Macquarie Research
Economics

CHINA

After the Plan

10 July 2007

Inside

After the Plan

Title	Date
China ROEs: Riding on the edge	18-Dec-06
Wages, prices and consumption	26-Jul-06

Source: Macquarie Research, July 2007

The China Diviner

Title	Date
Something's gotta give….but not yet	21-Jun-07
The China Diviner Special: A Party that is far from over	28-May-07
Friday's attempts to tame the tiger	21-May-07
What Anhui tells us about China	4-May-07
Not a typical austerity April	13-Apr-07
The Golden Year of the…Consumer	28-Mar-07
The NPC: Unbalanced rebalancing	9-Mar-07
Not nearly enough to derail this train	2-Mar-07

Source: Macquarie Research, July 2007

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Struggling with the lessons: China and 1980s Asia

China learns to control the symptoms of liquidity…

With our head Asia economist, Bill Belchere, leading the charge, we have for some time been discussing the macro similarities between Asia now and Asia in the 1980s, namely exchange rate policies that keep interest rates low and thus drive asset prices up. With China's stock market igniting, this comparison is now all the rage in Beijing, too, with everyone seemingly trying to learn the lessons of the 1980s.

Perhaps unsurprisingly, it is Japan's experience that has been pored over most intensively. By contrast, we devote most of our attention here to 1980s Taiwan. It is often forgotten that forex accumulation played no role in Japan's bubble, but it was central in Taiwan's. Moreover, Japan's bull market was a rather sedate affair. In Taiwan, by contrast, it was a phenomenon that gripped the whole island, in a way that the statistics suggest is today happening in urban China.

…but not the causes

This frenzy of analysis has yielded results, with China clearly learning some of the lessons of the 1980s. Faced with even greater forex inflows than China today, Taiwan just let the asset markets fly. By contrast, Beijing is using sterilisation, financial repression and administrative controls to lean heavily against the tide.

While allowing the bubble to inflate, though, Taiwan did at least put in place the conditions needed to bring it to an end, allowing big currency moves and capital account liberalisations that by the late 1980s had re-established external balance. Beijing, by contrast, has done virtually nothing to end the perception of renminbi undervaluation: the currency has moved, but only slowly, and restrictions on capital outflows are still tight. As a result, forex accumulation is accelerating.

The consequences for investors

This is not a bad situation for all investors. Financial repression and aggressive sterilisation have protected the real economy from liquidity, leaving firms in good health. And a tempered bubble is easier to ride than the 1,500% free-for-all in Taiwan in 1985–90. As a result, we still like the China story, seeing upside for the market in general, and the property and consumer sectors in particular.

China's decision to tackle only the symptoms of the liquidity does, however, have drawbacks. It is not helpful for the banks, because sterilisation and financial repression forces them either to swap their ample deposits for low-yielding PBC instruments, or worse still, do nothing with them at all. Put simply, the lack of renminbi change is not a free lunch, with China's banks for now paying the bill.

The lack of renminbi change and consequent persistent liquidity problems also make China vulnerable to future risks. One is a sustained pick-up in inflation, which by further lowering real interest rates could overwhelm Beijing's control policies and turn China's tempered bubble into a more vigorous Taiwanese-style one. The second is US and European protectionism, which would deal a shock not just to China, but also to the wider global economy.

Struggling with the lessons: China and 1980s Asia

Understanding North Asian bubbles

With our head regional economist, Bill Belchere, leading the charge, we have been talking about the macro similarities between Asia now and Asia in the 1980s for some time, namely exchange rate policies that keep interest rates low and thus drive asset prices up. With China's stock market igniting in recent months, this comparison has now become all the rage in Beijing, too, with officials, professors and the media all trying to learn the lessons of the Japan-led bubble years.

The importance of the Taiwan experience

Here we take a closer, more detailed look at Japan, and also take notice of Korea. Like China today, both economies had financial deepening in the 1980s, and large savings held in low-yielding bank deposits. Most of our space in this report, though, is saved for a comparison with Taiwan in the 1980s. Of the three North Asian economies, only in Taiwan did forex accumulation play any role: the combined capital and current account surplus reached an enormous 30% of GDP in 1986. Moreover, the rallies in Japan and Korea were rather sedate affairs. Taiwan's bull market, by contrast, gripped the whole island, in a way that the statistics suggest is today happening in urban China.

Lessons learnt

China fights the bubble…

Common perception is that policymakers in Beijing, like their counterparts in Taiwan in the 1980s, have been sitting on their hands and watching the tide of liquidity flood over the economy. This couldn't be further from the truth. Taiwan sterilised hardly anything in 1985, and only about half of the huge inflows in 1986. By contrast, the People's Bank of China (PBC) has been taking nearly all forex inflows out of circulation. Similarly, while Taiwan cut interest rates during the bubble years, China since 2004 has been raising them, albeit rather slowly. And, unlike Taipei in the 1980s, Beijing continues to take a very interventionist stance towards the economy, using extensive financial repression and administrative measures in the asset markets to prevent banks lending too much, and property and stock prices from rising too far.

Lessons not learnt

…but doesn't allow the exchange rate that would end it

However, while China has been actively dealing with the liquidity created by forex inflows and the large stock of domestic savings, it has done very little about the underlying cause, namely the undervalued currency and surging external imbalance. Here the score card for North Asia in the 1980s is rather better. Taiwan allowed huge currency movement in the 1980s and this, combined with an aggressive liberalisation of capital controls, brought the external imbalance under control: current account surpluses peaked in 1986, and by the late 1980s were being recycled through capital account outflows. It is also noteworthy for China that despite significant local currency savings, the North Asian appreciations of the 1980s have generally stuck. Taiwan, in particular, also shows that big exchange rate appreciations do not necessarily lead to economic slumps: while Japan's asset prices and economy suffered throughout the 1990s, in Taiwan GDP growth and the stock market bounced back quickly.

Consequences for China

The outlook: more growth and asset price inflation

The good news is that for the real economy at least, all the financial repression and sterilisation appears to have worked. In Taiwan, narrow money growth reached 50% in 1986, and lending growth peaked at not much less in 1989. By contrast, monetary growth in China has remained more or less in line with nominal GDP growth. This has prevented companies from over-expanding, shown by consistent improvements in asset turnover in recent years.

The bad news is that these policies are not cost free. They are not helpful for the banks, which have been left with falling loan-to-deposit ratios and an increasing stock of low-yielding PBC sterilisation instruments. That the lessons of the 1980s have only been half learnt also raise risks for China for the future. One is a sustained pick-up in inflation, which by further lowering real interest rates could overwhelm Beijing's control policies and turn China's tempered bubble into a much more frightening one. The second is US and European protectionism, which would deal a shock not just to China, but also the wider global economy.

Understanding North Asian bubbles

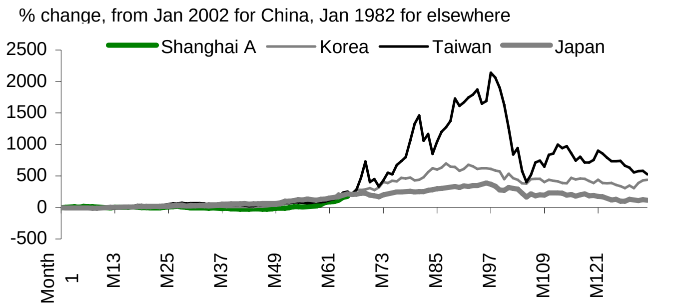
Not just Japan, but also Taiwan

> "Stock trading had rapidly become a national mania and few seemed to doubt that it had the potential to make everyone rich. Every day, one-tenth of the county's population played the market. The more modest of these market players included housewives, taxi drivers, college students, dancehall hostesses, teachers, Buddhist monks and retired soldiers.
>
> The mania reached the point where many government offices went unstaffed during stock exchange trading hours. Students at elite universities began routinely to cut morning classes; primary school teachers quizzed their students to see what stocks their parents were buying; and young office assistants, known as "tea girls" or "little sisters", deserted their jobs to trade shares."

Taiwan had the almightiest of bubbles

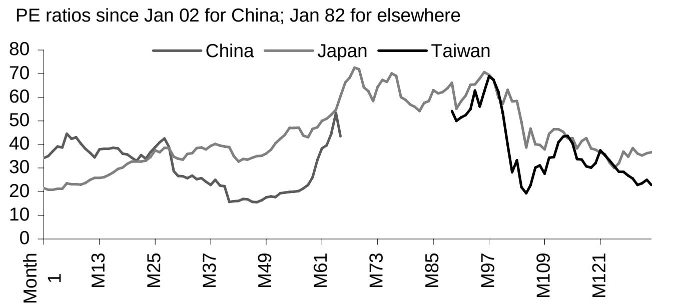
Sound familiar? Actually, this is not a description of China now, but rather an abridged quote about Taiwan in the second half of the 1980s, taken from a book by Steve Champion, "The Great Taiwan Bubble". The title of this excellent read, of course, rather gives the game away. Taiwan had the almightiest of bubbles, with the Taiex surging by 1,500% between January 1985 and January 1990, a rise that makes the 200% rise in the Nikkei during the same period look positively pedestrian (Figures 1 and 2). At the height of the frenzy in 1989, Cathay Life, which was then the single largest stock on the market, was trading at 87 times book, and ICBC (Taiwan's version – the International Commercial Bank of China) had a market capitalisation bigger than six of the biggest US banks combined.

Fig 1 Our bubble monitor, for indices...



Source: CEIC, Macquarie Research, July 2007

Fig 2 ...and PERs



Source: CEIC, Macquarie Research, July 2007

Why bring up Taiwan? With our head regional economist, Bill Belchere, leading the charge, we have been talking about the macro similarities between Asia now and Asia in the 1980s for some time, namely exchange rate policies that keep interest rates low and thus drive asset prices up. With China's stock market igniting in recent months, this comparison has now become all the rage in Beijing, too, with officials, professors and the media all trying to learn the lessons of the Japan-led bubble years.

The similarities between China and Japan are limited

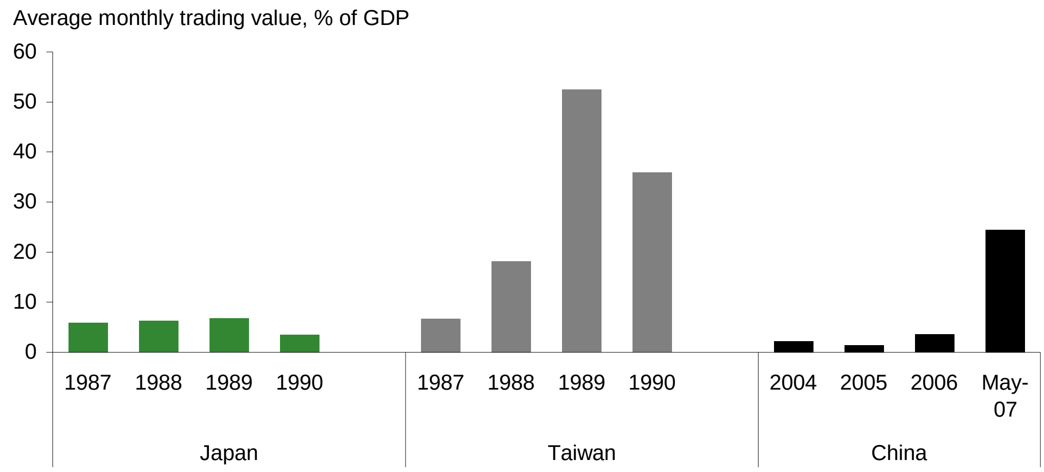
This new trend is welcome. However, the lessons that might be drawn from a quick look at Japan are likely to be misleading. In particular, there appears to be a tendency to link the subsequent ten years lost by what is still the world's second-largest economy only with the appreciation of the yen, without looking at the details of what actually happened. For example, as we will see, foreign exchange accumulation played very little role in the inflation of Japan's bubble, even though throughout the 1980s capital was allowed broadly to enter and exit the economy – obviously big contrasts with the huge forex accumulation and far-reaching capital controls in China today. And while the Nikkei rose, the Japanese market never exhibited the frenzy evident in China today.

Here, then, we take a closer more detailed look at Japan. But we also cast the net wider and include Korea, but more particularly Taiwan. In terms of the nature of the bubble, Korea looks like a less exciting version of Japan, but the policies that contributed to this difference make Seoul an interesting example for China: while the rest of North Asia didn't hike until 1989, the Bank of Korea raised interest rates as early as July 1986.

China's stock market looks as frenzied as Taiwan's in the 1980s

Taiwan, meanwhile, probably looks closest to China. For one thing, the stock market truly was a frenzy. Steve Champion calculates that in 1989 every single share on the Taiwan exchange changed hands twenty times, with the average value of monthly turnover in 1989 reaching 50% of GDP. On this perspective, China is catching up fast, with turnover on the domestic share markets in May this year totalling Rmb5.9tr, equivalent to around 25% of annual GDP (Figure 3). As with China today, administrative measures also played a part in Taiwan's bubble experience: a cut in the transactions tax in June 1986 kicked the party off (and an attempt to introduce a capital gains tax in 1988 looked for a time like it would bring it to an end).

Fig 3 China's frenetic trading looks like Taiwan's in the 1980s



Source: Macquarie Research, July 2007

Why bubbles form

Accumulation of foreign exchange

China is partly a forex reserves story

Perhaps the most eye-catching aspect of China's current predicament is the huge ongoing increase in foreign exchange reserves. Last year, the PBC's holdings of foreign assets increased by US$247bn, equivalent to 9% of GDP. This year the rise looks likely to be closer to US$400bn, or 12% of GDP. The result of trade, FDI and other unexplained capital inflows, this build-up is the most visible sign of the undervaluation of the renminbi, and would seem to be the strongest evidence for the kind of steep currency appreciations seen across Asia in the 1980s.

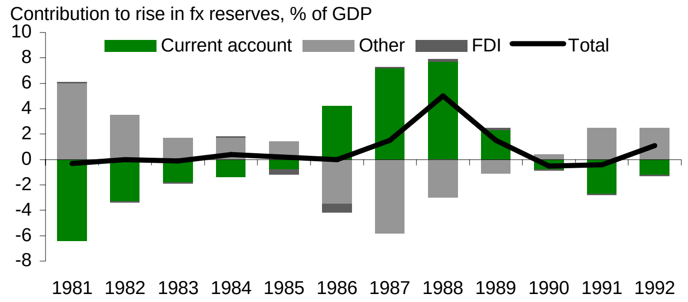
External imbalances played little role in Japan and Korea…

Interestingly though, in both Korea and Japan there never was a big build-up of forex reserves in the 1980s. In Korea, forex reserves only rose dramatically in 1988, and then only by a modest 5% of GDP (Figure 4). In Japan, the run-up was even smaller, peaking at just 1.5% of GDP in 1987 (Figure 5). The reason was partly because neither economy recorded the kind of current account surpluses that Beijing is struggling with today: Korea's peaked at around 8% of GDP in Korea in 1988 and Japan's at 4% in 1986, whereas China's current account surplus is 10% and rising (Figure 6). But it is also because throughout the 1980s both Korea and Japan consistently experienced net outflows of FDI and other capital to offset the inflow on the current account. China, by contrast, continues to experience big capital inflows.

…but were critical in Taiwan

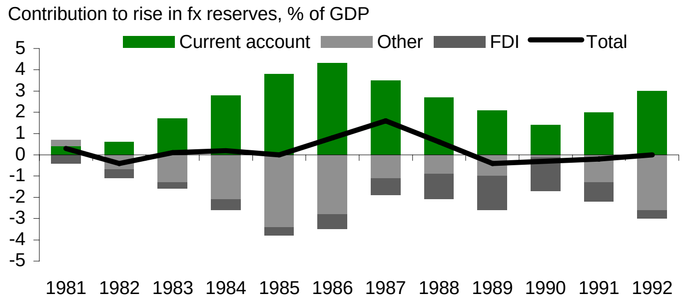
This makes China look more similar to Taiwan. As early as 1985, the increase in forex reserves was already equivalent to 10% of Taiwan's GDP, and the build-up accelerated to reach a monstrous 30% in 1986–87. The components of this accumulation also look similar to China today: a current account surplus of 20% of GDP, with non-FDI capital inflows accounting for almost all of the remainder. Taiwan in the 1980s really is a case book example of an economy overrun by capital inflows (Figure 7).

Fig 4 Fx accumulation played a small role in Korea...



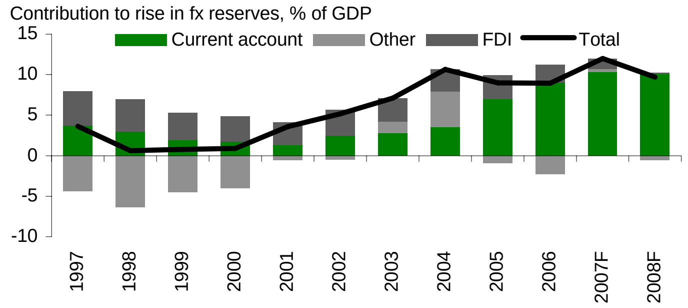
Source: CEIC, Macquarie Research, July 2007

Fig 5 ...and an even smaller role in Japan



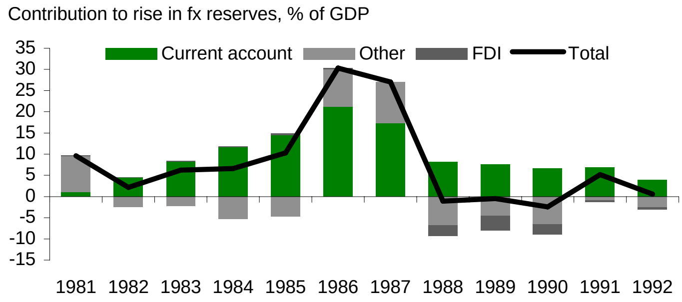
Source: CEIC, Macquarie Research, July 2007

Fig 6 The only economy that looks similar to China....



Source: CEIC, Macquarie Research, July 2007

Fig 7 ...is Taiwan



Source: CEIC, Macquarie Research, July 2007

Deregulation

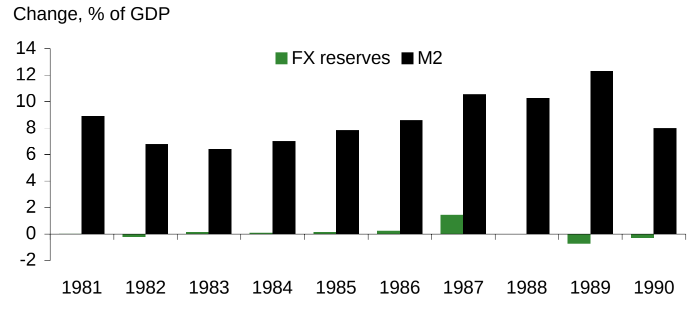
Japan's story was really about financial reform…

Readers might be wondering why, if forex inflows were so insignificant, Japan had a bubble at all. One reason is because money supply growth was pushed up partly by financial reform and aggressive bank behaviour – factors that were also at work in Korea, and forex-flooded Taiwan (Figure 8). Interest rates for example were deregulated in Japan in the 1980s, causing margins to fall, and encouraging banks to look to riskier projects to make profits. Across the region, banks were also able to make more loans because the bubble years boosted their capital adequacy ratios. Higher rates of economic growth lifted profits, and the rising stock market allowed banks both to make unrealised gains on their stock holdings and to increase equity finance.

…which is also happening in China

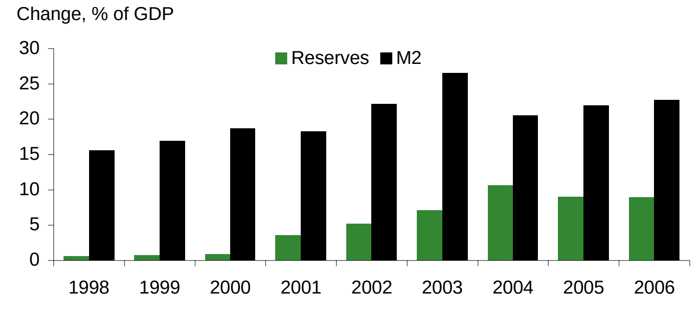
In China, similar forces would appear to be at work (Figure 9). Interest rates in China are still controlled, but competition in the banking sector has increased substantially, as the cosy oligopoly of the Big Four has given way to a much more diversified structure. Recapitalisation is also at work, with the Beijing government directly bailing out some banks, and letting those and others raise money by listing on the stock market. This recapitalisation programme has been one of our spice factors to the self-reinforcing liquidity cycle that is the main explanation for China's current period of growth and asset price outperformance. In China, banks also have also had more money to lend because improved clearance procedures have reduced the amount they need to keep in reserve for liquidity purposes, and there is a longer-term structural trend for individuals to keep a higher proportion of their savings in the form of deposits in the banking sector rather than cash under the mattress.

Fig 8 Japan was all about financial deepening...



Source: CEIC, Macquarie Research, July 2007

Fig 9 ...which is also part of the China story



Source: Macquarie Research, July 2007

Large stock of domestic savings

The region has high savings…

There is one more important common element of the Asian bubble experience, whether it be Japan, Taiwan and Korea in the late 1980s or China now: high savings, combined with low interest rates. In 1985, just before the bubbles across North Asia began to inflate, annual savings rates in the household sector across the region had reached over 20%, which is roughly where urban China is today (Figure 10).

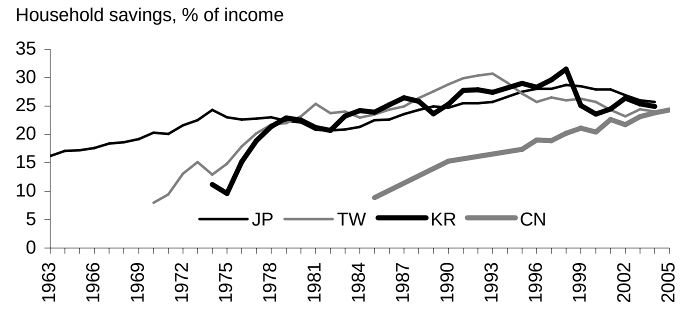
…largely kept in banks…

The relative sophistication of Japan's financial system allowed these savings to be held in quite a diversified portfolio of instruments, but because accumulated savings were so big, even the relatively small proportion held in banks was still equivalent to almost 40% of GDP. With a narrower range of investment vehicles, savings in Taiwan were concentrated in bank and postal savings deposits, which together were equivalent to 70% of GDP in 1985. This looks similar to China today, where household deposits in the banking system are equivalent to 77% of GDP (Figure 11).

…and so ready to be mobilised when interest rates fall

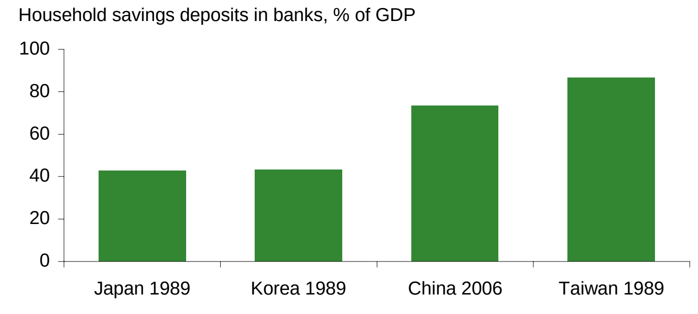
That substantial savings are held in the banking system is important because it creates a large pool of footloose money that falling interest rates can push into the asset markets. This is where the tiger analogy that we used a few weeks ago comes in: as soon as the yield-hungry savings tiger leaves the cage of the banking sector, asset price inflation begins to become a problem (The China Diviner, Friday's attempts to tame the tiger, 21 May 2007).

Fig 10 Savings across the region are high....



Source: National sources, Macquarie Research, July 2007

Fig 11 ...and are dominated by banks



Source: CEIC, Macquarie Research, July 2007

Lessons learnt

Sterilisation

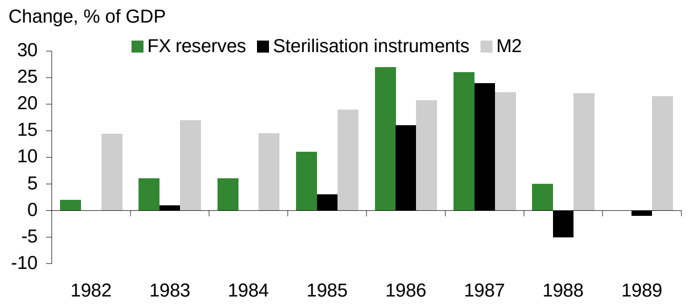
To begin with, Taiwan didn't sterilise at all

The underlying conditions are similar, but the experience of China today is not exactly the same as North Asia's in the 1980s. This is because China seems to be learning the lessons of the 1980s and so choosing a policy response rather different from the one used at that time. First is sterilisation. Given that forex inflows were only really an issue in Taiwan, China in this regard only has one economy to learn from. But it is quite a lesson. Taiwan's Central Bank of China (CBC) simply didn't sterilise anything, at least when the forex build-up first began in 1983 (Figure 12). By 1986, sterilisation had been stepped up, but it was only in 1987 – by which time the peak in reserve accumulation had already been passed – that the CBC came close to neutralising the effect on domestic money supply of all the capital flooding into the economy.

China, by contrast, has been sterilising almost everything

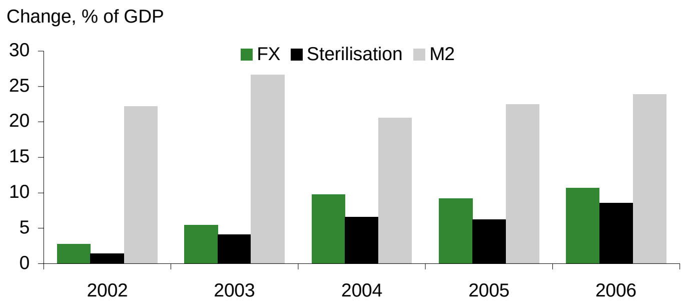
Academics in Taipei we have spoken to over the last few weeks attribute the CBC's slow start in part to bewilderment: policymakers in Taiwan had never faced such huge forex inflows before, and simply didn't know what to do about them. This was perhaps unfortunate for Taiwan, but has arguably served as a useful lesson for policymakers in Beijing, who have reacted much more aggressively to the more recent rise in forex reserves on the mainland. Through the issuance of central bank bills, a pronounced increase in government deposits at the central bank, and higher reserve requirements, we estimate that the PBC has sterilised 90% of all the forex inflows into China since 2002 (Figure 13).

Fig 12 Sterilisation got off to a slow start in Taiwan...



Source: CEIC, Macquarie Research, July 2007

Fig 13 ...a lesson China seems to have learnt from



Source: CEIC, Macquarie Research, July 2007

Interest rates

Interbank rates in China are low…

While much more aggressive than Taiwan's response, it is still pretty easy to argue Beijing is not sterilising enough. After all, 10% of the foreign inflows are still getting through to a domestic stock of credit that has already been inflated by all the monetary deepening of the last few years. The reserve requirement ratio (RRR) in China currently stand at 11.5%, which looks moderate compared with the 13% RRR maintained in Taiwan throughout the 1980s, and the 16% to which they were hiked by the CBC in 1989. Interbank interest rates, which are the best measure of the amount of liquidity sitting in the economy, are still very low, indeed close to zero in real terms.

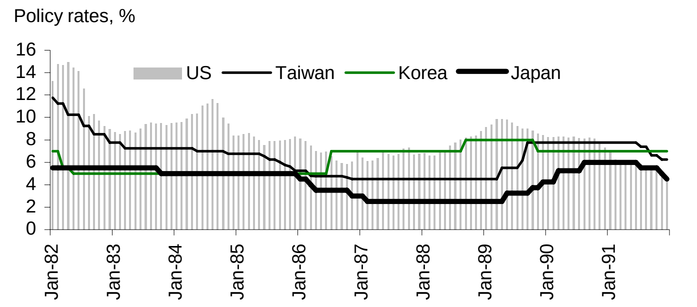
…but benchmark rates at least are rising

The relationship between excess liquidity and lending growth is weakened, though, by the structure of interest rates in China. Interest rates for a lot of lending in China have nothing to do with underlying liquidity conditions but rather are set administratively by the PBC. At 6.6% for loans of one-year maturity and even more for longer-term loans, these interest rates are relatively high, and in recent months have been rising – which is the third and most obvious difference between how China's policymakers are reacting to the current pressures and the response of their counterparts in North Asia in the 1980s.

By contrast, rates in Japan and Taiwan remained low during the bubble

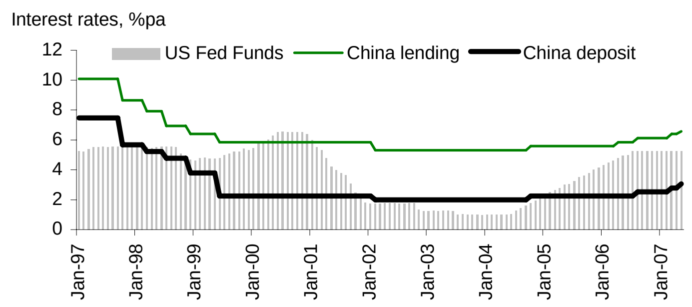
Far from being raised, in both Japan and Taiwan interest rates were actually steadily cut during the bubble years (Figure 14). In Taiwan, the impetus initially came from the Cathay financial scandal in the mid-1980s, but the Central Bank of China in Taipei then took its lead from the Bank of Japan. The BOJ first cut interest rates in response to the so-called 'endaka' recession caused by the sharp appreciation of the yen in 1985–86. There were some efforts to tighten monetary policy in 1987, but these were scuppered by the global stock market crashes on Black Monday, and in the end interest rates were not raised again until early 1989. China, by contrast, looks more similar to Korea, where after being cut in the early 1980s, interest rates were raised by 200bp in July 1986 (Figure 15).

Fig 14 Asia cut rates during the bubble...



Source: CEIC, Macquarie Research, July 2007

Fig 15 ...but China has been raising them



Source: CEIC, Macquarie Research, July 2007

Deposit rates in China, though, are still low

Having said this, some perspective needs to be kept. The cost of capital in China is indeed rising, but is unlikely to act as much of a constraint on demand for credit when rates of return are so high. In addition, with the PBC keen to give banks fat margins, deposit rates are kept well below lending rates, and with inflation rising, are in fact negative in real terms. So while interest rates have been rising in China, they still remain very accommodative. There is a vigorous debate in Beijing about whether the PBC should raise rates more aggressively to change this, something we will return to later.

Financial repression

In Asia in the 1980s, banks were well-placed to lend, and policy didn't do an awful lot to try and prevent them from doing so. For example, despite Taiwan's surging money supply and credit growth, it wasn't until early 1989 (at the end of February for those looking for another 228 incident) that Taipei introduced selective credit controls and hiked reserve requirements.

China's government still controls the banks…

In China, by contrast, the government simply isn't allowing its well-financed banks to lend. Market chatter that the partial privatisations of the banks would somehow loosen the government's control over them is, in our opinion, complete nonsense. Because of the regulated nature of the banking sector, even authorities overseeing fully privatised banks in more market-oriented economies have a lot of power to exercise moral suasion. The power of the Chinese regulators is even greater, because of the bureaucratic nature of China's economy, and because the Chinese state is still by far the biggest shareholder in three of the Big Four banks that have listed.

Fig 16 Never a dull moment: Monetary tightening, sterilisation and financial repression

2003-05 tightening measures	
Jun 03	PBC warns of lending to construction.
Jul 03	PBC calls window guidance meeting.
Aug 03	Another window guidance meeting, and higher reserve ratios (RRs).
Sep 03	Another window guidance meeting.
Dec 03	Clamp-down on development zones begins.
Jan 04	PBC circular targeting steel, aluminium and cement.
Mar 04	More exhortation to banks, and lift in PBC lending rates.
Apr 04	Austerity! Higher RRs, NDRC and CBRC investigations, land sale moratorium.
Oct 04	Benchmark rates raised by 27bp.
2006-07 tightening measures	
Apr 06	Window guidance meeting; benchmark lending rates raised by 27bp.
May 06	Window guidance meeting; more measures announced to cool the property market, including an 89sqm/70% rule.
Jun 06	Window guidance meeting; reserve requirements raised by 50bp.
Jul 06	Reserve requirements raised by 50bp.
Aug 06	Window guidance meeting; benchmark interest rates raised by 27bp; NDRC sends inspection teams to the provinces and the State Council census of Inner Mongolia.
Nov 06	Window guidance meeting, reserve requirements raised by 50bp.
Dec 06	Window guidance meeting.
Jan 07	Reserve requirements raised by 50bp.
Feb 07	Reserve requirements raised by 50bp.
Mar 07	Window guidance meeting; benchmark interest rates raised by 27bp.
Apr 07	Reserve requirements twice raised by 50bp.
May 07	Reserve requirements raised by 50bp; benchmark interest rates also raised, by 27bp on deposit side and 18bp for loans.

Source: Macquarie Research, July 2007

…and is not letting them lend

Certainly, the listings of the banks have not prevented China's authorities being very pro-active in trying to slow bank lending. In recent years there have been frequent initiatives to try and slow credit growth (Figure 16). As recently as this year the PBC has sold 'punishment bills' at below-market yields to banks (including listed ones) deemed to be lending too aggressively, has held a 'window guidance' meeting to exercise moral suasion and has recently raised interest rates more on the deposit than the lending side as a signal that current high lending margins are not set in stone.

The government consistently reacts to pick-ups in loans

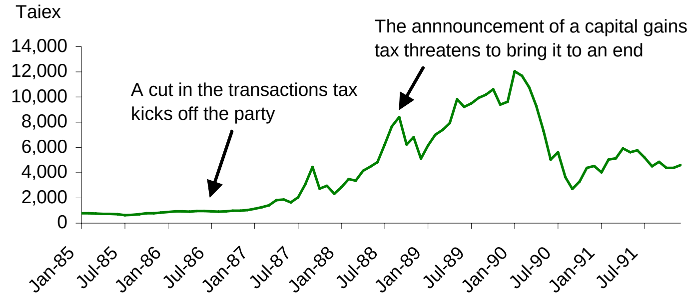
Of course, the very fact that the PBC finds it necessary to keep introducing new initiatives to slow credit growth might suggest to some that China's banks are indeed out of control. The point, though, is that almost every factor that affects the banks – liquidity, bank recapitalisations, corporate profitability – suggests credit lending in China should be much stronger than it is actually is. What is noteworthy is thus not that bank lending periodically picks up and causes the government some anxiety, but that at least since 2003, the acceleration has always been short-lived and moderate.

Asset market tightening

Taiwan's asset prices weren't just allowed to fly but were encouraged

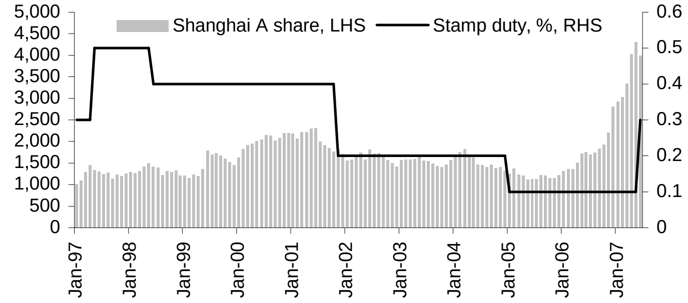
The fourth area of difference between China now and North Asia in the 1980s is policy towards the asset markets. As with more general monetary policy, the tendency twenty years ago in Japan, Taiwan and Korea was not just to let asset prices fly, but to encourage them to do so. In Taiwan, the government only made aggressive attempts to slow the property market with the credit controls of 1988, when restrictions were imposed on mortgage lending. As for the stock market, the bull market was kicked off in part by a six-month cut in the stock transactions tax in June 1986 from 0.3% to zero, a reduction in margin interest rates and a relaxation of margin requirements (Figure 17). In early 1987, the transactions tax was re-imposed and margin requirements tightened, but policy towards the market swung again in the aftermath of Black Monday.

Fig 17 Taipei didn't interfere much with the market...



Source: CEIC, Macquarie Research, July 2007

Fig 18 ...but Beijing is rather different



Source: CEIC, Macquarie Research, July 2007

Politicians talked up the market…

There were two reasons for the supportive policies: the close links between politicians and business, and simple politics. With such a large proportion of the island's population having exposure to property and shares, rising markets were clearly very popular, and falling ones very unpopular. Both main political groups campaigned for a bull market, with one KMT slogan reading 'Big Profits and Great Prosperity', and the opposition predicting the Taiex would reach 15,000 points (twenty years later the DPP's tactics are similar, but their goals are not as ambitious: one DPP campaign board we saw recently only aimed to get the market to a modest 10,000).

…and gave up on measures that cooled things down

Against this background, it should not be surprising that every year until 1988 Taiwan's Ministry of Finance (MOF) announced it was postponing implementation of a capital gains tax for another year. In September 1988, a date that capped a remarkable nine-month, 260% rise in the market, the unfortunate minister of finance did finally announce that the tax was to be introduced. This decision didn't mark a reversal of the government's reluctance to cool the market: as with China's current discussions of a capital gains tax, the motivation for implementation in Taiwan was equality and redistribution rather than to pierce the bubble. Investors, though, didn't see the decision in such an altruistic light, and sold heavily. The market collapsed 50%, protestors took to the streets (not for the first time), and the plan was quickly abandoned. As Steve Champion notes, after this debacle "most officials tried to avoid any comment at all about the level or future direction of the market".

China, by contrast, is standing in the way of asset prices

China's government, by contrast, has never been enthusiastic about asset prices going up, and has made a whole series of attempts in recent years to cool them down. China's bull market is a relatively new phenomenon, beginning only in September last year, and becoming feverish just at the beginning of early 2007. Even so, the government has already started to act to cool the market: the recent rises in interest rates have been aimed in part at the stock market, there has been talk of a capital gains tax and of course on 30 May the stamp duty for share transactions was hiked (Figure 19). In recent years, measures to restrain price increases in the property sector have been an almost monthly phenomenon (Figure 19).

Fig 19 An ongoing affair: China's attempts to control property prices

Mar 05	PBOC tightens mortgage lending rules, raises interest rates (by 20bp to 5.51%), LVR proposed to be capped at 70% versus existing 80%.
Apr 05	State Council announces measures to curb property sector: 1. Increase supply of low-end housing. 2. Maintain household affordability. 3. Discourage market speculation in land and housing markets and punish suspicious/speculative activities. 4. Use of administrative measures such as taxes to control property market. 5. Promote effective risk-management practices in lending for property. 6. Increase market transparency.
Jun 05	Seven government ministries announced following recommendations/proposals to cool property demand: 1. Business tax on proceeds from sale of apartments sold within two years of purchase. Capital gains tax to be levied if sold after two years from purchase. 2. Ban re-selling of uncompleted properties. 3. Taxes levied on projects where construction has been delayed for more than two years. Land use rights may be cancelled if land left idle for two years.
May 06	Central government announces plans to rein in property sector to "promote healthy development of the real estate industry". Measures effective June 2006. Note that some of these measures had been introduced in previous years, but were not enforced strictly. 1. 70% of developments in a particular region should be allocated to flats no larger than 90sqm by GFA. 2. Local governments to allocate 70% of land supply for low-cost developments. 3. Gains tax of 5.5% on profits on sale of properties sold within five years of purchase. 4. 70% maximum LVR on mortgages. 5. Land left idle (construction has not commenced) for one year will attract hefty penalties, and land left idle for two years may be revoked by government.
Jun 06	Central government announced it was looking at plans to regulate foreign investment in an attempt to curb housing prices.
Jul 06	Central government announced it was considering strictly imposing a 20% business tax on revenue from sale of all properties (primary and secondary).
Aug 06	The PBOC raised the effective mortgage rate by 6bp to 5.81% from 5.75% and widened the mortgage loan discount from 90% to 85%.
Sept 06	NDRC and Ministry of Construction launched a one-year campaign to combat improper property transaction practices. They are targeting to stop the six following types of activities: 1) Malpractice during presale. 2) Disclosure of false sales information. 3) Misleading advertising. 4) Illegal contract terms engaged in property transactions. 5) Unlicensed property agents. 6) Inappropriate charges and misleading information in pricing. Beijing government announced five new measures on the implementation of austerity measures, as outlined by the Central government: 1) Increase the supply of low-cost government-subsidised housing. 2) Increase the pace of confiscation (without compensation) on land that stays undeveloped for more than two years. 3) Raise the transparency of land supply. 4) Increase the land supply with restriction on prices and unit sizes of final products. 5) Expedite the categorised 'Grade A' land development for more efficient city development.
Feb 07	Strict implementation of LAT measures introduced.

Source: Macquarie Research, July 2007

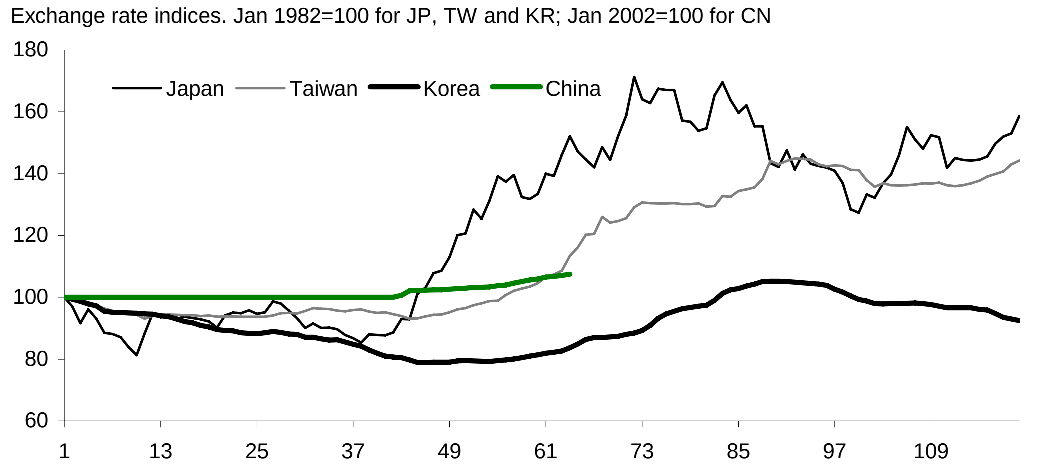
Lessons not learnt

Exchange rates can move!

North Asian currencies moved by 50%...

Of course, the most important difference between China and North Asia in the 1990s is exchange rate change (Figure 20). The yen, which traded between ¥200/US$1 and ¥250/US$1 during the first half of the 1980s, began to appreciate in mid-1985. The rise was given extra momentum by the Plaza Accord of September 1985, and by early 1988 the exchange rate had reached ¥122/US$1, a total appreciation of around 50%. In similar fashion, Taiwan's currency appreciated from above NT$40/US$1 in late 1985 to NT$25/US$1 by 1989.

Fig 20 The missing link: exchange rate change



Source: Macquarie Research, July 2007

… but the renminbi has moved by just 8%

If China's currency had moved by a similar amount, it would now be trading at Rmb5/US$1. Instead, the exchange rate is still around Rmb7.6/US$1. This equates to an appreciation since May 2005 of around 8% since the peg with the US dollar was officially broken in July 2005. At that time, the PBC announced that the renminbi would henceforth be pegged to a wide group of currencies rather than just the US dollar. However, this doesn't seem to have been the case: particularly on an inflation-adjusted basis, China's exchange rate measured against a basket of other currencies has been volatile in recent years.

Slow change keeps expectations alive

Claims that exchange rate change will be limited…

While the exchange rate changes in Asia in the 1980s were certainly sharp, they were not one-off moves, but rather happened over a period of years. The reason was largely that governments didn't think the economies could withstand the kind of appreciations that eventually occurred. The current official line in Beijing that exchange rate stability is needed to ensure the health of the export sector could be a word-for-word repetition of the kind of pronouncements made by officials in Taipei in the 1980s (and so far at least have proved similarly pessimistic).

In the 1980s, few people believed these official protestations. The very fact that appreciations were spread out over a period of time encouraged speculation that there would be more change to come. This was particularly because the external imbalances at this time, especially in Taiwan, were reaching incredible proportions. The US trade deficit with Taiwan surged from US$2.7bn in 1980 to US$17.4bn in 1987.Taiwan's current account surplus had also reached more than 20% of GDP by the mid-1980s – substantial by any standard.

…lack credibility when the external imbalances are big…

The circumstances in China today look very similar. According to US figures, the bilateral trade deficit has ballooned from under US$35bn in 1995 to US$233bn in 2006. Together with China's inadequate protection of intellectual property rights, this imbalance is already generating loud criticism in the US, a trend that is only likely to grow in the run-up to the 2008 presidential election. Admittedly, relative to the size of its domestic economy, China's external imbalances are much smaller than Taiwan's were in the 1980s. But this is just because back then Taiwan's current account surplus reached ridiculous proportions. At 10% of GDP, China's current account surplus is already big enough to suggest a major imbalance.

Fig 21 Drip drip.....China's slow exchange rate change

Date	Measure
Jul 05	Exchange rate revalued by 2.1% and 0.3% trading band against the US$ introduced.
Aug 05	Allow wider participation in the spot forex market. Established an interbank renminbi forward market.
Sep 05	Trading band for non-US currencies widened from 1.5% to 3%.
Jan 06	Reformed the structure of the inter-bank foreign exchange spot market and introduced OTC transactions to the inter-bank spot market.
Apr 06	Launch of the renminbi swap market.
Jun 06	PBC establishes a forex primary dealer system. By this time the number of participants in the interbank forward market was 62, up by 48 from August 2005.
May 07	Trading band against the US$ widened from 0.3% to 0.5%.

Source: PBC, Macquarie Research, July 2007

…and when regime change is always on the agenda

In the unlikely event that these imbalances weren't enough to persuade investors that the renminbi would continue to move, China's exchange rate policy probably would be. The PBC revalued the renminbi by 2.1% in July 2005. In the following few months, there were a whole range of changes, for example the introduction of 'market makers', that kept exchange rate change on the agenda (Figure 21). There was a period of quiet in 2006, but the government attracted attention back to the exchange rate in May 2006 by announcing a widening of the trading band from 0.3% to 0.5%. As in Taiwan in the 1980s, this steady drip of policies is not telling investors that more exchange rate change is unlikely, but rather is confirming for them that further appreciation is inevitable.

Capital controls don't prevent inflows, or encourage outflows

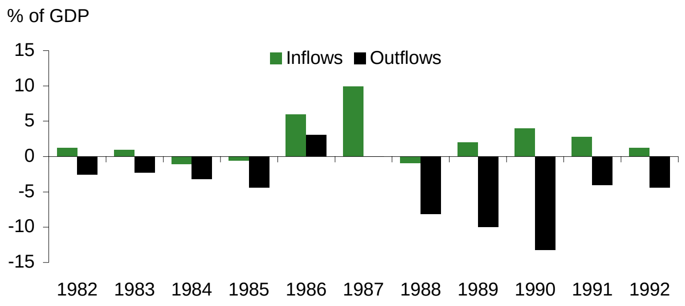
Taiwan's outward capital controls didn't work…

In theory, Taiwan's authorities weren't defenceless here. Indeed, if anything, Taiwan's capital controls then were even stricter than they are in China today. Taiwan has never had much of a programme to encourage FDI, and it was only in 1991 that the Qualified Foreign Institutional Investor (QFII) scheme was introduced to allow overseas investors to buy directly domestic shares. In the first half of the 1980s, domestic residents were not allowed to hold foreign currency, and until 1987 inward remittances per capita were limited to less than US$50,000 a year. In the mid-1980s, Taiwan further tightened restrictions on inward capital inflows by preventing banks from increasing foreign debt. Even with all these rules, though, investors found a way to buy local currency. Indeed, in 1987 hot money inflows into Taiwan amounted to a massive 9% of GDP (Figure 22).

…and China's aren't fully effective either

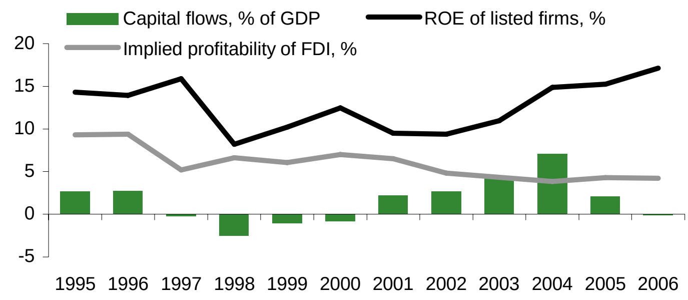
China hasn't been overwhelmed by such a flood, but speculative inflows have still been a problem (Figure 23). While capital inflows unrelated to trade and FDI fell off in 2005 and 2006, they bounced back in early 2007. Some capital flows are also hidden in China's current account. Foreign companies, for example, have slowed down the repatriation of profits earned in China: outflows on the income account have, for example, fallen well behind the general surge in profitability in China and the continued rise in FDI. There is also a lot of speculation that through over-reporting of exports and an underestimation of imports, the trade account is being used to hide capital inflows into China. Such practices though, while likely, are difficult to quantify.

Fig 22 Capital flows in Taiwan were truly enormous



Source: CEIC, Macquarie Research, July 2007

Fig 23 In China they are smaller, but understated



Source: Macquarie Research, July 2007

Nor do China's efforts to encourage outflows achieve much

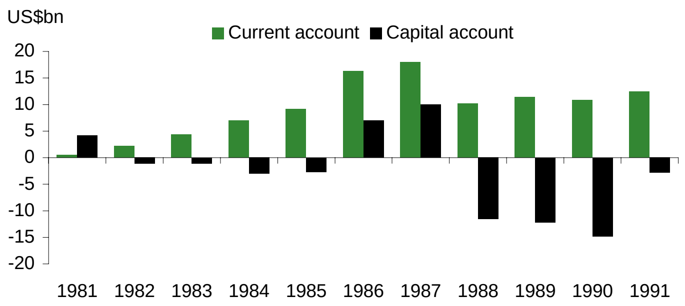
China, in recent years, has been trying to further strengthen inward controls. The government's response to the large inflows, though, has also been to encourage outflows. These efforts have been as unsuccessful as the measures to prevent speculation. Chinese interest rates have been kept below US ones, but domestic savers continue to run down their forex savings to buy renminbi. Banks have had difficulty selling their Qualified Institutional Investor Programme (QDII) quotas that allow Chinese individuals to invest overseas. And while the government has been crying out for Chinese companies to spend overseas, very few have yet done so. The reason for the ineffectiveness of these measures is simple. Liberalisation efforts have two problems. In addition to being cautious, the opening just doesn't address the reason why domestic investors are holding renminbi: expectations that the currency will appreciate.

Exchange rate change addresses external imbalances

Taiwan's capital flows reversed sharply in the late 1980s

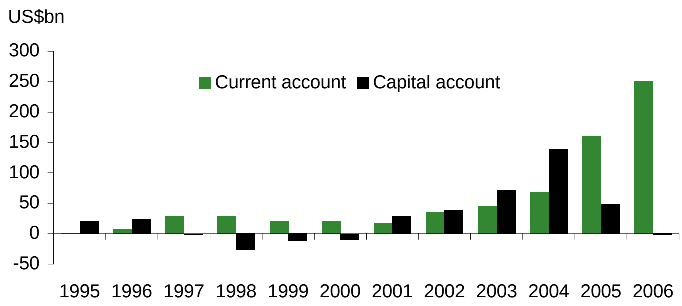
The importance of the exchange rate for domestic investors can be seen again from the example of Taiwan. The net inflow of 10% of GDP in 1987 had by 1988 turned into an outflow of 9% of GDP (Figure 24). This was partly the result of foreign investors liquidating NT$ positions: positive US$10bn in 1987, non-FDI capital inflows were a negative US$2bn in 1988. But the overall reversal of capital flows was much more than a foreign story. Private capital outflows from Taiwan surged from basically nothing in 1987 to US$22bn in 1990. A similar trend was seen in Japan, where outward FDI surged from US$15bn in 1986 to US$50bn just four years later.

Fig 24 Taiwan eventually achieved balance…



Source: CEIC, Macquarie Research, July 2007

Fig 25 …but China is still far away



Source: CEIC, Macquarie Research, July 2007

No more NT$ change persuaded individuals to invest abroad…

It is easy to see why foreigners stopped buying Taiwanese assets in 1988: with the NT$ no longer appreciating, there were no easy gains to be made. It is often forgotten, though, that expectations of exchange rate change also have a big impact on the decisions of local investors. During the mid-1980s it made little sense for local investors in Taiwan to buy overseas assets, even though US$ interest rates were higher than NT$ ones: the annual exchange rate change of 10% more than outweighed an interest rate differential that varied between 1–5ppt. Once the exchange rate stopped appreciating, the higher interest rates on offer suddenly made US$ assets much more attractive. Taiwanese investors didn't want to put all their money overseas. The Taiex at this time was still surging, and in any case, 'home bias' means local investors generally have a preference for local assets. Still, once the exchange rate levelled out, it was understandable that some diversification began to occur.

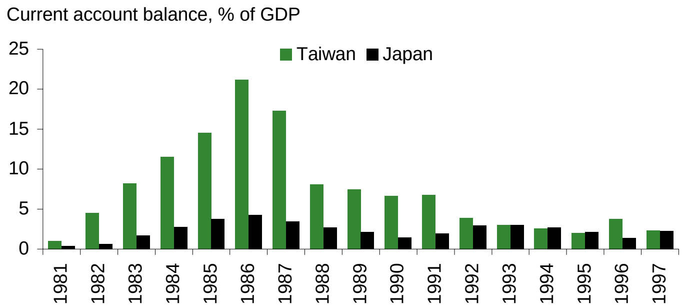
…and companies to do the same

The big uplift in outward FDI can be explained in a similar way. Of course, in part it represented a shift overseas of export-manufacturing made uncompetitive by the big exchange rate moves of the mid-1980s. But this wasn't the whole story: remember, in the late 1980s Sony bought Columbia Studios, and Mitsubishi bought the Rockefeller Centre. When a currency looks like it is going to rise, companies rightly conclude that overseas assets will be cheaper in the future. Once the appreciation has been completed, though, companies suddenly find themselves US$-rich, and start to spend.

China needs some capital outflows…

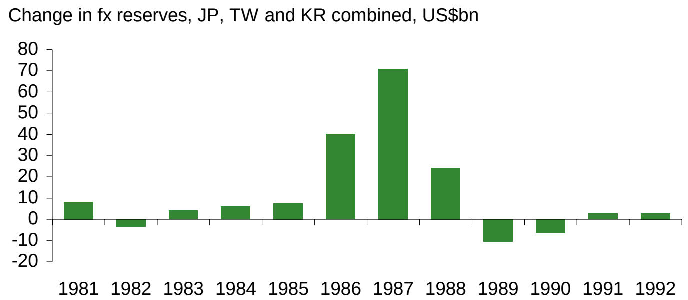
Persuading domestic investors to spend overseas is arguably more important for China than preventing foreigners from buying renminbi assets. Even if China managed to exclude all hot capital inflows, forex reserves would still be rising by US$400bn a year just because of the trade surplus and FDI. The model for China now should not be somewhere like Bhutan, where almost all capital inflows are excluded. Rather China should be aiming to look something like Taiwan in the late 1980s, or Singapore now, economies where big current account surpluses are recycled by domestic investors taking money out of the capital account. In these circumstances, forex reserves do not change, and the authorities have more control over domestic monetary policy.

Fig 26 Current account surpluses came down...



Source: CEIC, Macquarie Research, July 2007

Fig 27 ...and the forex inflow became an outflow



Source: CEIC, Macquarie Research, July 2007

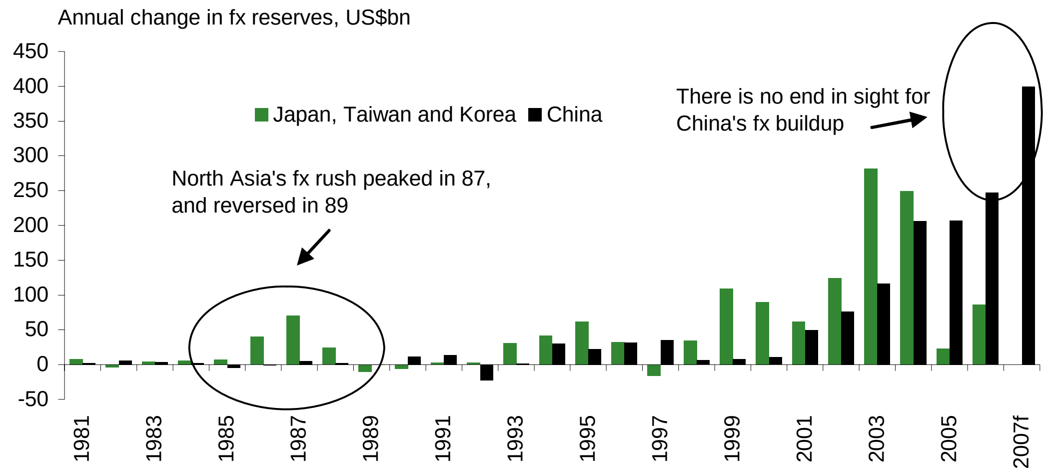
…but full capital account recycling account frighten policymakers

While Chinese policymakers might like the idea of stable forex reserves, they might be disturbed by what would be needed to achieve this. With the trade surplus so big, recycling would require capital outflows of 10% of GDP a year, a figure which would likely cause palpations in Beijing. We have some good news though: currency movements do not just change the capital account imbalance, they also impact the current account. Equivalent to over 20% of GDP at the peak in 1986, the island's trade and current account imbalances fell to just 1% and 4% of GDP in 1998. Japan's trade and current account surpluses fell from over 4% of GDP in 1986 to under 2% in 1996 (Figures 26 and 27). In both economies, the relative size of the surpluses has grown since, but this doesn't show that exchange rate change doesn't work: most economists would agree that the yen and NT$, and indeed most other Asian currencies, are once again undervalued.

The good news: renminbi change will cut the trade surplus too

The conclusion of all this is that contrary to common perception, the exchange rate appreciations of the 1980s did help reduce the external imbalances of North Asia. Relative to GDP, current account balances fell across the region. Just as importantly, though, there was a sharp change in the capital flows position. As a result, after rising by an unprecedented US$70bn in 1987, the combined forex reserves of Japan, Taiwan and Korea actually fell in both 1989 and 1990 (Figure 27). By contrast, China's build-up of forex reserves continues to accelerate (Figure 28).

Fig 28 Exchange rate change bought North Asia's forex build-up to an end



Source: CEIC, Macquarie Research, July 2007

Capital account liberalisation can be aggressive

Taiwan suggests capital account change can be aggressive

The message from Taiwan's experience is not just that the exchange rate matters, but that capital account liberalisation can be aggressive. Like China today, in the first half of the 1980s, Taiwan had very strict capital controls. Domestic residents were not allowed to hold any foreign currency until 1986, and controls on inflows were also very tight. As forex inflows gathered pace in 1986–87, though, the first phase of liberalisation occurred. In July 1987, just a year after Taiwanese were for the first time allowed to hold small amounts of foreign exchange, all restrictions on holdings of foreign exchange were removed, and the ceiling on annual outward remittances by individuals was raised to US$5m. With martial law ending in 1987, it was also at around this time that freedom to travel overseas also began to increase greatly, giving people in Taiwan more opportunity to make the most of the new remittance rules. In the 1986–97 period Taiwan also encouraged domestic funds to buy overseas shares.

China, though, has been cautious…

Taiwan's 1987 limit of US$5m a head equates to a current prices of around US$8m. This makes China's recent increase from US$5,000 to US$20,000 in the amount of foreign currency outbound tourists can take out of China look paltry indeed. China has, of course, also been instituting a Qualified Domestic Institutional Investor (QDII) scheme to allow domestic residents to invest in overseas equities. But QDII quotas currently total only less than US$20bn, less than a typical month's trade surplus. The conclusion should be clear: to date, China's opening of the capital account has been more cautious than in Taiwan in the 1980s. As we argued last year, if Bhutan scores a 10 (for a completely closed capital account) and Hong Kong a 1 (for open), China today would probably still be ranked with a 7 (**The China Diviner:** Four myths of Chinese capital controls, 11 May 2006).

….because of fears that all of its savings will leave

China's caution in opening up the capital account is perhaps understandable. The lesson Beijing draws from the 1997 Asian financial crisis is that capital controls saved the economy. Without them, China would have seen even bigger capital outflows than the 6% of GDP that were actually recorded, the government would have been forced to depreciate the currency, and China would have suffered the same period of lost growth experienced by much of Southeast Asia. Circumstances have obviously now changed greatly, but China's huge stock of savings still gives policymakers reason to fret about possible capital flight. With M2 equivalent to 160% of GDP, any reversal in domestic confidence could have a devastating effect on the economy.

Taiwan shows inflows can be freed up too…

Taiwan again, though, suggests that these worries might be over-played. This can be understood first by examining the second stage of Taiwan's capital control policies during the 1980s. After the peak in forex inflows in 1987, Taipei's policy shifted from trying to encourage outflows to efforts to enlarge inflows. The ceiling on annual inward remittances per person was introduced at US$50,000 in 1987, but lifted rapidly in the following years to reach US$1m in November 1989 and then US$5m in October 1992. Helped by these changes, non-FDI capital inflows, after turning negative in 1987, rose to US$1.4bn in 1988, and then US$5.3bn in 1989. Given that China today also bans most types of investment inflow, there is potential for substantial liberalisation if and when forex starts to leave.

…and that big savings don't always flee

Developments in Taiwan, and Japan for that matter, also suggest that currencies can hold their own even in the face of huge overhangs of domestic savings. In Taiwan, M2 as a proportion of GDP stood at 220% in 2006, and the stock of retail savings is equal to more than one year's total output. The numbers in Japan aren't quite as impressive, but M2 at 150% of GDP is hardly insignificant. In neither economy has all this cash triggered a full-blown currency crisis. Of course, both currencies have given up some of the value gained during the 1980s appreciations, depreciating sharply at the time of the Asian financial crisis, and suffering some more moderate downwards pressure today. But this is not an entirely undesirable scenario for China: a limited degree of currency weakness is exactly what policymakers in Beijing would like.

Fig 29 Opening up: liberalisation of capital flows in Taiwan

Date	Measure
Oct 83	Issuance of four mutual funds in the international financial market for foreign investors.
Dec 83	Enacted Offshore Banking Statutes, allowing local banks to engage in offshore banking business.
Jul 86	Liberalisation of rules on use of remittances; citizens allowed to hold and freely use small amounts of foreign exchange.
May 87	Limited the daily short position of foreign exchange for banks to US$3m and daily long position to US$20m; also froze the foreign debt balance of banks at the level of 13 May 1987, to release the currency appreciation pressure.
Jul 87	Restrictions on capital outflow removed; individuals can legally hold, purchase and utilise foreign exchange, allowing US$5m outflow remittance and US$50,000 capital inflow per person each year.
Jun 89	Limitation of yearly capital inflow per individual raised to US$200,000.
Sep 89	The limit on inward remittances per person per year is raised to US$500,000.
Nov 89	The limit on inward remittances per person per year is raised to US$1m.
Jul 90	The limit on the inward remittances per person per year is raised to US$2m.
Aug 90	Increased daily bank short sale of foreign currencies from US$3m to US$6m, and also increased daily bank long position from US$20m to US$50m.
Mar 91	CBC tightened restrictions on capital outflows, cutting the amount each individual and company can remit abroad each year from US$5m to US$3m. Also raised the amount that can be remitted back to Taiwan from US$2m to US$3m.
Oct 92	Further loosened individual capital flow restrictions; capital outflow and inflow increased to US$5m for individuals, and capital flow for businesses increased to US$10m.

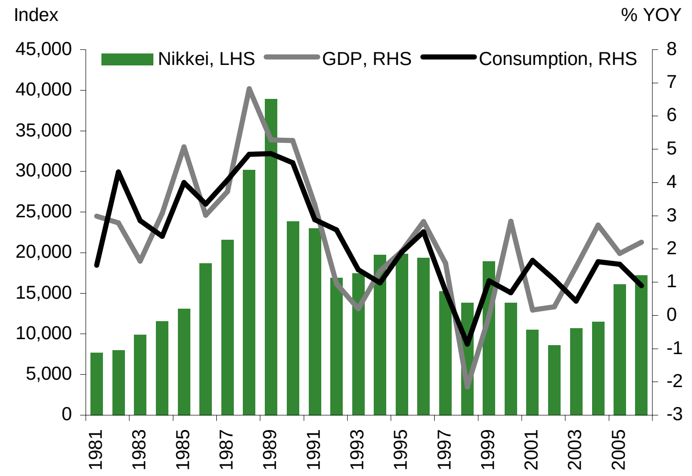
Source: Professor Norman Yin, CBC, Macquarie Research, July 2007

Exchange rate change doesn't lead to economic depressions

Taiwan and Korea survived the bubbles bursting

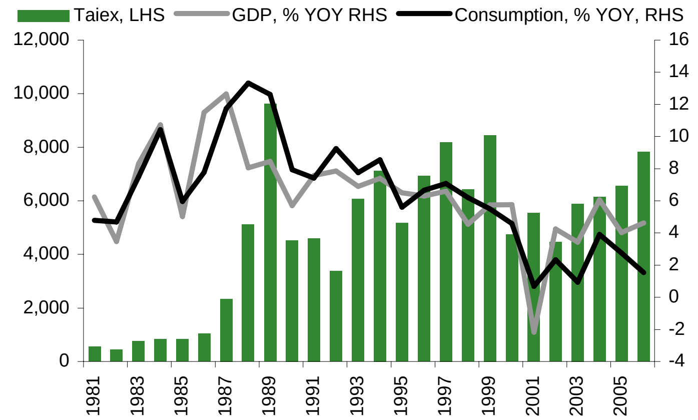
The North Asian case study that attracts the most attention in China is Japan in the 1980s. Taiwan and Korea are often ignored, often because it is simply not recognised that they also went through big exchange rate changes and asset price bubbles. This could be because Taiwan and Korea are small economies, but it is also because unlike Japan (Figure 30), their economic development was not bought to a screeching halt by the bursting of the bubbles. In late 1994, the Kospi rose above the 1989 all-time high, and economic growth in Korea remained strong until the crisis of 1997. The Taiex has not yet regained the highs of the late 1980s, but unlike the Nikkei, it has at least come close, and as with Korea, real economic growth in Taiwan following the bubble was generally strong (Figure 31).

Fig 30 Does China have a Japan-style future…



Source: CEIC, Macquarie Research, July 2007

Fig 31 ...or a Taiwan one?



Source: CEIC, Macquarie Research, July 2007

Taiwan was saved by the IT sector…

This is important because it challenges the usual understanding in China that has been created by the Japan experience: big exchange rate change inevitably leads to economic depression. There are several possible reasons why Taiwan and Korea were not felled by the bubble years. One is because while a few lucky stock market investors were rich in 1989, the economies as a whole were not, suggesting the economic energy of the bubbles could be replaced relatively easily by productivity catch-up. Paradoxically, exchange rate change also contributed to the quick bounceback, particularly in Taiwan, because the enforced move up the value-added chain cultivated the emergence of the island's IT companies, which were the motors of the economy and the stock market in the 1990s.

…and a rapid policy response

Also important is the policy response to the inflation of the bubble, and then its implosion. Korea tried to prevent things getting out of hand at all by raising interest rates as early as July 1986, and then again in September 1988. Seoul was also quick to loosen policy, cutting interest rates in November 1989. On both the way up and the way down the interest rate cycle in Taiwan was aligned almost exactly with that of Japan, but this masks the relatively quick response of the authorities when things started to go wrong: Reserve requirements were cut in August 1990, and the selective credit controls introduced in February 1989 were partially relaxed in October 1990.

Economic immaturity might help recovery

In Taiwan, this kind of policy response was possible only because of the less-developed nature of the economy: like the US, by the 1980s Japan had already moved on to rely on so-called indirect measures to control monetary policy. Taiwan's lower stage of development also gave the authorities a huge range of options to boost the market when the fall eventually occurred. As described by Steve Champion,

> "During the market's precipitous fall, government officials quietly took steps to increase the demand side of the equation by loosening rules governing foreign investors' access to the market, allowing new investment management companies to form, approving the launch of new funds by the existing money managers, allowing pension funds to invest a higher proportion of their assets in equity instruments, encouraging government-controlled banks to buy shares, allowing the formation of new legal margin lenders, and discussing changes in the stock transaction tax".

What happens after bubbles is not pre-determined

Thus, while current mainstream opinion in China seems to focus more on the big yen appreciation as being the root of Japan's 1990s malaise, the experience of the rest of Asia in the 1980s suggests that just as important is the policy reaction when the bubble bursts. This, in fact, is also the prevailing wisdom in economics, where mainstream opinion is that monetary policy shouldn't be used to burst bubbles but instead to soften the blow to the real economy when the pop eventually comes. The rationale is that central banks are simply not in a good position to identify a bubble. Economists would probably agree that interest rates were kept too low in Japan in the 1980s, but this just confirms the point. The links between exchange rate change and bubbles, and the bursting of bubbles and economic depressions are not pre-determined, but rather lie in the hands of policymakers.

The consequences for China

Financial repression works for the economy

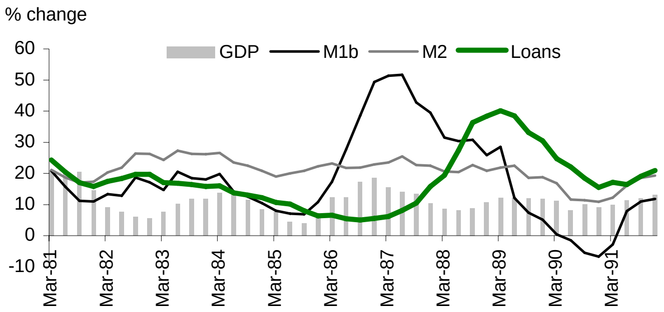
Money and loan growth was out of control in Taiwan…

China's unique response makes it look today in some ways very different to Asia in the 1980s. In Taiwan's bubble years, growth in narrow money supply peaked at more than 50%, in early 1987, and lending growth accelerated to reach 40% a couple of years later. This is in an economy where nominal GDP growth – which is usually a good barometer for judging just how fast monetary growth should be – never rose above 14% during the second half of the 1980s (Figure 32).

…and very high in Japan and Korea

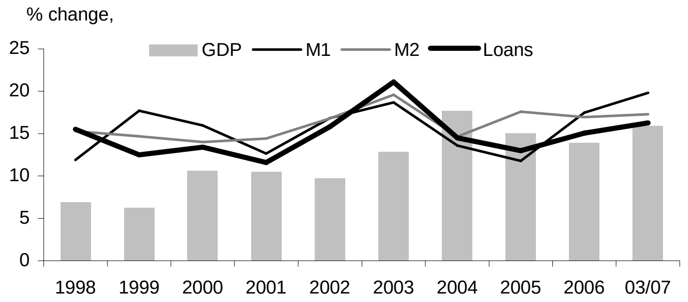
Having both forex inflows and financial deepening does make Taiwan the stand-out example, but in Korea, too, M2 growth of around 30% during the 1980s was consistently above growth in nominal GDP of below 20%. A glance at the 10% M2 and bank credit growth in Japan in the 1980s suggests nothing too amiss, but add in bond and equity issuance, and total credit growth in Japan by 1989 was running at near 14%, nearly double the rate of nominal GDP growth.

Fig 32 Monetary growth surged away in Taiwan...



Source: CEIC, Macquarie Research, July 2007

Fig 33 ...but has not in China



Source: CEIC, Macquarie Research, July 2007

In China, though, monetary growth is not too rapid

With both elements of the 1980s credit bubbles in North Asia in place – forex inflows and financial deepening – it would seem reasonable to assume that money supply growth in China should be galloping away at 30% or so, double the rate of nominal GDP growth. This certainly seems to be the impression of many observers, who talk breathlessly of China's inability to rein in out-of-control money supply. Admittedly, there was a scare back in 2003 when growth in monetary aggregates accelerated. But even then the excess over nominal GDP growth never reached nearly the extent seen in Asia in the 1980s, and since 2005 both M2 and bank credit growth have been held below 20% (Figure 33).

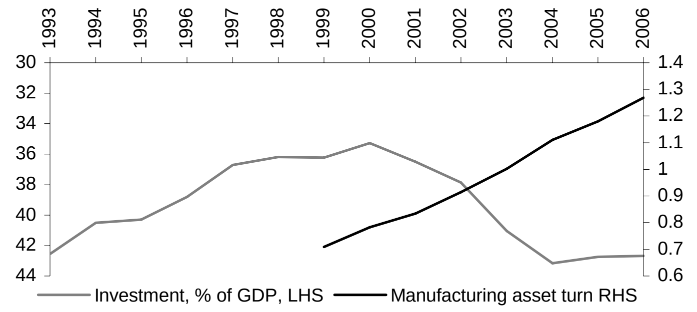
Company ROEs and asset turn also look good…

This picture of relative financial restraint is consistent with our own analysis of the real economy. Rather than taking the usual approach of looking at investment as a proportion of GDP, we prefer to look at asset turnover in companies, in other words sales revenue divided by assets. The analysis of Desh Peramunetilleke and the microstrategy team of listed firms in China, as well as our own look at a broader universe of Chinese companies, shows that asset turnover has been improving in recent years (Figure 34), suggesting capacity utilisation is actually rising (see our two reports entitled *China ROEs: Riding on the edge,* 18 December 2006).

…which is again in contrast to 1980s Japan

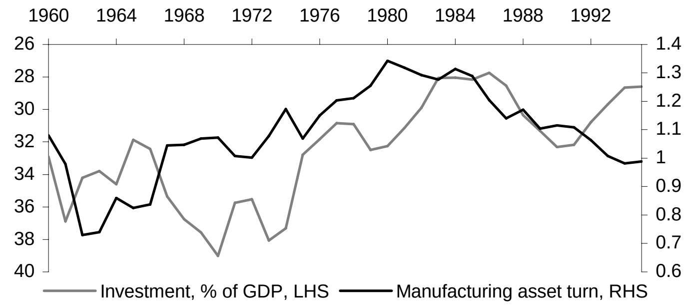
As with money supply, this would be in stark contrast to what happened in Japan, where the sharp rise in macro investment in the bubble years was reflected in a deterioration in asset turnover, a trend that contributed to the deflation of the 1990s (Figure 35). The rise in asset turnover in China also lies at the heart of a substantial improvement in the overall performance of the corporate sector, to the extent that profits in China are now equivalent to almost 10% of GDP.–

Fig 34 China's asset turnover continues to rise…



Source: MOF, CEIC, Macquarie Research, July 2007

Fig 35 ...whereas in China's bubble it fell



Source: CEIC, Macquarie Research, July 2007

Trouble number one: The banks

Where are the problems? First, the banking sector

Being a rather mean lot, we economists are fond of saying there is no such thing as a free lunch. This is true even for China. While the money generated by the huge trade surplus isn't going into the real economy, it doesn't just disappear. Instead, it goes into the banking sector, leaving what government economists still consider the Achilles heel of the economy picking up the bill for the continued health of the industrial sector.

PBC sterilisation of inflows…

This can be understood a little more clearly by considering just how financial repression and sterilisation work. So, think of an exporter, Fortune Fashion, which has just earned another US$1m by selling shoes in the US. The company converts this cheque into around Rmb8m at its local Construction Bank of China (CCB) branch in Beijing, whose manager, Mr Zhang, pays the proceeds into Fortune Fashion's one-year savings account.

…is unhelpful for the banks…

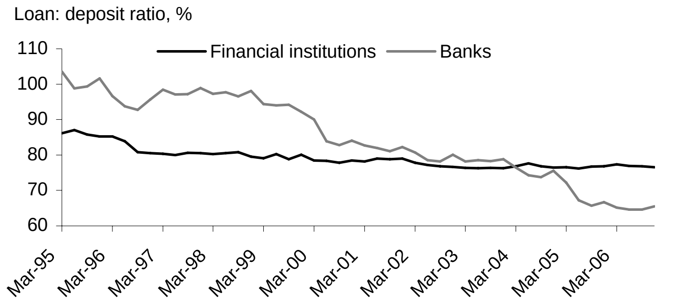
Mr Zhang might be rubbing his hands at this point, thinking he has an extra Rmb8m or so to be able to lend to companies at the benchmark rate of 6.6%. Wanting to prevent a rise in lending though, the PBC steps in. One choice is to grab the money back, issuing Rmb8 of sterilisation instruments to CCB. If the PBC is in a generous mood, it might choose to sell central bank bills to CCB at the market rate of around 3%. This yield more or less offsets the interest CCB has to pay to Fortune Fashion for its deposit, but is much less than what Mr Zhang could earn by lending the money to a company. From CCB's point of view, this is the least painful form of sterilisation.

…but financial repression is even worse

If the PBC was feeling more vengeful, it could force the CCB to buy central bank bills at below-market rates, something it has done on several occasions. Reserve requirements also could be raised, which would force CCB to deposit the money with the PBC at the paltry interest rate of just 1.9%. Worse yet is financial repression, where the PBC simply orders BOC – via the milder-sounding process of window guidance – not to lend the money out. The implied deterioration in the loan-to-deposit ratio is painful for BOC, because it has to pay interest on the money deposited by Fortune Fashion without earning anything at all in return.

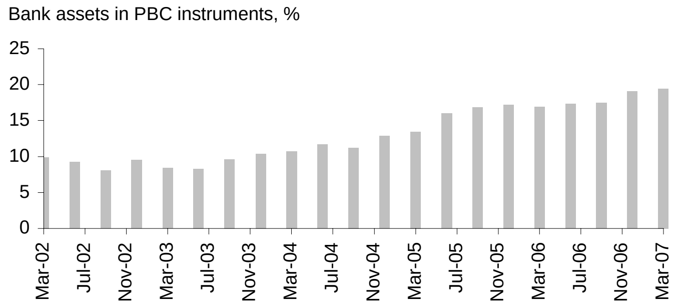
The loan-to-deposit ratio for the system as a whole has fallen from 86% at the end of 1999 to under 70% now (Figure 36). For the twenty or so biggest banks in China, the proportion of assets held in low-yielding PBC instruments has risen from just 10% in to 20% (Figure 37). We estimate that by the end of this year, this proportion would have risen further to more than 23%. With the government ensuring wide interest rate margins and lending growth still running at above 15%, the banks for now still look in good shape. But it is still true that it is the banks that are for now bearing much of the cost of China's exchange rate regime. The longer the renminbi remains undervalued, the more visible those costs will become.

Fig 36 Loan-to-deposit ratios don't look good....



Source: CEIC, Macquarie Research, July 2007

Fig 37 ...nor does sterilisation



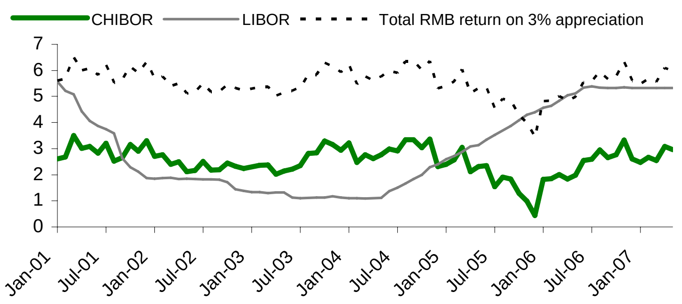
Source: CEIC, Macquarie Research, July 2007

Trouble number two: Asset price inflation

Renminbi policy leaves interest rates too low

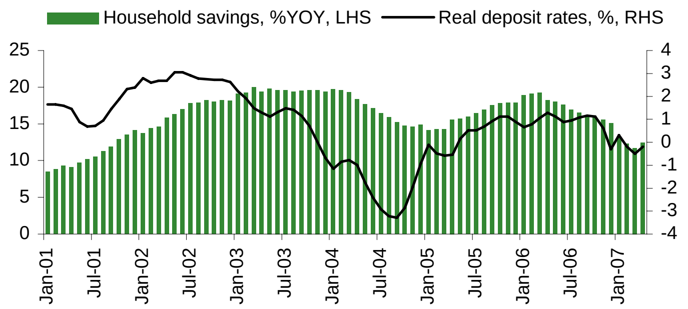
This wouldn't be so bad for the banks if the PBC were to increase the interest rate paid on its sterilisation instruments. But the central bank has been unwilling to do this. One reason is that higher interest rates would raise the cost of the PBC's sterilisation operations. Second, low interest rates, whether they be on the interbank market or on bank deposits, are part of China's attempts to preserve the exchange rate regime. The PBC has been trying to maintain Chinese rates around 3ppt below US ones in recent months. If investors also believe the PBC will not allow the renminbi to appreciate by more than 3% a year, this interest rate policy should leave foreign and domestic investors neutral between renminbi and US$ assets, reducing pressure on the currency (Figure 38).

Fig 38 Currency policy keeps interest rates low...



Source: CEIC, Macquarie Research, July 2007

Fig 39 ...forcing money from banks to asset markets



Source: CEIC, Macquarie Research, July 2007

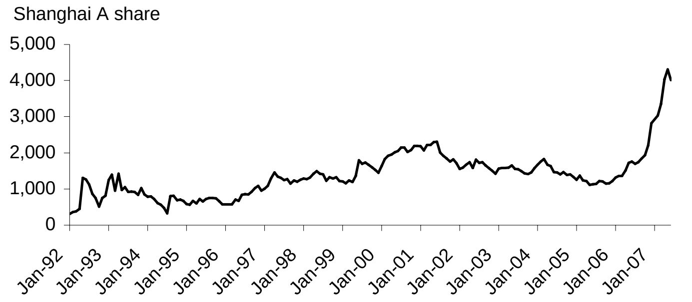
Low interest rates push money into the asset markets

With the Fed at just 5.25%, this policy leaves Chinese rates very low in nominal terms, and even lower when measured against inflation. This is a problem because households do seem to look at real interest rates in deciding where to invest their savings (Figure 39). Against this background, it should be no surprise that the government's administrative efforts to cool asset price inflation have been only partly successful. Obviously the issue of the moment is the stock market, with the Shanghai A share market surging by just 150% in the last twelve months (Figure 40). We still don't think the market matters much for the economy, but this obviously changes every day that the market grows: the capitalisation of the free float has risen from 11% of the GDP at the end of last year to 25% now (Figure 41).

The worry about the stock market is political

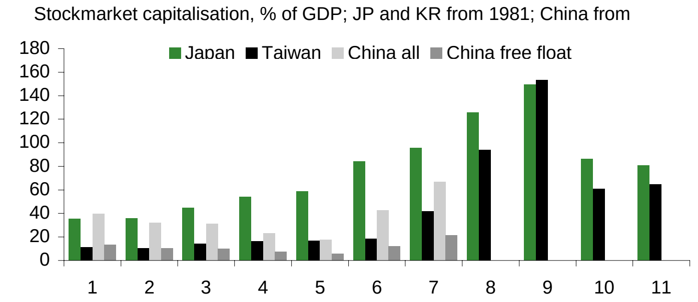
In any case, just as worrying for the government as the economic consequences of a correction are the political ones. The huge falls that periodically punctured Taiwan's great 1980s bull market triggered protests on the streets and sit-ins at the Ministry of Finance. This example triggers more pause for thought in Beijing today than might be expected. China, of course, doesn't allow such kind of things, but they were hardly welcomed in 1980s Taiwan – it was only in 1987 that martial law on the island was lifted.

Fig 40 The bull market is young....



Source: CEIC, Macquarie Research, July 2007

Fig 41 ...and the market doesn't matter so much yet



Source: CEIC, Macquarie Research, July 2007

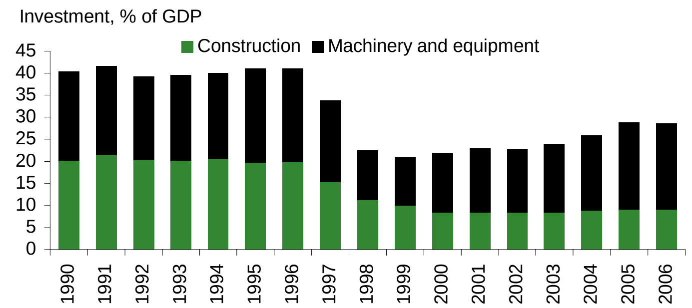
More worrying for the economy is real estate…

Much more important for the real economy than the stock market is real estate. This is because by affecting construction activity, property prices have a direct impact on economic activity. This close relationship is good news when property prices are rising, as strong construction activity can boost the whole economy. But it is troubling when prices are falling, as the resultant slowdown in real estate construction can have a big macroeconomic impact.

…because property matters much more for the real economy

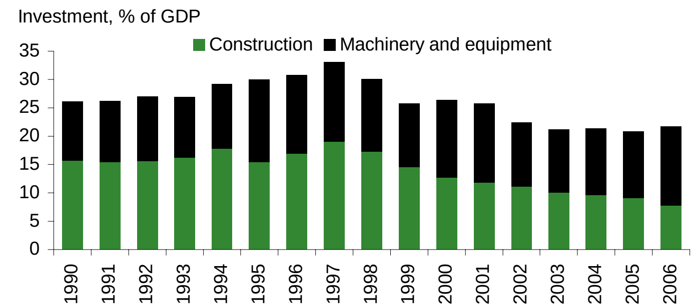
China doesn't need to look far to find examples of the double-edged nature of the property market. Boosted by rising prices, construction activity in Thailand in the early- to mid-1990s consistently accounted for 20% of GDP. As prices crashed after the crisis, though, real estate investment collapsed, dragging down total investment growth from 40% of GDP in 1996 to just 20% in 1999 (Figure 42). Hong Kong has followed a similar path, with a sharp drop in construction activity after 1997 causing total investment growth to drop from 30% of GDP to just 20% (Figure 43).

Fig 42 Construction is the main driver in Thailand...



Source: CEIC, Macquarie Research, July 2007

Fig 43 ...and in Hong Kong



Source: CEIC, Macquarie Research, July 2007

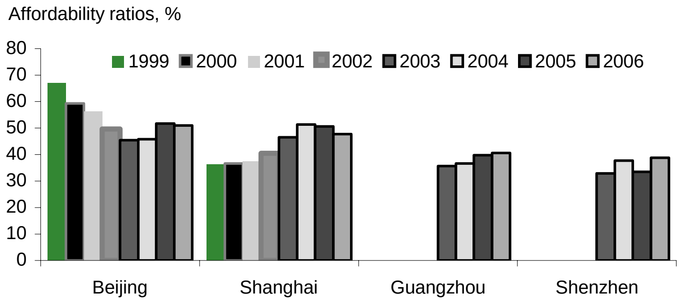
Property prices in China have risen…

With China's stock market still mired in a bear market, it was property prices that were the first to lift when liquidity initially became an issue back in 2003–04. The almost continuous stream of government measures since has cooled the rise in prices, and the official figures do not paint the picture of an overall bubble. But there are worries that this data understates the extent of price rises. In any case, even using the government numbers, affordability ratios in the big cities like Shanghai and Beijing have begun to deteriorate (Figure 44), and across the country the upward trend in prices remains very much intact.

…contributing to a big rise in construction activity

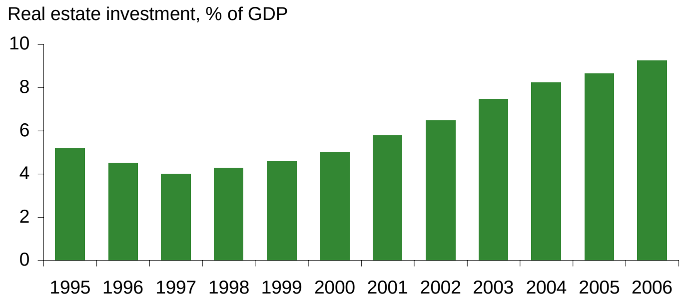
In recent years, real estate and construction activity in China has also jumped, from under 5% of GDP in the late 1990s to more than 10% now (Figure 45). The rise is not all down to price increases, with a series of structural factors – particularly urbanisation, rising incomes and the development of the private housing market – also contributing to the rise in real estate investment. Relative to the size of the economy, real estate activity is also well below the peaks seen elsewhere. Still, the rise in prices would have had at least some upward impact on real estate investment. Given also that the surge in construction activity explains most of the rise in the overall investment-to-GDP ratio in recent years, a reversal in prices would still have some macroeconomic impact.

Fig 44 Affordability in China deteriorates somewhat...



Source: Macquarie Research, July 2007

Fig 45 ...and real estate matters for the economy



Source: CEIC, Macquarie Research, July 2007

Trouble number three: Protectionism

China's incremental measures lack political impact…

The continued rise in the trade surplus in recent years has prompted China to take more and more measures to tame export growth, rolling back export tax rebates and imposing more specific restrictions on the resource sector. Arguably though, these incremental measures lack the political impact of exchange rate change, which is after all the number one demand of China's trade critics around the world.

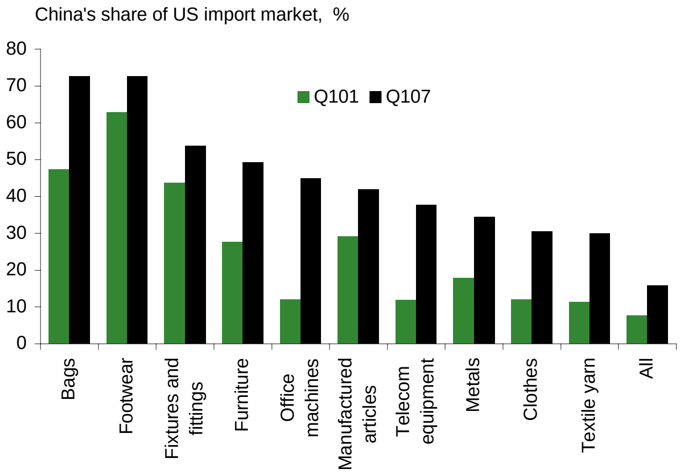
…and anyway are not slowing down exports…

Perhaps this wouldn't be so bad if China could at least show that its export-calming measures were having some kind of real effect. But this doesn't seem to be the case. The trade surplus has continued to grow, almost doubling in the first five months of 2007 alone. With world growth accelerating, and the government doing nothing to encourage demand for imports, we expect the expansion to continue in the second half of 2007 and into 2008.

…so protectionism remains a real risk

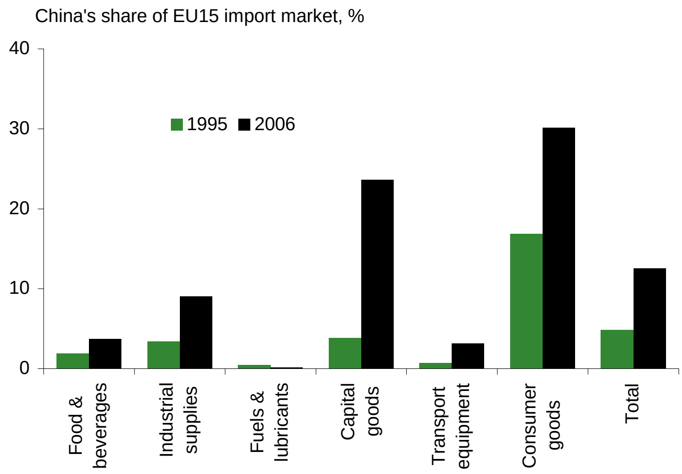
More importantly, in recent months there has been no let up in the relentless market gains that Chinese companies have been making in the US (Figure 46). This might not matter if the US economy stays afloat, but unlike North Asia in the 1980s, it is not only the US that China needs to worry about. Fuelled in part by the big deprecation of the renminbi against the euro, China in recent years has also been making significant market share gains in the EU (Figure 47). Against this background, there continues to be a real risk that China's pegged exchange rate regime could eventually trigger real protectionism in the rest of the world.

Fig 46 Market share in the US attracts attention...



Source: CEIC, Macquarie Research, July 2007

Fig 47 ....but the same thing happens in the EU



Source: Eurostat, Macquarie Research, July 2007

Where next for China

For the time being China's half-learned model looks sustainable

For the time being China's model, based on half-learnt lessons from North Asia, is probably sustainable. This might not be exactly what investors want, but does at least offer a pretty positive outlook. The half of the 1980s experience that Beijing has taken on board – the importance of leaning against the liquidity trends – means that the returns on offer will be nowhere near as crazy as were available in Taiwan in the 1980s. But the unlearnt half – that exchange rate change is needed to make a real difference to external imbalances – suggests that liquidity will remain an issue for the foreseeable future, and that asset prices will consequently continue to rise.

Favoured sectors are property and the consumer

In terms of sectors, best placed are property and the consumer. As long as the undervaluation of the exchange rate causes interest rates to be artificially low, real estate prices will continue to rise. As for consumption, rising asset prices and the resultant wealth effects will certainly help. More important, though, will be the wage and employment growth resulting from the continued strength of the construction and export sectors. Indeed, we continue to think 2007 will be the Golden Year of the Consumer, largely as tightness in the labour market feeds through into sustained growth in rural incomes for the first time since the mid-1990s. From the macro perspective, the protectionist threat makes exporters unattractive, and the in the medium-term the banks are not helped by their unfortunate position holding the bag for the undervalued exchange rate.

The capital gains tax remains unlikely for now

Will the asset prices become such a problem that they force a vengeful policy reaction from the government? Beijing is discussing a capital gains tax for stock market investors, and this really would be the nuclear option: when Taiwan's authorities tried to introduce a similar levy in 1988, the market crashed 50%. The very fact that it is such a powerful tool, though, will make China's policymakers reluctant to implement it. While Beijing doesn't want asset prices going up vertically, it does want them to rise: a falling market would be very unpopular both with the middle class, and with many invested officials. In any case, the government seems to have enough other options on hand to temper the market, be it big increases in the supply of paper, or further changes in the stamp duty. The capital gains tax might be talked about if the market does rise fast again, but implementation seems unlikely at this time.

Inflation could turn the tempered bubble into a more violent one

Risks that would make the picture less sustainable come in two varieties. On the upside are lower interest rates in the US and higher inflation in China. The former would make the renminbi look even more attractive, and so raise further the external surplus that is the root cause of China's liquidity problems. The latter would depress real interest rates, speeding up the shift of money within China from the banks into the asset markets. In these circumstances, there would be a risk that even interventionist Beijing loses control, transforming China's bubble from the current tempered version into the much more violent and less sustainable type that was allowed to develop in Taiwan in the 1980s.

The best response would be renminbi appreciation

We hope the policy reaction to accelerating inflation would be bigger exchange rate change and more capital outflows. This would relieve some of the pressure in China, lift asset prices and economies in the rest of the region, and cheer the gloomy Americans and Europeans. The alternative – an aggressive hike in interest rates – leads to the downside risks. This strategy does have some supporters in Beijing, because it was the belated hikes in Asia in the late 1980s that burst the bubbles there. But as we have explained, by 1989 Asian currencies were perceived to be at fair value. By contrast, the renminbi is as undervalued as it ever has been, suggesting higher interest rates would attract even more liquidity in.

The alternative – much higher rates – would be very bad for China

Of course, if the interest rate changes were aggressive enough, the inflow would only be temporary. The subsequent sharp slowing of the economy and higher real interest rates would make asset markets much less attractive, and start to chase money out of China. The slowing of the domestic economy would reduce import demand and make Beijing even more reluctant to allow the renminbi to rise, both of which could be just what are needed to push the potential protectionists in the rest of the world over the edge. Then the China party really would be over.

Bibliography

The Central Bank of China, “The Central Bank of China: Purposes and Functions, 1961-1991”, 1996.

Steven Champion, “The Great Taiwan Bubble: The rise and fall of an emerging stock market”. PacificView Press, 1998.

Kunio Okina, Masaaki Shirakawa, and Shigenori Shiratsuka, “The Asset Price Bubble and Monetary Policy: Japan’s Experience in the Late 1980s and the Lessons”, Monetary and Economic Studies (Special Edition), February 2001.

Taiwan Stock Exchange, Annual Report, various editions.

Norman Yin, “Chronology of Taiwan’s Financial Reform”, National Cheng-chi University, Taiwan.

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Macquarie - Australia/New Zealand
Outperform – return >5% in excess of benchmark return
Neutral – return within 5% of benchmark return
Underperform – return >5% below benchmark return

Macquarie – Asia/Europe
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie First South - South Africa
Outperform – expected return >+10%
Neutral – expected return from -10% to +10%
Underperform – expected return <-10%

Macquarie - Canada
Outperform – return >5% in excess of benchmark return
Neutral – return within 5% of benchmark return
Underperform – return >5% below benchmark return

Macquarie - USA
Outperform (Buy) – return >5% in excess of benchmark return (Russell 3000)
Neutral (Hold) – return within 5% of benchmark return (Russell 3000)
Underperform (Sell)– return >5% below benchmark return (Russell 3000)

Recommendations – 12 months

Note: Quant recommendations may differ from Fundamental Analyst recommendations

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This is calculated from the volatility of historical price movements.

Very high–highest risk – Stock should be expected to move up or down 60–100% in a year – investors should be aware this stock is highly speculative.

High – stock should be expected to move up or down at least 40–60% in a year – investors should be aware this stock could be speculative.

Medium – stock should be expected to move up or down at least 30–40% in a year.

Low–medium – stock should be expected to move up or down at least 25–30% in a year.

Low – stock should be expected to move up or down at least 15–25% in a year.
* Applicable to Australian/NZ/Canada stocks only

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All "Adjusted" data items have had the following adjustments made:
Added back: goodwill amortisation, provision for catastrophe reserves, IFRS derivatives & hedging, IFRS impairments & IFRS interest expense
Excluded: non recurring items, asset revals, property revals, appraisal value uplift, preference dividends & minority interests

EPS = adjusted net profit / efpowa*
ROA = adjusted ebit / average total assets
ROA Banks/Insurance = adjusted net profit /average total assets
ROE = adjusted net profit / average shareholders funds
Gross cashflow = adjusted net profit + depreciation
*equivalent fully paid ordinary weighted average number of shares

All Reported numbers for Australian/NZ listed stocks are modelled under IFRS (International Financial Reporting Standards).

Recommendation proportions – For quarter ending 30 June 2009

	AU/NZ	Asia	RSA	USA	CA	EUR	
Outperform	40.38%	48.53%	40.00%	44.02%	57.42%	40.20%	(for US coverage by MCUSA, 1.54% of stocks covered are corporate advisory clients)
Neutral	39.25%	17.08%	45.00%	37.45%	32.90%	39.21%	(for US coverage by MCUSA, 1.16% of stocks covered are corporate advisory clients)
Underperform	20.38%	34.40%	15.00%	18.53%	9.68%	20.59%	(for US coverage by MCUSA, 0.77% of stocks covered are corporate advisory clients)

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Consumer

Mohan Singh (Asia)	(852) 3922 1111
Jessie Qian (China, Hong Kong)	(852) 3922 3568
Unmesh Sharma (India)	(9122) 6653 3042
Toby Williams (Japan)	(813) 3512 7392
HongSuk Na (Korea)	(822) 3705 8678
Edward Ong (Malaysia)	(603) 2059 8982
Alex Pomento (Philippines)	(632) 857 0899
Linda Huang (Taiwan)	(8862) 2734 7521

Emerging Leaders

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Industrials

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Janet Lewis (Japan)	(813) 3512 7475
Chang Han Joo (Korea)	(822) 3705 8511
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Seshadri Sen (Asia)	(9122) 6653 3053
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Media

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Pharmaceuticals

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Eva Lee (China, Hong Kong)	(852) 3922 3573
Chris Cheng (China, Hong Kong)	(852) 3922 3581
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Chang Han Joo (Korea)	(822) 3705 8511
Tuck Yin Soong (Singapore)	(65) 6231 2838
Elaine Cheong (Singapore)	(65) 6231 2839
Corinne Jian (Taiwan)	(8862) 2734 7522
Patti Tomaitrichitr (Thailand)	(662) 694 7727

Resources / Metals and Mining

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YeeMan Chin (China)	(852) 3922 3562
Christina Lee (Hong Kong)	(852) 3922 3571
Rakesh Arora (India)	(9122) 6653 3054
Adam Worthington (Indonesia)	(65) 6231 2981
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Dohoon Lee (Hong Kong)	(852) 3922 1119
Patrick Yau (Hong Kong)	(852) 3922 1264
Zona Chen (Hong Kong)	(852) 3922 3578
Damian Thong (Japan)	(813) 3512 7877
David Gibson (Japan)	(813) 3512 7880
George Chang (Japan)	(813) 3512 7854
Michiko Kakiya (Japan)	(813) 3512 7868
Yukihiro Goto (Japan)	(813) 3512 5984
Michael Bang (Korea)	(822) 3705 8659
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Daniel Chang (Taiwan)	(8862) 2734 7516
James Chiu (Taiwan)	(8862) 2734 7517
Nicholas Teo (Taiwan)	(8862) 2734 7523
Stefan Chang (Taiwan)	(8862) 2734 7511

Telecoms

Tim Smart (Asia)	(852) 3922 3565
Ramakrishna Maruvada (ASEAN)	(65) 6231 2842
Bin Liu (China)	(852) 3922 3634
Shubham Majumder (India)	(9122) 6653 3049
Kenneth Yap (Indonesia)	(6221) 515 7343
Nathan Ramler (Japan)	(813) 3512 7875
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Transport & Infrastructure

Anderson Chow (Asia)	(852) 3922 4773
Jonathan Windham (Asia)	(852) 3922 5417
Wei Sim (China, Hong Kong)	(852) 3922 3598
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ES Kwak (Korea)	(822) 3705 8644
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Max Layton	(4420) 3037 4273
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Henry Liu	(8621) 2412 9005
Rakesh Arora	(9122) 6653 3054

Data Services

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Eric Yeung	(852) 3922 4077

Economics

Rajeev Malik (ASEAN, India)	(65) 6231 2841
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Paul Cavey (China)	(852) 3922 3570
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Quantitative

Martin Emery (Asia)	(852) 3922 3582
Viking Kwok (Asia)	(852) 3922 4735
George Platt (Australia)	(612) 8232 6539
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Patrick Hansen (Japan)	(813) 3512 7876

Strategy/Country

Daniel McCormack (Asia)	(852) 3922 4073
Desh Peramunetilleke (Asia)	(852)3922 3564
Mahesh Kedia (Asia)	(852) 3922 3576
Michael Kurtz (China)	(8621) 2412 9002
Seshadri Sen (India)	(9122) 6653 3053
Ferry Wong (Indonesia)	(6221) 515 7335
David Gibson (Japan)	(813) 3512 7880
Peter Eadon-Clarke (Japan)	(813) 3512 7850
Chan Hwang (Korea)	(822) 3705 8643
Prem Jearajasingam (Malaysia)	(603) 2059 8989
Edward Ong (Malaysia)	(603) 2059 8982
Alex Pomento (Philippines)	(632) 857 0899
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Sales

Regional Heads of Sales

Giles Heyring (ASEAN)	(65) 6231 2888
Peter Slater (Boston)	(1 617) 598 2502
Thomas Renz (Geneva)	(41) 22 818 7712
Ajay Bhatia (India)	(9122) 6653 3200
Andrew Mouat (India)	(9122) 6653 3200
Stanley Dunda (Indonesia)	(6221) 515 1555
Jason Lee (Malaysia)	(603) 2059 8888
Gino C Rojas (Philippines)	(632) 857 0761
Greg Norton-Kidd (New York)	(1 212) 231 2527
Luke Sullivan (New York)	(1 212) 231 2507
Scot Mackie (New York)	(1 212) 231 2848
Sheila Schroeder (San Francisco)	(1 415) 835 1235
John Sim (Singapore)	(65) 6231 2888

Regional Heads of Sales cont'd

Angus Kent (Thailand)	(662) 694 7601
Michael Newman (Tokyo)	(813) 3512 7920
Charles Nelson (UK/Europe)	(44) 20 3037 4832
Rob Fabbro (UK/Europe)	(44) 20 3037 4865
Nick Ainsworth (Generalist)	(852) 3922 2010

Sales Trading

Adam Zaki (Asia)	(852) 3922 2002
Mike Keen (Europe)	(44) 20 3037 4905
Mona Lee (Hong Kong)	(852) 3922 2085
Brendan Rake (India)	(9122) 6653 3204
Stanley Dunda (Indonesia)	(6221) 515 1555
Mario Argyrides (Korea)	(822) 3705 8610

Sales Trading cont'd

Edward Robinson (London)	(44) 20 3037 4902
Thomas Chin (Malaysia)	(603) 2059 8888
Robert Risman (New York)	(1 212) 231 2555
Matthew Ryan (Singapore)	(65) 6231 2888
Isaac Huang (Taiwan)	(8862) 2734 7582
Jon Omori (Tokyo)	(813) 3512 7838

Alternative Strategies

Convertibles - Roland Sharman	(852) 3922 2095
Depository Receipts - Robert Ansell	(852)3922 2094
Derivatives - Wayne Edelist	(852) 3922 2134
Futures - Tim Smith	(852) 3922 2113
Structured Products - Andrew Terlich	(852) 3922 2013