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Shaky isles

Economic impact of the Canterbury earthquake

- **The earthquake that struck the Canterbury region this weekend has resulted in extensive damage to infrastructure and property, with early estimates putting the total damage at around $2bn, or 1% of national GDP.**
- **Reconstruction efforts are likely to be a net positive for measured GDP – but the national balance sheet has undoubtedly been weakened by this event.**
- **The local nature of the event, and a high level of preparedness for it, should limit the implications for financial markets.**

The 7.1 magnitude earthquake that struck Canterbury in the early hours of Saturday morning resulted in no loss of life, but has wrought extensive damage to infrastructure and property. Media reports have varied from 5% of buildings sustaining damage to 20% of residential houses being damaged beyond repair. The Earthquake Commission (EQC) has put an early estimate on the total damage of $2bn.

The disruption to Christchurch has been immense. But the local nature of the event, and a high level of preparedness for it, should keep the implications for financial markets fairly limited. The scope of the disaster is manageable, with the total damage bill currently estimated to be 1% of GDP. The critical infrastructure of the airport, port, telecommunications and payments systems are operational.

The affected region accounts for roughly 13% of New Zealand's population and economic activity. Christchurch is New Zealand's second-largest manufacturing centre, and the Canterbury region is a major exporter of meat and dairy products. Lyttleton port is the point of egress for most of New Zealand's coal exports.

Economic activity – short term

Regional economic activity will be harmed in the short run – the entire CBD and most suburban shops remain closed, as do schools, universities and other institutions. There has been damage to at least one dairy manufacturing plant, although it is expected to return to normal operation within days. There is sure to be as-yet unreported damage to productive capacity elsewhere.

A survey of the 1994 Los Angeles earthquake – which was of comparable magnitude to the Canterbury quake – found that 57% of businesses suffered some degree of physical damage; about 22% of premises suffered structural damage, although ultimately only 2% were condemned.[1] The median loss was about NZ$12,000 in current price terms, reflecting the fact that most firms were small (though there were a few very large losses; the largest in the survey was $35m).

More than half had to close temporarily, even if only for a few days. The most common reason given was employees unable to get to work (e.g. with schools closed, many parents would have to stay at home). Damage to the owner's home was another major reason – again reflecting the number of small owner-operated firms.

Modelling of the impact of a major Wellington earthquake – itself based on the experience of the 1931 Napier quake – estimated that the short-term income loss would be equivalent to about 15% of the capital loss.[2] Estimates for costs of the Northridge earthquake were similar. Applying the same ratio would put the short-term income loss from the Canterbury earthquake at $300m, or 0.2% of national GDP.

Economic confidence is likely to take a short-term hit. Households are liable for at least the excess on their insured property, and a few households and businesses may suffer uninsured losses. This could worsen already-tatty balance sheets.

[1] Tierney, Kathleen (1996), "Business impacts of the Northridge earthquake", University of Delaware Disaster Research Center, Preliminary Paper 237.

[2] Clarke, Mary (1998). "The Economic Effects of a 1998 Wellington Earthquake", NZ Institute of Economic Research, Working Paper 98/17.

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Economic activity – medium term

The local economy is likely to get a substantial boost from reconstruction activity that will be much larger than the initial income loss. The rebuilding work, if it does amount to $2bn, would be equivalent to 26% of New Zealand's total annual construction expenditure. This will boost national GDP by far more than the initial income loss, with a corresponding let-down once the reconstruction boom ends.

The overall effect of an earthquake on GDP partly depends on when it occurs in the economic cycle. When the economy is running at full speed and supply is the main constraint on growth, a natural disaster could have a small or even negative impact on GDP. But when the economy is running below capacity – as is the case today, and especially in the construction sector – the temporary boost to demand can be a substantial positive for GDP. Although the 1931 Napier earthquake occurred amid the Great Depression and declining national output, the local economy actually grew in the years after the recession, and local wages rose, on reconstruction activity.

Of course, events such as natural disasters highlight one of the shortfalls of GDP as a measure of economic wellbeing – it only measures the flow of activity, rather than changes in the stock of wealth. The national balance sheet has undoubtedly been weakened by this event, no matter how the costs and benefits are distributed. A substantial boost to GDP is needed just to get the capital stock back to where it was before the earthquake.

Government finances

The fiscal costs arising from the Canterbury earthquake come from a number of sources. The EQC covers the cost of housing repairs and rebuilding up to a limit of $100,000 plus GST; initial estimates put the EQC's liability at around $1bn. The EQC had $5.6bn of assets as at June 2009, of which about 70% was in NZ Government securities and bank deposits and 30% in global equities. The EQC has the option to sell securities in the market, or put them back to the Government in exchange for cash – though this in turn could pressure the Government's short-term cash position, and push bond rates up at upcoming tenders.

The Government is liable for repairing its own structures in Christchurch. On top of this, central government has historically promised to cover 60% of the expense of restoring local government infrastructure, some of which is uninsurable. The NZIER paper on the effects of a major Wellington earthquake put the cost of restoring some local infrastructure at $190m. Christchurch City Council's 2009 annual report puts the value of infrastructure assets at $3.1bn. With initial reports suggesting that the worst of the damage is contained to the central city and that in most cases repair and maintenance will be required rather than full replacement, a cost of around $200m would seem a reasonable guesstimate.

There will be further effects from increased health and welfare spending including ACC claims, housing and accommodation benefits, and from decreased tax revenue in the near term. However, there may be a boost to revenue over the medium term as construction activity ramps up.

As at May 2010, Core Crown debt was $52.6bn, or 28% of GDP. Thus, a cost to the Government of as much as $1.5bn appears manageable. That said, it comes at a time when there is little room for manoeuvre on the fiscal position, with fiscal deficits forecast to remain until 2016/17.

Debt levels/current account deficit

Private insurers have international reinsurance contracts in place – as does the EQC, though they will only be triggered if its total liability exceeds $1.5bn, which is not expected to be the case. Triggering payment on these contracts could result in a short-term improvement in the services balance of the current account.[3] This would be partly offset by a deterioration in the goods trade balance, as many replacement items are imported over the next couple of years.

There was an increase in debt following the 1931 Napier earthquake, despite the Great Depression, as residents borrowed for reconstruction.

Inflation

Earthquakes tend to be inflationary. This quake is likely to cause inflation in the Canterbury region, particularly in construction costs. There could also be a spillover to construction costs nationwide, as limited resources are diverted to Canterbury. However, the impact on national CPI will probably be small. For example, a 20% increase in Canterbury's construction costs would boost national CPI by just 0.13%.

The RBNZ is explicitly required to look through a short-term inflation spike resulting from a natural disaster, and will probably focus its monetary policy deliberations on inflation ex-Canterbury for the next year or so. However, as always, the RBNZ is charged with preventing any second-round effects on nationwide inflation.

Financial markets

The RBNZ will seek to shore up confidence in the first instance, so any remaining chance of an OCR hike in the September *Monetary Policy Statement* has been eliminated. Markets will probably factor in a lesser chance of hikes at other meetings this year. The short end of the yield curve can be expected to fall. Our analysis suggests that long-term rates should rise on the fiscal cost of reconstruction, so the yield curve should steepen.

We expect the NZ dollar to weaken in the near term. However, given that the economic impact of the earthquake will be fairly contained, any exchange rate impact should be short-lived.

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[3] White, Bruce (1997), "Preparing for natural disasters disasters – where does the Reserve Bank fit in?", RBNZ Bulletin, Volume 60(4).