Executive Summary

The spectacular growth of the Chinese economy over the past few decades has brought significant benefits to New Zealand. This report investigates the links between the two economies and asks how detrimental a sharp slowdown in Chinese growth would be for New Zealand.

- China is the top destination for New Zealand’s goods exports. In 2014 almost 20% of New Zealand’s good exports went to China, accounting for 4.2% of New Zealand’s gross domestic product (GDP).

- Close trade links between the two countries mean that New Zealand is particularly vulnerable to a sharp slowdown in Chinese economic growth, especially if China were to suffer a disorderly crisis.

- A crisis in China would weaken global demand and reduce world trade. It would also put downward pressure on the price of agricultural commodities, which are the mainstay of New Zealand’s exports to China.

- This report investigates the effects of such a crisis using Oxford Economics’ Global Economic Model. It sets out a scenario in which Chinese GDP growth falls to just 5.2% this year and 4.1% in 2016, rather than a central forecast of 6.8% and 6.1%.

- In this scenario New Zealand’s economy would grow just 2.2% on average in 2015-16, rather than the 2.9% currently forecast. Around NZ$1.8b of output would be lost in total over the next two years compared with current GDP forecasts.

- Weaker Chinese demand would not just damage New Zealand’s exports to China. Many of New Zealand’s other export markets would also be affected by the slowdown. Some (such as Australia and South Korea) are more dependent than New Zealand on Chinese demand, so would experience an even sharper slowdown in trade growth.

- GDP growth among New Zealand’s major trading partners excluding China would slow to an average 2.2% a year over the next two years versus 3% in the base case. This will exacerbate already weaker New Zealand exports. Overall, sluggish export growth would account for a third of the slowdown in New Zealand’s GDP growth, and be an estimated NZ$600m lower by end-2016.

- The negative trade shock would be compounded by the effect on global commodity prices. World food prices would be around 8% below 2014 levels. As agriculture is one of New Zealand’s most important sectors, this would subtract an estimated NZ$930m from forecast national income in 2015.

- New Zealand would not be the most badly affected economy in the region. The impact on growth rates in Australia would be much the same as for New Zealand. But GDP growth in Singapore and South Korea would be between one and two percentage points on average below
current forecasts, a larger shortfall than the estimated 0.6 percentage point loss in New Zealand.

- Some of New Zealand’s comparative resilience stems from the strength of its economy. It has not needed to cut interest rates as far as the US, Eurozone or Japan, for example, in the aftermath of the global financial crisis. So there is scope for further monetary policy easing to stimulate the economy. The scenario in this report assumes that the policy rate is cut from 3.5% to 2%.

- On the fiscal side there is also room for tax cuts and/or higher spending because the government balance is in surplus. Moreover, construction activity in Canterbury, as well as in other regions such as Auckland, will help to offset some of the investment slowdown in other sectors.

- This report concludes that while New Zealand’s economy is vulnerable to a crisis in China, it is more resilient than many others in the region.
1 Introduction

China has been the leading driver of global economic growth since the global financial crisis, contributing around 40% of the growth in world GDP over this period. Its rapid growth phase seems to be drawing to a close, however. The Chinese economy may not achieve the Chinese government's 7% growth target for this year. Domestic activity has weakened sharply, partly owing to a correction in the housing market. This is reflected in sluggish Chinese imports, as well as declining global commodity prices.

The Chinese authorities are attempting to engineer a managed slowdown, but the prospect of a painful 'hard landing’ remains.

New Zealand’s close trade links with China and its dependency on commodity prices for investment mean it is sensitive to a sharp, possibly disorderly, slowdown in Chinese economic growth.

This report investigates the potential macroeconomic impact of a crisis in China on New Zealand’s economic growth. It is structured as follows:

- It first establishes the growing economic relationship between the Chinese and New Zealand economies, focusing on rising Chinese demand for imported goods from New Zealand since the two countries signed a Free Trade Agreement in 2008.

- Second, it examines the growth prospects and risks for the Chinese economy.

- Third, it outlines a China crisis scenario and quantifies the potential macroeconomic impact of on New Zealand’s economy.
2 Trade linkages between New Zealand and China

China is New Zealand’s main market for goods exports

Over the past two decades the Chinese economy has grown by an average of 10% a year. It is now the world’s largest economy after the US.¹ A rapid rise in exports has been a key part of China’s economic success. It is now the world’s largest exporter, accounting for 12.5% of world exports in 2014.² Rising incomes and a construction boom have also boosted China’s share of world consumption, particularly for commodities. In 2014, it was the second largest global importer, pulling in over 10% of world imports.

Trade between New Zealand and China has also grown rapidly in recent years, particularly since the two countries signed a Free Trade Agreement in 2008. The agreement provided provisions for the elimination of tariffs on 96% of New Zealand’s exports to China. To date, tariffs on around 70% of New Zealand’s exports have been eliminated. The tariffs on the remainder of identified goods have been reduced with aim that these tariffs will be phased out by 2019.³

New Zealand’s total goods exports to China have risen tenfold from NZ$0.9b in 2000 to just shy of NZ$10b in 2014. China now accounts for nearly 20% of its total goods exports (or 4.2% of GDP) and has overtaken Australia as New Zealand’s largest export market.⁴

¹ In market exchange rate terms.
² Export and import shares for 2014 are sourced from the IMF Direction of Trade data and calculated as the average for the first eleven months of 2014.
³ http://www.chinafta.govt.nz/1-The-agreement/1-Key-outcomes/1-Goods/index.php
⁴ When service exports are considered Australia remains New Zealand’s largest trading partner.
China is New Zealand’s top destination for exports of commodities such as dairy, forestry, seafood and wool with a value of over NZ$5bn FY2014 (or half of total goods exports to China).

**Dairy products are New Zealand’s biggest export to China**

*Dairy products account for over a third of New Zealand’s total exports.*

**Dairy export volumes to China have risen nearly eight-fold since 2008.** Tariffs have been reduced or eliminated on a number of dairy products since 2008. For example, from 2013 there are no longer any tariffs on infant milk formulae, while the tariff rate on concentrated milk has been lowered from 15% to 3% currently. This will have contributed to this strong growth, but there have also been some marked shifts in both China’s demand and production profile.

Chinese demand for global imported dairy products has risen seven-fold since 2008, and it now accounts for 13% of world dairy imports. This has mainly been driven by strong household income growth. But concerns about the quality of Chinese milk following a melamine-tainting scandal in 2008 are also likely to have encouraged a shift in demand towards imported dairy products.

Chinese dairy supply has stagnated as rising production costs and outbreaks of foot-and-mouth disease have led to a large number of producers abandoning milk production.
Chinese demand has led to a terms-of-trade boom

China’s growing demand for commodities such as dairy products has pushed prices for some of New Zealand’s key exports to record highs.

World dairy prices reached record highs in 2013 following droughts in China and New Zealand which impacted global supply. Although production has since recovered and Chinese demand has softened, global dairy prices are still 13% higher than the average price in 2009.\(^5\)

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\(^5\) According to the ANZ commodity price index in March 2015.
The price of New Zealand’s other key commodities have also recorded solid increases since 2009 with forestry and meat products up 7% and 40% respectively.

The rise in goods export prices over this period pushed New Zealand’s terms of trade – the ratio of export prices to import prices – to a near 40-year high in Q2 2014. When a country’s terms of trade improve, it can buy more units of imports for the same units of exports, boosting its standard of living. Although New Zealand’s terms of trade have started to fall back from recent peaks, it was still some 13% higher in 2014 than the average of the past decade.

Income gains associated with the rise in the terms of trade between 2008 and 2014 are estimated to be around NZ$49b in total, equivalent to around 4% of GDP per year.\(^6\)

### New Zealand: Terms of Trade

**Index: Q1 2005=100**

![New Zealand: Terms of Trade](source: Oxford Economics/Haver Analytics)

Overall, therefore, the economic linkages with China have increased over the past decade, particularly since the signing of the Free Trade Agreement in 2008. But strong trade links with China and dependency on agricultural commodities also bring risks. New Zealand is more sensitive than ever to a sharp and possibly disorderly slowdown in Chinese economic growth.

**New Zealand’s trading partners also dependent on China**

\(^6\) Calculated as the average trade share (average of exports and imports to GDP) multiplied by the change in the national accounts based terms of trade between 2008 and 2014. Based on the methodology employed by the Reserve Bank of New Zealand. For more details please see [http://www.rbnz.govt.nz/research_and_publications/reserve_bank_bulletin/2014/2014jun77_2steenkamp.pdf](http://www.rbnz.govt.nz/research_and_publications/reserve_bank_bulletin/2014/2014jun77_2steenkamp.pdf)
New Zealand’s vulnerability to a Chinese downturn is amplified further by the dependence on China of its other major trading partners. China is now either the first or second most important export destination for most of New Zealand’s nine other major trading partners. In Australia’s case, it buys more than a third of goods exports.

![Image: China’s share of major trading partners' exports]

Source: Oxford Economics/Haver Analytics

Slower GDP growth in China would lead to lower export growth among New Zealand’s major trading partners. GDP growth would moderate as a consequence and this would lead to slower demand for imports from New Zealand.

The close trading ties in the region mean that these countries are also likely to be linked to China in other ways too, including foreign direct investment and debt - although the latter would be limited given China’s relatively closed capital account.

China’s indirect linkages to New Zealand via its major trading partners, and the ways in which these linkages feed back into China’s slowdown, will also affect demand for New Zealand exports.
3 Chinese growth set to slow in decade ahead

China’s economic growth has already slowed this year, to 7% year-on-year in Q1 2015 from 7.4% in Q4 2014. To some extent this reflects a deliberate policy to wean the economy off its dependence on debt-fuelled investment growth, but there are also structural reasons for the deceleration. GDP is likely to grow at a more subdued rate of between 5% and 6.5% over the next three years. This is for two main reasons:

- **Working population set to fall** – China’s working population will start to fall over the next few years (and is already doing so on some estimates). While China is improving the quality of its workforce through education, an aging population will make this more difficult. Only 20% of China’s population is aged between 15 and 24.

- **Slower pace of capital accumulation** – investment growth will moderate. Capital accumulation has been responsible for much of China’s growth in recent decades, with the real capital stock growing at 11-13% per year since 1979. But this pace of growth is unsustainable.

Strong investment growth is normal in an emerging economy but China’s economy has now become unusually investment-driven even by the standards of fast-growing Asian economies. Investment now accounts for around 50% of GDP, up from 39% in 2007. For comparison, this is more than ten percentage points higher than the peak level seen in Korea in the early 1990s and 20 percentage points higher than Taiwan’s peak level of the 1970s and 1980s.

**Asia: Investment shares in GDP**

China’s capital/output ratio is now comparable to countries with considerably higher levels of GDP per capita and there is mounting evidence that the efficiency of investment has declined. In 2009-14, the incremental capital/output ratio was over five, much higher than in Taiwan and Korea when those countries were at broadly the same level of economic development.
The abnormally high rate of investment and growing evidence of capital misallocation go a long way towards explaining the authorities’ recent move to ‘rebalance’ the economy away from investment and towards other sources of growth including consumer spending. This desire also reflects one of the side-effects of very high investment growth: rapid growth of debt and related risks to financial stability.

The forecast moderation in investment growth means that capital accumulation is set to make a smaller contribution than previously. It is estimated that the labour supply will add just 0.2 percentage points a year to GDP growth in the next fifteen years, while the contribution of capital stock growth slips to a (still quite high) three percentage points or so per year. Even assuming total factor productivity growth of 2% per year – which is comparable to the experience of other fast-growing Asian countries – China’s long-term growth slows to around 5.5% per year.

This still represents fast growth for an economy of China’s size: at 5% growth, the Chinese economy will double in size over the next fifteen years, or increase its output by an average US$593b per year. Putting this into perspective, in 2010 when the economy grew by 10.6%, total GDP rose slightly less (US$579b). Coupled with ongoing urbanisation, the number of middle-class households is also set to rise strongly, increasing from 23m in 2012 to 161m by 2030.

There is a strong correlation between rising incomes and increased demand for protein-based foods such as dairy products and meat. Given its geographical proximity, New Zealand is excellently placed to meet these demands. Notwithstanding the prospect of more moderate economic growth over the medium term and increased competition from other dairy and primary producing countries, China is expected to remain New Zealand’s key export market.
4 China crisis

What could trigger a sharper slowdown in China?

The forecast slowdown in Chinese GDP growth may appear dramatic, but similar – and more abrupt – slowdowns have been experienced in other fast-growing economies over recent decades.

A broad study by Pritchett and Summers (2014) highlights the risk of rapid slowdowns after periods of fast growth.\(^7\) Looking at 28 episodes where GDP growth per head accelerated to above 6% a year this pace was maintained on average for nine years, thereafter average growth slowed to just 2.1% in the periods following the fast growth episodes. China’s current rapid growth phase has lasted around the same length as this.

The property sector could be the catalyst

China’s property sector could be the catalyst for such a slowdown. In the aftermath of the global financial crisis of 2008-09, highly expansionary monetary policy in China led to an acceleration in real estate sales and prices, triggering a construction boom that has resulted in massive over-supply.

At the beginning of 2015, property under construction was equivalent to 4.8 years’ worth of supply at the current rate of sales (dramatically above the average ratio of 2.4 years in 2006-10) and vacant floor space has also soared. House prices have been falling modestly for the past year, but there is a risk that if supply does not ease, or demand does not pick up, house prices might start to fall at faster rates. In short, China’s housing market might be at a tipping point. We examine in more detail the possible drivers of a housing market crisis, and the channels through which it would affect China’s financial system, in Appendix 1.

Chinese growth could slow to 4%

The Oxford Economics Global Economic Model estimates that, in a scenario where house prices fall at an accelerating rate, triggering a contraction in investment by the construction industry and more broadly, Chinese GDP would grow around 5.2% in 2015, slowing to only 4.1% in 2016 versus the 6.8% and 6.4% currently predicted. Moreover, while confidence would be expected to return eventually, following action by the central government and monetary authorities, the recovery in investment would be slow and GDP growth would remain below 5% until mid-2017, accelerating to 5.6% in 2018. Nonetheless, overall GDP is still 4% below the baseline level by the end of 2019. (See Appendix 2.)

\(^7\) L.Pritchett & L.Summers ‘Asiaphoria Meets Regression to the Mean’ NBER Working Paper No.20573 October 2014
5 Projecting the impact of a crisis in China

New Zealand’s trading partners particularly hard hit

China’s large weight in the global economy means that a severe slowdown would have a significant negative impact on the world economy, with GDP growth estimated to slow to 2.1% in 2015 and 2.2% in 2016 versus the baseline projection of 2.8% and 3%, before a modest recovery ensues. This would be led by the advanced economies, notably the US. GDP growth among New Zealand’s major trading partners would also slow.

Under this scenario, world trade would be expected to average 3.5%, which would represent a deceleration from 4.4% last year.

Overall, GDP growth among New Zealand’s major trading partners (MTP) excluding China would slow to an average 2.2% per year over the next two years versus 3% in the base case scenario. But the projected moderation in growth would vary.

South Korea and Singapore are the two economies among New Zealand’s major trading partners which would experience the largest slowdown in GDP growth over the next two years, with GDP growth around an average one or two percentage points lower per year over the next two years than otherwise.

This reflects a mixture of the level of trade with China, but also the high dependency of both Korea and Singapore as exports as a driver of GDP growth. Singapore tops the list with exports accounting for nearly 190% of GDP. Korea is ranked third in terms of the share of exports to GDP among New Zealand’s major trading partners, but over 26% of its exports are destined for China. The slowdown in exports would also come at a time when domestic demand and in particular household spending is in the doldrums.
China crisis: how resilient is New Zealand?
May 2015

The US and UK and other advanced economies would not escape unscathed.

In response to falling confidence in the US and elsewhere, the Federal Reserve Bank postpones its first interest rate hike to late 2016. The Bank of England also delays raising interest rates. Nonetheless, US economic growth moderates to 2.2% in 2015 and only 2% next year, on average 0.8 percentage points lower than it would have been otherwise.

In this scenario Australia would be adversely affected through lower commodity demand and commodity prices. Business confidence would also weaken, strangling the forecast recovery in non-mining investment. Although the Reserve Bank of Australia would respond by slashing interest rates to below 1% (from 2% in the base case), overall GDP growth would decelerate to 2.4% and 2.2% in 2015 and 2016, around 0.5 percentage points lower than it would otherwise have been.

Appendix 3 presents a table comparing the base case GDP forecasts for New Zealand and the major trading partners with the alternative GDP forecasts under the China Crisis scenario.
Effect of slowdown on New Zealand

Under this scenario, weaker activity in China and among New Zealand’s major trading partners would flow through the economy in the form of weaker demand and lower prices for key commodity exports. The global shock to confidence and stock markets would also see business investment and household spending growth slow.

However, sound fundamentals mean that New Zealand would weather this external shock better than most in the region.

In particular, the RBNZ and the government are in a position to help cushion the impact on the economy. In our modelling exercise, the RBNZ is assumed to slash interest rates to a low of 2% in 2016 from 3.5% currently.

Overall GDP growth in 2015-16 would be on average 0.6 percentage points lower per year than otherwise, averaging around 2.2%, compared to an average of 2.9% in the base case. Thereafter, a gradual improvement in external demand leads a steady recovery. The table below summarises the base case and alternative forecasts for GDP, GDP by expenditure, interest rates and exchange rates.

The following section looks at the components of New Zealand GDP growth in more detail.
Exports to subtract around 0.4 percentage points from GDP growth

Export growth would slow to an average 2.3% over 2015-16 versus 2.8% under the base case and would be NZ$600m lower by the end of 2016 than otherwise. This would wipe between 0.2 percentage points from GDP growth in 2015 and a further 0.1 percentage point in 2016.

Putting this into context, the direct impact of lower export growth is less than for Australia, for whom the moderation in exports would reduce GDP growth by 0.1 percentage point in 2015 and nearly 0.4 percentage points in 2016.

This is not surprising when one considers that Australia is more exposed to an investment-driven slowdown in China than New Zealand. Australian export volumes would be NZ$7.7b lower by end-2016.

New Zealand: Export growth

Lower terms of trade reduces national income

Under this scenario, China’s demand for exports and commodities would be lower and New Zealand’s export prices would fall, albeit by less than some other globally-traded commodities such as oil.

Global food prices, including dairy prices, are estimated to fall 8% in 2015, compared to 10% for oil.

And while a supply response would improve the demand and supply balance in 2016, global food prices would still be around 3.3% below baseline by end-2016.

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8 Australia’s trade with China is nearly entirely driven by hard commodities such as iron ore and coal, which comprise around 40% of total Australian exports. Demand for these commodities would be more sensitive to construction activity than soft commodities (or primary exports) such as dairy and other food stuffs.

9 Calculated using the 2014 average NZ$ per A$ exchange rate.
Similar to Australia, an expected 17% depreciation in the NZ$ against the US$ in 2015 would help buffer the impact of the impact of lower US$-denominated exports. However, the terms of trade would still be 17% lower than otherwise – effectively extracting income from the economy. National income as measured by nominal GDP would be reduced by NZ$930m or the equivalent of 0.4% of the value of GDP in 2014. This would primarily be through lower profits in the agricultural sector. The expected reduction in spending would also affect those sectors that service the agricultural sector. Using input-output tables, the direct and indirect effect from one dollar less of agriculture spending is estimated to reduce nominal GDP by NZ$2.37.\(^\text{10}\) This does assume that the economic impact of agricultural spending on nominal GDP is symmetrical.

**Canterbury re-build cushions impact on domestic activity**

Overall, domestic activity is expected to fare better than in other economies in the region, including Australia.

The sharp slowdown in Chinese GDP growth would generate a shock to business confidence. Along with weaker profitability, this sees total investment levels around 4.6% lower by end-16, compared to the main forecasts.\(^\text{11}\)

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\(^{10}\) OECD, New Zealand Input-Output table 2007. This includes the original NZ$1 reduction in agricultural spending plus associated supply chain linkages in the wider economy.

\(^{11}\) As in Australia, the New Zealand stock market would be around 8% lower in 2015.
Nevertheless, residential investment activity would remain high, underpinned by the Canterbury rebuild.

The government is committed to funding around NZ$2.4b over the next two years and a surge in consents over 2014 suggests that there is already a large amount of work in the pipeline. Commercial consents equalled to NZ$850m in 2014 compared to NZ$260m in 2013.

Work in place and building authorizations are also around record highs implying that there is already a lot of work that will support construction activity.

Ongoing solid activity in the construction sector would also cushion the forecast rise in unemployment (construction accounted for 7½% of jobs filled in 2014). The unemployment rate would still edge higher from current levels, but remain below pre-crisis high of 6.8%.

Overall, household spending would be around ¾% lower by end-2016 than otherwise aided by lower interest rates.

**Government to miss fiscal targets**

The fiscal balance returned to a budget surplus in FY 2014. At 1¼ percent of GDP this is below pre-crisis highs (4.7% in 2007). Nonetheless, the government is in a position to weather the downturn in government revenues.

Under this scenario, nominal GDP is 1.1% lower in 2015-16 than in the base case. This would directly affect government revenues through lower GST and corporate tax receipts.

The government would need to either adjust its current budget surplus target lower (or even accept a period of fiscal deficits) or adjust its expenditure.

Consequently, the New Zealand government would be expected to postpone achieving its fiscal target to beyond the current budget projections. Assuming the government maintains its current expenditure plans, the fiscal balance would not return to surplus until FY2017-18. In the event that the government announces a fiscal package to stimulate domestic demand, a return to a surplus is likely to be delayed for a further couple of years.

**Risks of a sharper downturn**

The China slowdown scenario assumes that any increase in global financial costs is relatively contained compared to episodes such as the global financial crisis and even the ‘taper tantrum’ of 2013. This partly reflects the notion that financial spillovers from a sharp slowdown in China would be limited due to its relatively closed capital account.

However, the risk of a more severe impact on asset prices cannot be ruled out. Western banks’ debt claims on China are worth around US$800b and foreign securities issuance by Chinese firms is worth another US$400b. Exposure to China via Hong Kong has also increased substantially.

If China’s growth slows sharply at a time when the world economy is struggling for traction, global confidence could fall more than we have assumed here. It could even and trigger another possible global event such as a Greek exit from
the Eurozone. This would only add to market jitters and set the scene for a substantial re-pricing of risk across both advanced and emerging market assets.

A rise in corporate and consumer borrowing costs would lead to much weaker global activity, dragging export volumes down.
6 Conclusions

China has played a role in New Zealand’s recent economic performance.

- In 2014, almost 20% of New Zealand’s goods exports went to China, accounting for 4.2% of New Zealand’s GDP.
- Chinese demand for commodities such as dairy products has also pushed up the price of New Zealand’s key export commodities pushing New Zealand’s terms of trade to near 40-year highs. The associated income gains between 2008 and 2014 is estimated to equal NZ$49b.

New Zealand is more sensitive than ever before to a sharp and possibly disorderly slowdown in Chinese economic growth.

- China’s indirect linkages to New Zealand via its major trading partners, are as important as the direct impact of weaker Chinese demand for New Zealand exports.

A sharp slowdown in Chinese GDP would reduce New Zealand’s GDP growth to 2.2% over the next two years from 2.9% in the base case.
- Weaker export growth would account around a third of the slowdown in growth, and be an estimated NZ$600m lower by end-2016.

However, compared to many other economies in the region, it fares relatively well.
- The impact on growth is similar to Australia.

Some of this resilience stems from the strength of its economy.

- Interest rates are at a higher starting point than any other advanced economy. This gives the RBNZ room to lower interest rates, possibly to a record low of 2%.
- The government fiscal balance is also once again in surplus, which provides more policy options to stimulate domestic demand.
- Construction activity will help offset some of the investment slowdown in other sectors.
7 Appendix 1 – The property market – a trigger for a crisis in China

The current trajectory of the property market threatens to create a significant bad debt issue. Many real estate developers are highly leveraged, and banks are highly exposed to property despite official restrictions on lending to the sector. Banks’ property-related loans account for around a fifth of all loans and there are also further exposures resulting from loans to other sectors often being collateralised by property assets.

A continued slump in the property sector could also damage households. Despite the relatively low level of mortgage debt outstanding (about 27% of household disposable income), around two-thirds of household assets are in the form of property.

China: Outstanding debt

High indebtedness is not a problem limited to the property sector. China’s debt levels have soared over recent years. In 2014, we estimate household and non-financial corporate debt reached 160% of GDP, compared with 147% of GDP in the US.

Yet in spite of high debt stocks and higher debt servicing costs, the Chinese authorities report the level of non-performing loans to be just around 1%, little more than prior to the beginning of the credit boom.

In fact, cross-country evidence suggests that credit booms – such as that in China between 2009 and 2013 – result in substantially higher non-performing
loans (NPLs). A more realistic range of 10% to 20% of total loans implies NPLs of RMB6-12 trillion (US$1-1.9 trillion).\(^\text{12}\)

The higher end of this range would suggest a bad asset problem comparable in scale to that seen in the wake of the US subprime crisis.

World: Bad loans and credit expansion

This is risky enough, even before taking into account the large, rapidly-expanding shadow banking sector. Shadow banking, which is more lightly regulated than conventional banking, now accounts for around 15% of total financing to the economy – compared to less than 5% in 2005. The very existence of such a large shadow banking sector represents a warning over the true extent of financial market risk. Indeed, non-bank lending institutions have certainly been key factors in other regional financial crises, notably in Thailand in 1996-97 and in the 2003 Korean credit card crisis.

\(^{12}\) A sample of 33 countries experiencing credit booms followed by financial crises over the 1980 – 2008 period had median annual growth in their private credit/GDP ratios of 11% in the three years prior to their ‘crisis’ years and a median peak NPL ratio of 16%. By comparison China’s annual growth in the private credit/GDP ratio from 2008 to 2012 was 6.6% and it is currently reporting an NPL ratio of just 1% which, strikingly, has been relatively stable since 2010.
8 Appendix 2 – What would a Chinese crisis look like?

The excessively expansionary policies of 2009-10 have led to a big increase in corporate leverage, a potentially serious bad loan problem in the banking sector and have distorted the structure of the economy towards the property sector. China also needs to tackle the problem of industrial sectors with severe overcapacity.

Dealing with these structural issues could prove to be harder than expected (or the authorities handle things badly). Not all credit booms end in crises, but the risks associated with booms such as China has experienced are substantial. The study by Dell’Arricia et al. (2012) of credit booms since the 1960s suggests around one-third of such booms lead to a financial crisis, while fully 60% are followed by economic underperformance i.e. below-trend growth.13

That said, it is most likely that a Chinese financial crisis would propagate itself differently than such crises generally do in western economies. The impacts would be more domestically centred and express themselves more in terms of slower GDP growth than overt signs of financial stress such as bank failures. This reflects the large degree of government control in the corporate and banking sectors and China’s relatively closed capital account. Nevertheless, the consequences for Chinese and world growth could be profound.

**China’s GDP growth slows to around 4%**

The Oxford Economics Global Economic Model is used to test the impact of a possible financial scenario. In this case it is triggered by the real estate sector. Falling house prices and subdued housing demand sees real estate investment fall sharply this year and next. And given the exposure of other sectors in the economy, such a scenario would also have widespread

Local governments would be expected to scale back investment aggressively, as the central government seeks to rein in excessive off-balance debt accumulation.

In addition, credit growth slows relatively sharply as China’s banks are hard-hit by a rise in defaults among affected companies – for example property developers, as well as other businesses relying on continued construction growth. Non-performing loans rise quickly, peaking at 6.9% and some developers fail in light of the deeper property downturn. Asset management companies would also take on a similar share of NPS to help banks clean up their balance sheets.

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13 G.Dell’Arricia et al. ‘How to Deal with Credit Booms’ IMF Staff Discussion Note May 2012
A loss of confidence in the economy’s prospects would also see FDI inflows drop significantly. Overall investment growth slows sharply in 2015 and grinds to a halt in 2016.

**China Crisis: Investment**

![Graph showing investment levels from 2010 to 2019, comparing base case to China crisis scenario.]

However, the central government is not powerless to respond. With unemployment set to rise, and the government’s authority to rule depending on securing goals like real income growth, the government would be expected to act quickly, absorb a large share of bad debt from other sectors, though probably not all – the core banking system and SOEs would be likely to be best protected. The scale of this operation could, however, be significant enough to transform China from a low public debt country to a relatively high one. Based on plausible assumptions, this could see public debt doubling from 45% to 90% of GDP.

The People’s Bank of China would also be expected to ease monetary policy, reducing the lending rate a further 60 basis points to a record low of 4.2% and the renminbi would also be allowed to levels not seen since just after the global financial crisis. While these actions will help ease monetary conditions, confidence returns only gradually returns and the recovery in investment is slow.
### 9 Appendix 3: Alternative GDP growth forecasts for major trading partners

#### Alternative GDP growth Forecasts

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#### China Crisis

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* Trade weighted average of China, Australia, US, Japan, South Korea, UK, Singapore, Malaysia, Indonesia and Thailand