

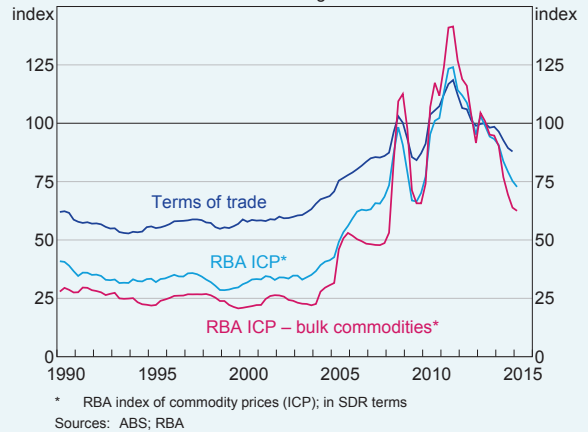
## Box A

# The Effect of Oil Price Movements on the Terms of Trade

Over the past decade, movements in Australia's terms of trade – the ratio of export prices to import prices – have been driven by movements in the prices of commodities, particularly of bulk commodities such as iron ore and coal (Graph A1). This reflects both large changes in the prices of these commodities and the fact that they comprise around one-third of Australia's total exports. Australia's terms of trade rose to record levels following significant increases in bulk commodity prices over the eight years to 2012. The terms of trade have declined since then, following substantial falls in commodity prices.

Movements in oil prices are likely to play an increasingly important role in determining Australia's terms of trade. Given that Australia is currently a net importer of oil, the recent fall in oil prices is expected to lead to an increase in the terms of trade as the effect of the fall in prices for imported oil outweighs that of the fall in prices of exported oil.<sup>1</sup> This direct effect is offset to some extent by the indirect effect of lower oil prices, which lead to lower prices for Australia's exports of liquefied natural gas (LNG), albeit with a lag of one to two quarters.<sup>2</sup> This offsetting effect is estimated to be small at the moment, but will grow as LNG exports become a larger share of Australia's exports. Following the substantial investment in LNG production and export capacity over recent years, Australia is projected to become the largest global producer of LNG by 2018; Department of Industry and Science projections suggest that, in value terms, LNG exports could surpass coal exports around that time. Indeed, taking oil and LNG together, Australia

**Graph A1**  
**Terms of Trade and Commodity Prices**  
2012/13 average = 100



is likely to shift from being a net importer of oil and LNG to being a net exporter over the coming year or so (Graph A2).

The sensitivity of the terms of trade to changes in oil prices can be illustrated by considering three scenarios: a 'reference case', which assumes that the Brent oil price follows prevailing futures market pricing (i.e. oil prices move to US\$74 per barrel by the end of 2020); a 'lower case', where oil prices fall to US\$40 per barrel; and a 'higher case', which assumes that oil prices rise to US\$100 per barrel.<sup>3</sup>

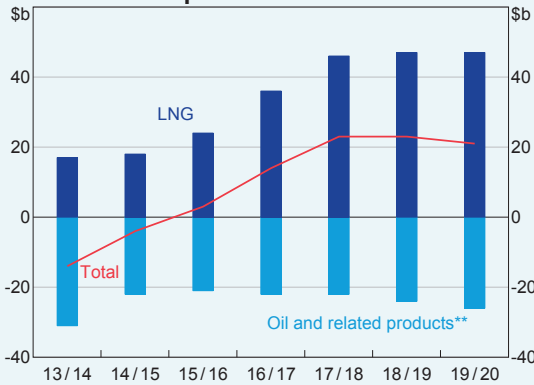
In the reference case, assuming that the historical relationship between US dollar oil prices and Australian dollar prices for Australian gas exports continues to hold, Australian LNG export prices

1 For more details about the effect of oil price movements on the Australian economy, see RBA (2015), 'Box C: The Effects of the Fall in Oil Prices', *Statement on Monetary Policy*, February, pp 46–48.

2 More detail about the Australian LNG market and LNG pricing is in Cassidy N and M Kosev (2015), 'Australia and the Global LNG Market', *RBA Bulletin*, March, pp 33–43.

3 LNG and oil export volumes are assumed to follow long-run projections published by the Department of Industry and Science from the June quarter of 2017 onwards. For further details, see Department of Industry and Science (2015), *Resources and Energy Quarterly*, March Quarter. Other prices and volumes are consistent with the forecasts outlined in the 'Economic Outlook' chapter until the June quarter of 2017 and are assumed to be unchanged thereafter.

**Graph A2**  
**Net Exports of Oil and LNG\***



\* Department of Industry and Science estimates from 2014/15 onwards  
\*\* Includes crude oil and other refinery feedstock, liquefied petroleum gas and refined products

Source: Department of Industry and Science

are estimated to fall noticeably by mid 2015 (in response to the oil price having declined by around 50 per cent since mid 2014).<sup>4</sup> LNG export prices then rise again towards their previous level, reflecting the recovery in oil prices implied by futures market pricing (Graph A3).<sup>5</sup> In the case of 'higher' oil prices, LNG export prices would rebound more sharply and surpass their current level. In the case of 'lower' oil prices, LNG export prices would fall further and remain below their current level over the entire period.

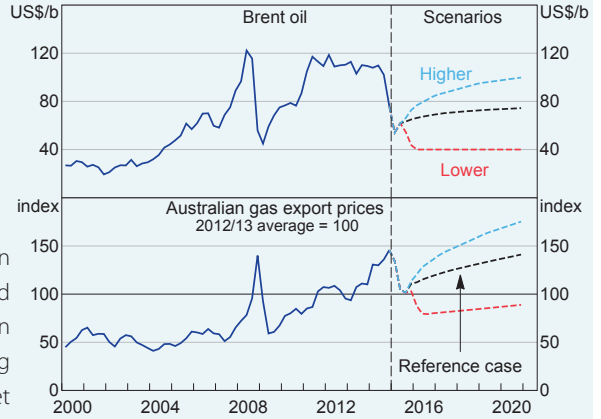
Under these scenarios, the projections for the terms of trade are not markedly different, particularly in the near term (Graph A4). The differences become larger over time, however, as the projected share

4 For the purposes of this analysis, growth in US dollar prices for Australian natural gas exports are modelled using an autoregressive distributed lag model that includes the growth in US dollar Brent oil prices and a constant. Gas export prices are then converted to Australian dollars. The estimation period is from 2000 onwards. Consistent with the sample period, the model implies that for a given increase in oil prices, gas export prices would rise by proportionately more.

5 Movements in LNG prices drive movements in the natural gas implicit price deflator, given that LNG comprises the vast majority of natural gas exports.

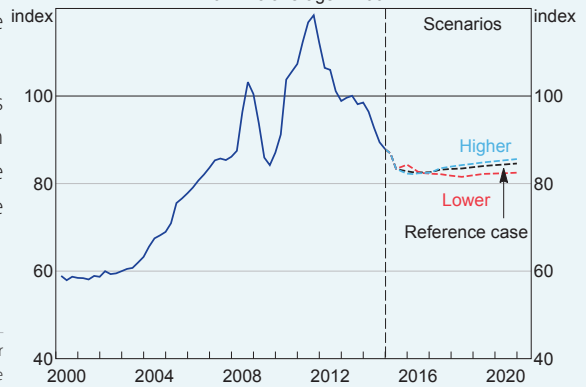
of LNG in total exports increases (from around 5 per cent in 2014/15 to around 11 per cent in 2019/20) and the indirect effect of oil prices on LNG prices dominates the direct effect on the terms of trade. The difference in the terms of trade between the 'higher' and 'lower' oil price scenarios is about 4 per cent by 2020. ↘

**Graph A3**  
**Brent Oil and Natural Gas Prices**



Sources: ABS; Bloomberg; Department of Industry and Science; RBA

**Graph A4**  
**Terms of Trade**  
2012/13 average = 100



Sources: ABS; Department of Industry and Science; RBA

