

# Floods: Weighing up the costs

## Economic impact of floods

- The east coast floods were caused by the La Niña weather event. La Niña will continue until at least March. El Niño and La Niña are regular climactic events and there has been no discernible change in their severity or regularity in recent years.
- The forerunner of today's Bureau of Infrastructure, Transport and Resource Economics (BITRE) undertook the seminal study on the costs of natural disasters in Australia in 2001.
- Based on the analysis from the BITRE of all 77 flood events (cost greater than \$10 million) from 1967 to 1999, CommSec estimates that the cost in current dollars would be almost \$52 billion. The entire 1974 floods across the nation are estimated to cost just over \$4 billion in today's dollars.
- Economists are tending to over-estimate the economic and financial impact of the Queensland floods. While activity is lost in the short-term, it is boosted in the longer-term through rebuilding, repair and refurbishment work. This restoration work has already begun.

### It's all due to La Niña

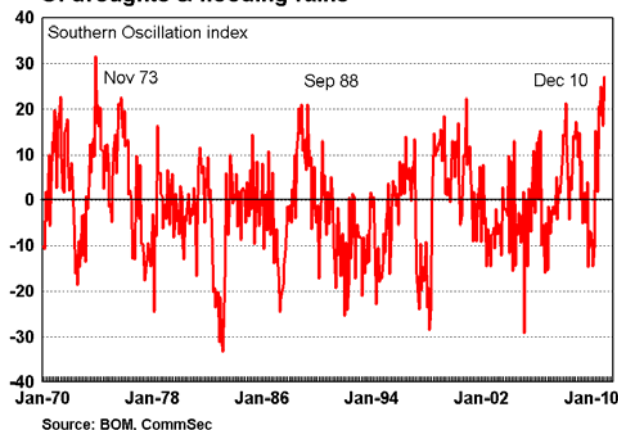
- There are two significant influences that have affected Australia's weather patterns over time – El Niño and La Niña. El Niño is associated with droughts in Australia while La Niña is associated with floods. The two effects are determined by changes in sea temperature in the southern Pacific, affecting air temperatures, air pressures and winds.
- El Niño predominated over most of the noughties, resulting in the worst drought conditions in eastern Australia for a century. The current La Niña event is the strongest since 1973. One way of tracking the strength of El Niño and La Niña events is the southern oscillation index. La Niña events are reflected in high SOI readings. In December the SOI was 27.1 – the highest since November 1973. The highest readings prior to this were August 1917 and April 1904.

### Highest levels for SOI

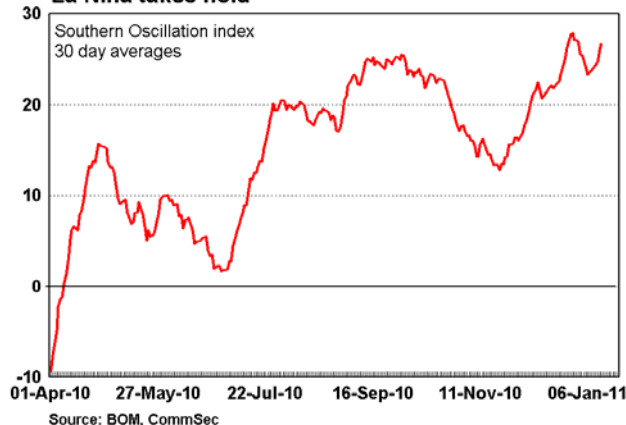
August 1917	34.8
April 1904	31.7
November 1973	31.6
December 2010	27.1
June 1950	26.9

Source: BOM, CommSec

Of droughts & flooding rains



La Nina takes hold



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- The severity of the Brisbane floods accords with the SOI reading. The latest floods were the most significant since January 1974, and before that the 1904 floods. Certainly there has been above-average rainfall together with flooding over most of eastern and southern Australia since October. In contrast, southern parts of Western Australia have remained dry. While dam levels across the east coast are near 100 per cent, in Perth dam levels stand at 29.9 per cent
- Current readings of the SOI remain high. The average SOI over the last 30 days was 26.7. A reading above +8 points to a La Niña event. The SOI hit +8.2 on July 8 2010 and soared to +20.5 on July 30. The SOI has maintained double-digit levels in the period since, hitting highs of +27.9 on December 29.
- Climate experts predict that the strong La Niña conditions will last until at least autumn.
- While La Niña is associated with wet weather in Australia it is also associated with wetter conditions in Venezuela and Brazil and with droughts in Argentina and southern parts of the USA.
- Climatologists say that the current La Niña event have been complicated by volcanic eruptions in Russia, affecting normal wind patterns such as the “Pineapple express” and influencing weather across the globe including the harsh snow storms in the UK and the US north-east.

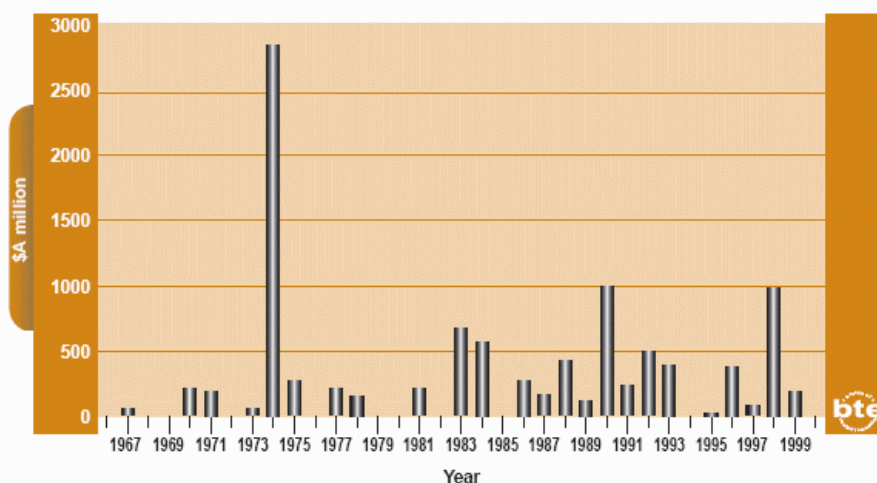
### Working out the cost

- It's not a simple matter to work out the cost or economic impact of disasters such as the Queensland floods. The floods have short-term negative effects on business activity while longer-term stimulatory effects through restocking, rebuilding and refurbishment. And while some production and activity is curtailed in one region, it may be boosted in other regions. For instance some fruit and vegetables can be produced in various regions of Australia while there is also access to imports in some cases to meet shortfalls. Coal is produced in Queensland, but it is also produced in NSW.
- In terms of the timing effects, business activity in parts of NSW and Queensland was restrained in late December and different regions will be negatively affected over early January. But already in Queensland the clean-up process has started and this will extend through February and March. So the impact on economic growth in the March quarter will be minimised as a result of the fact that the flooding happened early in the quarter.
- Over the June and September quarters business activity will further recover and some industries will operate at higher rates of capacity such as the coal industry.
- Still it is important to note that the La Niña event is not over as yet. The concern is that cyclone activity could produce further flooding in Queensland in coming months. Governments and businesses cannot afford to rest too easy and must maintain high levels of awareness and planning.

### The study on the cost of natural disasters

- Some estimates place the cost of the Queensland floods as high as \$13 billion. The figure has been arbitrarily arrived at based on an estimate of 1 per cent of GDP. So it is worth a little more analysis.
- The Bureau of Transport Economics (now the Bureau of Infrastructure, Transport and Resource Economics – BITRE) undertook a study entitled the **“Economic Costs of Natural Disasters in Australia”** in 2001. The paper noted that costs should be broken down into direct, indirect and intangible costs. Most focus is on direct costs such as “physical destruction or damage to buildings, infrastructure, vehicles and crops.” The BITRE argues that

ANNUAL COST OF FLOODS IN AUSTRALIA, 1967–1999



Note Estimates are in 1998 dollars.

Source BTE analysis of Emergency Management Australia (EMA Track) database (unpublished).

business disruption costs should be excluded as this is a transfer between businesses rather than loss to national output.

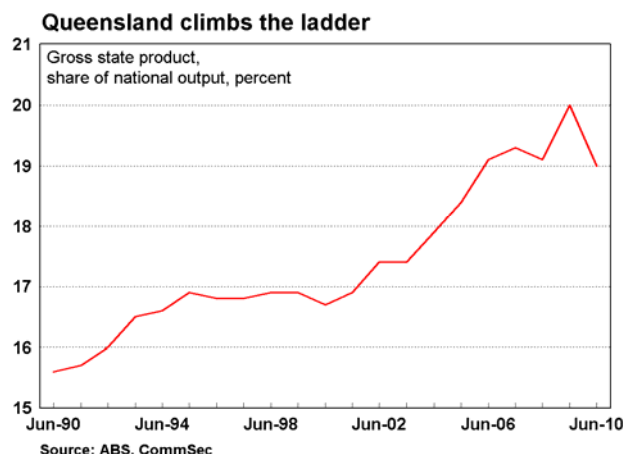
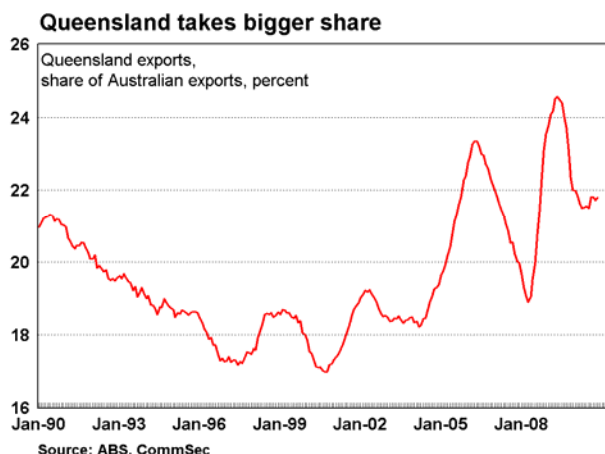
- The BITRE found that the overall cost of all disasters from 1967 to 1999 was estimated at \$36.4 billion in 1999 dollars or \$1.14 billion a year. However if three significant events were excluded – Cyclone Tracy (1974), the Newcastle earthquake (1989) and the Sydney hailstorm (1999) – the average annual cost declined to \$860 million.
- The insurance cost of the disasters from 1967 to 1999 was estimated at \$9.6 billion or \$290 million per year.
- In current dollars that would equate to \$51.8 billion or \$1.6 billion a year (insurance cost, \$13.7 billion or \$412 million a year).
- The BITRE found that since 1967, floods costing more than \$10 million each (77 flooding events) have resulted in a total cost of \$10.4 billion. The worst year was 1974, with a total cost of \$2.9 billion. The average annual cost of floods in Australia from 1967-1999 was approximately \$315 million.
- In today's dollars the cost of floods over the period would be \$14.8 billion with all the 1974 floods (including Brisbane) costing \$4.1 billion.
- So if the BITRE study is correct in its assumptions and calculations, the estimated \$13 billion cost of the Queensland floods appears on the high side. Given the increase in population and values of buildings and infrastructure over time, the cost of the Queensland floods is probably more in the realm of \$3-5 billion.

### The Disasters Database

- The BITRE utilised the Emergency Management Australia (EMA) disasters database to derive its estimates on the cost of natural disasters. The EMA database is now maintained by the Federal Attorney General's office. The database has information on natural and non-natural disasters since 1622.
- While the BITRE utilised the disasters database, it also developed its own methodology to estimate the economic costs of natural disasters. And it didn't always come up with the same figures.
- The BITRE study included a detailed assessment of the economic costs of Cyclone Tracy in 1974 that destroyed Darwin including direct, indirect and intangible costs, estimating the figure at \$1.965 billion in 1999 dollars. In current dollars the estimated cost of the disaster would be \$2.8 billion. The EMA database estimated a cost of \$4.2 billion. The BITRE suggested that the difference could be attributed to its low estimate of indirect costs such as business disruption and clean-up costs.
- Cyclone Tracy resulted in 5,000 dwellings destroyed, 5,000 homes severely damaged. Of the 45,000 population, 35,362 people were evacuated.
- But other BITRE case studies resulted in smaller discrepancies with the EMA database. For instance the 1974 Lismore floods were estimated by BITRE at \$84.1 million in 1999 prices versus \$89.4 million in the EMA database.

### The 2011 Queensland floods

- The Queensland floods have been estimated to have covered an area the size of France and Germany combined. And while 86 small towns, mining and rural areas were affected, so was Brisbane with a population of 2.06 million.
- It was estimated that 11,900 homes were completely inundated in Brisbane, 14,700 partially. And 2,500 businesses were flooded with another 2,500 businesses partially affected. In Ipswich 3,000 homes and

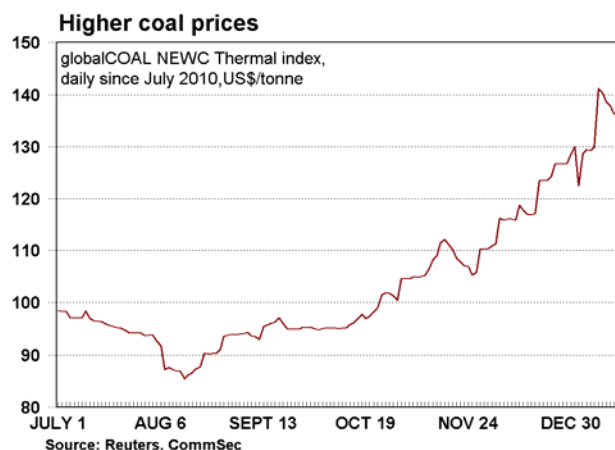
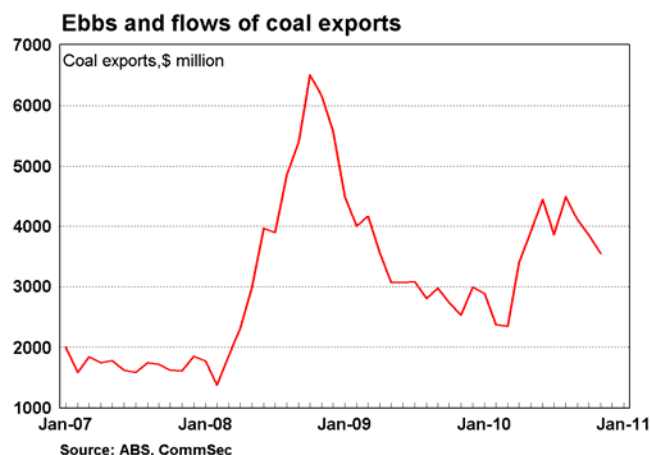


businesses were inundated by water. In Rockhampton 150 homes were inundated by floodwaters. The Masters Builders Federation say that it could take a month for homes to completely dry out.

- The Insurance Council has advised that insurers have so far received 7,000 claims from regional Queensland at a cost of \$365 million. The Insurance Council estimates that half of all insured homes in Queensland are not covered by flood damage. These homeowners may have to rely on either the goodwill of insurers/reinsurers, private donations, the Government or their own funds for clean-up and repair costs.
- The Federal Government will provide business recovery grants to a maximum of \$25,000 for businesses affected by the floods.
- The Federal Government has deployed 1200 defence troops to assist with the clean-up of the Queensland floods – the biggest deployment since Cyclone Tracy.
- Certainly a raft of businesses has been affected by the floods from small business to retail, coal, tourism, transport and construction. It is important to consider – as the BITRE study did – the fact that short-term disruptions by some firms will be balanced by increased activity for other businesses. For instance replenishment of stock for a supermarket will mean increased production/output for various food manufacturers. And the cost may ultimately be borne by insurance/reinsurance.
- For instance the Ipswich distribution centre of The Reject Shop was flooded, meaning that Queensland stores will have to be supplied from the Melbourne warehouse. But the company said that insurance should cover all losses. It's worth noting that shares in The Reject Shop rose 5.5 per cent on Friday after going into a trading halt on Wednesday.
- Coal production & exports have been particularly affected by the flooding. Since January 1 Dalrymple Bay coal terminal has been running at between 60 and 70 per cent capacity while the Gladstone port terminal – the world's fourth largest coal export terminal – has operated at 60 per cent capacity. Gladstone resumed coal exports on Saturday after being closed for a fortnight. The Moura rail line reopened last Thursday and QR National is hopeful of restoring some services on the Blackwater line by Friday. Gladstone normally exports 1.3 million tonnes of coal a week.
- Coking and thermal coal prices have soared in response to the flooding in Queensland. So while it is estimated that Queensland has been losing around \$500 million in coal exports each week over late December/January, when production returns to normal coal producers will reap the gains of higher prices.

### Overall assessment and implications

- Australia is experiencing the worst flooding since 1974. However given the similar levels of the southern oscillation index to late 1973/early 1974, the significance of the flooding should hardly come as a surprise. The hope is that the worst is over, but given the continued elevated levels of the SOI, further challenges may lie ahead.
- Queensland has already started the process of clean-up, repair and rebuilding. But while it goes down the path of recovery, there are around 46 towns in north western Victoria that are severely affected by flooding. Flooding has affected five states in the past few weeks and it is still too early to say whether we have seen the last of the wet weather. Weather forecasters indicate that La Niña has further to run.
- In a broad sense, flood events have negative short-term effects on activity but positive longer-term effects as rebuilding and refurbishment are under-taken. Certainly individual businesses such as farmers may be negatively affected for some time. But in terms of damage to homes, businesses and infrastructure, there will be increased



demand for work, material and services for building trades, construction firms, and some retailers.

- As the BITRE study has shown, there can be the risk of double-counting when working out economic costs of natural disasters. That is, there is a gross cost when assessing the impact on spending and activity and a net figure – the loss by one business, becoming a gain for another.
- And it is the net impact that should be the focus of attention. While the flood events across Australia will tend to depress economic activity modestly in the March quarter, the repair and rebuilding work will add to activity over the remainder of 2011 and perhaps into 2012. It is difficult to gauge the timing of these influences as it depends on the availability of labour and materials to undertake the work as well as administrative efforts of insurance companies to process the claims.
- Some economists have estimated that the Queensland floods could cost as much as \$13 billion or 1 per cent of GDP. However that figure is hard to reconcile with past floods or natural disasters. And if it is conservatively assumed that there are 30,000 insurance claims at an average \$100,000 per claim, the total cost would be \$3 billion. That would suggest that the cost of infrastructure repairs would have to be significant if the floods were to cost the economy \$13 billion.
- One of the key challenges with the repair and rebuilding work is to secure skilled staff to complete the required work. Job markets are already tight across the country – especially in the construction trades. To prevent breakdowns and bottlenecks in the rebuilding process, it is almost certain that workers will need to be brought in from abroad. It will be up to the Federal Government to monitor the supply and demand for labour in key areas and streamline processes for bringing in necessary workers.
- Apart from the impact on spending and economic activity, there is the impact on crops and prices. Not only have key growing areas for fruit and vegetables been affected in Queensland but flooding has affected crops in north and western Victoria, Tasmania and northern NSW. It is too early to gauge these effects.
- The chief executive of AUSVEG Richard Mulcahy said on Friday that vegetable prices are stable: “With a few exceptions, such as sweet potatoes, ginger and pumpkins, vegetable prices on the whole remain relatively stable and we are not seeing fluctuations such as those that occurred after Cyclone Larry.” Mr Mulcahy has ruled out the need for increased imports of vegetables.
- Woolworths spokeswoman Clare Buchanan has been quoted as saying that there shouldn't be any significant short-term price rises apart from a few select produce lines such as melons, lychees and sweet potato.
- However the key question is how Queensland crops will fare in the autumn and winter growing seasons. The risk is that Australia may face an extended period of high and rising food prices in the second half of 2011 and into 2012. Again the onus is on federal and state governments to closely monitor the situation. There may need to be some temporary relaxation of controls on fresh food imports to ensure that prices don't soar and become more ingrained in medium-term inflation.
- Of note, for the first time in 90 years, varieties of Chinese apples have today arrived in Australia and are now selling in NSW.
- In terms of interest rates, we expect the Reserve Bank to stay on the interest rate sidelines for at least the next three months. All economic indicators released in 2011 have been soft while the widespread flooding will further withdraw momentum from the economy in the short-term. Certainly the latest inflation gauge from TD Securities indicates that price pressures are contained. Excluding volatile prices, prices have risen just 0.1 per cent in the past three months.

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