

## Box A

# The Impact of the Recent Floods on the Australian Economy

The eastern states of Australia experienced very high rainfall in the second half of 2010 and early 2011 due to the development of a La Niña weather pattern and then Cyclone Tasha in December. Subsequent flooding affected Queensland (including Brisbane) in particular, although there were also floods in parts of Victoria and New South Wales. While information is still incomplete – and there could be further weather-induced disruptions in coming months – this box sets out initial estimates of the effects of these events on GDP and inflation. The analysis does not include any effects from Cyclone Yasi in north Queensland, as little information was available at the time this document was finalised.

In terms of the economy, natural disasters such as floods are a negative supply shock as production is disrupted and public infrastructure, homes, cars and business assets are damaged. In terms of demand, spending is initially delayed but then increases as the disruptions ease and the repair and replacement of damaged assets gets under way. While production and consumption spending generally bounce back fairly quickly, the repair and rebuilding of damaged public and private assets is often spread over a number of years. This reflects the time it takes both to plan new building projects and to reassess risks in terms of the location and resilience of homes and other fixed structures to future similar events. The price effects associated with floods are most pronounced in the short term, with a temporary increase in prices due to loss of crops and transport disruptions.

## Impact on GDP in the Near Term

The largest impacts of the rains on the path of GDP are likely to be in the December, March and June quarters, primarily due to the disruption to coal production. Starting in early December, the rain and flooding significantly affected the Bowen Basin coalfields, Queensland's primary coal producing region that supplies over half of Australia's coal exports. During December and January, around 25 per cent of mines in the basin became inoperable and a further 60 per cent were operating under restrictions. As a result, many mining companies declared *force majeure*, which releases them from liability when they are unable to meet contracts due to circumstances beyond their control. The flood impact on mines varied depending on their location and flood mitigation methods (e.g. levees in place and whether the mines are underground or open cut) and whether supporting rail lines were flooded. Production has since recommenced in many mines and most rail systems are now running, though there are still some ongoing limitations.

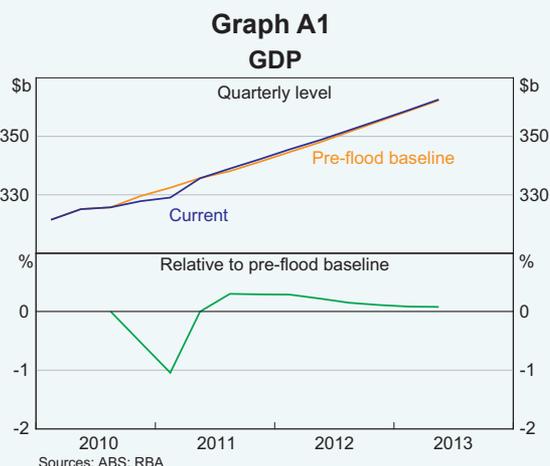
There is a wide range of estimates as to the magnitude of the coal production that has been lost.<sup>1</sup> If the total loss of production, relative to the level of coal production in the pre-flood period, was around 25 million tonnes spread over the December and March quarters, this would represent a loss of around 15 per cent of Australian six-monthly coal production. Assuming no significant additional disruption from further rain, industry reports suggest coal production will be back close to its pre-flood forecast level in the June quarter, a pace of recovery that would be consistent with previous floods in early 2008 and 2010. Companies report that they will not be able to make up lost production as mines and ports have been operating at close to full capacity.

<sup>1</sup> ABARES and the Queensland Government have estimated a loss of 15 million tonnes in exports, while the Queensland Resources Council has estimated a production loss of 31 to 54 million tonnes over the three quarters to June 2011.

The floods also affected agricultural areas across the eastern states. For some commodities, the primary effect has been on the quality rather than the quantity of production. An exception is fruit and vegetables, where a significant share of the Queensland crop in particular has been lost. While there could be further reductions in output of some fruits and vegetables during 2011/12, yields for some other crops will benefit from an improvement in soil moisture.

The rainfall and flooding also caused some delay in other private output as well as expenditure. While there are few indicators available yet, consumption in Queensland and Victoria is likely to have been reduced somewhat due to the cutback on non-essential expenditure in early January and the loss of retail trading days. Thereafter, however, consumption spending will be boosted by the replacement of flood-damaged household goods, although there has been some loss of wealth and income. In terms of business investment, only a limited number of projects appear to have suffered flood inundation; while some investment was delayed in December and January, the consequent reduction in GDP will be largely offset in future months by spending to replace damaged assets.

Putting all these aspects together, the Bank's preliminary estimate – made prior to an assessment of the impact of Cyclone Yasi – is that GDP growth in each of the December and March quarters could be around ½ percentage point lower than what it otherwise would have been, with the biggest impact arising from the disruption to coal production in Queensland (Graph A1). However, assuming no further significant weather disruptions, the recovery in coal production, bounce-back in delayed private spending and commencement of replacement and repair spending are estimated to bring the level of June quarter GDP back close to its pre-flood forecast.



This profile implies a reduction in the level of GDP in 2010/11 as a whole of close to ½ per cent compared with the outlook immediately prior.

### Impact on GDP in the Medium Term

Beyond the June quarter, the size of the effects on the quarterly GDP profile will depend on the magnitude of the damage to private and public assets, the time horizon over which these assets are rebuilt and repaired, and the extent to which planned spending on unrelated projects is postponed. While the full extent of damage has yet to be determined, the rebuilding program will mostly be focused on repairs and rebuilding of houses and contents, farm and other business assets, and public infrastructure.

Initial estimates suggest around 35–40 000 residential properties may have been affected by the floods across the eastern states (mainly in Queensland), which includes damages to houses as well as yards, fencing and other structures. Some homes will need to be completely replaced; assuming an average cost of around \$250 000 per dwelling, every 1 000 homes rebuilt will cost around ¼ billion. The balance of the homes damaged will require repairs (though not all of this activity will be included in

GDP).<sup>2</sup> The rebuilding and repair of dwellings is likely to take some time, reflecting both financing issues (some early reports suggest around half of the homes affected were insured for flooding) and possible new building restrictions in flood-vulnerable areas. Overall, the rebuilding program is likely to provide a modest boost to dwelling investment and GDP from the second half of 2011.

The full extent of the damage to public buildings and infrastructure from the floods is still being determined. The Queensland Government estimates damage to local government roads, water supplies and waste facilities, buildings and airports alone at around \$2 billion. Based on this and other initial reports from the state and federal governments, the total damage to public infrastructure across the eastern states is currently estimated at around \$6–7 billion. The overall boost to GDP from this reconstruction expenditure will depend on the period over which the rebuilding effort is spread and the degree to which the spending on repairs and rebuilding is offset by lower spending on other planned public projects.<sup>3</sup> Experience from other natural disasters suggests that, after an initial boost to spending on essential repairs, the planning and building of infrastructure projects will likely be spread over several years.

2 Based on the standard national accounts framework, household repairs are not included in final household consumption. The national accounts treat dwellings as an investment by households that returns a rental service over the life of this investment (like a machine does for a company). Hence, repairs to this investment detract from the 'profit' provided by dwellings and are counted as intermediate rather than final household consumption. On the income side of the accounts, higher spending on repairs will be reflected in higher compensation of employees, but the 'gross operating surplus of dwellings' will fall by the amount of the repairs. However, in terms of resource usage and the level of activity in the economy more broadly, labour is required to undertake these repairs (in order to provide the same level of housing rental services as before the flood), which implies there is less spare labour (and other inputs) that can be used for other purposes.

3 The replacement of public capital is recorded in public investment in the national accounts. Unlike for dwellings, repairs to public capital are recorded in GDP, under final public consumption (since public assets are not treated as delivering a flow of services to the economy thereafter).

Taking all these factors into account, net additional spending – primarily on public infrastructure and dwellings, although also including the rebuilding of farm and other business assets – could be around \$8 billion, spread over around two years from mid 2011. With not all of this spending included in GDP and part of it spent on imports, the overall effect could be to boost the level of quarterly GDP during the rebuilding period by up to ¼ percentage point (Graph A1).

## Impact on the Consumer Price Index

The floods will temporarily boost some food prices, primarily due to the loss of fruit and vegetable crops. In regards to fruit and vegetable prices, two previous episodes of severe rainfall – in the eastern states from October 2000 to March 2001 and in Queensland in early 2009 – showed a sharp and immediate pick-up in these prices in most states (Graph A2). If nationwide fruit and vegetable prices were to rise by an average of 5-10 per cent in the March quarter as a result of the floods in the eastern states then, given the weight of fruit and vegetables in the overall CPI of 2½ per cent, this would increase March quarter headline inflation by up to ¼ percentage point.<sup>4</sup> As the effects unwind – with alternative sources of supply (including imports) becoming available – fruit and vegetable prices are likely to fall in the June quarter. Some inflationary pressure may persist for fruits or vegetables that have longer growing periods (such as pineapples) or where there have been delays in replanting due to water-logged soil. There has not been a significant loss of livestock from the floods though difficulties transporting livestock may have increased prices for a short period.

In regard to other commodities, while Queensland produces virtually all of Australia's sugar and Victoria

4 In the case of Cyclone Larry in 2006, there were larger and more prolonged effects on banana prices because bananas cannot be imported for quarantine reasons. Early reports indicate Cyclone Yasi has also damaged the banana crop.

