

Beyond the madding crowd

Thematic research

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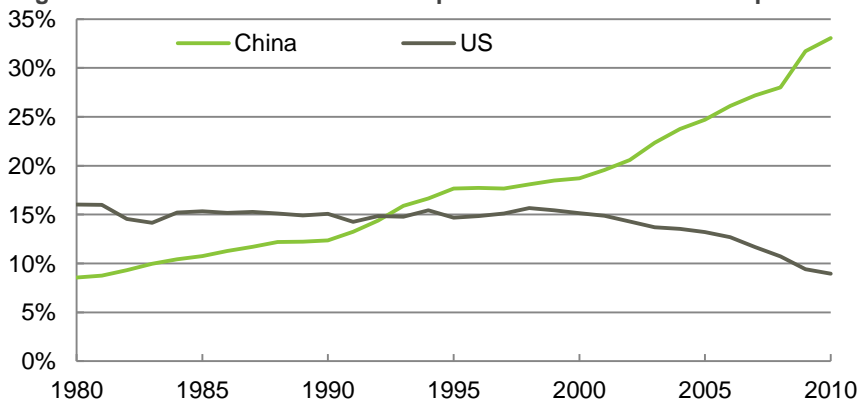
Pictures of China

Do you know enough about China? We don't, so we set out to learn more: the 80 charts in this booklet are the fruits of our labour. We explore demographic and economic trends; ask questions about data reliability, resource constraints, overinvestment, indebtedness and the banking system, all the while putting China into an international context. We finish with a review of the current economic situation, the outlook for Chinese assets and the effect China may have on global commodity markets, using one thousand years of data. We draw our own conclusions: see if you agree.

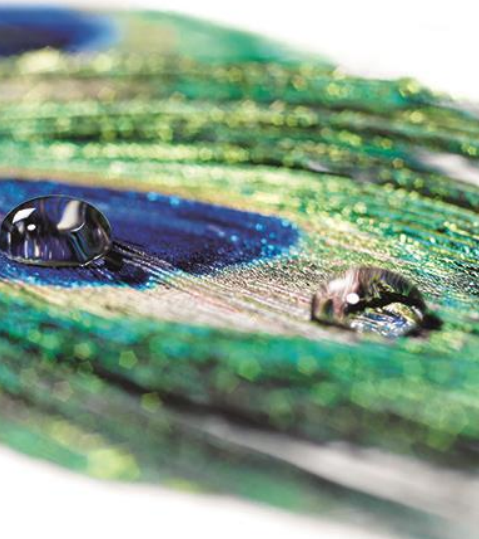
Our main conclusions are:

- Chinese data is not as bad or as manipulated as many believe
- Growth is currently in line with potential (around 7%) but should move lower
- Demographic and resource constraints are an issue (see **Figure 1** below)
- Total debt (230% of GDP) may both limit growth and present a systemic risk
- The corporate sector has added debt equivalent to 50% of GDP in six years
- Luckily, banks are 90% funded by deposits and capital ratios are acceptable
- Debt equivalent to 40% of GDP has been financed outside the banking sector since 2008 (local governments and shadow banking), where regulation is light
- However, shadow banking is smaller than elsewhere and, if needed, FX reserves and increased government debt could cover a large debt black hole
- Importantly, China is self-financing and has massive external assets
- CNY is expensive and we expect a decline to USD/CNY 7.00 as PBOC eases
- Stocks are no longer expensive but recent policy actions suggest caution
- China will not come to the rescue of commodity markets

Figure 1 – Natural resources consumption as % of world consumption



Source: United Nations and Source Research.



Pictures of China

Introduction

China is the largest economy in the world (measured on a PPP basis) but we know so little about it, especially compared to the wealth of information about the US. This is partly because access is limited (to both the country and its data) but also because few of us have taken the time to try. We decided to do something about our own personal lack of knowledge and what follows is the result.

It is said that a picture paints a thousand words, so we tell the story of our exploration with charts (80 of them). Among the questions we ask are:

- How long will China be the most populous country? Not long is the answer.
- Can China's workers support the rest of the population? It may get old before it gets rich.
- What natural resources does China have and how rapidly is it using them? It has a lot but not enough for its population.
- Is China already the largest economy in the world (yes on some measures) and what has driven its growth? Investment and productivity gains have been the main drivers.
- Has China over-invested? No, if we look at the development requirements, yes, if we look at the average productivity of capital.
- Does China have a debt problem? Yes but it is focused in the private sector and China is self-financing (little external debt).
- Are China's banks a risk? Perhaps, but capital ratios are acceptable and exceptional losses can be covered by the authorities (if needed).
- What about shadow banks and local governments? There seems to have been strong growth in non-bank sourced financing, so this could be an issue but shadow banking is less important than in other countries.
- How is the economy doing now? Growth seems to have settled around 7%. China is importing rather than exporting deflation.
- Can we believe the numbers? They seem to be internally consistent and are corroborated by alternative measures, so, surprisingly, yes.

- Are Chinese assets good value? Equities may be, if you can ignore unpredictable regulations and government intervention.
- Would you want to live or do business there? We let you decide.

Summary and conclusions

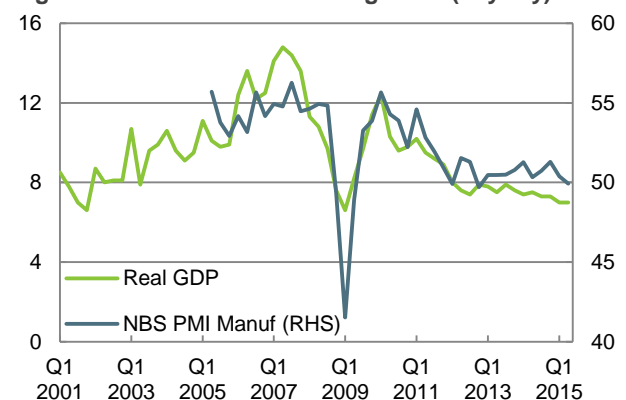
We hope that the pictures in this booklet allow you to form your own ideas but, just in case, we provide our own interpretation and conclusions.

Can the data be trusted?

There is a lot of scepticism about Chinese economic data, the suspicion being that it is manipulated. At the moment, it is commonly supposed that official data understates the economic slowdown.

Given the control exerted over many aspects of the Chinese economy, it is easy to have such concerns. However, our checking of the internal consistency of the data (GDP versus electricity consumption and freight volumes, say), along with external verification (Chinese exports versus data from 21 trading partners about imports from China), suggests to us that commonly used economic data is a good reflection of what is actually happening (see **page 30**). For example, there was much panic when the official PMI for August slipped to 49.7 but already published GDP data was consistent with even lower PMIs (see **Figure 2**).

Figure 2 – China PMI and GDP growth (% y-o-y)



Source: China National Bureau of Statistics, Datastream, Source Research

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On the basis of the various indicators that we look at, it seems the economy is growing at around 7% per year, though the mix is changing (the service sector is now bigger than the industrial sector and consumer spending is growing more rapidly than investment).

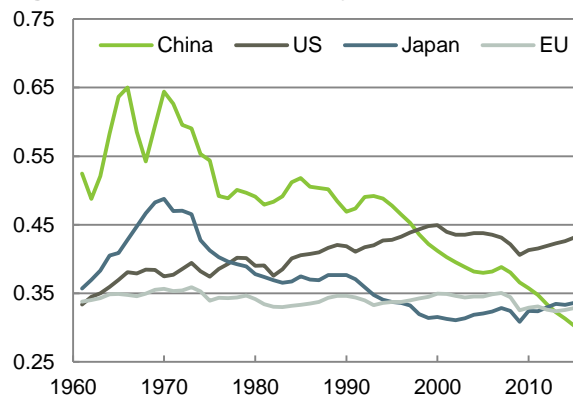
Can the growth be maintained?

A number of factors will limit China's growth in the years and decades ahead: demographics, natural resource constraints, lower returns to investment and private sector indebtedness. From around 7% today, potential growth is reckoned to be on a declining path (to 6% by 2020 and lower thereafter).

The demographic problems are well known but labour force expansion was never the major contributor to GDP growth (it added at most 1.5% in the 1980s but its contribution is now marginally negative – see [page 16](#)).

Rather, the major drivers of growth have been expansion of the capital stock and gains in total factor productivity and therein lays a problem: rapid growth in the capital stock has depressed average capital productivity (see [Figure 3](#)), though the marginal efficiency of capital expenditure remains higher in China than in major developed economies (see [page 17](#)).

Figure 3 – Capital productivity (GDP/capital stock)

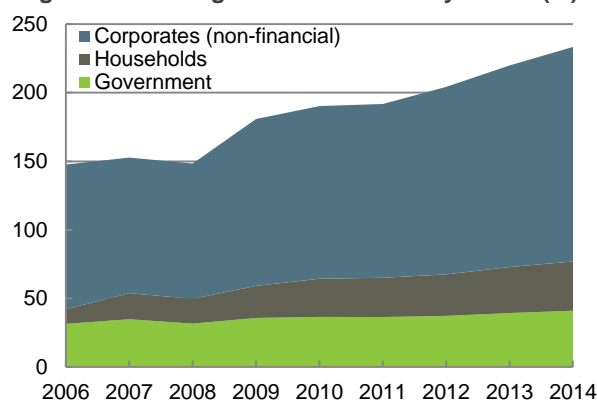


Source: OECD, World Bank, Bloomberg, Datastream, Source Research

Much of China's recent growth has been fuelled by debt, with total debt now greater than 230% of GDP and approaching levels seen in the US and UK. Beyond a certain point, debt becomes a burden and the fact that additions to Chinese debt have largely been in the non-bank private sector (unlike in many developed countries) suggests the private sector contribution to future growth may be constrained (see [Figure 4](#)).

Alarming, between 2008 and 2014, the non-financial corporate sector took on debt equivalent to 50% of GDP.

Figure 4 – China gross debt to GDP by sector (%)



Source: BIS, IMF, Datastream, Source Research

China has plenty of natural resources but often not enough to match its population (for instance, China has around 10% of the world's agricultural land but its population share is closer to 20% -- see [page 11](#)). Further, its rate of growth is causing it to use resources at an increasing rate: it now accounts for more than 30% of the global consumption of natural resources and in the two years 2012-2013 it produced more cement (4.6bn metric tons) than did the US (4.3bn metric tons) during the whole of the twentieth century (according to the United States Geological Survey). Resource depletion has accounted for around 3%-5% of Gross National Income (GNI) in recent years and China is already very dependent on resource imports. Luckily, its high rate of net savings makes this affordable in a financial sense but the finite supply of global resources will impose limits, especially if India develops in a similar fashion.

Does China have a debt problem?

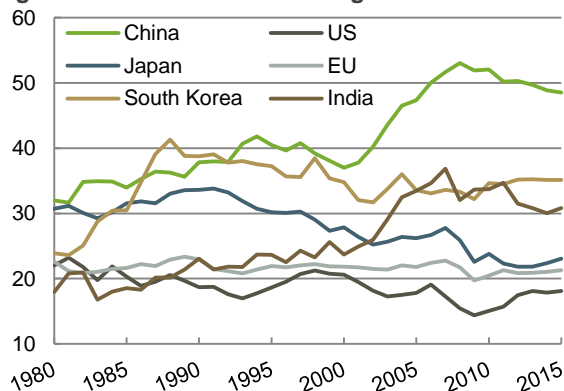
It was noted above how rapidly debt has grown in China. Apart from the potential dampening effect on growth, this increases both the fragility of the economy and the magnitude of risks associated with economic slowdown/recession. This in part explains the sensitivity of global financial markets to signs of economic weakness in China.

There are, however, two important caveats to these concerns: first, the central government has not participated in the debt binge and has the capacity to

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boost debt in support of problem areas, if needed (as happened in many other economies during the global financial crisis) and, second, China is self-financing as a result of its high level of savings (see **Figure 5**).

Figure 5 – Gross national savings as % of GDP



Source: IMF, Datastream, Source Research

The self-financing nature of the Chinese economy implies both limited reliance on external financing (external debt is low) and the building of external assets (as demonstrated by international reserves approaching \$4trn and a net international investment position of nearly \$2trn – see **page 23**). China cannot have a debt problem imposed from outside and has ample external resources to help smooth internal problems, in our opinion.

Are the banks a risk?

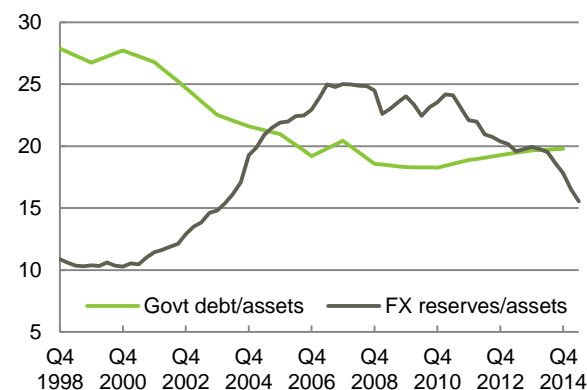
Though banks are less important than they were, they still finance around 75% of the debt taken up by the non-financial private sector (the ratio is less than 40% in the US) – the balance is sourced from market debt, local government financing vehicles, the shadow banking sector etc.

Bank loans to the private sector have grown from around 100% of GDP in 2008 to 140% in 2014 (almost three times the level in the US and India and even higher than in the UK and Japan). That fixed asset loans account for more than 60% of the total (as they have done for some time) is a worry, if we consider the extent of over-investment in China and the decline of property prices.

However, there are again important caveats: first, the banks fund themselves largely by deposits (90% of total liabilities, versus the 70% that was typical in the US

prior to the financial crisis); second, loans account for around 80% of total banking sector business, so the risks from financial markets etc. are more limited than they were in other countries in the run-up to the financial crisis (the ratio was 60%-70% in the US, for example); third, non-performing loans are rising but are starting from a low base and Core Tier 1 capital ratios are in line with those of the US and Europe; finally, China has the ability to cover sizeable bank balance sheet problems (**Figure 6** shows the size of FX reserves and existing government debt relative to bank balance sheets, and suggests to us that a 10% asset write-off could easily be covered by a combination of FX reserves and government debt issuance).

Figure 6 – FX reserves and government debt as % of financial institution assets



Source: People's Bank of China, National Bureau of Statistics, Datastream, Source Research

What about other financing vehicles?

Non-financial private sector debt has risen from around 120% of GDP prior to the global financial crisis to almost 200% in 2014. At the same time, the share of that debt financed by the banks has fallen from around 90% to 75%, so where has the balance come from (equivalent to around 40% of GDP)?

The answer appears to be some combination of local government financing vehicles (especially for fixed asset investment financing) and the shadow banking sector, among others. The shadow banking sector is a particular cause for concern among many commentators, though the concept is rather nebulous – it is basically financing that is done outside of the formal banking sector (and therefore not regulated in the same way as the banks). This [primer](#) from The Brookings Institute gives some good background: it makes clear

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the recent aggressive growth of this type of financing in China but also shows how small the sector is compared to similar activities in other countries. As in many other domains, as China becomes more like other countries it finds itself more criticised than those other countries. It seems to be one rule for China and another for the developed world.

If you are worried about Chinese debt, the banking system and the shadow banking system, you should have similar concerns for much of the developed world. Of course, China is now going through a property market correction and it was that phenomenon that caused the financial crisis in the US. The banks in China look in better shape than their US counterparts prior to 2008 and the Chinese authorities have more resources to deal with any such crisis should it occur. However, we know less about China and, as usual, what we don't know, we make up.

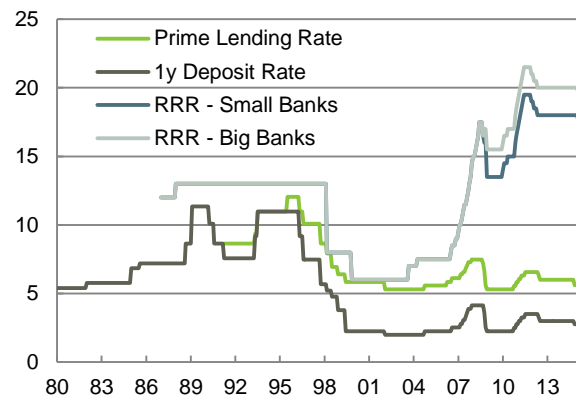
How is the economy doing now?

There was no way that China could maintain the 12%-14% GDP growth registered prior to the financial crisis. Attempts to offset the effects of that crisis on its own economy maintained growth at around 10% for a while but came at the price of a debt fuelled investment boom. For all of the reasons outlined above, growth potential is on the decline and we suspect current growth (around 7%), is in line with current potential (see [page 16](#)).

However, to counteract the inflationary problems created by the investment boom, the central bank (PBOC) has been running a very tight monetary policy for a number of years (see [Figure 7](#)). This contributed to the strength of the yuan and the combined effect has been economic deceleration. It would be no surprise to see growth slip below potential during this cycle. Hence we should be prepared for GDP growth to move lower.

The aim of the PBOC tightening was to bring down inflation and, in particular, to bring down house prices which were deemed to be too expensive for the ordinary worker. The policy has succeeded on both counts (see inflation indicators on [page 29](#)). Hence, the PBOC has now been easing policy for almost a year, reducing both interest rates and the reserve requirement ratio applied to banks (RRR).

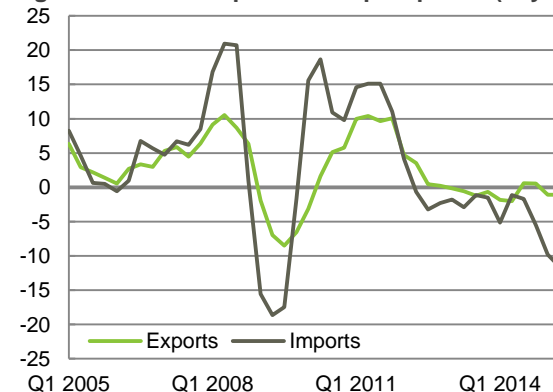
Figure 7 – PBOC monetary policy settings



Source: Datastream and Source Research

As can be seen from [Figure 7](#) the PBOC has plenty of scope to further loosen its monetary shackles if conditions so dictate, particularly via RRR reductions (the historical average is close to 10%, some way below the current 18%). Though manufacturing PMIs are now below 50 (and causing angst among commentators), there are some signs that PBOC easing is having a beneficial effect – in particular, house price declines seem to be easing, with prices in July actually rising in more districts than they declined (prices are still falling y-o-y).

Figure 8 – China export and import prices (% y-o-y)



Source: National Bureau of Statistics, Datastream, Source Research

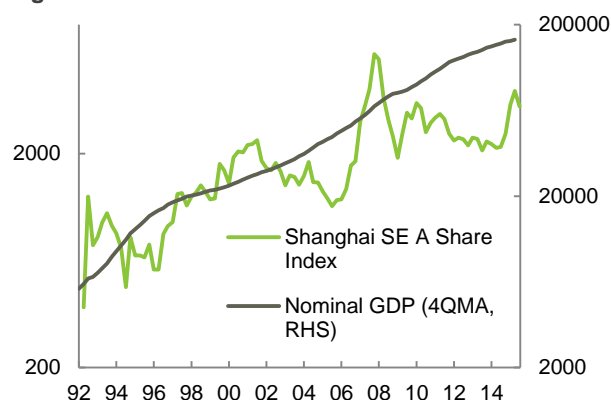
Apart from the fact that inflation is low/negative (depending on the measure used), it is hard to argue that China is yet displaying recessionary conditions. Although China is accused of exporting deflation, the reverse is true – it is importing deflation via falling commodity prices (see [Figure 8](#)). The PBOC has plenty of scope to cushion any dramatic slowdown.

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Are stocks and policy makers telling us something?

If Chinese share prices told us anything about the state of the economy, we could be worried by the sharp declines since mid-July. However, they do not (see **Figure 9**) and even if they did why would we take more notice of the recent slide than of the much bigger climb in the previous 18 months? As for wealth effects on future consumption, these are unlikely to be significant given that only 9% of households actively trade stocks, of which only 6% borrow money to do so (China Household Finance Survey).

Figure 9 – China’s GDP and the stock market



Source: Datastream and Source Research. Note: both y axes on log scales.

When it comes to the actions of policy makers, we would distinguish the actions of the PBOC to ease monetary policy and adjust the currency regime from the manic attempts by the government to prevent the stock market from falling.

The PBOC is following a logical course when it comes to easing what was a very tight policy and, at the same time, is taking the opportunity to liberalise the financial system (by giving the banks greater freedom to determine the appropriate level of interest rates).

The change to the currency regime also makes sense and for three reasons: first, flexible exchange rates make more economic sense than fixed rates (in our opinion); second, liberalising the exchange rate is a necessary step to the inclusion of the yuan in the IMF’s SDR basket and, third, the yuan was extremely elevated (in real terms), which was having a depressing effect on the Chinese economy. This latter point suggests that if the market has a greater role in setting

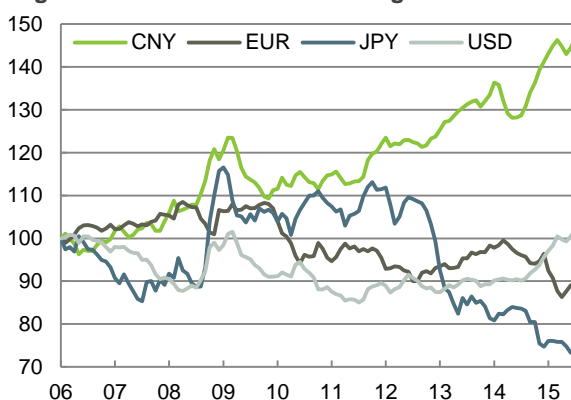
the yuan, the likely direction will be downward, especially as the PBOC eases its monetary stance.

On the other hand, it is hard to fathom the desire of the government to prevent the stock market from falling. The almost daily initiatives smacked of panic and, rather than helping, actually made the situation worse as investors questioned why the authorities were so worried about falling prices. Maybe they had good economic reasons to behave in this way but we suspect it was simply a desire to present an orderly market environment to the outside world, especially the IMF. If that was the intention, they failed. At the very least, this erratic policy approach has probably resulted in investors applying an even higher risk premium to Chinese assets. This being said, they may argue they were simply copying many of the market manipulation measures operated in other countries (central bank asset purchases, NYSE circuit breakers, bans on shorting banks etc.).

What about Chinese assets?

We have already covered our view on the yuan – **Figure 10** makes it clear how expensive it had become, especially versus the yen. On the positive side, a current account surplus, healthy FX reserves and strong net international investment position should lend support to the Chinese currency.

Figure 10 – Real effective exchange rates



Source: OECD, Datastream, Source Research. Note: June 2006 = 100

However, some of these supportive factors would be diminished if ever they had to be used to support the banks. More importantly, the ongoing loosening of PBOC policy will remove an important support and we suspect this will eventually drive the currency lower. On

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the basis of **Figure 10** we suspect USD/CNY will move to 7.00 at some stage over the coming year or so.

Given the anticipated easing of PBOC policy, it would be no surprise to see bond yields move lower, which suggests better potential than in many developed markets (with higher starting rates giving more attractive yield). The problem is, of course, the currency risk.

Stocks are certainly more attractive than they were in early July. We had suggested [selling in May and going away](#) and valuations now look more compelling (see **page 33**). Indeed, the cyclically-adjusted price/earnings ratio is as low as it has been since 2003 (unfortunately, the need to use a 10-year moving average of earnings limits the historical reference period). However, as mentioned above, the higher risk premium that we are applying to the market makes us hesitant to return immediately.

Finally, what about commodities?

Unfortunately, there is nothing in this document that makes us feel any more constructive on commodities. We certainly don't believe that China is about to

crumble but gradual deceleration is enough to prevent a spike in demand for raw materials.

In the absence of such a spike, we expect the ongoing unwinding of the super-cycle bubble to continue. Some important commodities such as oil and copper have returned to long run norms (in real terms) but we believe a period below those norms will be necessary (as it always has been – see [\\$20 oil, why not?](#)).

Talking of long run cycles, **Figure 11** shows the price of rice in China since the year 1000. Throughout the ages, sharp gains in price have inevitably been followed by long periods of decline. The rise in the price since the establishment of the PRC is phenomenal. This may have been driven in the early period by Mao's policy of sending food "surpluses" to the Soviet Union and elsewhere but the most recent spike has probably more to do with the rapid economic development in China. It will be interesting to see if history repeats itself, with a sharp prolonged decline at some stage (and to see what economic conditions prevail at the time).

Now, you decide!

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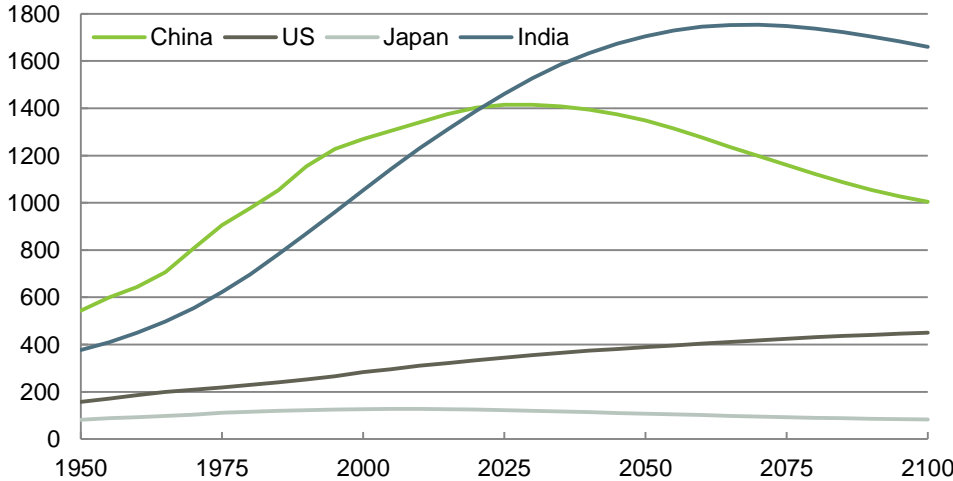


Source: *Global Financial Data, Beth Rose - Appendix to the Rice Economy of Asia (1995), Datastream, Wikipedia and Source Research.*

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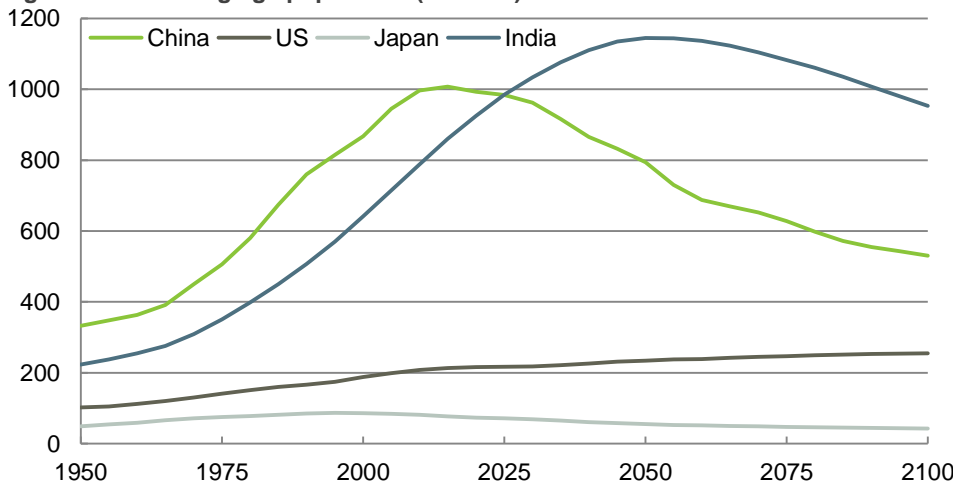
Human resources – from slumbering giant to shrinking violet

Figure 12 – Total population (millions)



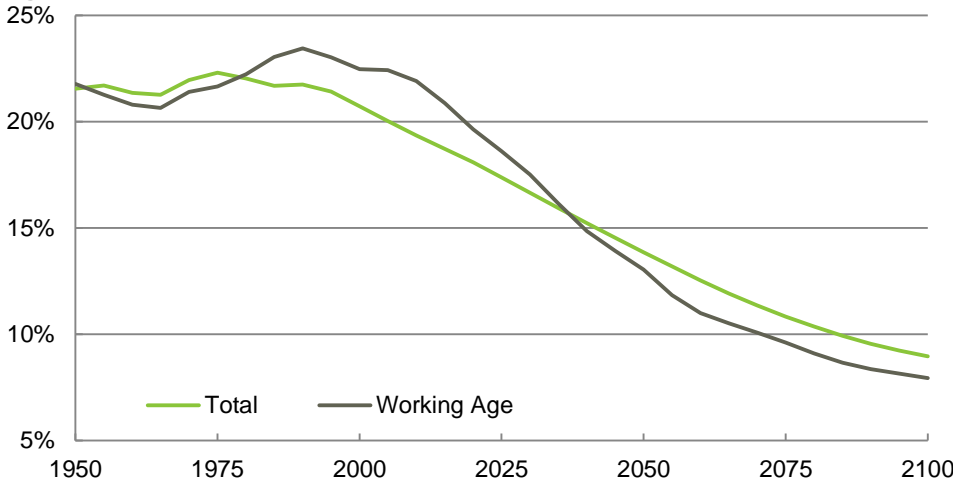
- China is still the most populous country in the world with its population predicted to peak in the 2030s
- However, it will lose that status to India in the 2020s (United Nations projections)

Figure 13 – Working age population (millions)



- China's working age population is predicted to peak around this year and will decline sharply from here
- Only the US is predicted to have a steadily increasing workforce from these 4 countries

Figure 14 – China population as % of World



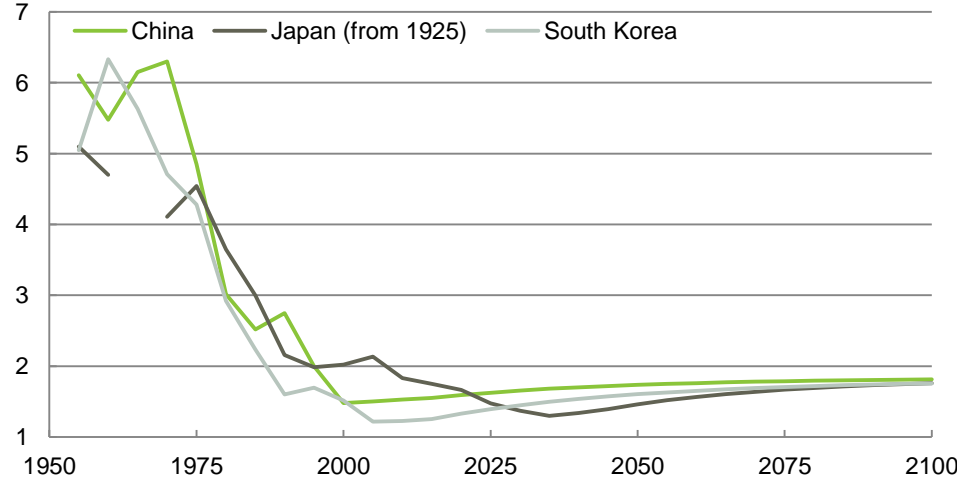
- China's population as % of the World peaked around 1975, after which its fertility rate went into decline (see **Figure 15**)
- Its working age population continued to grow until the early 1990s and it is now falling faster than the total

Source: United Nations and Source Research. Notes: UN median variant forecasts after 2015.

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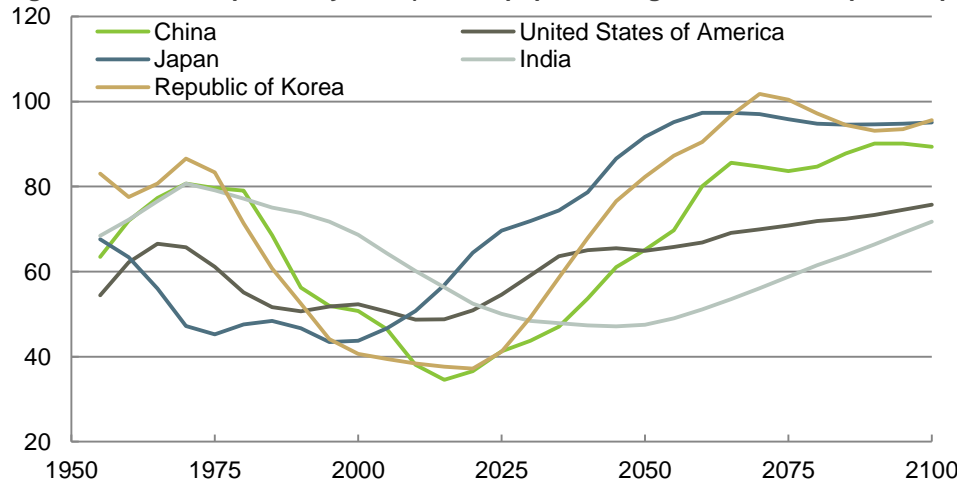
Low fertility, high dependency – following the Japanese model

Figure 15 – Fertility rates*



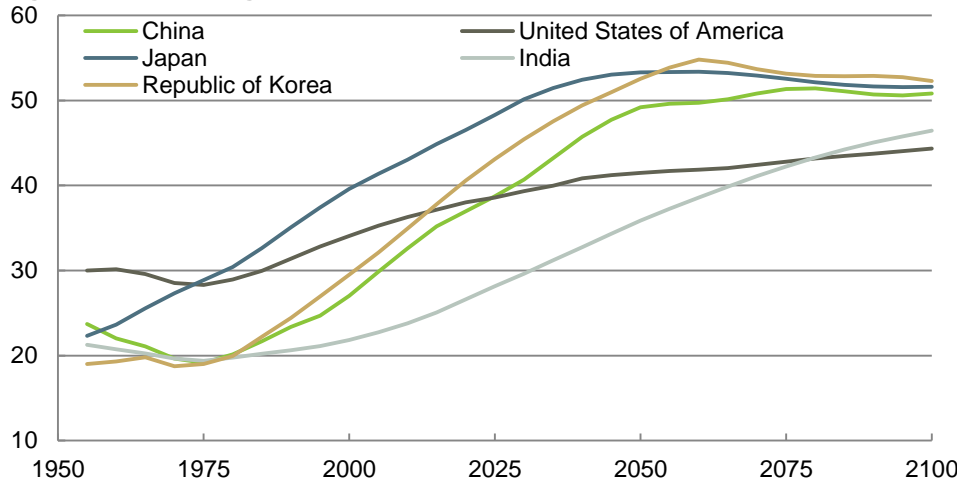
- Fertility rates fell as China, Japan and Korea developed
- One-child policy in China probably accelerated the decline
- The fertility rate dropped by 2 points in the 70s, 2x what was suggested by Japanese or Korean experience

Figure 16 – Total dependency ratio (ratio of population aged 0-14 and 65+ per 100 population 15-64)



- The dependency ratio in China will trough at lower levels than Korea or Japan
- However, it will sharply rebound, meaning that the “demographic dividend” will be short-lived

Figure 17 – Median age of population



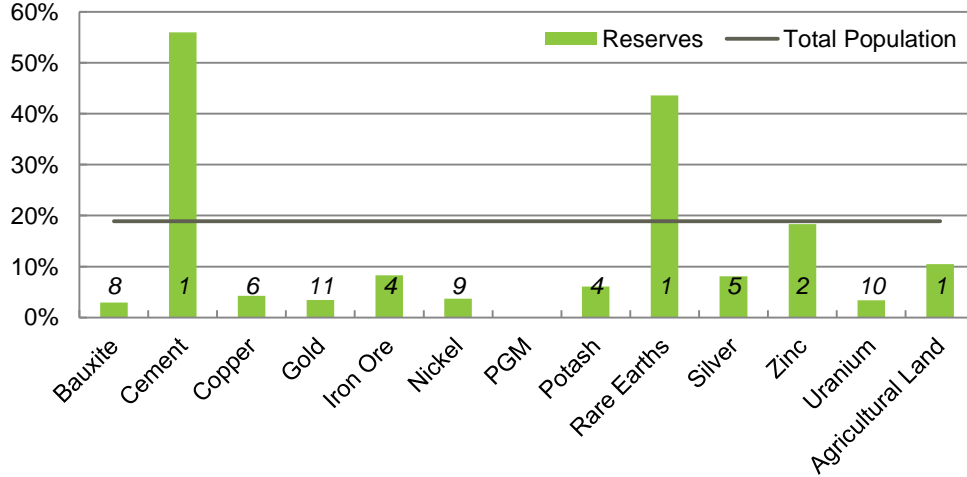
- China and Korea had similar profiles in the early 1970s and they seem to follow the same path
- China might get old before it gets rich, even if it maintains current growth rates in per capita income

Source: United Nations, Statistics Japan, Source Research. Notes: UN median variant forecasts after 2015. *Japan data shown from 1925, rebased to 1955

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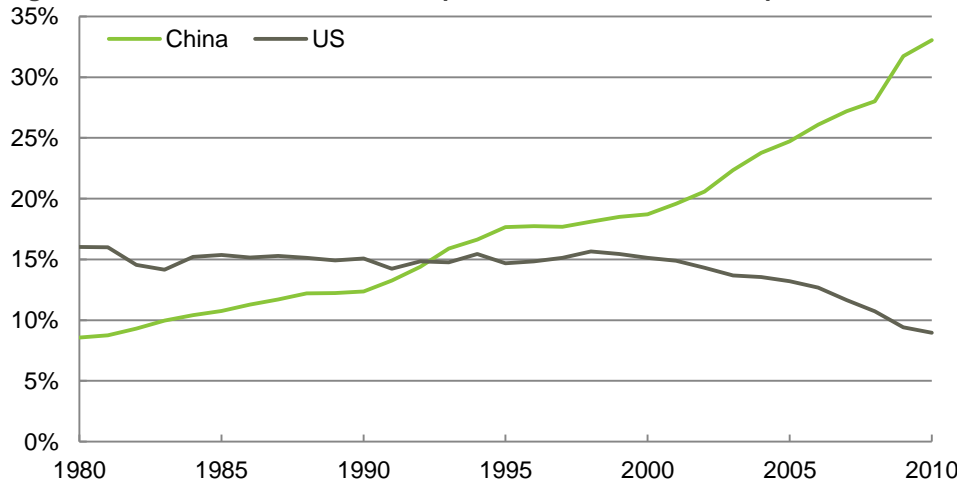
Natural resources – abundant but not enough

Figure 18 – China natural resource reserves as % of World (numbers indicate rank)



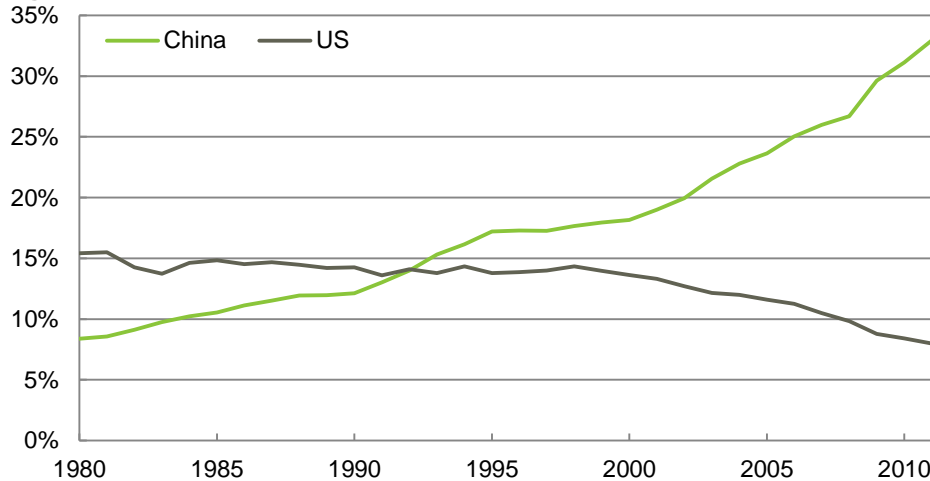
- China's share of world resources is higher than its population share in only cement capacity and rare earths
- Resource depletion and agricultural intensity might become issues in the future

Figure 19 – Natural resources consumption as % of World consumption



- The US consumed about 15% of natural resources globally until the early 2000s
- The increasing share of resources used by China coincided with the acceleration of outsourced manufacturing

Figure 20 – Natural resources extraction (used) as % of World extraction



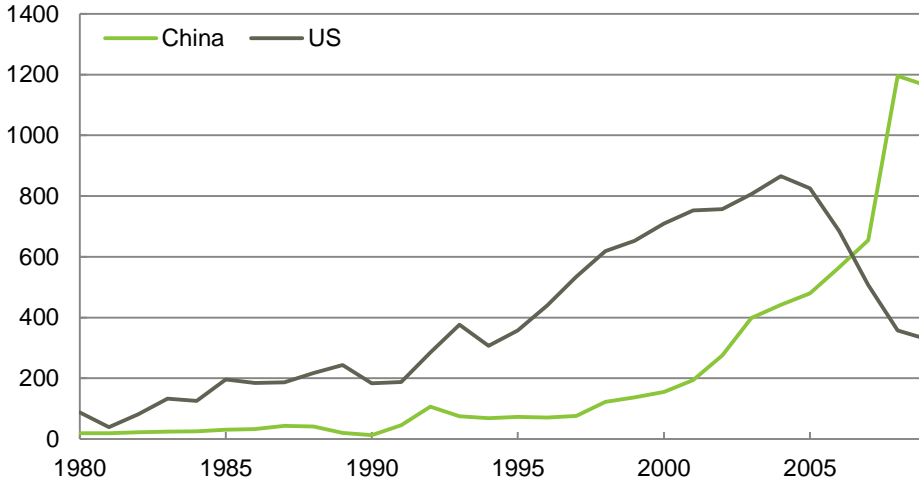
- China became a major source of natural resources, especially in the late '90s
- They are in danger of depleting their domestic resources and are increasingly reliant on imports

Source: United Nations, United States Geographical Survey, Materialflows, Source Research. Notes: Cement shown as clinker capacity, potash as K₂O equivalent, rare earths as rare earth oxide equivalent; PGM=Platinum group metals; "used" extraction refers to the amount of extracted resources, which enter the economic system for further processing or direct consumption.

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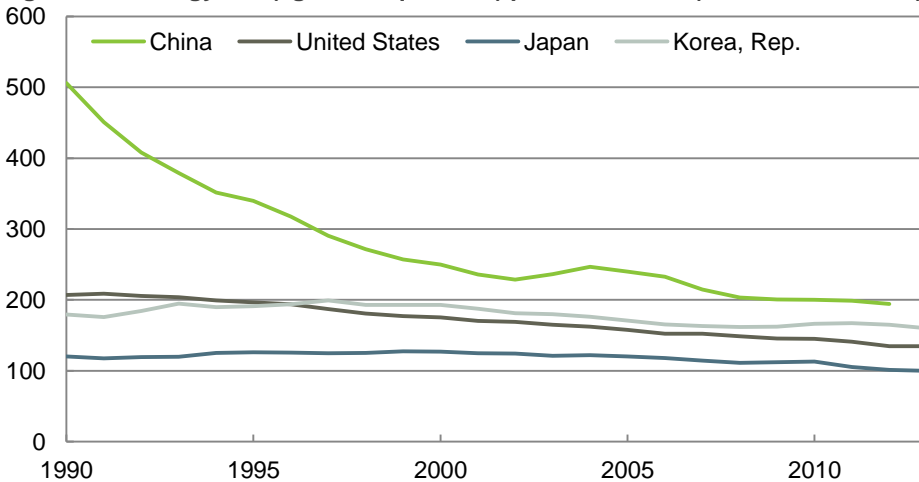
Natural resource depletion – an issue for China and the world

Figure 21 – Resource consumption minus extraction (million metric tonnes)



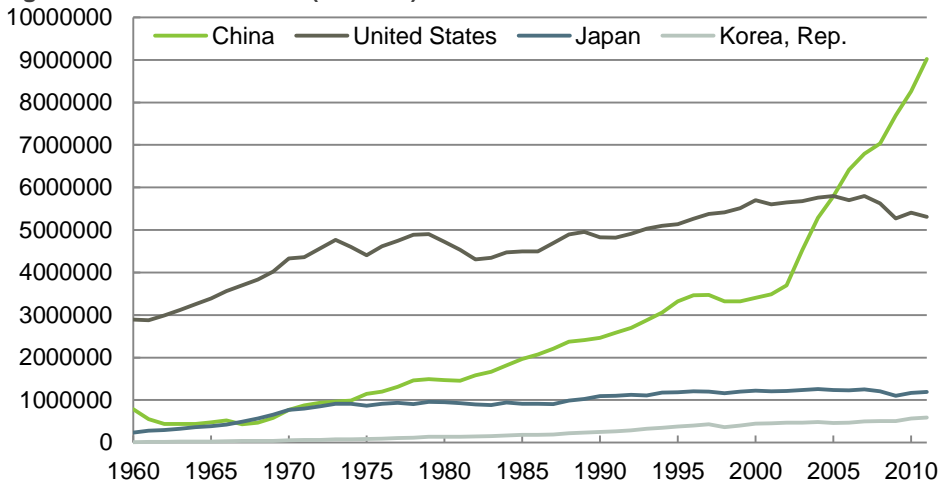
- China was close to being self-reliant until the late '90s
- However, the accelerating rise in consumption has led to a higher dependence on imports

Figure 22 – Energy use (kg of oil equivalent) per \$1,000 GDP (constant 2011 PPP)



- Despite impressive gains in efficiency, the Chinese economy is still more energy-intensive than the US, Japan or Korea
- Low efficiency is a concern, especially because of its reliance on coal

Figure 23 – CO₂ emissions (kilotons)



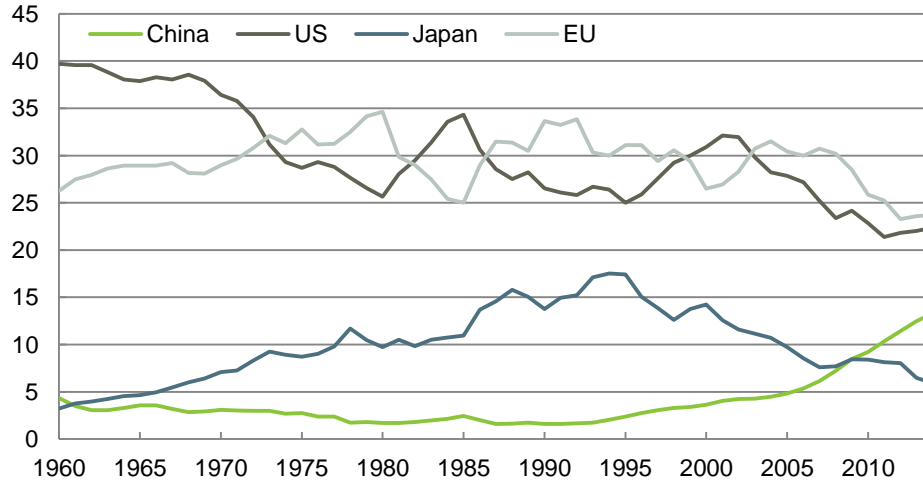
- China has taken over the US as the largest polluter in the world
- China will have to become more efficient and use more renewables to stem the increase in emissions

Source: World Bank, Materialflows, Source Research

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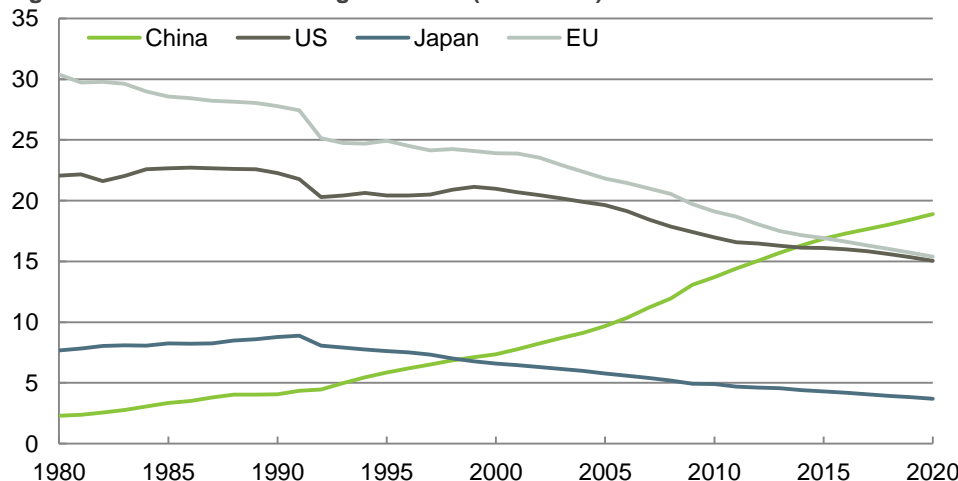
China may now be the largest economy in the world

Figure 24 – Percent share of global GDP (in US\$)



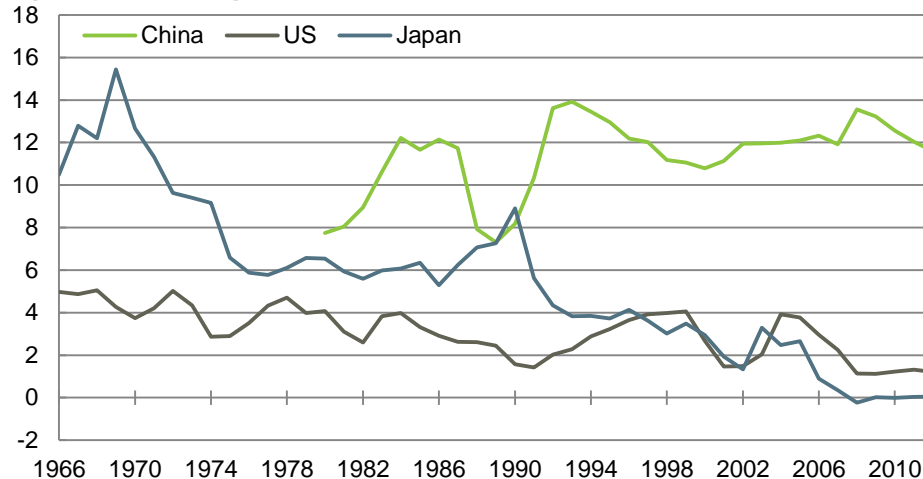
- From below 2% in the 1980s/early 1990s, China's share of global GDP has risen to above 13%
- It has taken share from all major developed world economies (it has virtually swapped places with Japan)

Figure 25 – Percent share of global GDP (PPP basis)



- The above analysis is distorted by swings in exchange rates. Using PPP exchange rates is more revealing
- On this basis, the Chinese economy is already larger than that of the US and will overtake the EU in 2016 (according to IMF estimates)

Figure 26 – Annual growth in capital stock (%)



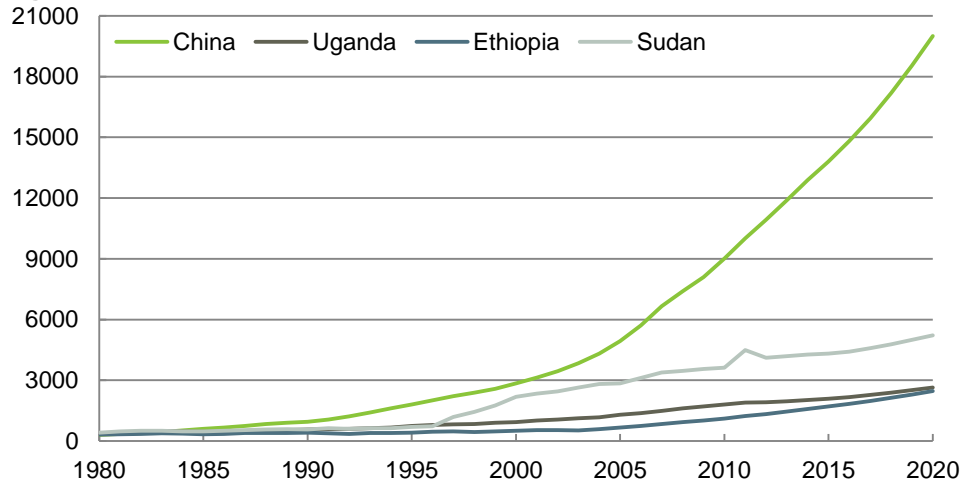
- As demonstrated on **page 16**, a big driver of Chinese growth has been expansion of the capital stock
- This has been a key differentiating factor between China and other large economies

Source: IMF, OECD, World Bank, Bloomberg, Datastream, Source Research. Note: PPP = Purchasing Power Parity (a measure of the exchange rate that would equalise purchasing power in different countries).

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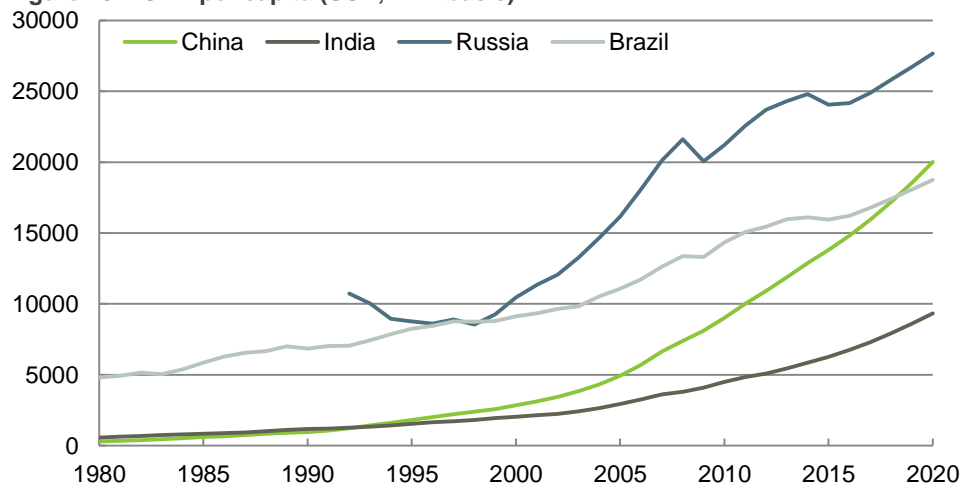
Per capita comparisons are less favourable

Figure 27 – GDP per capita (USD, PPP basis)



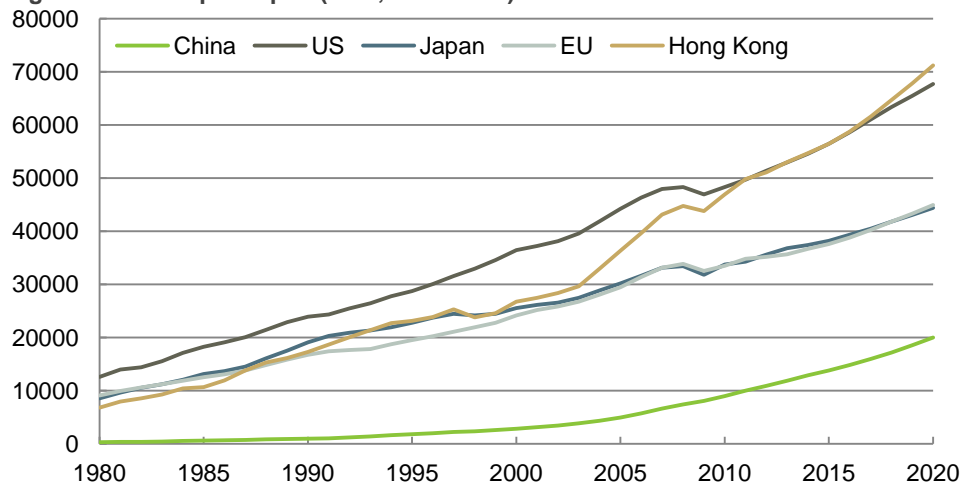
- Mao left China with a per capita income in line with struggling African countries (around \$300 per year in 1980)
- In the context of these countries, China's subsequent development has been startling

Figure 28 – GDP per capita (USD, PPP basis)



- China has also outperformed other BRIC countries
- Starting at around half the per capita GDP of India in 1980, China's income levels are now twice those of its neighbour
- China's per capita income is now 50% of Russian levels, from 11% in 1992

Figure 29 – GDP per capita (USD, PPP basis)



- China is still far behind developed countries (and its own Hong Kong territory)
- Starting in 1980 at about 2.5%, China's GDP per capita is now around 24% of US levels – good progress but with plenty of upside

Source: IMF, Bloomberg, Source Research

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An economy in transition

Figure 30 – China GDP by industry (% share)

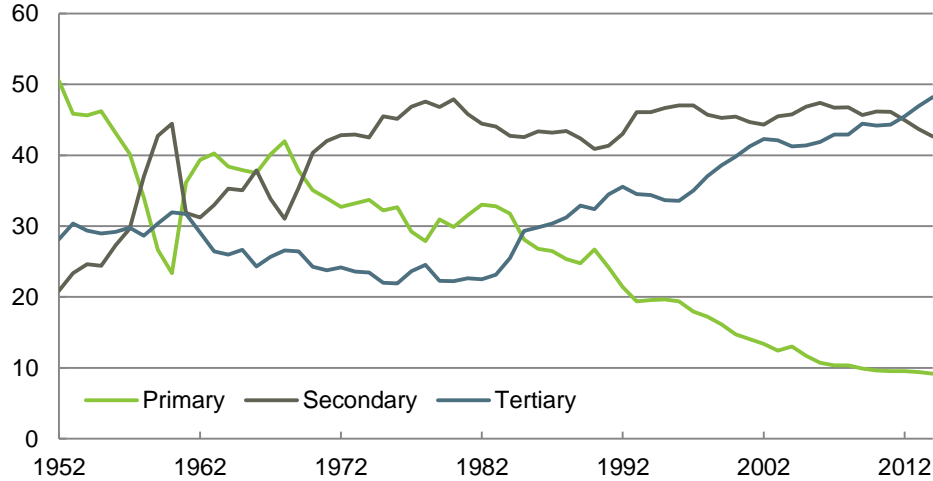


Figure 31 – China GDP by expenditure (% share)

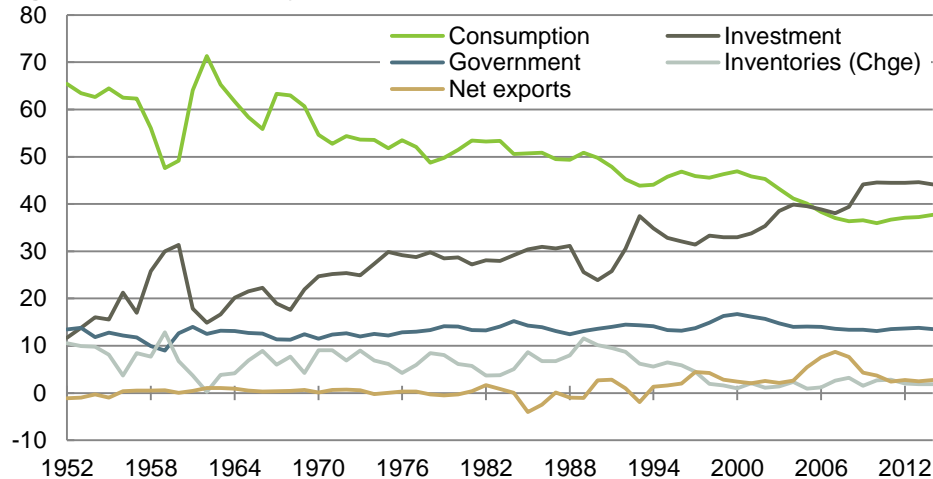
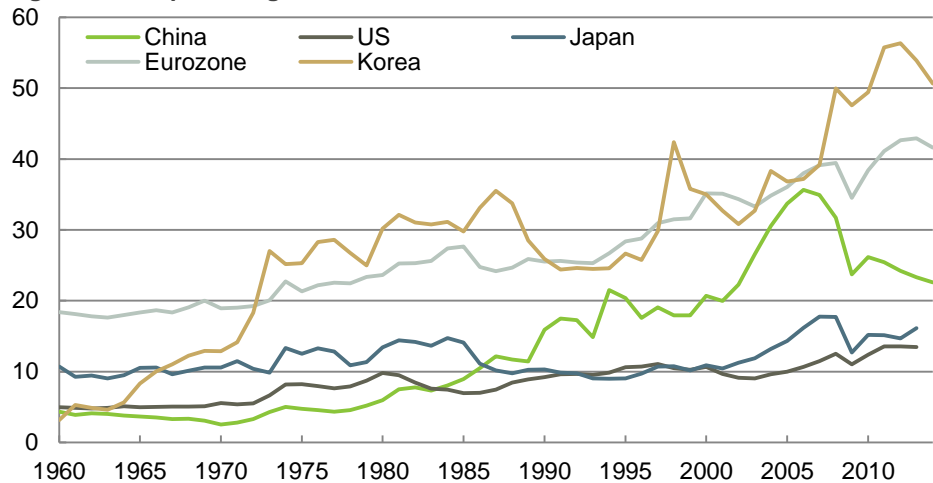


Figure 32 – Exports of goods & services as % of GDP



Source: China National Bureau of Statistics, World Bank, Datastream, Source Research

- The transition from an agricultural to industrial economy was apparent even in the 1950s
- More recently, tertiary activity (services) has replaced first primary and then secondary activity, to become the biggest part of the economy

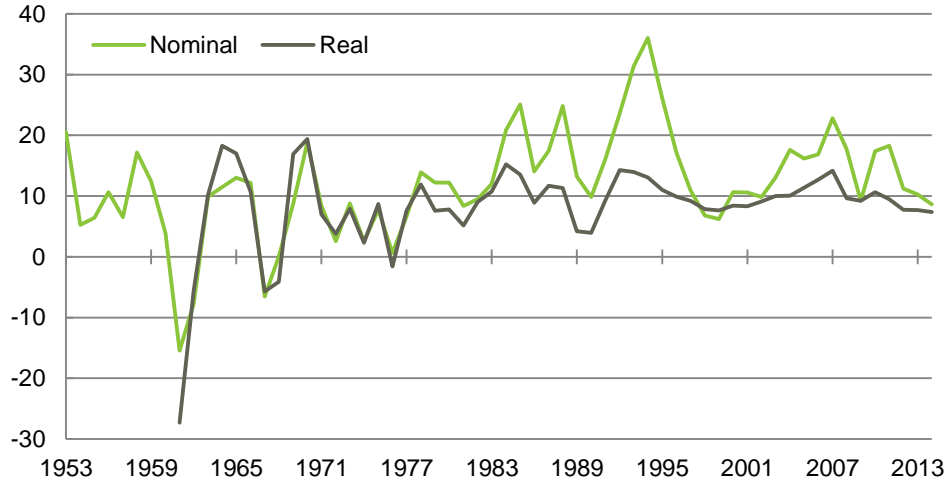
- The consumer was traditionally the dominant source of expenditure but was overtaken by investment in 2006.
- The gap between the two peaked in 2009-11 (state sponsored investment) but consumer spending is rebounding

- By 2006, exports were almost as important to China as they were to the Eurozone and South Korea
- The subsequent sharp rise in investment spending reduced the importance of exports to more like US and Japanese levels

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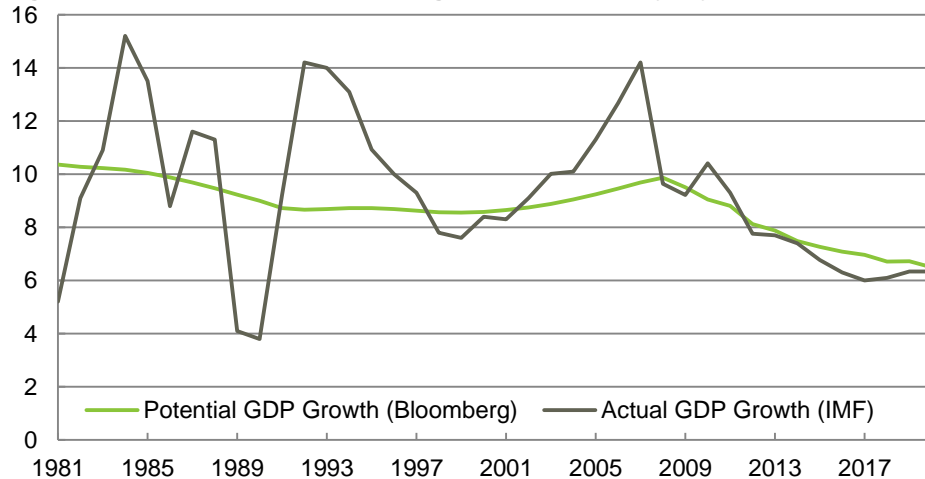
Growth driven largely by investment and productivity

Figure 33 – Economic growth in China (% y-o-y, annual data)



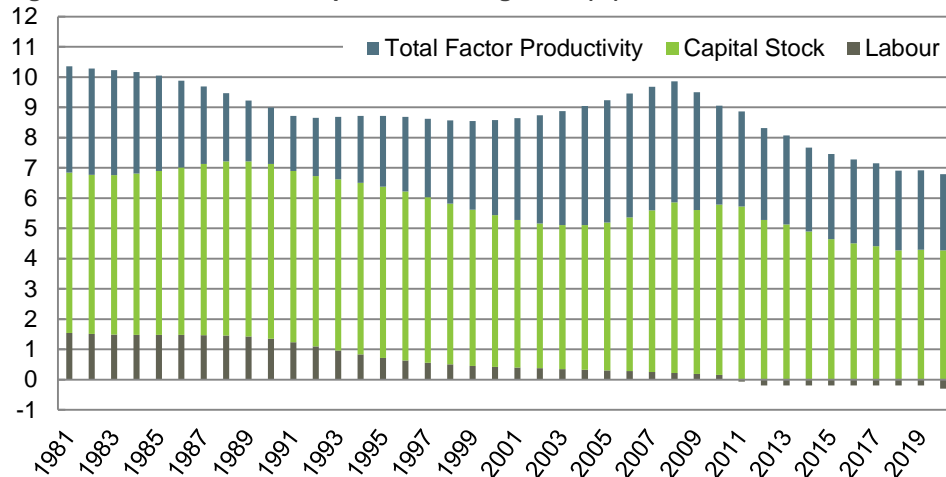
- GDP growth averaged 6.6% between 1952 and Mao's death in 1976. It has since averaged 15.4%
- In real terms, growth averaged 4.9% from 1960 (middle of The Great Leap Forward) to Mao's death; it has since averaged 9.8%

Figure 34 – Potential and actual GDP growth in China (% y-o-y, real)



- Potential annual growth in GDP ranged between 8% and 10% for much of the last 30 years
- It slipped below 8% in 2013 and is expected to be around 6.5% by 2020 (according to Bloomberg estimates)

Figure 35 – Contributions to potential GDP growth (%)



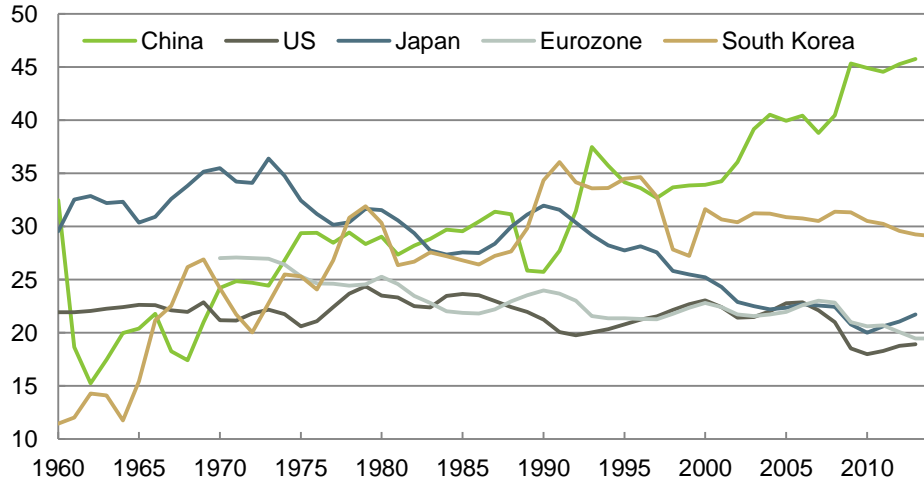
- The major sources of growth have been expansion of the capital stock and gains in productivity
- Growth in the labour force played a minor role (it is now a negative)
- All three contributors are expected to weaken in the future

Source: China National Bureau of Statistics, IMF, World Bank, Bloomberg, Datastream, Source Research.

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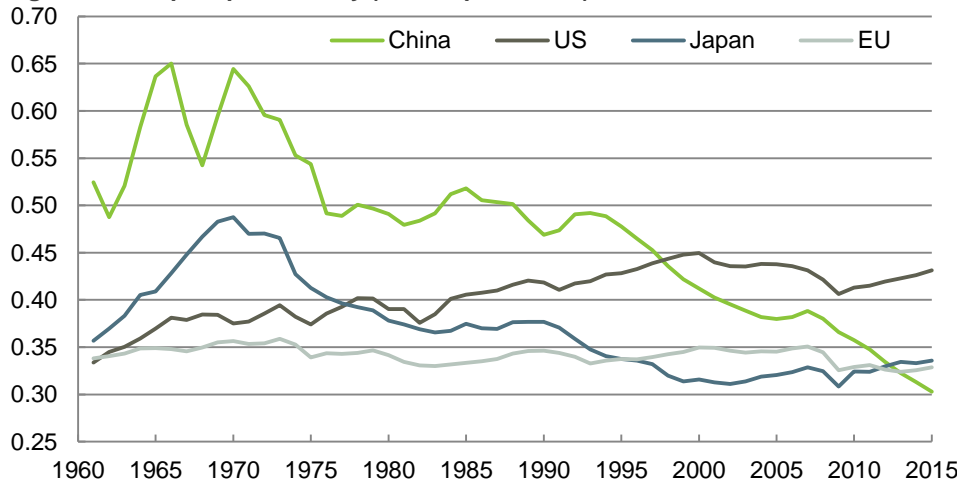
Is China overinvesting?

Figure 36 – Gross fixed capital formation as % of GDP



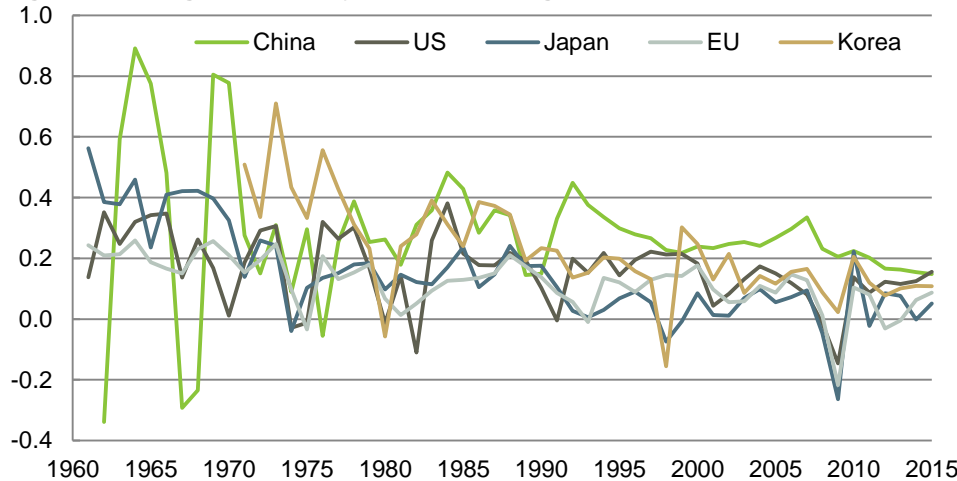
- Capital investment has been around 40% of GDP or higher since 2003
- This is well above comparable countries (around 20% in developed economies)
- It barely exceeded 35% of GDP when Korea and Japan were developing

Figure 37 – Capital productivity (GDP/capital stock)



- With a capital stock growing by around 12% per year since the early 1990s, there is no surprise that the productivity of that capital has waned
- GDP per unit of capital stock is now lower than in Japan, the EU and the US

Figure 38 – Marginal efficiency of capital (GDP gain per unit of capital investment)



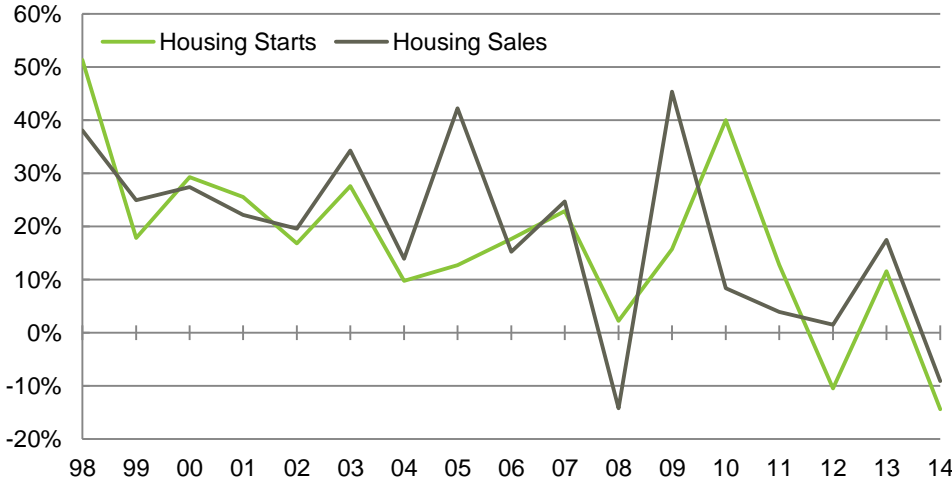
- On the other hand, the marginal efficiency of capital, though falling below historical norms, still compares well to other economies
- Each unit of investment in China still produces more GDP than in other countries (though the US is catching up)

Source: European commission, OECD, Oxford Economics, World Bank, Bloomberg, Datastream, Source Research. EU data in Figures 37 and 38 includes West Germany up to 1991 and thereafter Germany (East and West).

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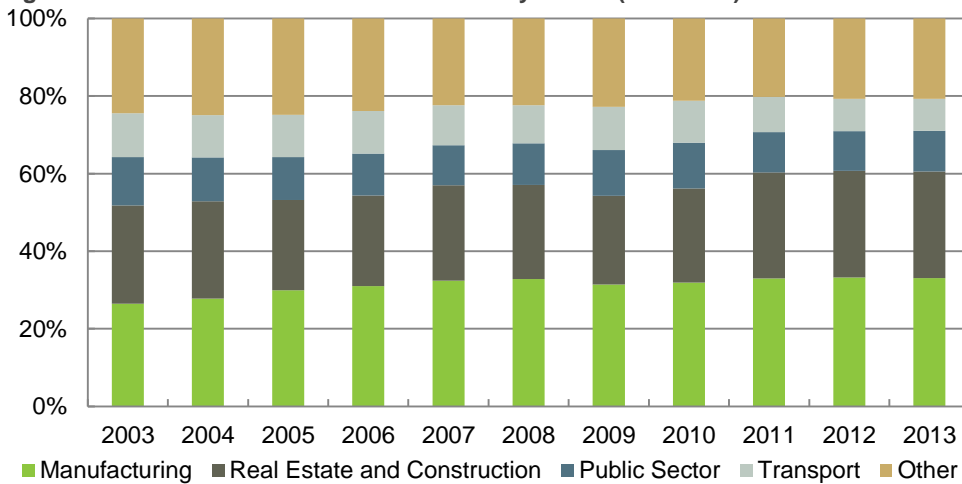
Where has the money gone?

Figure 39 – Residential building started vs floor space sold (% YoY change in square meters)



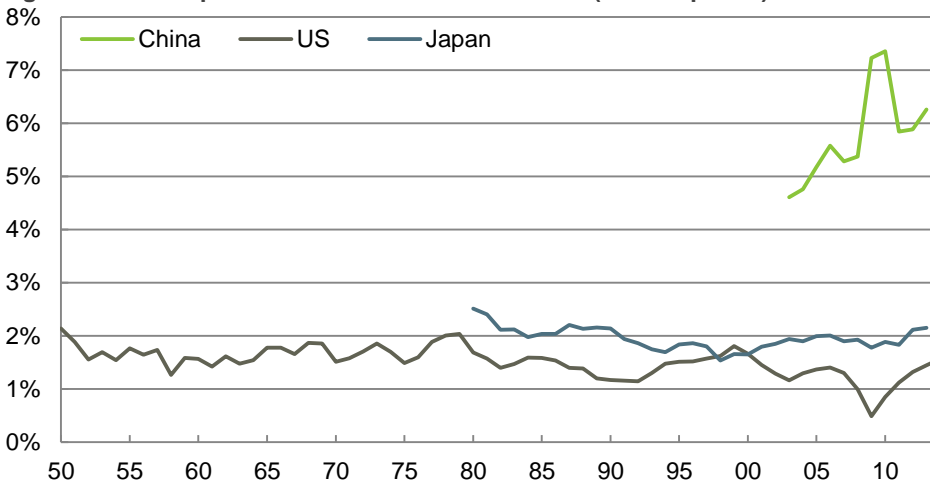
- Sales and housing starts tracked each other closely until the mid-2000s
- Significantly higher growth in starts in 2010 and 2011 suggests oversupply in the market

Figure 40 – Total investment in fixed assets by sector (% of total)



- Real estate and construction investment was a stable share of the total in 2011-13 (c27%, up from 24% in previous years)
- The share of transport investment has been gradually decreasing (to 8% in 2013)

Figure 41 – Transportation investment as % of GDP (current prices)



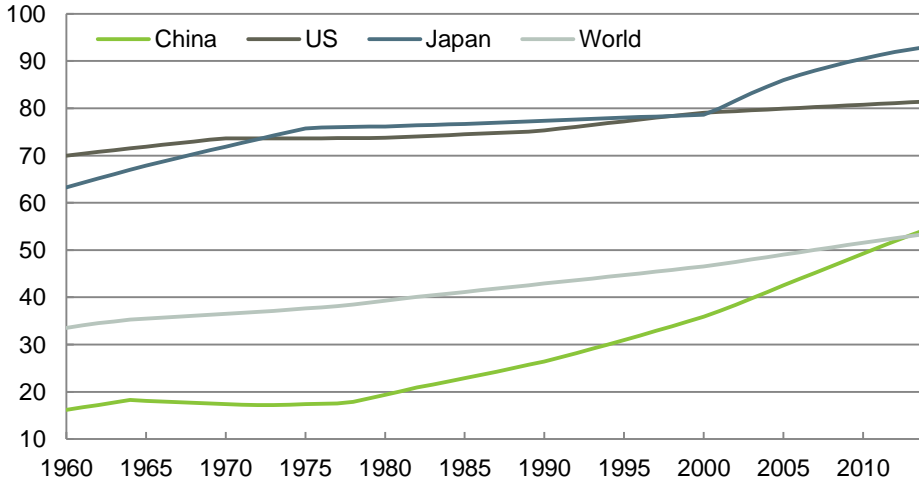
- Nevertheless, Chinese transportation investments have been running at a much higher pace than in the US or Japan
- It is quickly catching up to more developed nations, but still has shortcomings, especially in road building

Source: China National Bureau of Statistics, Bureau of Economic Analysis, Datastream, Source Research

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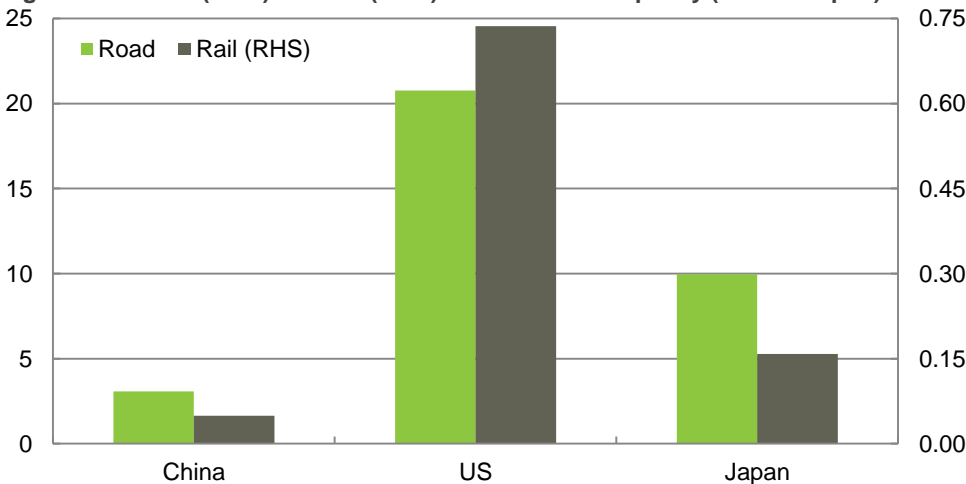
Urbanisation and modernisation

Figure 42 – Urban population as % of national population



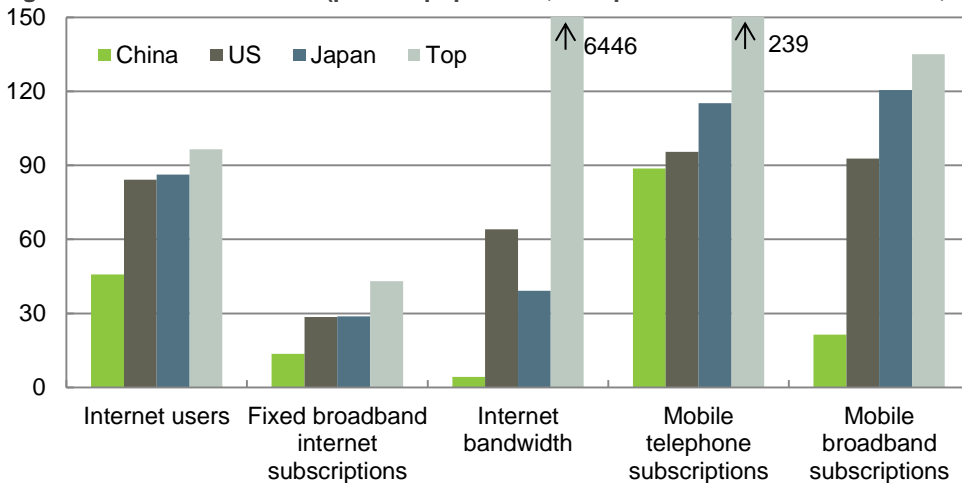
- China has undergone rapid urbanisation in the last 30 years, and now most of its population lives in cities
- According to Bloom *et al.**, the level of urbanisation does not affect the rate of economic growth

Figure 43 – Road (2011) and rail (2012) infrastructure capacity (metres/capita)



- China's stock of infrastructure is significantly below Japan and the US
- Over 90% of China's population lives in the Eastern half of the country, so it probably needs capacity closer to Japanese than US levels

Figure 44 – IT infrastructure (per 100 population, except bandwidth: kilobit/second, 2013)



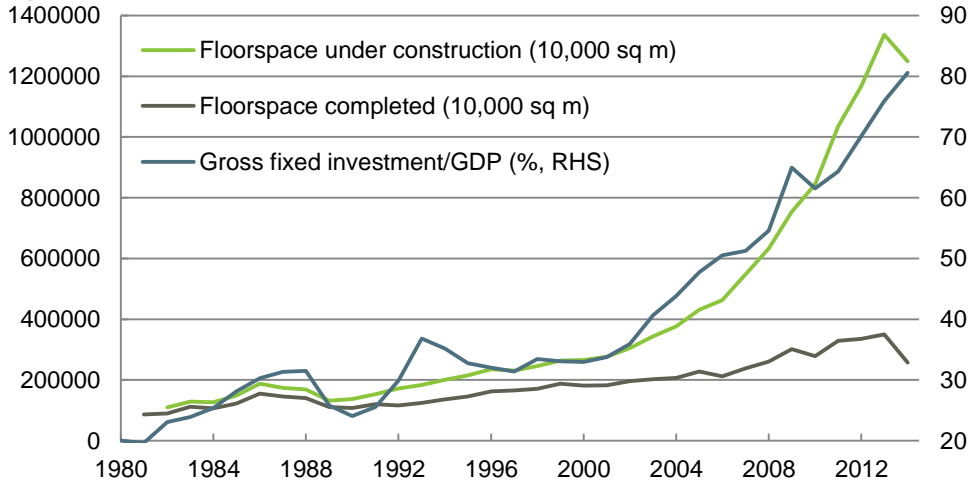
- China is significantly lagging Japan and even the US in both basic and advanced IT infrastructure
- Only mobile telephone penetration is close to levels in the other two economies

Source: World Bank, OECD, China National Bureau of Statistics, World Economic Forum, Source Research, Notes: *Bloom, D.E., Canning, D. & Günther, F. (2008). Urbanization and the Wealth of Nations. Program on the Global Demography of Aging Working Paper Series.

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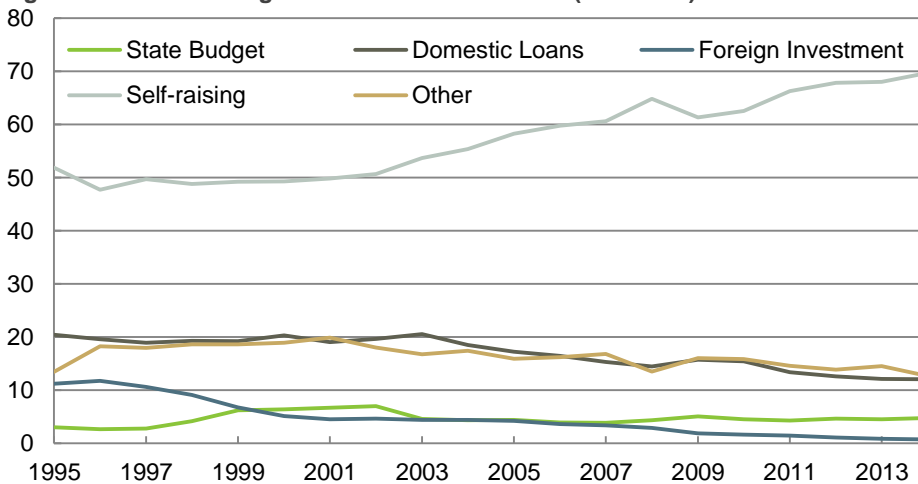
Has there been too much construction?

Figure 45 – Gross fixed asset investment and floor space construction



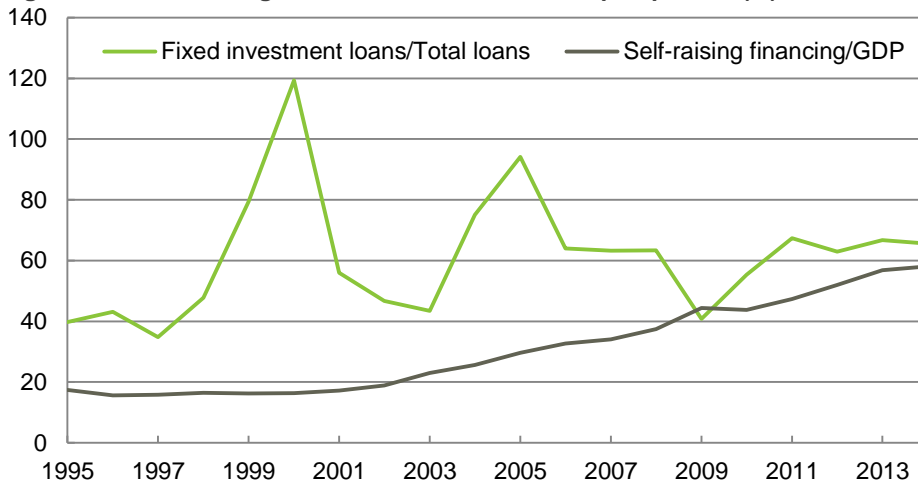
- Building construction has tripled in the last 10 years (judging by floor space under construction)
- This is an important factor in the 8-fold increase in gross fixed investment (in yuan terms) and the near doubling of its share in GDP

Figure 46 – The funding of fixed asset investment (% of total)



- This degree of building could depress property prices, thereby increasing the risk for those providing the financing
- “Self-raising” has become more important and includes funds from local governments, retained earnings, family funds etc.

Figure 47 – The funding of fixed asset investment in perspective (%)



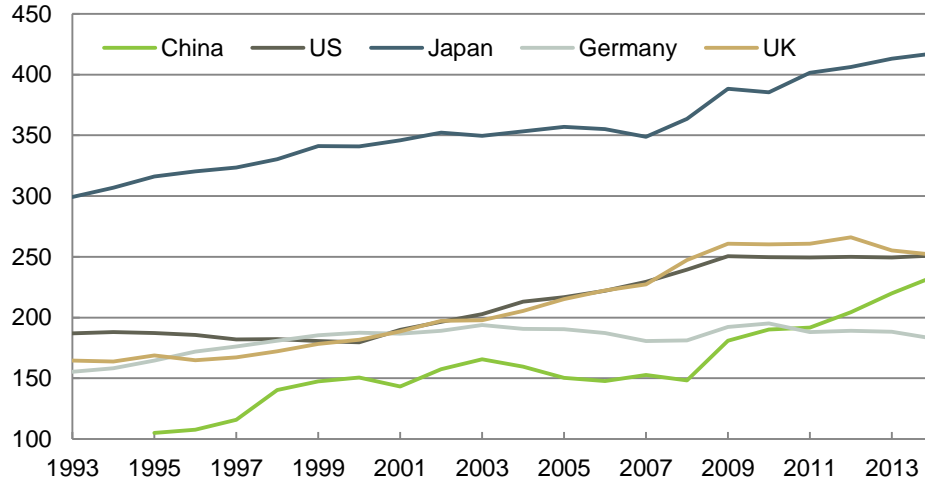
- For the banks, fixed asset investment loans are not outsized versus total loan books.
- On the other hand, “self-raising” financing is now 60% of GDP, up from 20% in the early 2000s. This is where the risks lie.

Source: China National Bureau of Statistics and Source Research.

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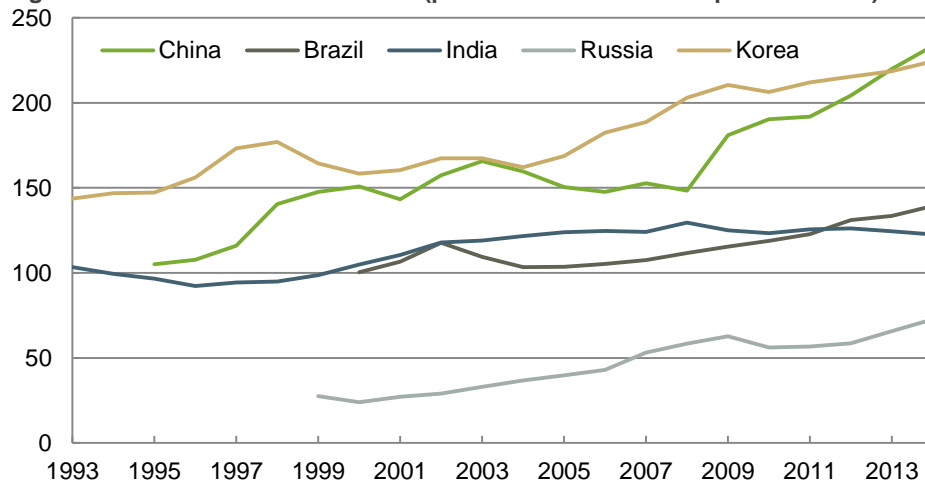
Does China have a debt problem?

Figure 48 – Gross debt as % of GDP (public and non-financial private sector)



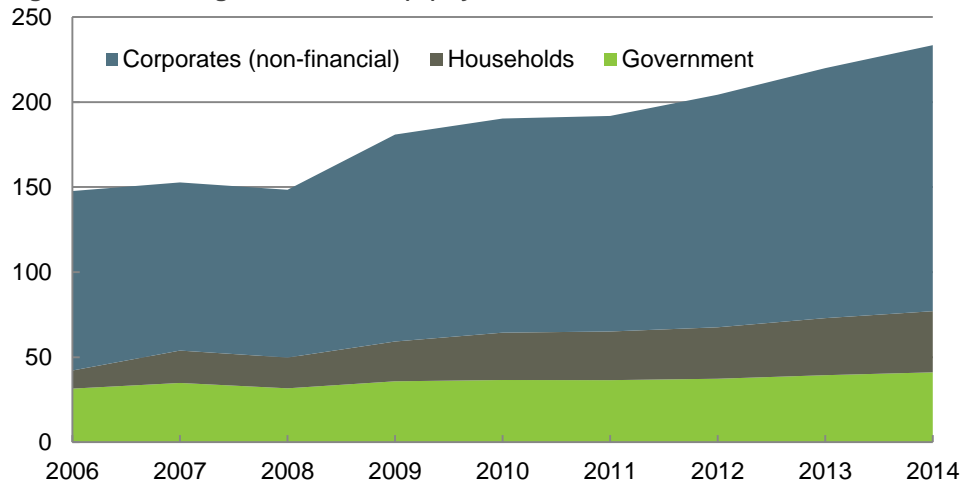
- Since the financial crisis, gross debt ratios have expanded rapidly in China (233% at end-2014)
- Now almost at same level as US, Italy and UK
- Germany has controlled its indebtedness, while Japan is highly leveraged

Figure 49 – Gross debt as % of GDP (public and non-financial private sector)



- The comparison is worse versus other major emerging economies, with the Chinese debt ratio now exceeding that of South Korea
- Not shown here but Asian neighbours Malaysia and Thailand have debt ratios approaching 200%

Figure 50 – China gross debt/GDP (%) by sector



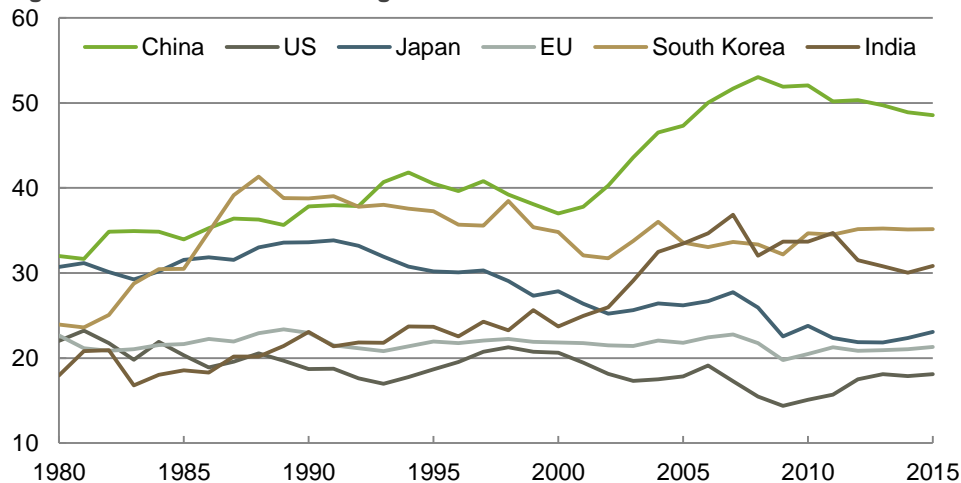
- The sharp increase in debt since 2008 occurred in the private rather than the public sector
- In particular, non-financial corporates have taken on substantially more debt since 2008 (an increase equivalent to 50% of GDP)

Source: BIS, IMF, OECD, Datastream, Source Research

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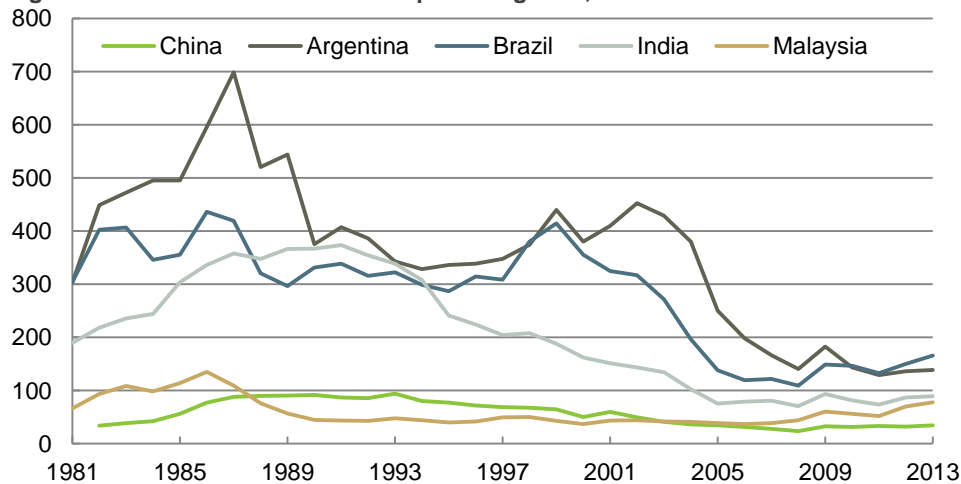
Luckily, China is self-financing

Figure 51 – Gross national savings as % of GDP



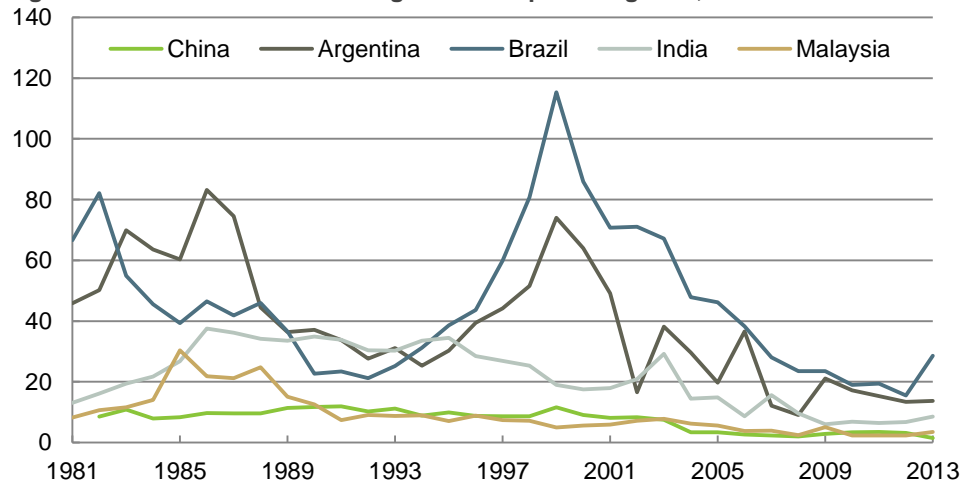
- China may have a lot of debt but the high savings rate enables it to be self-financing
- South Korea and India have savings rates above developed market norms but lower than in China

Figure 52 – External debt as % of exports of goods, services and income



- Not surprisingly, China's external debt is limited (9.5% of GNI in 2013)
- As shown, it was only 34% of exports, well below the ratio in other emerging economies
- 90% of the external debt is in USD

Figure 53 – External debt servicing as % of exports of goods, services and income



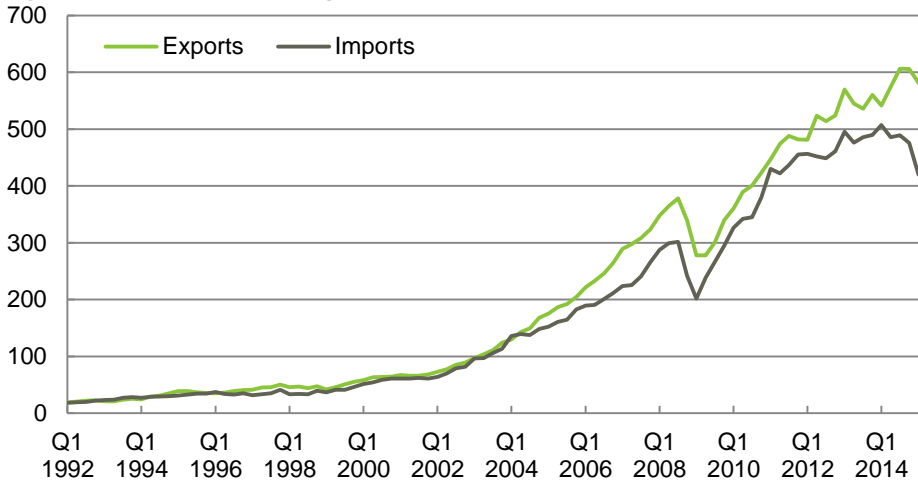
- External debt servicing costs were only 1.5% of exports in 2013 (note Brazil in the late 1990s)
- The effective maturity of China's external debt has almost doubled in the last 10 years (to nearly 28 years, according to Oxford Economics)

Source: IMF, Datastream, Source Research

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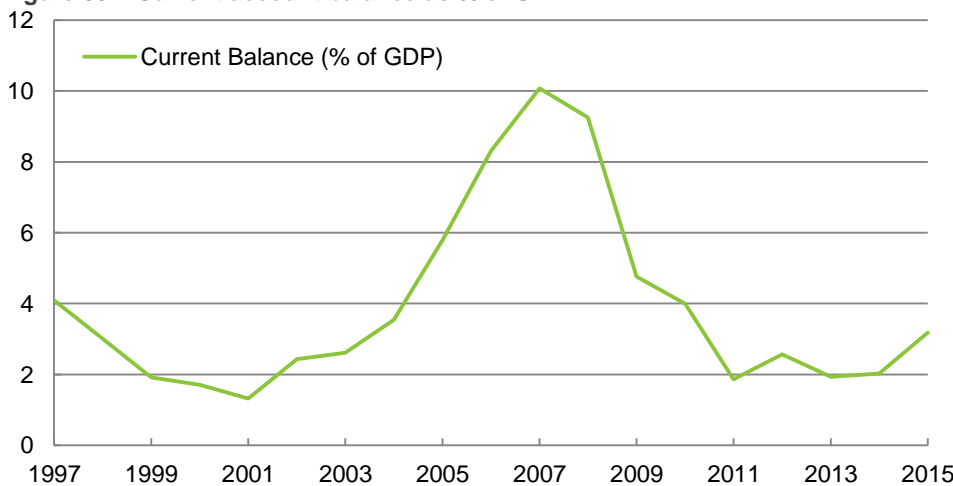
Which is why the external position is so healthy

Figure 54 – China’s trade in goods (US\$ bn)



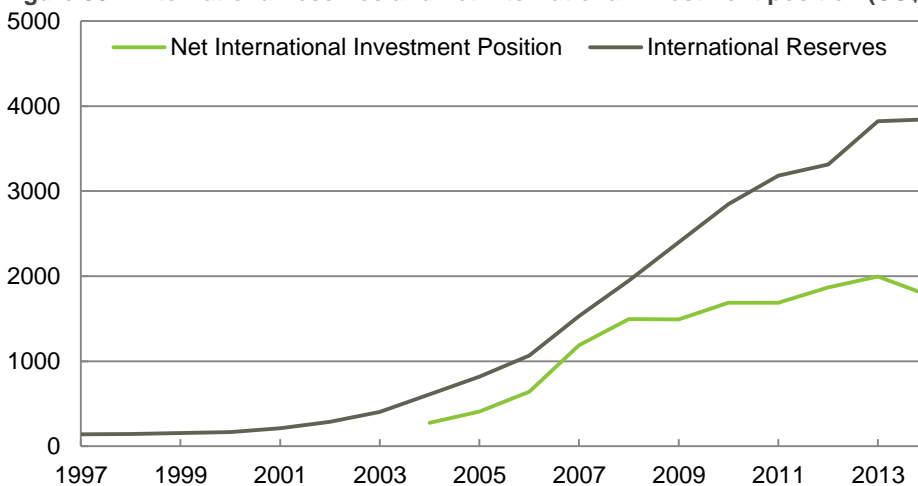
- Exports have easily outstripped imports for the last 10 years
- Recent weakness in imports may reflect a slowing economy but more likely is due to falling commodity prices

Figure 55 – Current account balance as % of GDP



- The current account has been in constant surplus for some time
- The peak of 10% of GDP (reached in 2007) was extreme and could not last
- An ongoing surplus of 2%-4% should not be problematic for relations with the US etc.

Figure 56 – International reserves and net international investment position (US\$ bn)



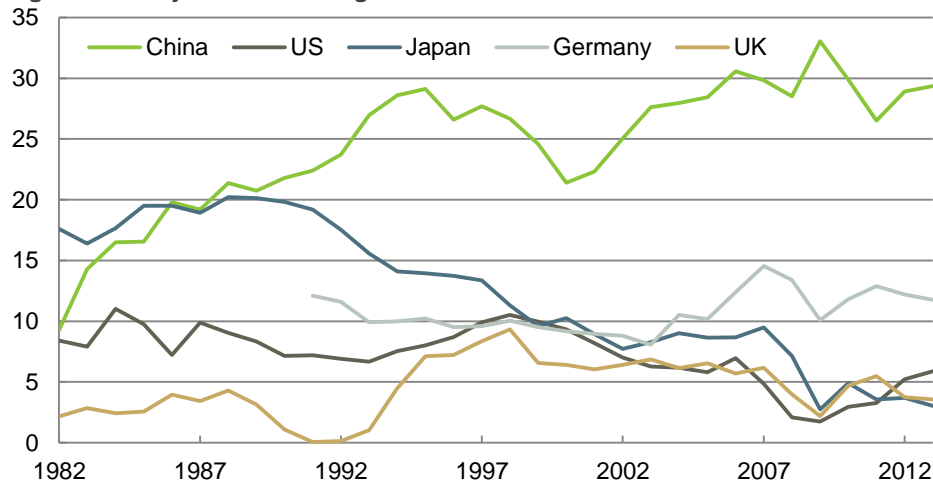
- The current account surpluses have led to the build-up of FX reserves and a positive net international asset position
- Both were also aided by the strength of USD and falling treasury yields (which are now reversing)

Source: OECD, IMF, China State Administration of Foreign Exchange, People’s Bank of China, Datastream, Source Research.

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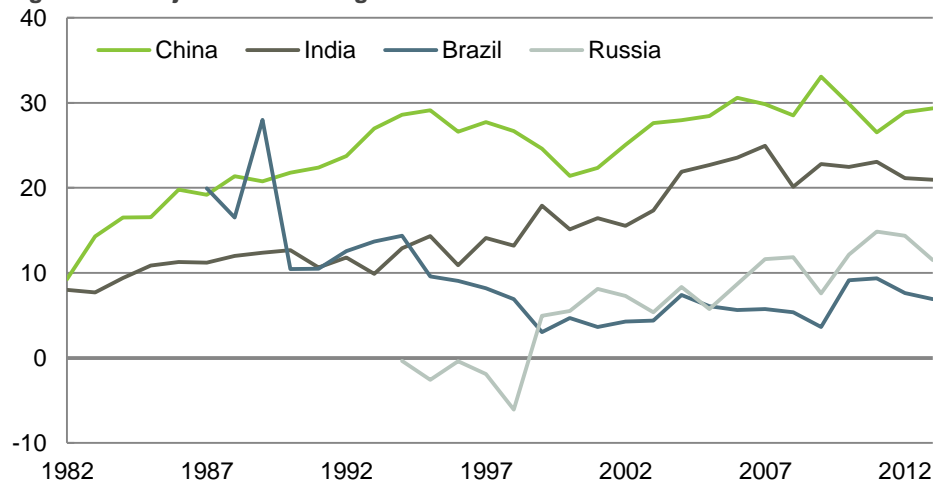
High savings compensate for resource depletion

Figure 57 – Adjusted net savings as % of GNI



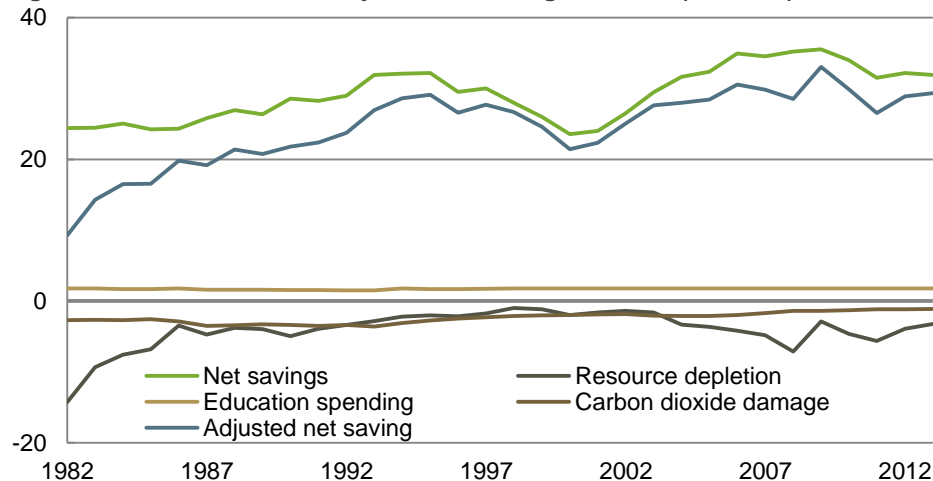
- Adjusted net savings show savings plus education spending less depletion of capital stock, natural resources and carbon dioxide damage
- China is healthier than developed countries (if the world has the resources)

Figure 58 – Adjusted net savings as % of GNI



- BRIC countries in general are in a better position than major developed nations
- India is almost, but not quite, on a par with China

Figure 59 – Contributions to adjusted net savings in China (% of GNI)



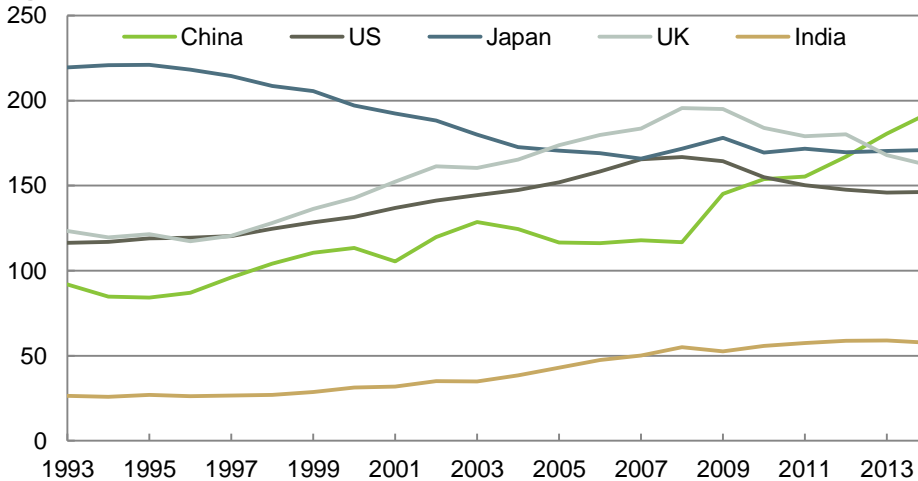
- Net savings are the major driver, with a small contribution from education spending (around 2% of GNI)
- Resource depletion is the major negative at 3%-5% of GNI in recent years (energy and mineral depletion are the major factors)

Source: World Bank, Datastream, Source Research. Adjusted net savings are gross savings plus education expenditure less depletion of fixed capital and natural resources (forestry, energy, minerals) and carbon dioxide damage. Particulate damage is excluded. GNI is Gross National Income.

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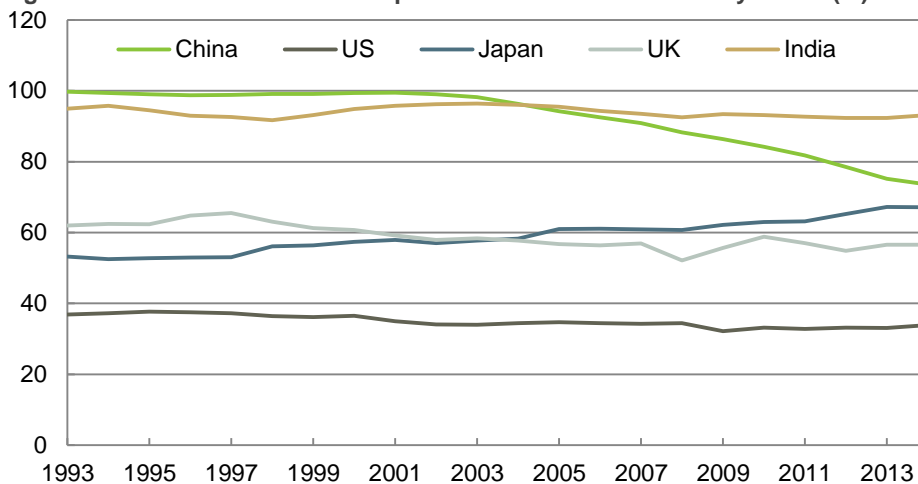
Private sector debt: the Achilles's heel of China?

Figure 60 – Non-financial private sector debt as % of GDP



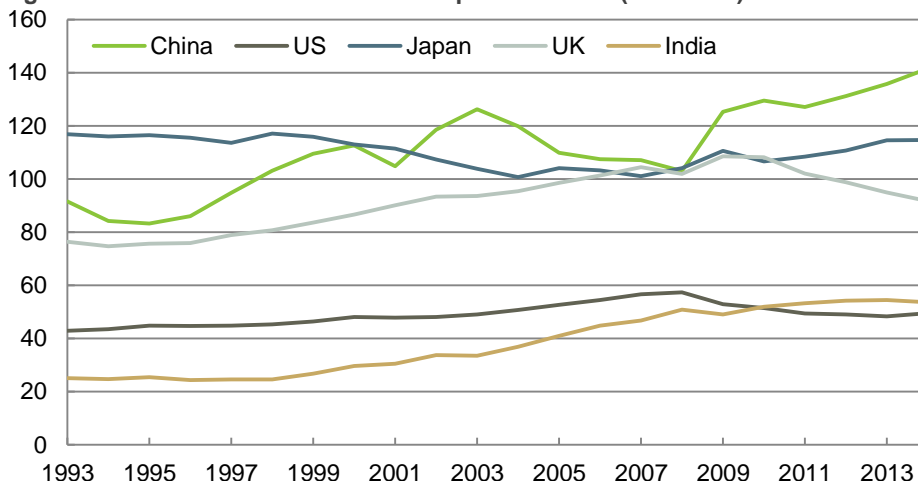
- Private sector debt has risen sharply since the global financial crisis and now exceeds that of the US
- At the very least this will dampen economic growth and at worst could result in a debt crisis

Figure 61 – Share of non-financial private sector debt financed by banks (%)



- There has been a noticeable decline in the share of private sector debt sourced from banks
- The shadow banking sector has likely filled the gap
- There are concerns about the safety of such loans

Figure 62 – Bank loans to non-financial private sector (% of GDP)



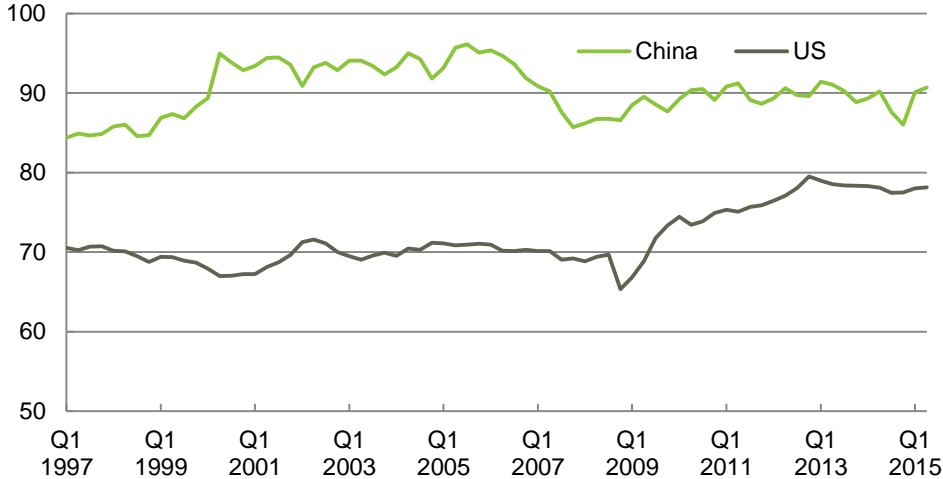
- Nevertheless, the loans that have been provided to the private sector by banks now account for 140% of GDP
- This is higher than in countries such as Japan, the UK and the US
- The overall threat to the economy is growing

Source: BIS, IMF, Datastream, Source Research

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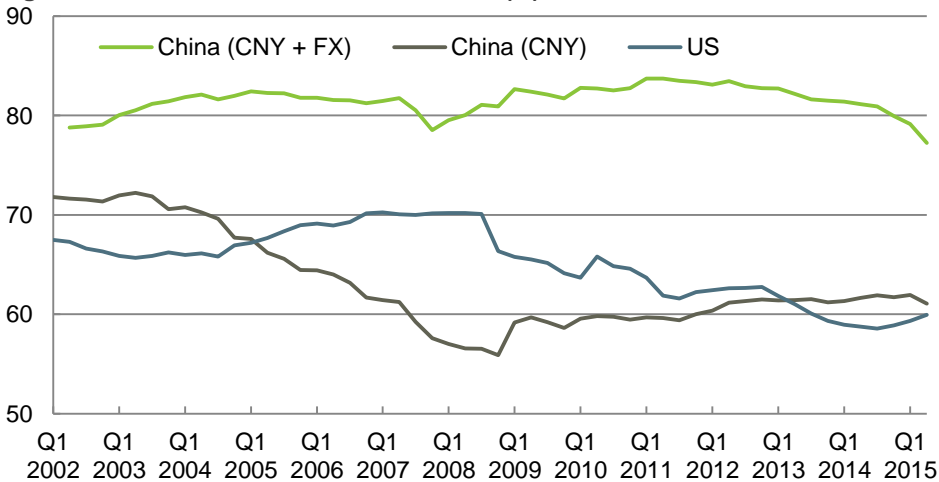
How safe is the banking sector?

Figure 63 – Deposits as a share of total liabilities (%)



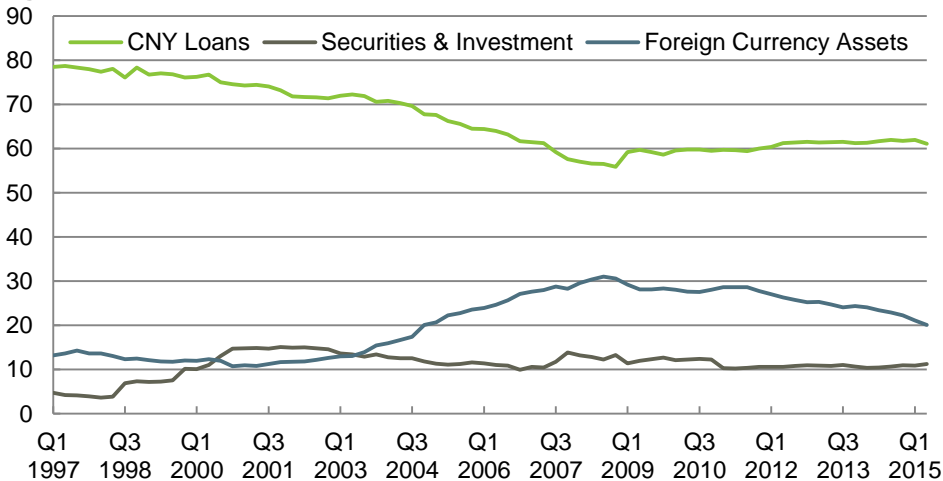
- Reassuringly, deposits remain by far the biggest source of funding for Chinese banks
- The reliance on wholesale financing, which proved so problematic elsewhere during the financial crisis, is limited

Figure 64 – Loans as a share of total assets (%)



- When looking at total business (both CNY and foreign currency business), loans remain the staple, though falling, activity of Chinese banks
- Pure CNY business is less focused on loans and is in line with US norms

Figure 65 – China financial institutions: principal uses of funds (% of total)



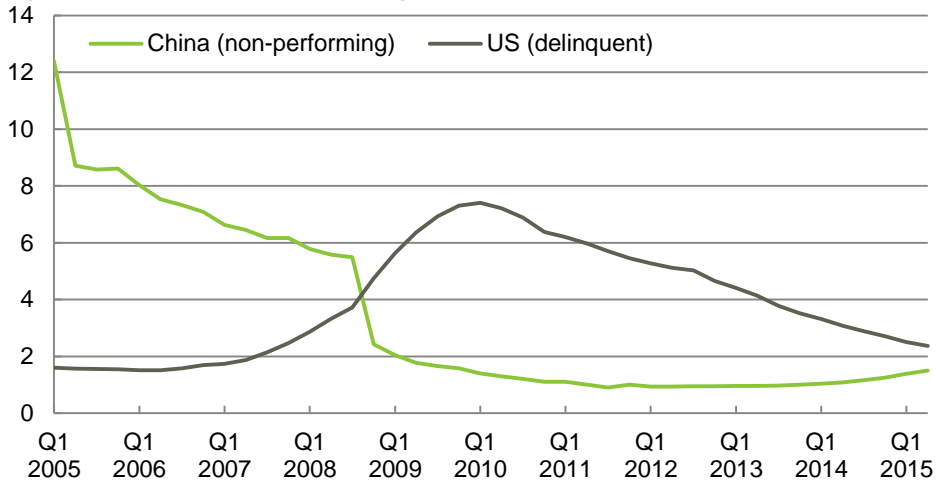
- In the run-up to the global financial crisis, CNY loans became a smaller part of total balance sheets, with foreign currency business taking a bigger share
- That pattern has since reversed to some extent

Source: People's Bank of China, US Federal Reserve, Datastream, Source Research. US data is for commercial banks; China data is for financial institutions. In the case of China, "CNY" data concerns domestic currency business and "CNY + FX" data includes foreign currency business.

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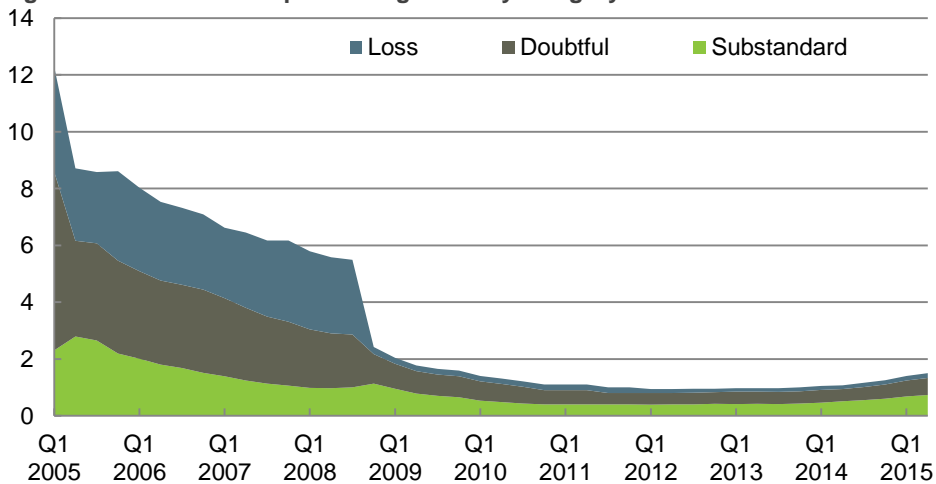
How much are the banks at risk?

Figure 66 – Ratio of non-performing loans for commercial banks (%)



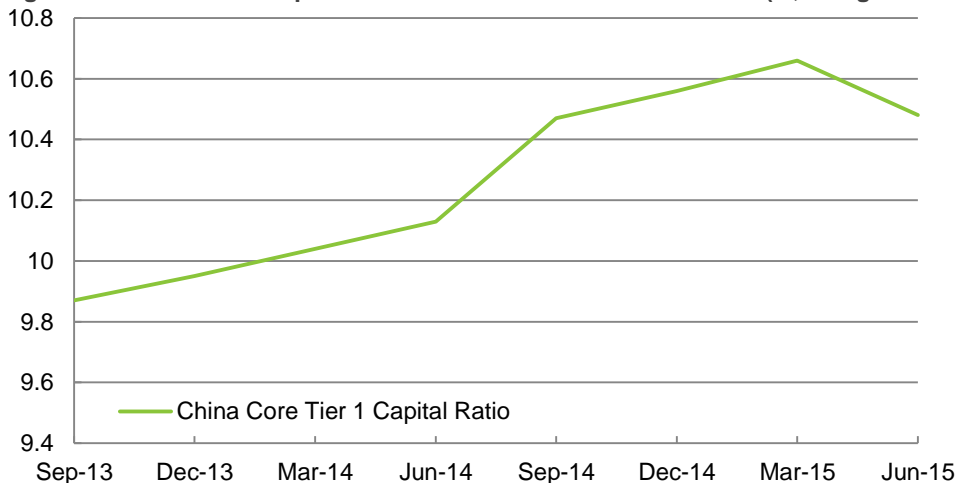
- Non-performing loan ratios in China have done the opposite of those in the US over the last ten years
- They have started to creep up but remain low, for now

Figure 67 – Ratio of non-performing loans by category for China commercial banks (%)



- As is to be expected, the upward creep started with “doubtful” and “substandard” categories
- Losses come later

Figure 68 – Core Tier 1 capital ratio for Chinese commercial banks (% using risk weighted assets)



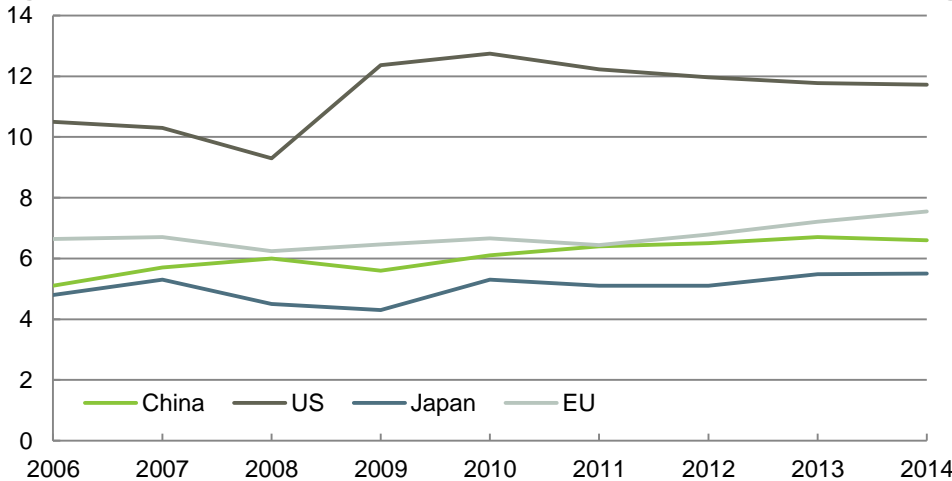
- The average core Tier 1 capital ratio for China’s commercial banks is close to 10.5% (Basle III requires 7% by end-2018)
- The EU ratio was 11.5% at end-2013 (EBA EU-wide stress test) and the US major bank ratio was 9.6%-10.7% in 2014 Q4 (Forbes)

Source: China Banking Regulatory Commission, People’s Bank of China, US Federal Reserve, Datastream, Source Research.

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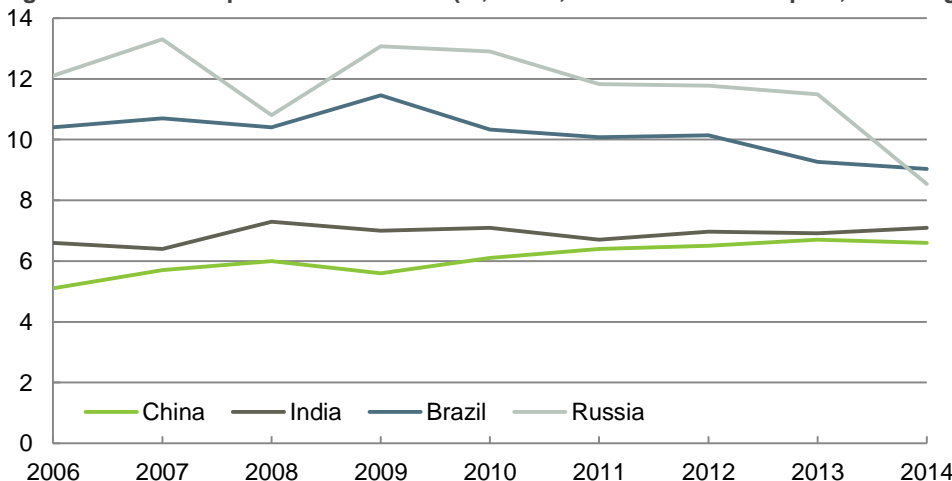
Covering any banking sector black hole

Figure 69 – Bank capital to assets ratio (% , Tier 1, Tier 2 and Tier 3 capital, non-weighted assets)



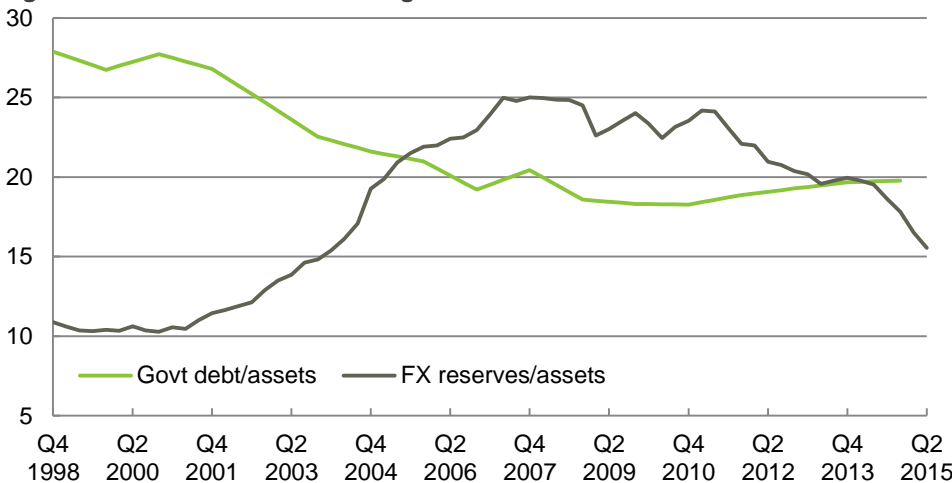
- Based on World Bank data, Chinese bank capital ratios, at 6.6% in 2014, were roughly in line with those of Japan (5.5%) and the EU (7.6%)
- US capital ratios (11.7%) were well ahead of the others

Figure 70 – Bank capital to assets ratio (% , Tier 1, Tier 2 and Tier 3 capital, non-weighted assets)



- China's capital ratios are in line with those of India (both have been improving over recent years)
- Brazil and Russia have healthier, though deteriorating, capital positions

Figure 71 – China FX reserves and government debt as % of assets of financial institutions



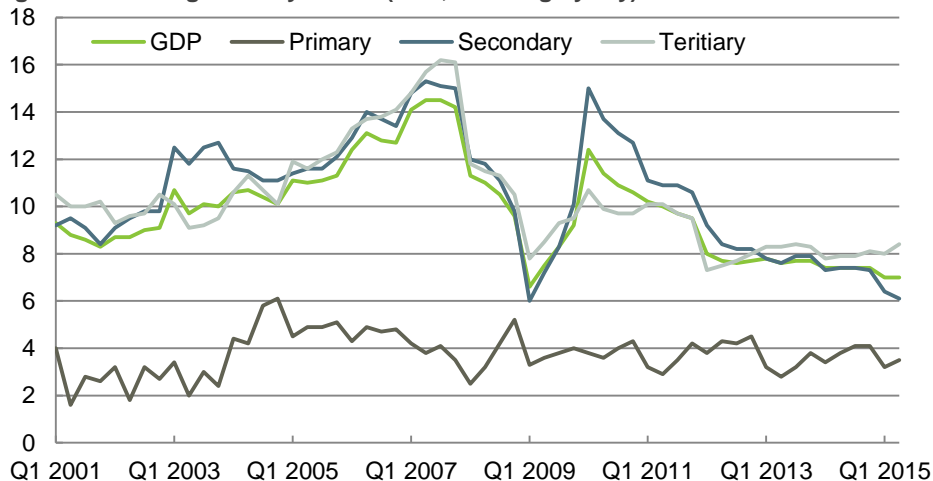
- If China's financial institutions did have a capital shortage, two obvious sources of funds would be FX reserves and government debt
- 10% of their assets could easily be covered by some combination of FX reserves and higher government debt

Source: People's Bank of China, IMF, World Bank, Datastream, Source Research

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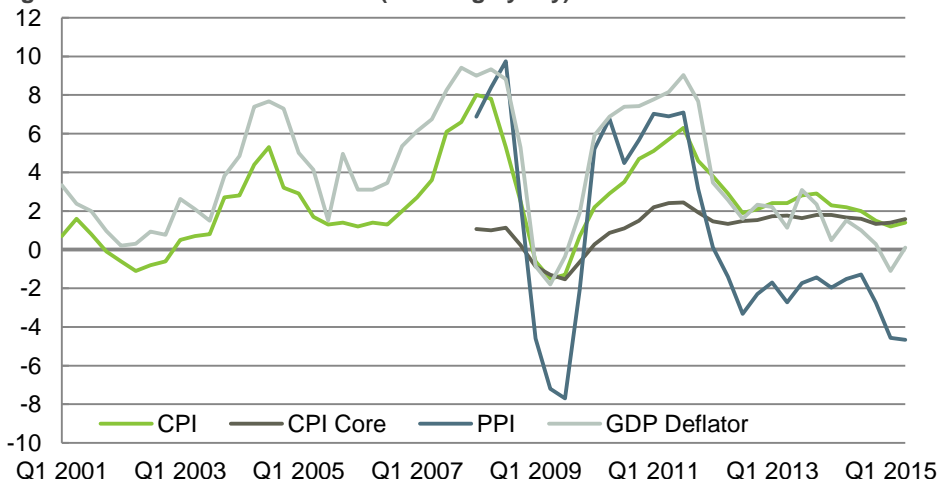
How is the economy doing now?

Figure 72 – GDP growth by sector (YTD, % change y-o-y)



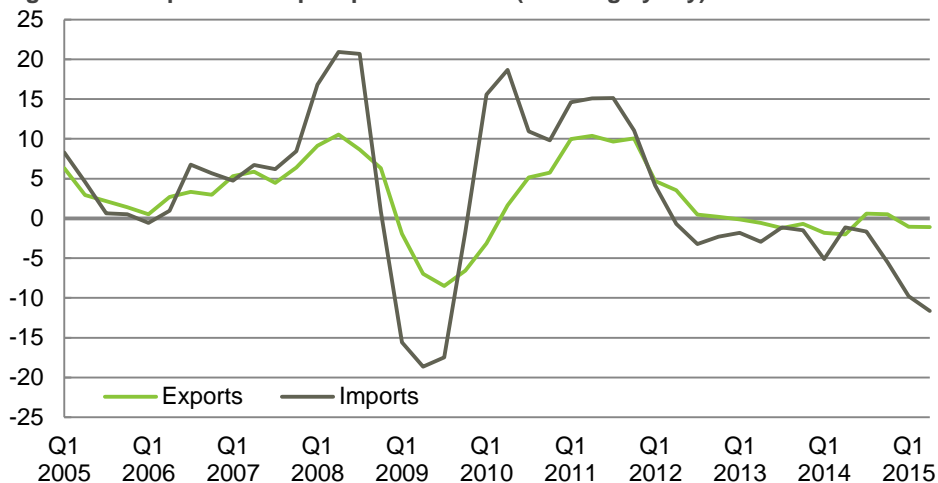
- The expected deceleration is under way, with GDP growth down to 7% (according to official data).
- Secondary (manufacturing, utilities) sector growth has slipped to 6%
- Tertiary (services) growth is still around 8%

Figure 73 – Measures of inflation (% change y-o-y)



- CPI inflation is in the 1%-2% range (both headline and core) but the GDP deflator suggests inflation closer to zero
- Producer prices paint a bleaker picture, with deflation reaching 4%-5%

Figure 74 – Export and import price inflation (% change y-o-y)



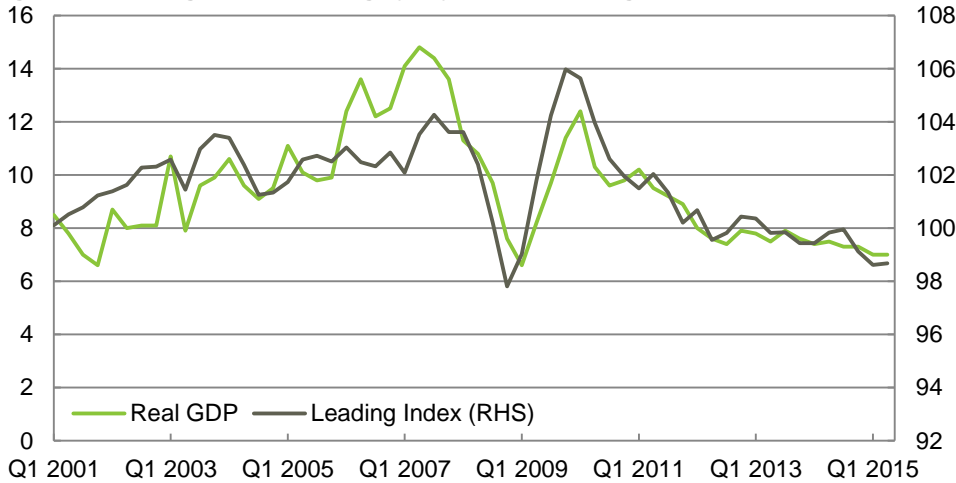
- China is accused of exporting deflation but this chart suggests that, if anything, it is importing deflation
- Weak commodity prices are no doubt the explanation (as with PPI above) and to that extent it could be seen as a bonus rather than a problem

Source: China National Bureau of Statistics, Oxford Economics, Datastream, Source Research.

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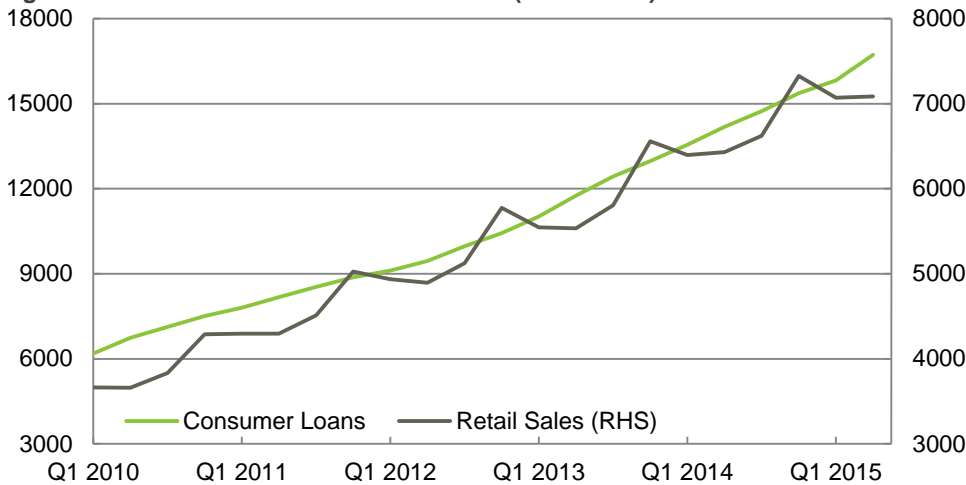
Can the data be trusted?

Figure 75 – GDP growth (% change y-o-y) versus leading indicator



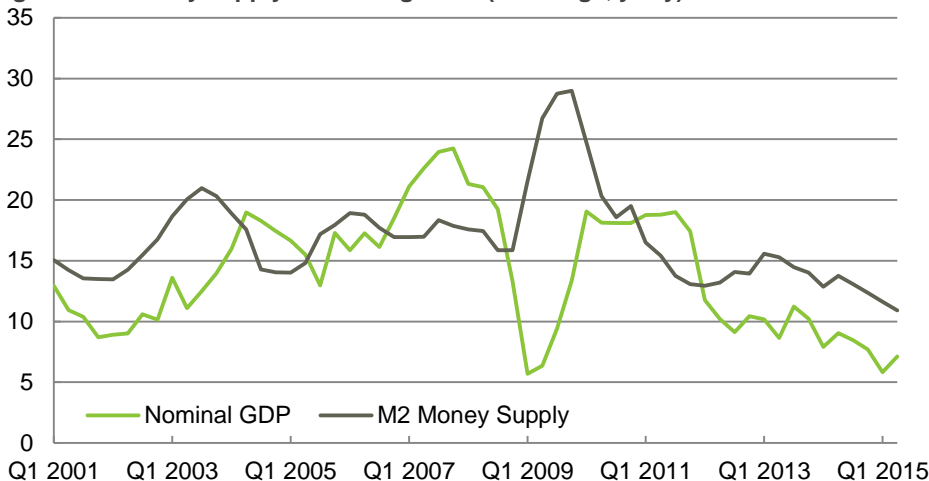
- China's official data is often thought to be at best poor and at worst manipulated
- The data could at best be described as awkward but is surprisingly rich
- If it is manipulated we would expect to find internal inconsistencies
- Leading indicators agree with GDP

Figure 76 – Retail sales and consumer loans (CNY billion)



- Consumer loan data is provided by the PBOC and fits with retail sales data provided by the National Bureau of Statistics
- Loan data suggests consumer spending may be stronger than indicated by retail sales (as does consumer confidence)

Figure 77 – Money supply and GDP growth (% change, y-o-y)



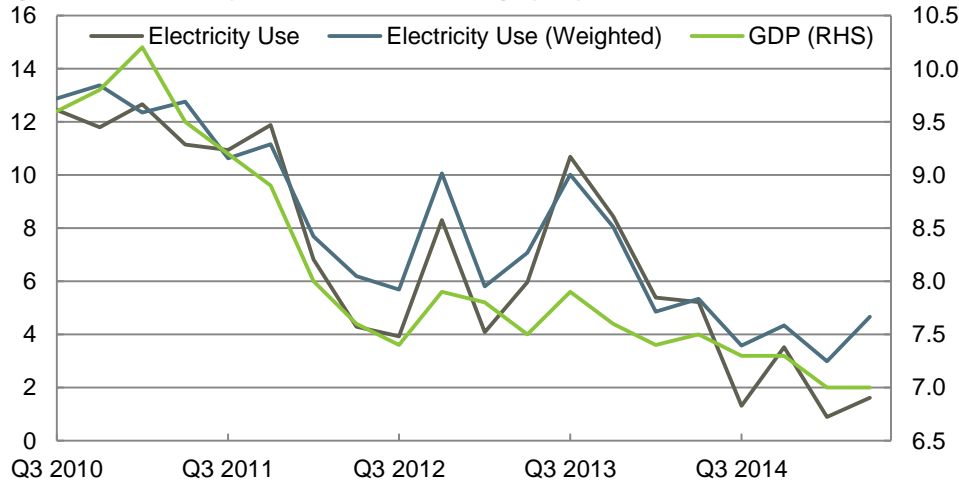
- Over time, nominal GDP growth should approximate that of the money supply
- In recent years, M2 growth (PBOC) points to stronger GDP growth than suggested by official NBS data
- If the data is manipulated upwards, it is well coordinated

Source: China National Bureau of Statistics, People's Bank of China, Datastream, Source Research.

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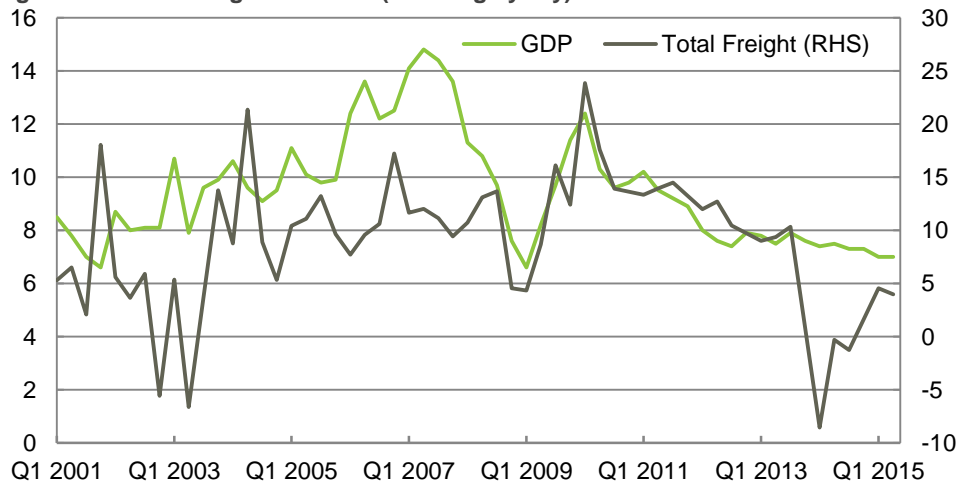
Alternative measures of economic activity

Figure 78 – Electricity use and GDP (% change y-o-y)



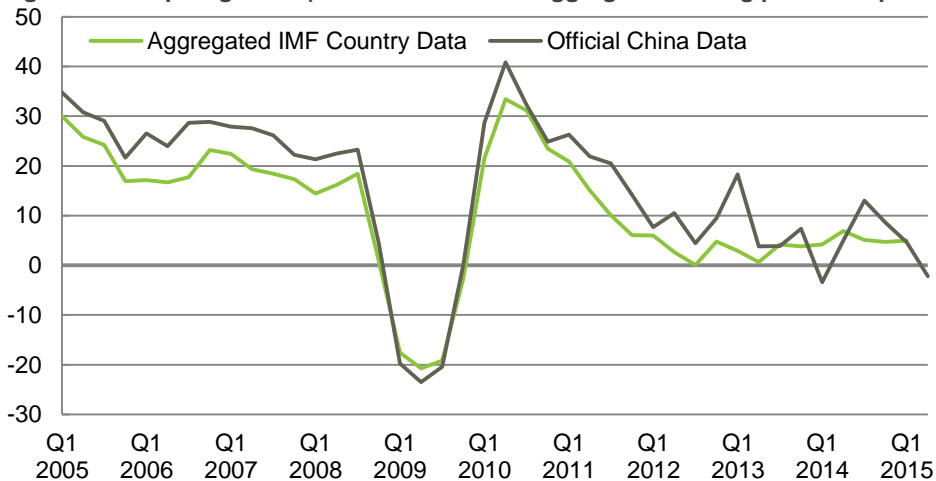
- Energy use will lag GDP due to efficiency gains (note the different axes in the chart).
- Reported electricity use recently appears consistent with GDP growth of 6.0%-6.5%
- An aggregation of sector usage is consistent with GDP growth of 7%

Figure 79 – Total freight and GDP (% change y-o-y)



- The movement of goods should ebb and flow with the economy
- The apparent collapse in (highway) freight in early 2014 was perhaps due to changed data methodology
- Normal service has been resumed

Figure 80 – Export growth (official data versus aggregated trading partner imports from China)



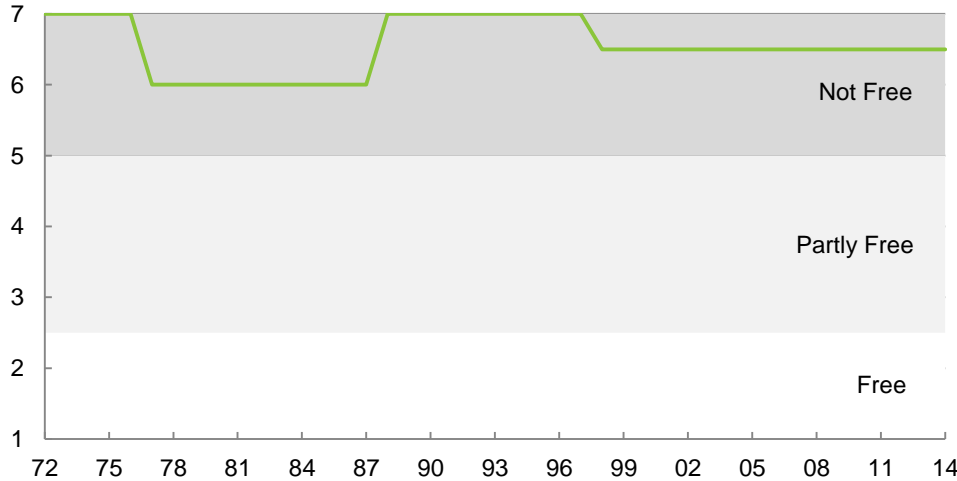
- Chinese export data has recently become erratic due to over-invoicing but that is not the fault of the statisticians
- In general, Chinese customs data is in line with trading partner data about imports from China (based on the 21 largest partners)

Source: China Customs, China National Energy Administration, China National Bureau of Statistics, IMF, Bloomberg, Datastream, Source Research.

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Living and doing business in China

Figure 81 – Freedom House historical scores for China 1972-now



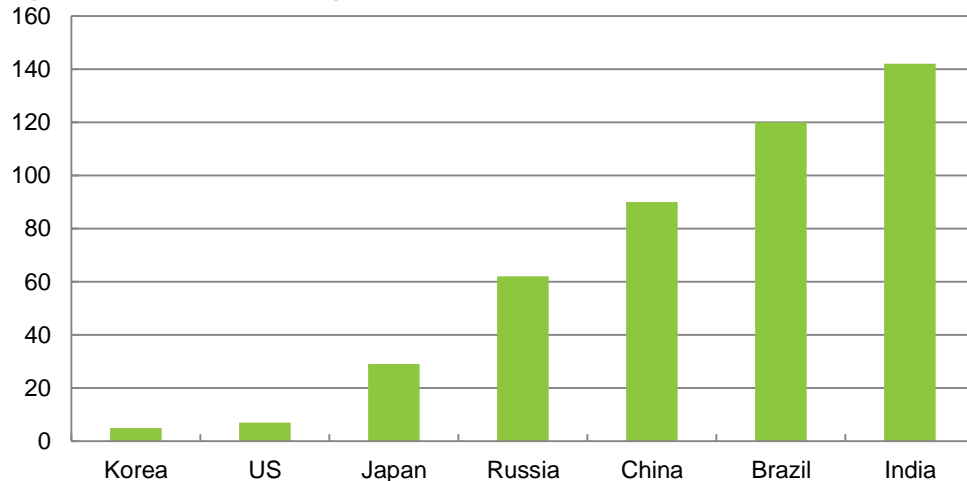
- China has tightly controlled its population and power is concentrated in the hands of Communist Party officials
- Slight changes in the late 90s have not led to wholesale reforms

Figure 82 – Freedom House checklist scores for China 2014 (bars show score out of maximum achievable)



- Weak “rule of law” scores suggest that even certain individual freedoms might be difficult to realise
- Political freedom is more or less non-existent, one party rules with little transparency

Figure 83 – The ease of doing business index (lower is better)



- The index ranks countries in order of the business-friendliness of their regulatory environment
- Although China ranks better than Brazil or India, its regulations are still restrictive and bureaucracy can be an issue

Source: Freedom House, World Bank, Source Research

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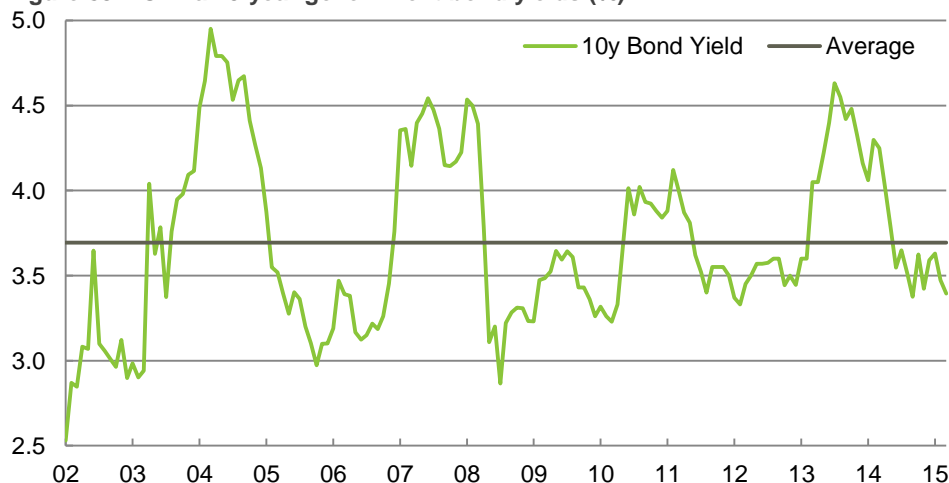
Are Chinese assets good value?

Figure 84 – China cyclically-adjusted price/earnings ratio (Datastream index)



- Looking at the CAPE, Chinese stocks have not been so cheap since 2003
- We think that they are good value at these levels, but are worried about the unpredictability of the government's actions in response to market moves

Figure 85 – China 10-year government bond yields (%)



- 10-year yields are higher than in the US, Eurozone, Japan or UK
- Slowing growth could depress yields further, in our view, but a weakening yuan could offset capital gains

Figure 86 – China real effective exchange rate (CPI based, OECD)



- Despite recent fears of devaluation, the yuan is close to its highs since 1990
- A 10-15% weakening from current levels would not be surprising, in our view

Source: OECD, Datastream, Source Research

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