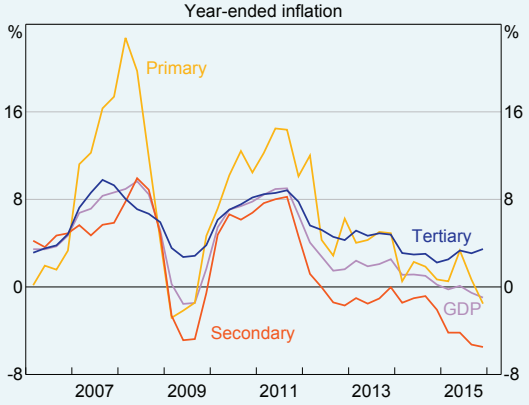
Box A

# Recent Trends in Inflation in China

The Chinese economy has experienced low inflation for several years, and output prices have even fallen in some sectors (Graph A1). Since 2012, consumer price inflation has been below the authorities' annual objectives while producer prices have been declining at an increasing rate (Graph A2). This box examines the drivers of – and risks associated with – a protracted period of low inflation in China and even deflation in parts of the economy.

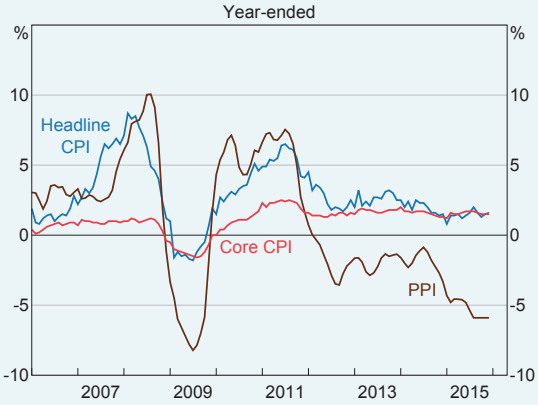
An important driver of the weak inflationary pressures in China over recent years has been excess capacity in the industrial sector, largely owing to major investments that were undertaken as part of the Chinese authorities' stimulus measures in response to the global financial crisis. Excess capacity has placed persistent downward pressure on output prices in many industries including steel, glass and cement production and other heavy industries. More recently, industrial activity has weakened noticeably, further adding to the downward pressure on output prices.[1] As a result, measures of prices that include the output of the industrial sector – such as the secondary sector deflator and the producer price index (PPI) – have declined over recent years (Graph A1 and Graph A2).[2] In contrast, services price inflation, as reflected in the tertiary sector deflator, has not eased to the same extent, consistent with the relatively strong growth of activity in the services sector.

**Graph A1**
**China – Implied GDP Deflators by Sector***




* RBA estimates
Sources: CEIC Data; RBA

**Graph A2**
**China – Inflation**




Sources: CEIC Data; RBA

Falls in commodity prices over the past few years have also contributed to the downward pressure on Chinese inflation. Producer prices have been falling at a faster rate since mid 2014, particularly for industries that are most exposed to commodity prices, such as mining and other producers of raw materials. Rough estimates suggest that around

1 See RBA (2015), 'Box A: China's Industrial Sector', *Statement on Monetary Policy*, November, pp 15–17.

2 The broadest measure of price inflation is the GDP implicit price deflator, which measures the level of prices of new, domestically produced final goods and services, and is calculated as the ratio of nominal to real GDP. The PPI measures prices received by firms for the goods they produce, and excludes prices of services. The Consumer Price Index (CPI) measures the prices paid by households for consumer goods and services.

half of the additional PPI deflation since mid 2014 is the result of lower commodity prices. Also, other business costs have been increasing less rapidly, in particular the cost of both labour and imported inputs.

Wage growth is an important determinant of domestic inflation, as it affects business costs and household demand for goods and services. Slowing labour productivity has been reflected in lower wage growth over recent years; one measure of growth in urban nominal wages was around 15 per cent in 2011, and slowed to around 8 per cent by late 2014. More timely data on migrant wages suggest that this slowing continued in 2015. To the extent that wage growth has been moderating more quickly than labour productivity, it is likely to have contributed to the easing in inflationary pressures.

Another factor adding to downward pressure on inflation has been the appreciation of the renminbi, which has reduced prices for imports. Since mid 2011, and despite the recent depreciation, the renminbi has appreciated by around 30 per cent on a nominal trade-weighted basis. The appreciation was particularly large over the second half of 2014. This has contributed to downward pressure on the domestic prices of imported consumer goods and services, and of imported producer goods such as fuels and other resource commodities.

Downward pressure on the prices of inputs that are used to produce consumer goods can be expected to pass through to consumer prices over time, placing downward pressure on CPI inflation.[3] Inflationary pressures facing households in China have often been driven by developments affecting the prices of food, which represents almost one-third of households' expenditure. Since 2011, food inflation has eased and has accounted for the majority of the slowing in CPI inflation. This has reflected a decline in food prices globally and structural changes to food production in China, which have reduced cyclicality in prices.[4] More recently, lower oil prices have reduced the energy costs for households and lowered headline CPI inflation. Core CPI inflation, which excludes food and energy prices, has been steady at around 1½ per cent.

The disinflationary pressures facing China in recent years pose challenges for the economy. One consequence of lower inflation is that households and businesses have faced an increase in real (or inflation-adjusted) interest rates, and hence tighter monetary conditions. Over 2014 and early 2015, real interest rates increased by around 50 to 80 basis points, depending on the inflation measure used in the calculation (Graph A3).[5] From late 2014, the People's Bank of China (PBC) cut benchmark lending interest rates by 165 basis points, and estimates of real interest rates have fallen accordingly, although the extent of this fall again depends on which inflation measure is used. The PBC has noted that higher real financing costs were one of the main reasons for lowering benchmark interest rates during the current period of easing.[6]

Another risk related to China's low inflation environment arises in the presence of high levels of debt. Low inflation tends to be associated with lower nominal income growth, which reduces the capacity of firms and individuals to service a given nominal level of debt. This has the potential to cause financial distress, particularly where leverage

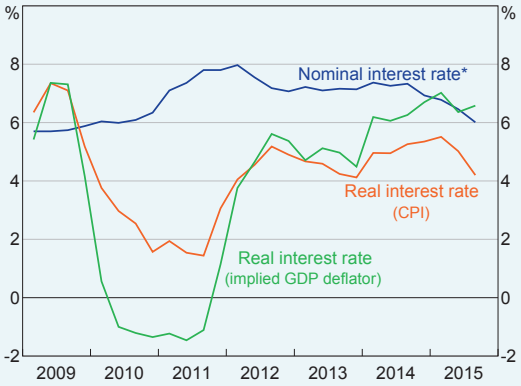
3 The People's Bank of China estimates that a 1 per cent drop in the PPI eventually results in a 0.3 per cent decline in the CPI; see PBC (2015), *China's 2015 Macroeconomic Forecast (Annual Update)*, June.

4 For example, hog rearing has become more sophisticated over time, which has reduced the previously pronounced cycles in pork prices.

5 Nominal interest rates are deflated by the actual CPI and GDP deflator in the absence of reliable measures of inflation expectations. Using CPI inflation expectations derived from Consensus forecasts yields similar results.

6 See, for example, the PBC's October 2015 statement accompanying the interest rate reduction; PBC (2015), 'PBC spokesperson responds to journalists' questions regarding reductions in interest rates and reserve requirement ratios, and removing the ceiling on deposit rates', Media Release, 23 October.

**Graph A3**
**China – Interest Rates**
General loan rates




* Nominal average weighted general loan rate
Sources: CEIC Data; RBA

is already high. China's total debt has increased substantially since 2008 and was around 250 per cent of GDP at the end of 2014. The debt of private non-financial companies is high compared to other economies in the Asian region and those at a similar stage of development.[7] This poses risks for financial institutions with sizeable on- and off-balance sheet exposures to these companies, and the Chinese economy more broadly.

In the near term, inflationary pressures are likely to remain weak. The PBC expects CPI inflation to remain around 1.5 per cent in 2016, and PPI deflation to ease to 1.6 per cent.[8] Chinese authorities have acknowledged the challenges posed by falling prices in parts of the economy, and have stated that macroeconomic policy will attempt to stimulate demand while avoiding the build-up of debt and higher real interest rates that can trigger a deflationary spiral.[9] Reforms have been undertaken to reduce these risks. For example, measures to restructure local government debt have reduced the interest burden and the risk of default for local government entities. In the longer term, ongoing structural reform targeting a more sustainable pattern of growth that is less focused on investment growth and the development of heavy industry is likely to reduce excess capacity in the industrial sector.

7 See RBA (2015), *Financial Stability Review*, October.

8 See PBC (2015), *China's 2016 Macroeconomic Forecast*, December.
9 See PBC (2015), 'Box 4: Discussion on Real Interest Rates and Debt', *Report on China's Monetary Policy Implementation in the Third Quarter 2015*, November, pp 44–46.