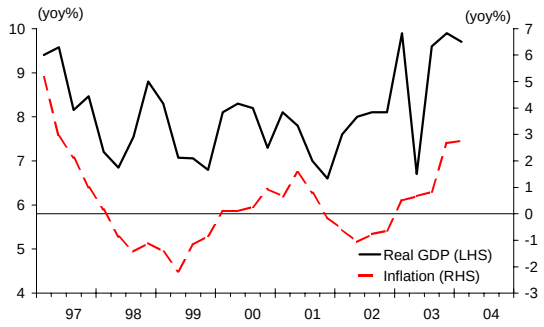
3. The rest of the paper is organised as follows. The next section analyses current concerns about macroeconomic conditions in the Mainland. It considers issues such as whether the economy is experiencing broad-based overheating or inflationary pressure, and what explains the limited passthrough from investment goods inflation to consumer price inflation and the moderate inflationary impact of the rapid monetary expansion. Section III assesses the monetary and financial conditions by examining a combination of quantity and price indicators. Current monetary and financial conditions have implications for the inflation outlook, because of the lag in the transmission mechanism. Section IV summarises policy responses by the Mainland authorities, and considers whether, further to monetary, administrative and prudential measures taken so far, interest rates will likely be raised.

II. Current Concerns

4. Macroeconomic conditions in the Mainland have strengthened since 2002, and by early 2004 there were clear signs of imbalanced growth and overheating pressures in certain sectors. Real GDP growth accelerated to 9.1% in 2003 from 8.3% in 2002, and recorded an annual rate of 9.7% in 2004Q1 (Chart 1A). CPI inflation picked up to an annual rate of 2.8% in Q1, and rose further to 4.4% in May 2004. The trade account recorded a significant deficit of 2.6% of GDP in Q1, as imports grew much faster than exports (Chart 1B). Of particular concern is a rapid expansion in fixed asset investment and bank credit, which grew by over 40% and 19% respectively in Q1 over a year ago.

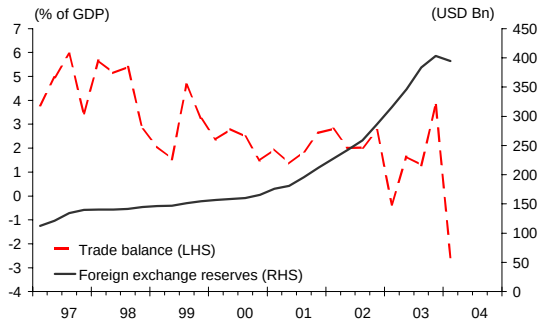
Chart 1. Recent Macroeconomic Developments

A. Growth and Inflation



Source: CEIC.

B. External Payment Position



Source: CEIC.

5. There is little dispute that investment growth has been too rapid and there are significant bottlenecks in the economy. The key concern is whether there is a broad-based overheating and, if so, whether inflationary pressures are significant enough to jeopardise macroeconomic stability. In this respect, it is important to assess recent developments in money and credit growth and inflation. Commentators have tended to focus on year-on-year changes in the statistics, which lag recent developments as they reflect average monthly changes in the past year.

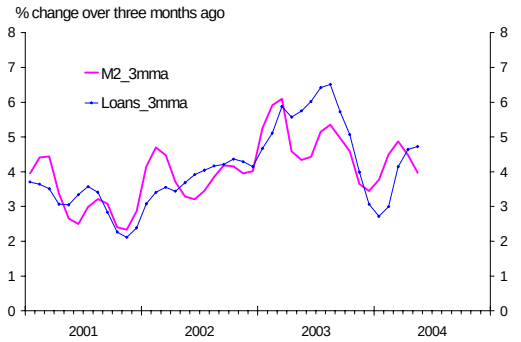
Efforts have been made to seasonally adjust the numbers, and analyse month-on-month or quarter-on-quarter changes. While caution is required in interpreting these estimates, they provide useful complementary indicators to year-on-year growth rates.

6. Annual growth of broad money and bank credit started to accelerate from mid-2002, and reached over 20% in the latter part of 2003. In recent months, the growth rates have decelerated, but remained at relatively high levels in May 2004. Date on seasonal adjusted M2 from the PBoC is available only up to February 2004. To gauge the latest developments, two alternative approaches are employed: (i) a seasonal adjustment using X11 and (ii) a simple 3-month moving average of the series.[1] Three months-over-three months changes of these series are depicted in Chart 2A-C. They seem to suggest that following a slowdown in the last quarter of 2003, growth in broad money and bank credit accelerated in the first quarter of 2004, but slowed somewhat in April-May. On a month-on-month basis, the slowdown in credit and money growth is much sharper, although monthly changes may be affected by noise in the data. In particular, credit growth slowed to an annualised rate of below 9% in May. Assuming M2 and bank credit continue to increase at the current monthly rates, the year-on-year growth rates would slow markedly to around 13-15% by end-2004, which are lower than the levels desired by the PBoC.

[1] It is noted that our own seasonally adjusted series of M2 and bank credit are quite close to those published by the PBoC.

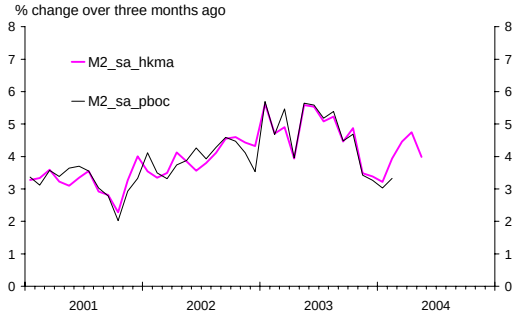
Chart 2. Monetary and Credit Developments

A. M2 and Loans
(3-month moving average)



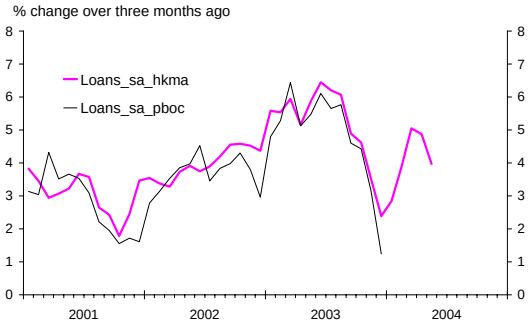
Source: Staff estimates.

B. M2
(Seasonally adjusted)



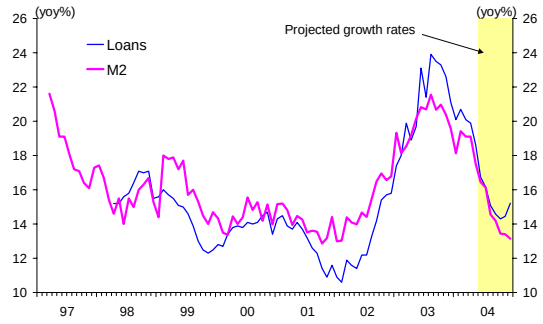
Source: CEIC and staff estimates.

C. Loans
(Seasonally adjusted)



Source: CEIC and staff Estimates.

D. Year-on-Year Changes
(M2 and Loans)



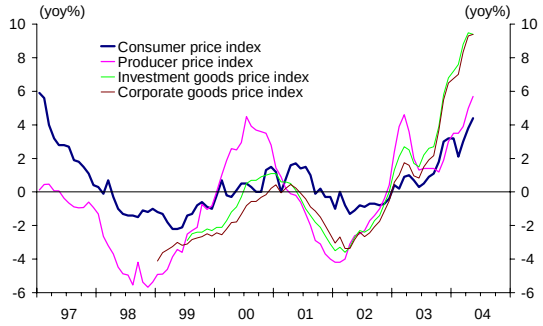
Source: CEIC and staff estimates.

7. Regarding inflation, prices of investment goods—as measured by the deflator for fixed asset investment—has risen by about 9% in 2004Q1 from a year ago, while the consumer price index (CPI) and produce price index (PPI) both increased at a slower but rising rate (Chart 3A). However, these numbers are published only on a year-on-year change basis. This is a particular concern for the April-May data, as the pick-up in the headline CPI inflation rate to over 4% could conceivably be attributable to a low base of comparison reflecting the impact of the SARS in the same period of 2003. To provide an indication of the latest development, we estimate quarter-on-quarter changes in the CPI making use of an estimate of the level of the CPI in the earlier years obtained from the IMF. In doing so, we adjust the series for seasonal effects and assume that the April-May average represents the second quarter number. The estimated quarter-on-quarter CPI inflation is shown in Chart 3B. This series should be interpreted with caution because it is subject to errors in

estimating the levels of the CPI and in seasonal adjustment. Nevertheless, it suggests that CPI inflation indeed rose in the first few months of 2004.

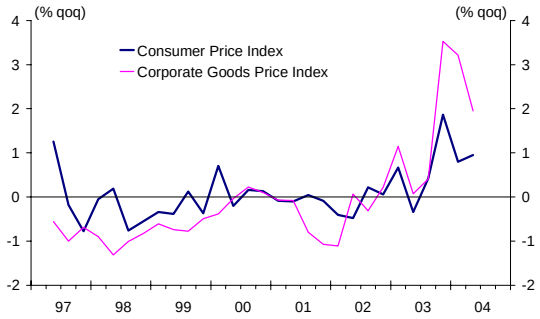
Chart 3. Recent Price Development

A. Year-on-Year Inflation



Source: CEIC.

B. Quarter-on-Quarter Inflation



Source: CEIC and staff estimates.
Note: The data are seasonally adjusted.

8. Because most of the rise in the CPI was related to food prices, which are known to be relatively volatile and subject to temporary shocks, there is also an issue of whether changes in the CPI provide an adequate measure of the underlying inflationary pressures. It is thus useful to look at measures of underlying inflation. One is inflation in the CPI excluding food prices, which is much more modest than the headline inflation (Chart 4A). However, as food prices have a large weight of about 40% in the CPI basket, it may not be valid to exclude them for assessing underlying pressures. An alternative measure is to assign weights to different components of the CPI based on volatility of their movements over time (with those of relative high volatility being given relatively low weights).[2] This measure suggests a more moderate rise than the headline CPI, but shows a clear uptrend. The third measure is an estimate of underlying month-on-month changes in the CPI using a statistical procedure, which shows also a rise in recent months (Chart 4B).[3]

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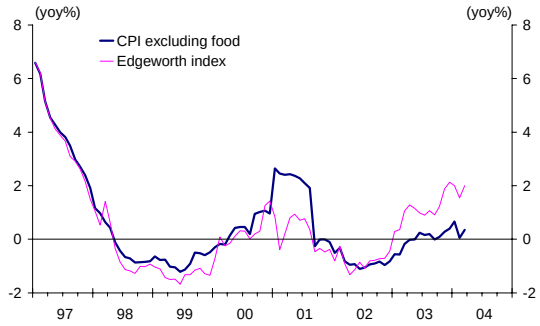
[2] For technical details, please see HKMA Research Memorandum 2004, "Alternative Measures of Core Inflation on the Mainland", http://www.info.gov.hk/hkma/eng/research/RM-mainland_core_inflation.pdf.

[3] For technical details, please refer to HKMA Research Memorandum 2004, "A Simple Measure of Underlying Inflation: Estimates for Hong Kong and the Mainland", http://www.info.gov.hk/hkma/eng/research/RM02-2004.pdf.

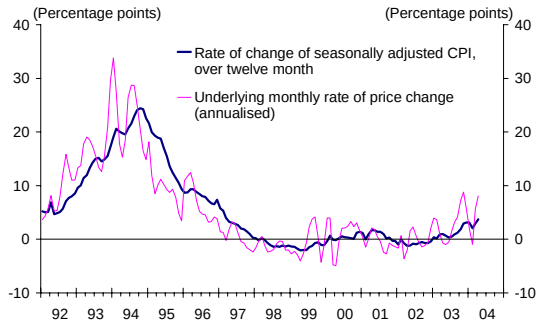
Chart 4. Underlying Inflationary Pressure

A. Measures of Core Inflation



Source: Staff estimates.

B. Underlying Month-on-Month Changes in the CPI



Source: Staff estimates.

9. In sum, there are signs of a pick-up in underlying inflationary pressures. Nevertheless, while prices of investment goods, particularly those of certain raw materials and input commodities such steel and cement have risen sharply, the pass through to consumer price inflation has been moderate so far. Furthermore, the monetary expansion appears to have limited inflationary impact on consumer prices. In the remainder of this section, we consider what may explain these developments.

Limited passthrough to consumer prices

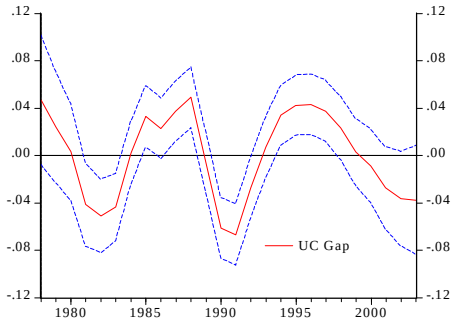
10. A number of factors may explain the limited passthrough from prices of raw materials and investment goods to prices of consumer goods and services. One is related to the aggregate demand pressure in the economy relative to aggregate supply. A typical measure of this is the so-called output gap, which is the deviation of the actual output from an estimate of potential. Internal research suggests that the output gap in the Mainland was likely to be negative in 2003 despite the acceleration in growth (Chart 5A), reflecting mainly below potential growth in the earlier years (Box 1). Furthermore, the output gap tends to have a lagged effect on inflation. Admittedly it is difficult to estimate potential output,

considering the tremendous structural changes and reforms in the economy. To gauge the uncertainty, we provide a 95% confidence band for the point estimate, with the upper band crossing the zero line. Thus, it is possible that aggregate demand exceeds aggregate supply, but the size of pressure is unclear. Going forward, an important issue is at what rate the Mainland economy can grow without generating inflationary pressures. The analysis suggests a point estimate of just below 9% with a 95% band ranging from 8% to 10%.

11. Different sources of growth in aggregate demand may help explain the discrepancy between movements in prices of consumer and investment goods. The acceleration in real GDP growth has been driven mainly by fixed asset investment, although growth of private consumption—as measured by retail sales—has also picked up. The latest developments suggest that growth in fixed asset investment decelerated sharply on a year-on-year comparison (Chart 5B). Annual growth in retail sales jumped, but mainly owing to the low base of comparison as consumption was depressed by the outbreak of SARS last year (Chart 5C). Quarter-on-quarter growth rebounded in April-May, but was comparable to the growth rates before the outbreak of SARS (Chart 5D).

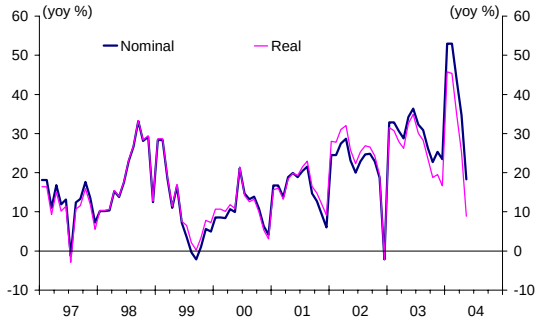
Chart 5. Indicators of Demand Pressure

A. Output Gap
(Together with 95% confidence band)



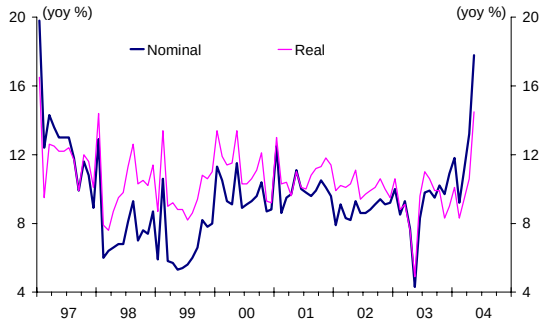
Source: Staff estimates.

B. Fixed Asset Investment



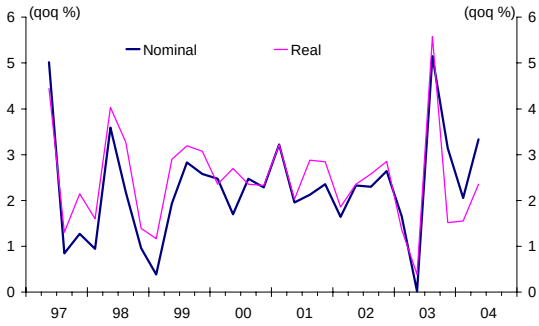
Source: CEIC and staff estimates.
Note: Deflated by corporate goods price index.

C. Annual Growth in Retail Sales



Source: CEIC and staff estimates.
Note: Deflated by retail price index.

D. Quarter-on-Quarter Growth in Retail Sales

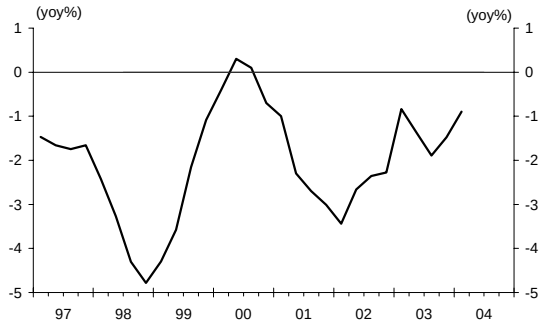


Source: CEIC and staff estimates.
Note: Deflated by retail price index.

12. Other possible contributing factors are globalisation and productivity growth. The increasing integration with the global economy means that inflation in the Mainland has become more affected by price developments in the main trading partners, which have shown moderate inflation despite easy monetary conditions (Chart 6A). Tariff reduction and trade liberalisation have probably also reduced import prices. There are indications that productivity growth has improved, while wage growth has remained stable, probably reflecting the large number of surplus labour (Chart 6B).

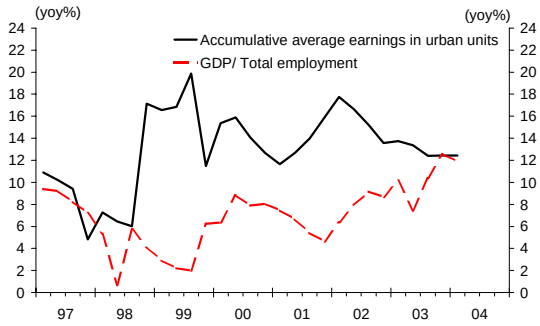
Chart 6. External Prices and Productivity and Wage

A. Export Prices



Source: Staff estimates.
Note: Unit value index of Hong Kong exports is used as a proxy.

B. Wage



Source: Staff estimates.

Limited inflationary impact of monetary expansion

13. There are two possible explanations for the limited inflationary impact of the strong expansion in broad money and credit. First, there is a time lag in the transmission mechanism, and inflation may rise further in the period ahead. Therefore, it is important to assess the current monetary and financial conditions including whether and by how much broad money has expanded faster than the underlying demand factors such as economic activity (to be covered in the next section). It is also useful to consider real interest rates and the real exchange rate.

14. Secondly, the co-existence of rapid monetary expansion and low price inflation is not unique to the Mainland. It has been the case in many developed and emerging market economies in recent years. In the late 1990s, low inflation was accompanied by a bubble in equity prices in the major economies. More recently, low interest rates have contributed to sharp increases in property prices and mortgage lending in the US and the UK, while strong productivity growth has constrained inflationary pressures. In the Mainland, it could be argued that a similar situation has developed, albeit in a somewhat different form. Productivity growth, the expansion of the non-state-owned sector, and increased migration of labour from the rural to urban area have improved the supply side of the economy. In the recent years, aggregate demand has been helped by the strong recovery in the global economy following a slowdown in 2001, a weaker US dollar, and low interest rates. All these factors have accelerated

economic growth, restrained inflation and raised corporate profitability, leading to optimistic views about return on investment and assets. However, because of the underdeveloped financial market, bank credit has played a dominant role in financing corporate investment. Thus, the demand for credit has increased strongly. On the supply side, a loose lending stance by commercial banks have probably exacerbated or reinforced the boom with increases in investment and property prices supporting demand and sustaining, at least for a while, the optimistic expectations of the future.

Concerns about the rapid growth of investment and bank credit

15. There are a number of concerns about the rapid increase in fixed asset investment financed by bank credit, even though it has resulted in limited inflation in consumer prices. First, such investments will increase the supply capacity of the economy, and may lead to excess supply and deflationary pressures in the future, particularly in an economic downturn. In this respect, commentators tend to focus on the annual growth of 43% in fixed asset investment in 2004Q1, and some have argued that the excess capacity as a result of the current investment will be so large that a major correction is now needed. While anecdotal evidence suggests over-investment and excess capacity in some specific sectors, at the macro level, headline growth rates should be put in a proper context. For example, prices of investment goods have risen by about 9% during the same period, implying that real investment (or volume) grew by only 32% in 2004 Q1. Furthermore, to the extent that fixed asset investment has made more use of steel, cement etc (related to the real estate and heavy industry), the distortion could be more significant as prices of these inputs increased more rapidly than average prices of investment goods. The latest data suggests that annual growth in fixed asset investment slowed significantly to 18% in May.

16. Secondly, the rapid growth in some sectors has raised bottlenecks in the economy, in particular an increased shortage of electricity. These bottlenecks reduce efficiency of the other parts of the economy. Thirdly, and probably more importantly, to the extent that some of the investment reflect excessively optimistic views about future profitability, they will likely become a waste of resources and raise the

level of non-performing loans. Because of the imbalanced financial structure, there has been an increased reliance on bank finance for investment in recent years. Thus, the exposure of the banking system to a slowdown in growth and investment has arguably never been higher.

17. The above points to a mixed picture while the growth in fixed asset investment and bank credit shows a marked slowdown, consumer price inflation has continued to increase. To assess the outlook, it is important to have a view about whether the current monetary and financial conditions are too loose for maintaining strong growth without generating significant inflationary pressures. It would be also useful to examine the stance of fiscal policy, which played an important role in supporting domestic demand after the Asian financial crisis.

III. Monetary and Financial Conditions and Fiscal Policy Stance

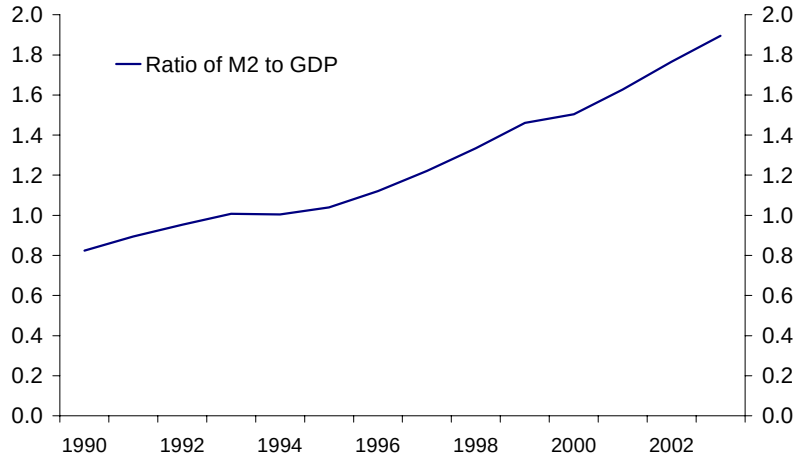
18. To assess the monetary and financial conditions, it is important to look at a combination of quantity and price indicators. The most important transmission mechanism of monetary policy is likely to be the credit availability channel. Thus, base money, broad money and bank credit are useful indicators. As a result of the economic reforms, particularly the banking sector, and the nascent development of financial markets, the role of interest rates in the transmission mechanism has increased. While nominal lending and deposit interest rates have been kept unchanged in recent years, real rates have declined as a result of increased inflation. In addition, the exchange rate is also an important factor that affects aggregate demand. While the RMB has been stable against the US, the trade-weighted real effective rate has moved quite significantly over the past decade, with a significant decline in the past few years which implies improvement in external competitiveness. To examine the impact of fiscal policy on domestic demand, we estimate a measure of fiscal stance, which indicates the degree of expansionary/contractionary policy.

A monetary overhang?

19. One way of assessing monetary conditions is to compare money supply with demand that is determined by factors like economic

growth and inflation. There is a significant gap between annual growth of broad money of 19% in 2004Q1, and real GDP growth of close to 10% and CPI inflation of 3%. The gap of 6% could be regarded as excess money supply. However, it is not new that broad money grows faster than real GDP and inflation. It has been the case in the past decades. As a result, the ratio of M2 to GDP has risen steadily from below 1 in early 1990s to about 2 in 2003 (Chart 7). This suggests that the income elasticity of money demand is probably larger than unity.

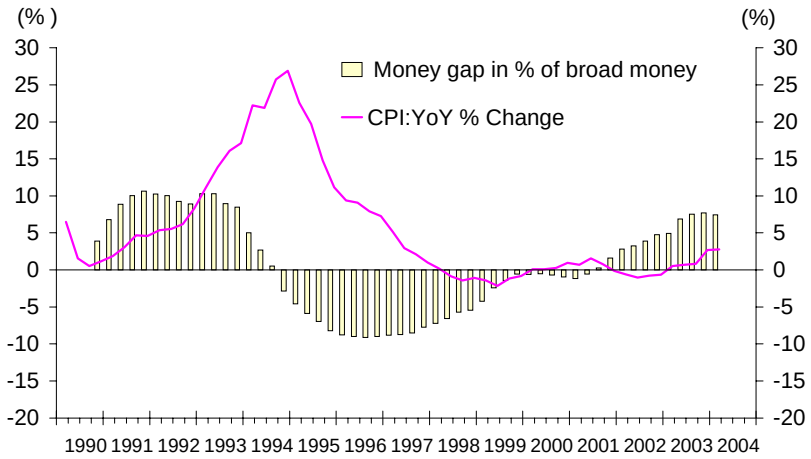
Chart 7. Broad Money (M2) to GDP Ratio



20. Based on our estimate of a long-run demand function for broad money that has an income elasticity of about 1.6, we derive a gap between M2 and an estimated demand that is in line with real GDP and inflation.[4] A positive gap represents excess money supply and is sometimes termed monetary overhang that may increase inflationary pressures in the period ahead. Chart 8 shows that a positive gap has developed in recent years, and that this measure of money gap tends to be positively related with CPI inflation, with a considerable lag. Thus, if the historical relationship continues to hold, the inflationary impact of the recent monetary expansion is unlikely to have been completed and CPI inflation would rise further.

[4] For developed economies, the estimated income elasticity typically is about unity. Alternative explanations have put forth for a relatively large estimate for the Mainland. One is monetization of the economy following economic reform and urbanisation, which increased money demand. The other is that the demand for bank deposits has been boosted by increased savings due to reforms and structural changes in the economy.

Chart 8. Monetary Overhang



Source: Staff Estimates.

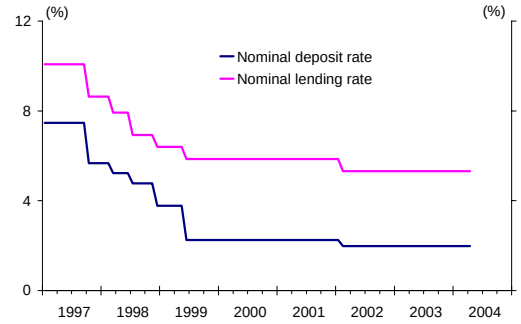
Note: The money gap is defined as the difference between the actual M2 nominal and an estimated demand determined by economic growth and inflation.

A monetary conditions index

21. To examine the financial conditions of the non-bank sector, it is useful to look at one-year deposit and lending rates, both of which were cut many times in the period from late 1997 to early 2002 and have since been kept unchanged (Chart 9A). The real interest rates have, however, declined in the past two years as a result of the increase in inflation (Chart 9B). Measured against annual CPI inflation, the real one-year deposit rate has become negative in recent months. While a similar measure of the real lending rate has remained positive, that relative to annual inflation in the corporate goods price index has dropped to the negative territory in 2004 Q1. The latter is probably a more relevant indicator for investment.

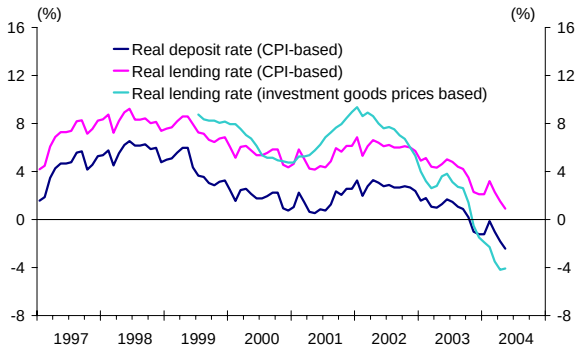
Chart 9. Deposit and Lending Interest Rates

A. Nominal



Source: CEIC.

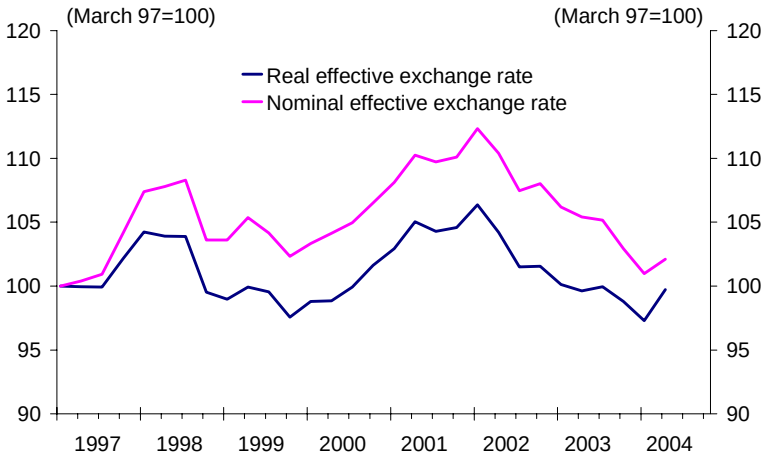
B. Real



Source: CEIC.

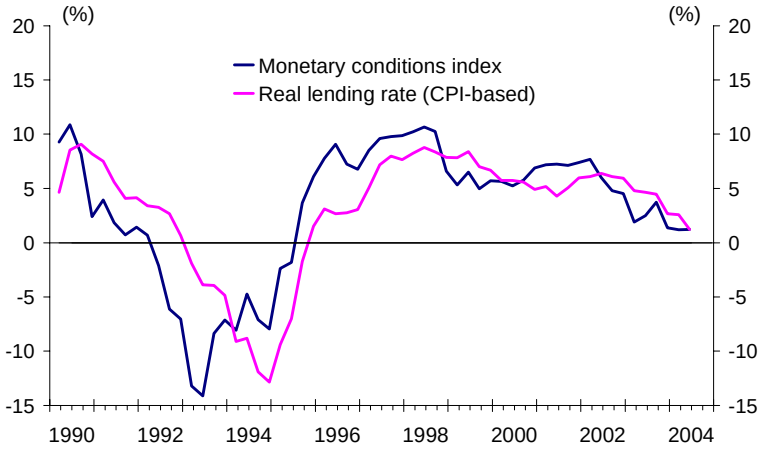
22. In the meantime, the real effective exchange rate (REER) of the RMB has declined, reflecting a weakened US dollar to which the RMB exchange rate has been kept stable and relatively low domestic inflation until recently (Chart 10). The decline in the real exchange rate has probably contributed to the rapid growth in exports in recent years.

Chart 10. Nominal and Real Effective Exchange Rates of the RMB



23. To provide an indication of changes in the overall monetary and financial conditions, we construct a composite indicator based on the concept of monetary conditions index (MCI). Box 2 provides some details about the rationale and interpretation of the MCI. Chart 11 shows that the MCI declined by about 6 percentage points (real interest rate equivalent) in the period of 2002 Q1 - 2004 Q1. It also shows that the easing in monetary conditions was greater than what is suggested by the decline in the real interest rate alone, as a result of the depreciation of the RMB in real effective terms.

Chart 11. The MCI



24. In sum, both quantity and price indicators suggest that monetary conditions have eased markedly in recent quarters. Judging also from the pick-up in inflation and overall economic growth, it is likely the current monetary conditions are somewhat loose from a macroeconomic stability perspective. If unchecked, there is risk of a build-up of broad-based inflationary pressures in the economy. Nevertheless, both the estimated monetary overhang and the MCI suggest that the current monetary conditions are less loose than in 1992-93.

Fiscal policy stance

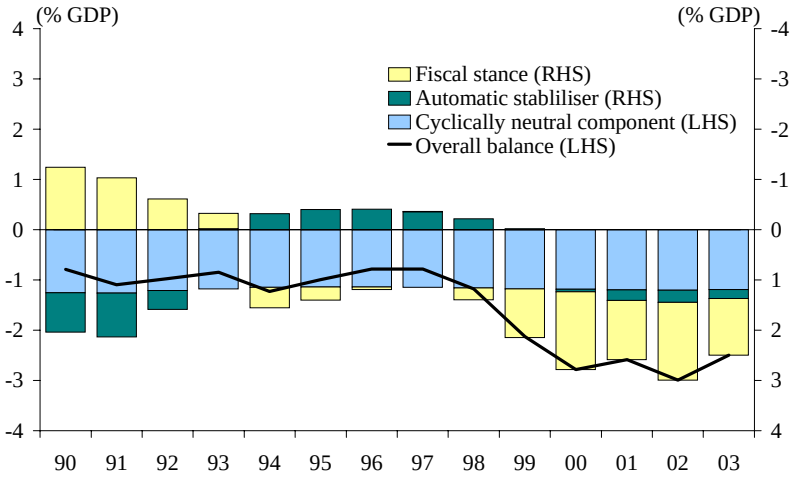
25. A consolidated account of the fiscal position of the central and local governments shows a considerable increase in deficits since 1999 (Table 1). The deficit reached a peak of 3% of GDP in 2002, and declined only moderately to 2.5% of GDP in 2003, compared with shortfalls of around 1% of GDP in 1997-98. Of course, the outturn of the fiscal balance reflects also influences of non-policy factors, such as cyclical conditions in the economy. Below-potential growth (until recent quarters) probably restrained tax receipts and contributed to the fiscal deficits in recent years. By purging the effects of cyclical conditions, a measure of fiscal stance is estimated (Box 3). This suggests that the stance of fiscal policy has indeed been expansionary in 1999-2003 relative to the earlier years, although the stimulus was reduced somewhat in 2003 (Chart 12).

Table 1. Summary of Fiscal Operations

	1997	1998	1999	2000	2001	2002	2003
	(In Percent of GDP)						
Revenue	11.6	12.6	13.9	15.0	16.8	18.0	18.6
Tax	11.1	11.8	13.0	14.1	15.7	16.8	17.1
Others	0.6	0.8	0.9	0.9	1.1	1.2	1.4
Expenditures	12.4	13.8	16.1	17.8	19.4	21.0	21.0
Economic Construction	4.9	5.3	6.2	6.4	6.7	6.3	na
Social, Cultural & Education Development	3.3	3.7	4.4	4.9	5.4	5.6	na
National Defense	1.1	1.2	1.3	1.3	1.5	1.6	na
Administration	1.8	2.0	2.5	3.1	3.6	3.9	na
Other Expenditures	1.3	1.5	1.7	2.0	2.3	3.5	na
Overall Balance	-0.8	-1.2	-2.1	-2.8	-2.6	-3.0	-2.5

Source : CEIC.

Chart 12. Estimates of Fiscal Stance



Source : Staff estimates.

IV. Policy Responses by the Mainland Authorities

26. The authorities have taken a number of monetary tightening, prudential and administrative measures in an attempt to slow down investment and credit growth (Table 2). In particular, banks' reserve requirements have been raised three times, and tighter restrictions have been placed on property lending. The PBoC and China Bank Regulatory Commission (CBRC) have also tried to use moral suasion, asking banks to curb lending to overheated sectors. However, the benchmark lending interest rates have been kept stable. The State Council has raised the capital requirements for fixed asset investment projects in four sectors—steel, cement, real estate, and aluminium—and asked all regional governments and line ministries to review ongoing and planned new investment projects.

Table 2. Tightening Measures

Measures	Agency	Effective date	Objective
Tighten lending rules to the real estate sector	PBoC	June 5, 2003	Control excess lending to the real estate sector
Hold meetings to require commercial banks to observe guidance on risk management and take measures to prevent credit and liquidity risks	PBoC	July 18, 2003, August 11, 2003, September 12, 2003	Moral suasion
Raise the reserve requirement ratio from 6% to 7%	PBoC	September 21, 2003	Control credit growth
Sterilisation through issurance of central bank bills	PBoC	Since 2003	Offset the increase in base money due to the increase in foreign exchange reserves
Send five inspection teams to seven provinces to examine bank lending to certain sectors	CBRC	April, 2004	Control excess investment; optimise credit allocation; guard against financial risks
Provide guidance to commercial banks to curtail lending to overheated sectors	CBRC	April, 2004	Control excess investment in certain sectors without affecting the growth of other sectors
Introduce a differentiated reserve requirement system in which the reserve requirement ratio was raised to 7.5% for some banks, and to 8.0% for banks whose capital adequacy ratio is below certain level	PBoC	April 25, 2004	Control credit growth; raise the cost of capital, particularly for smaller local banks, and deter them from lending aggressively
Issue new rules for land use	State Council		Control excess investment in the real estate sector
Require local governments to review and clean up investment projects	State Council	April 30, 2004	Control excess investment; adjust the structure of investment
Raise the capital requirements for fixed asset investment projects in four sectors	State Council	April, 2004	Control excess lending to certain sectors; guard against financial risks
Consolidate investment projects applicable to those started in 2003	NDRC		Control excess investment in certain sectors
Jointly issue guidance on review and clean up investment projects	NDRC, PBoC, and CBRC	May, 2004	Control excess investment in certain sectors

Agencies:
PBoC: the People's Bank of China
CBRS: the China Banking Regulatory Commission
NDRC: the National Development Reform Commission

27. It is understandable that the measures taken so far have mainly involved administrative and prudential instruments, because a relaxed lending stance has probably played an important role in the rapid growth of bank credit and broad money. In particular, the relaxed lending stance has contributed to an increase in the money multiplier (the ratio of broad money to the monetary base) since the middle of 2002 (Box 4). It takes time for the effects of these measures to work through. Views seem to differ among commentators in reading the recent slowdown in fixed asset investment growth and bank credit expansion. One is that tightening measures should continue or even be reinforced, as a rebound in credit and investment growth will likely take place if administrative measures are relaxed somewhat. The other is that risks for a sharp slowdown in economic growth or a hard landing have increased, and administrative measures—which are crude—should be relaxed somewhat. Thus, at this conjuncture, it is difficult to assess whether the measures taken so far are adequate to achieve a soft landing. Data on key macroeconomic variables such as CPI inflation, money and credit growth in the next few months are crucial for assessing the effectiveness of the stabilisation efforts.

28. As regards possible measures for further tightening, if there is such a need, there has been a debate about whether the PBoC should raise interest rates. Some commentators have argued that a rise in interest rates is not appropriate, and that efforts should be focused on administrative and prudential measures to tighten banks' lending stance and restrain local governments' drive to achieve fast, headline economic growth rates. This view reflects a number of considerations including:

- a rise in interest rates would not help to reduce investment that is driven by distorted incentives and not based on proper risk-return assessments;

- companies in some "overheated" sectors enjoy high profit margins, at least for now, and would not be sensitive to a modest rise in interest rates;

- a rise in interest rates may hurt consumption growth, but the concern is mainly with excess expansion in investment;

- banks' profitability may be affected; and

- to the extent that a rise in interest rates raises their spread over US interest rates, further capital inflows may be encouraged, increasing the pressure on the RMB exchange rate and sterilisation by the PBoC.

29. These points highlight limitations in using interest rates as a policy instrument, although some of these are of lesser concern in view of the latest developments (see below). However, administrative measures such as restricting banks' credit supply also have problems. These measures are crude, and difficult to fine-tune. Thus, if there is too much reliance on administrative measures, there is a risk of causing a contraction that is more severe than intended. At the micro-level, the tightening is likely unevenly distributed and entails credit rationing by banks, leading to rent-seeking behaviour and efficiency losses.

30. An alternative view points to merits for interest rates to play a role in tightening the overall monetary and financial conditions. First, while sector-specific lending constraint is needed for addressing overheating in specific industries, it may not be adequate to achieve a tightening of overall monetary conditions. This is because it may shift the supply of credit from the restricted sectors to unrestricted sectors, given the ample liquidity in the system.

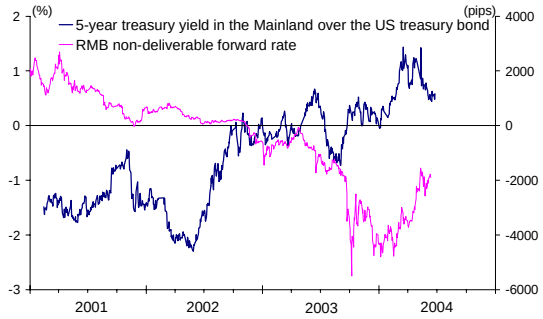
31. Second, a rise in interest rates should restrain investment growth—and thus the demand for credit including mortgage loans—but may not depress consumption growth. There are projects that are unlikely to be responsive to higher borrowing costs. However, given the reduced importance of the state-owned sector in the economy and economic and financial reforms, investment decisions overall should have become more sensitive to changes in costs of capital. This is supported by some simple regression analyses (Box 5). Specifically, fixed asset investment was

found to be negatively related to the real lending rate in the period of 1994-2003, but the relationship was statistically insignificant in 1981-93. In contrast, retails sales do not appear to have been significantly affected by changes in deposit interest rates. This suggests that a negative inter-temporal substitution effect due to a rise in deposit rate is likely to be offset by a positive income effect. Thus, concerns about a depressing effect of higher interest rates on consumption may not be as significant as some have feared.

32. Third, there are less concerns about a rise in interest rates widening interest rate differential between the Mainland and US and thereby attracting capital inflows, as markets now expect a faster and greater tightening by the Fed than earlier thought. The easy global monetary conditions had led to yield-seeking and capital inflows to emerging market economies including the Mainland (the positive sentiment towards the Mainland and speculations of a RMB revaluation of course have been an important pulling factor). However, financial conditions in the US have already tightened, as indicated by a rise in the longer-term interest rates. As a result, there are signs of a reversal of fund flows from the emerging markets. The RMB NDF spread against the spot rate has narrowed significantly in recent months, and the interest rate spread between the 5-year treasury yield in the Mainland and that of the US turned from negative to positive (Chart 13A). Moreover, the positive spread between 12-month RMB deposit rate and 12-month LIBOR was also closed as a result of the increase in the latter (Chart 13B). All these suggest that concerns about inducing further and large amounts of inflows by a rise in regulated interest rates have been much reduced.

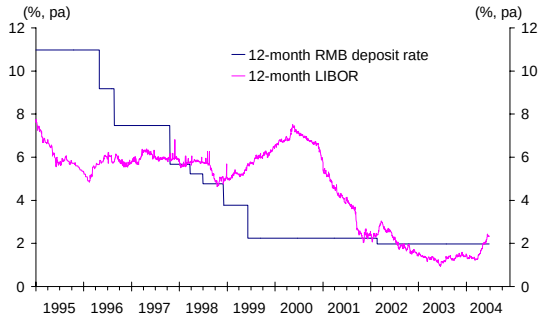
Chart 13. Interest Rate Spread

A. RMB NDF Spread and Bond Yield Spread



Source: CEIC & Reuters.

B. 12-Month LIBOR and RMB Deposit Rate



Source: CEIC & Reuters.

33. Finally, as the economy becomes increasingly market oriented, the importance of interest rates for resource allocation will rise over time. Even though administrative measures may be more effective now, it is important for banks and the non-bank sector to build up the capacity of managing interest rate risks. Allowing interest rates to play a role in the current tightening effort would also increase the flexibility of monetary policy in the next cycle of easing. Should higher interest rates, coupled with administrative measures, lead to excessively tight monetary conditions, interest rates can be reduced. However, if the current consolidation relies solely on administrative measures, in the event of a need for monetary easing, the room for reducing interest rates would be limited, particularly as the US monetary policy is expected to be tightened significantly in 2004-05. In that case, there would probably be a need for a relaxation of bank lending stance through administrative means, creating the possibility of another cycle of rapid credit expansion that is not based on proper return-risk considerations.

34. While these considerations suggest that a rise in interest rates will help contain broad-based inflationary pressures, it is not clear whether this is needed now in view of the latest slowdown in investment and credit growth. Furthermore, our analysis on the magnitude and timing for any such interest rate adjustments is hampered by the lack of understanding of the monetary policy transmission mechanism in the Mainland.

- The PBoC has announced targets for broad money growth in recent years, implying that broad money has been used as an intermediate

target for the implementation of monetary policy. Our estimates suggest a monetary overhang based on a demand for broad money relationship, which points to the need for tightening. However, given the structural changes in the economy, the money velocity is not stable as indicated by the rising M2/GDP ratio. Thus, the relationship between the estimated overhang and inflation may not be as strong as in the historical data. More importantly, the multiplier from monetary base to broad money has increased in recent years, in part reflecting a relaxed lending stance by banks. It is not clear how the administrative and prudential measures have reduced and, furthermore, how a rise in interest rates will impact on the multiplier.

- Interbank and money market interest rates have already risen as a result of the tightening measures by the PBoC. In addition, the floating band for bank lending rates has been raised to allow for more flexibility. Considering the administrative measures adopted to limit credit supply, it is possible that the actual lending rates for some loans have already risen above the announced benchmark rates. Whether and to what extent this is the case would have implications for the need and size of rise in the benchmark rates.

- In the event of an increase in interest rates, an important issue is whether to raise both lending and deposit interest rates and leave the lending spread unchanged. One consideration would be how the PBoC sees the role of lending and deposit rates in influencing macroeconomic conditions. For example, are there merits for raising the lending rates more because the concern is mainly with credit growth? Also, is there a concern for bank profitability? It is possible that a widened lending spread would offset to some extent the impact of slower credit growth and help limit the impact on banks' profitability. On the other hand, an increased spread may induce banks to lend more. This would run against the objective of restraining credit expansion.

35. Finally, there is an issue of the role of fiscal policy in stabilising macroeconomic conditions. As noted earlier, fiscal policy stance has been expansionary in recent years. There is, therefore, room for

a tightening of fiscal policy by reducing expenditure. On the other hand, fiscal policy is a less flexible than monetary policy. Some commentators have argued that a rise in interest rates would raise costs of financing fiscal deficits and viewed this one of the constraints on monetary policy. It is not clear whether and to what extent this is indeed a concern. In this respect, a tightening of fiscal policy would reduce the financing need and therefore easing the constraint on monetary policy.

V. Conclusions

36. In sum, the recent developments suggest a mixed picture about the macroeconomic conditions in the Mainland. On the one hand, there are signs that the tightening measures have started to take effect. Some have even expressed concerns about too rapid a slowdown in investment and bank credit growth. On the other hand, inflation has continued to rise, and current monetary and financial conditions point to risks of a further build-up of broad-based inflationary pressures. Thus, while the use of administrative measures to curb excessive investment and bank lending is appropriate, whether this is adequate to achieve a soft landing remains to be seen.

37. The paper also reviews considerations for and against the use of interest rate adjustments for macroeconomic stabilisation purposes. On balance, there seem to be merits for interest rates to play a role in tightening overall monetary and financial conditions. However, should the recent slowdown in investment and credit growth sustain, the need for a rise in interest rates in the near term would be reduced. Furthermore, the analysis on the magnitude and timing of any interest adjustments is hampered by our lack of understanding of the monetary policy transmission mechanisms in the Mainland. Overall, it seems that developments in key macroeconomic variables such as CPI inflation and money and credit growth in the next few months will have important implications for whether the PBoC will raise interest rates.

38. Finally, while there are significant challenges to macroeconomic policy management, it should be noted that the current situation compares favourably with the last round of tightening a decade ago. First, the

macroeconomic conditions are more favourable than in 1992-93, as indicated by relatively slow growth, inflation, and monetary expansion this round (although it is possible that the rates of growth and inflation may rise further). Secondly, the economy has become more market-oriented due to the structural change and reforms in the past decade. Specifically, the importance of the non-state sector in the economy has increased, and the economy has become more open. The increased pace of migration of labour from the rural to urban areas has raised productivity growth, while at the same increased competition in the labour market. All these developments suggest that the economy has become more flexible in coping with shocks and policy adjustments. Thirdly, external demand could provide a considerable cushion to the impact of a slowed domestic demand. The global economy is in a strong recovery, and the competitiveness of the Mainland as a trading power has risen.

Hong Kong Monetary Authority
July 2004

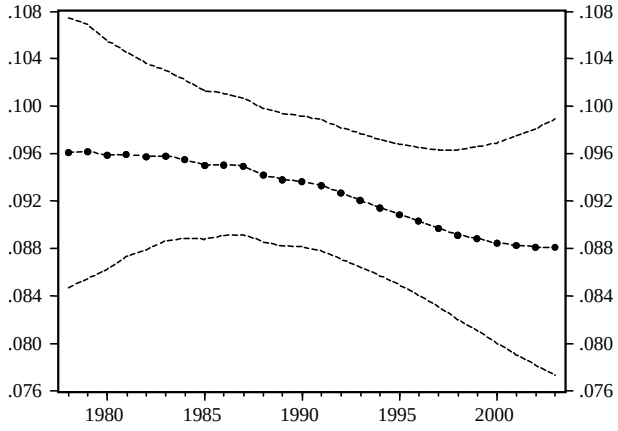
Box 1. Measures of Output Gaps

There are two broad approaches to estimating potential output and the output gap. One is the production function approach which accounts for the sources of growth. Its main disadvantage arises from the need for high quality data on the capital stock and the labour force, which are difficult to obtain for many economies, particularly for the Mainland. The second is the statistical approach. While this method is easy to implement, it suffers from the drawback of providing no economic understanding of the sources of growth.

A recent research paper uses three statistical methods to construct the output gap for the Mainland: 1) the Hodrick-Prescott filter; 2) regress the logarithm of real GDP on a cubic polynomial in time and use the residuals as a measure of the output gap; and 3) an unobservable components model which provides an explicit estimate of the degree of uncertainty of the resulting measure of the output gap.[5]

The three output gap measures turn out to be similar and evolve over time in line with movements of inflation and other macroeconomic indicators. Specifically, the three downturns in economic activity in 1981-83, 1989-91, and 1993-1999 were accompanied by sharp falls in inflation. Furthermore, the upturns around the mid-1980s and the early 1990s saw a marked acceleration in inflation rates. The estimated cycles in the output gap are broadly in line with estimates presented in other studies that use the production function approach, such as Heytens and Zebregs (2003).[6] The point estimate of the unobservable components model suggest that the potential rate of growth is currently at about 8.8% (Chart B1.1). However, the degree of uncertainty is high, as the 95% confidence band ranges from below 8% to almost 10%.

Chart B1.1. Potential Growth
(Together with 95% confidence band)



[5] Technical details are provided in HKMA Research Memorandum 2004, "Output Gaps and Inflation in Mainland China".

[6] "How Fast can China Grow?" China: Competing in the Global Economy, IMF, 2003.

Box 2. A Monetary Conditions Index for the Mainland

A monetary conditions index (MCI) is defined as a weighted sum of some measures of the real interest rate and the REER, with the weights reflecting their relative effects on aggregate demand.[7] It provides a more comprehensive measure for assessing the impact of financial conditions on the real economy than real interest rates, because it takes into account the impact of real exchange rate. This is particularly relevant to the Mainland, given that exports have been an important driver of growth. In most formulations, the coefficients on the real interest rate and REER in an aggregate demand function determine the weights in the MCI.

To this end, an aggregate demand function is estimated. The data sample consists of quarterly data on real GDP growth (*y*), real interest rate (*r*) and fourth-quarter change in the logarithm of REER (*reer*) for the 1990/Q2-2004/Q1 period. The real interest rate is measured by the difference between 1-year lending rate and annual CPI inflation.[8] The estimated aggregate demand function are as follows.

$$y_t = \underset{(32.1)}{0.098} - \underset{(-7.33)}{0.289}\, r_{t-1} - \underset{(-3.71)}{0.140}\, reer_{t-1}$$

Sample period: 1990/Q2-2004/Q1
Adjusted R^2: 0.560
Equation standard error: 0.016
t-statistics in parentheses.

The ratio of the estimated coefficients shows that a 1 percentage point change in the real interest rate is equivalent to 2.1 percentage point change in the REER in terms of the effect on real GDP growth. The weights of the MCI is thus:

$$MCI = r + 0.484\, reer$$

Although the concept of MCI is theoretically appealing, there are caveats in empirical implementation. Specifically, there are considerable uncertainty regarding the measurement of real interest rate and the REER, as well as in the estimation of the relative weights for the component variables. Thus, caution is required in interpreting the estimates.

[7] A broader measure of financial conditions, termed the financial conditions index, incorporates equity prices as well. However, equity market in the Mainland is still under-developed and the wealth effect associated with fluctuations in equity prices is limited.

[8] Ex-post realised real interest rate is used, because of the lack of estimates for inflation expectations.

Box 3. Estimating the Fiscal Stance

The conventional measure of budget balance may not fully reflect the effect of fiscal policy as it is no clear whether changes in the balance are the cause or the result of changes in the economy. This box presents a "top down" approach to estimating the policy effect after purging the actual balance of the consequences of cyclical conditions in the economy.

First, a base year is selected in which output is close to potential. Potential output is proxied by trend GDP obtained from a Hodric-Prescott (HP) filter. In our calculations, 1998 was selected as the base year, in part also because fiscal deficits (in % of GDP) more or less doubled in the subsequent years.

Secondly, the fiscal balance is decomposed as follows:

$$B = \left(t_o Y^P - g_o Y^P\right) - t_o\left(Y^P - Y\right) - FIS$$

↓	↓	↓
Cyclically neutral component	Automatic stabiliser	Ex post stimulus effect

where t_o = T_o/Y_o, the revenue ratio in the base year
g_o = G_o/Y_o, the expenditure ratio in the base year
Y = actual GDP in nominal prices
Y^P = potential GDP in nominal prices
FIS = fiscal stance
B = fiscal balance

By re-arranging the above equation, fiscal stance can be expressed as $FIS = \left(t_o Y - g_o Y^P\right) - B$. A positive (negative) ratio of fiscal stance to GDP, *FIS/Y*, in a particular year indicates expansionary (contractionary) fiscal policy stance relative to the base year (where by definition, fiscal stance is close to neutral). A year-on-year increase in fiscal stance (sometimes termed as positive fiscal impulse) indicates that fiscal policy is more expansionary relative to the previous year.

Some of the limitations of this estimation should be noted. One is the error arising from potential GDP estimates. Another is related to the assumption that the elasticity of tax revenue and government expenditure with respect to output is unity. As a result, any effect of automatic stabilisers that arises owing to differences from unity in the revenue and expenditure elasticity with respect to output will be included in the fiscal stance measure.

Box 4. What Explains the Strong Expansion in M2?

This box presents some stylised facts and statistics to shed light on factors that have contributed to the strong expansion in broad money and bank credit. Specifically, the importance of two factors is explored. One is a rise in base money, which may have resulted from incomplete sterilisation of capital inflows. The other is relaxed bank lending stance, which would have increased the multiplier effect from the base money to broad money.

First, an analysis of the counterparts of M2 suggests that the rapid growth in net domestic credit (NDC) of the banking system is the main contributor to the rapid M2 expansion since 2002. This seems to lend support to the view that a loosened lending stance coupled with increased credit demand has contributed to the strong increase in M2. In particular, the growth in credit outpaced that in M2 since mid 2003, suggesting possible change in bank lending practices.

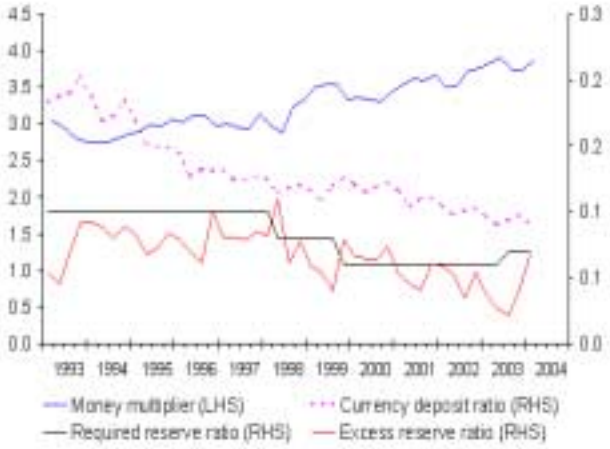
Marginal contribution to M2 growth of:

	1998	1999	2000	2001	2002	2003
		(in percent)				
Net Domestic Credit	128	81	112	41	130	90
Net Foreign Assets	10	12	20	30	17	17
Others (Net)	-38	7	-32	29	-47	-7

However, an analysis of the consolidated balance sheets of the central bank and commercial banks could mask the channel through which capital inflows, if not fully sterilised, lead to a rise in base money and in M2 through the multiplier effect. Therefore, it is also important to examine the behaviour of the base money and M2 multiplier.

Chart B4.1 plots the developments in the money multiplier and its components. It appears that in the absence of any policy change, since mid 2002, there have been consistent increases in the money multiplier accompanied by a decline in excess reserve to deposit ratio. Given the relative stability of currency to deposit ratio over the last few years, it is likely that the rise in the multiplier is due to the increased ease of borrowing and lending.

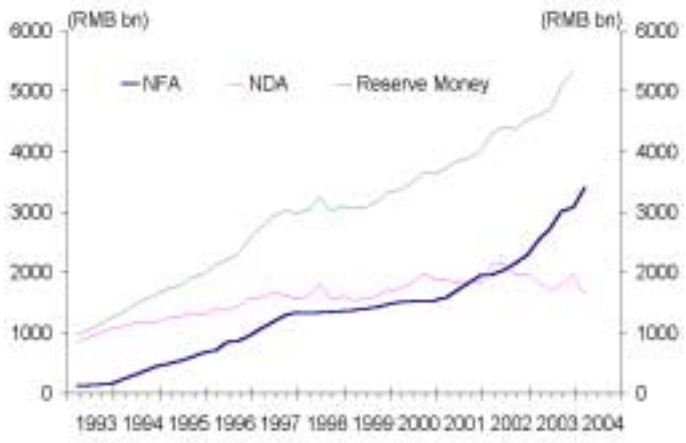
Chart B4.1. M2 Multiplier



Source: Staff estimates.

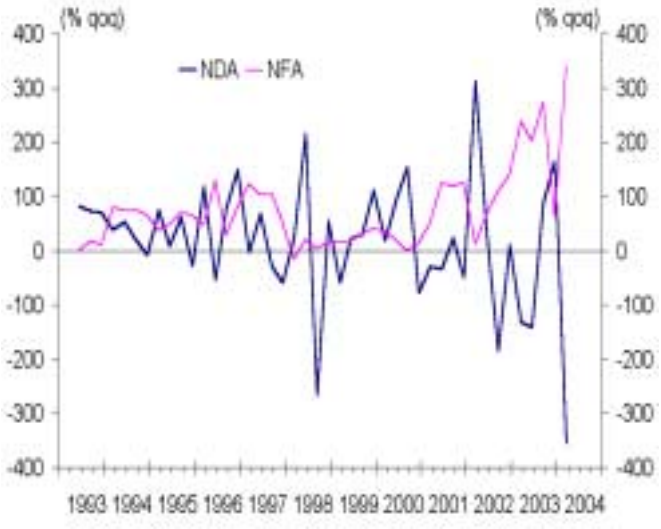
Furthermore, in addition to the increase in the M2 multiplier, base money is shown to also have risen at a rapid rate. It is possible that some of the reserve money growth was due to "pass-through" from rapid foreign inflows. Chart B4.2 shows that growth in reserve money was mostly driven by growth in net foreign assets, while changes in net domestic assets are more subdued.

Chart B4.2. Reserve Money and Its Counterparty



Starting from mid 2002 net domestic assets tended to move in opposite direction of net foreign assets (Chart B4.3). This indicates certain degree of "sterilisation"—effort by the central bank to withdraw liquidity from the banking system in response to capital inflows.

Chart B4.3. Indications of Sterilisation



Source: PBoC and staff estimates.

To examine the issue systematically, a monetary policy reaction function is estimated for the Mainland to measure the degree of sterilisation. The methodology closely follows that of Cumby and Obstfeld (1981), which was widely adopted by the academic literature in the studies of capital flows and monetary policy conduct. A central bank that has the stability of exchange rate and inflation, and economic growth in its objective function could have a reaction function of the form:

$$\Delta NDA_t = a_0 + a_1 \Delta NFA_t + a_2 Deficit_t + a_3 REER_{t-1} + a_4 GDP_{t-1} + a_5 Inflation_t + \varepsilon_t$$

Where NDA and NFA refer to net domestic asset and net foreign asset of the central bank respectively, deficit is the general government account balance, REER is the real effective exchange rate, and GDP is the growth rate in real output. This reaction function of the central bank allows for responses to a number of factors in addition to the balance of payments.

In this specification, coefficient a_1 measures the degree of sterilisation by the central bank. Using quarterly data from 1993 to 2004, the estimation gives an estimated of around 0.6, suggesting that the central bank has sterilised about 60 percent of the capital inflows in the sample period. This estimate gives an indication of the "average" degree of sterilisation by the central bank over the period. However, latest data suggest complete sterilisation in the recent quarters.

In sum, the preliminary analysis suggests that capital flows probably led to base money expansion in the earlier periods, but more recently there are indications of complete sterilisation by the PBoC. The increase in the money multiplier, resulting probably from relaxed lending standards, has also contributed to the broad money growth. Indeed, the latter has probably played a more important role.

Box 5. Impacts of Changes in Interest Rates on Investment and Consumption

To gauge the impact of changes in interest rates on investment and consumption, two simple regressions are estimated. The investment equation relates fixed assets investment to output and the one-year lending rate, while the consumption equation regresses retail sales on output, bank deposits (as a measure of wealth), and the one-year deposit rate.

The results suggest that fixed assets investment has begun to respond to changes in interest rates since the mid-1990s (Table B5.1). On the other hand, econometric analysis shows that retail sales appear to respond to income and bank deposits, but not to interest rates, suggesting that the substitution effect of changes in interest rates is probably offset by the income effect (Table B5.2).

Table B5.1. Estimation of Investment Equation [1]

	1981-1993	1994-2003
Real GDP	1.10	2.23
	(12.57)	(19.60)
Real lending rate [2]	-0.39	-1.96
	(-0.92)	(-2.57)
R-squared	0.95	0.90
Durbin-Watson	0.82	2.02

Notes: 1. Real investment is obtained by dividing the nominal quarterly fixed assets investment by the implicit price deflator of GDP. Quarterly data are not available prior to 1994.
2. 1-year nominal lending rate minus year-on-year change of CPI.
3. t-statistics are in parentheses.

Table B5.2. Estimation of Real Sales Equation [2]

	1994-2003 [1]
Real GDP	0.17
	(18.40)
Real deposits	0.47
	(37.79)
Real deposit rate [2]	-0.11
	(-0.96)
R-squared	0.96
Durbin-Watson	1.97

Notes: 1. Real quarterly retail sales and deposits are obtained by deflating the nominal values by CPI.
2. 1-year nominal deposit rate minus year-on-year change of CPI.
3. t-statistics are in parentheses.