**Non-technical summary for 'Macrofinancial Stress Testing on Australia Banks'**

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History shows that the failure of banks can be hugely disruptive for an economy. As a result, financial regulators and those charged with ensuring financial stability devote considerable resources to monitoring the health of banks.

One tool that is often used to do this is stress testing. In a stress test, it is typically assumed that the economy enters a 'severe but plausible' downturn in which unemployment rises significantly and property prices fall sharply. A model is then used to determine the size of losses that banks might incur from loan defaults in this scenario, and whether these are large enough to make them unviable. Understanding how likely banks are to fail if there is a large downturn in the economy can help regulators decide what actions to take.

This paper outlines how the Reserve Bank of Australia's (RBA's) bank stress testing model works. It also shows how the model was useful in a real-world crisis, at the onset of the COVID-19 pandemic.

**How does the model work?**

The heart of the stress testing model involves mapping a scenario for GDP, the unemployment rate and property prices to changes in banks' capital ratios. This is done by estimating the response of three key variables:

1. Bank profits – which are particularly influenced by increased credit losses as the economy deteriorates.
2. The amount of profits that is retained as capital rather than paid out as dividends.
3. The change in their (risk-weighted) assets as the riskiness of their loan book changes because of the evolving economic situation.

These three variables enable the model to update its estimates for banks' capital ratios each quarter, and show how close each bank comes to breaching its prudential capital requirement.

**The importance of capturing interaction effects**

The RBA's model includes the nine largest banks in Australia. An important feature of the model is that it includes various mechanisms to capture how the behaviours and outcomes at one bank affect all others. The global (and other) financial crisis showed that such 'contagion' effects can significantly amplify the effect of an economic downturn on banks' capital. We consider three forms of contagion within the model, which work via:

1. Funding costs: as one bank becomes stressed, funding costs increase for all banks.
2. Fire sales: to satisfy liquidity needs a banks may begin to sell its securities, which can depress the prices of these securities and force other banks to mark down their value.
3. Economic feedback: if banks restrict their lending to households and firms it can cause the economy to deteriorate more sharply and result in higher loan losses for all banks.

**Real life use during COVID-19**

The RBA's stress testing model was especially valuable as an analytical tool when the COVID-19 pandemic struck Australia in March 2020. At that time the economy was predicted to enter one of its largest ever downturns. This raised significant concern about how banks would fare and whether the viability of any would be threatened.

The model was very helpful in assuring policymakers that this was unlikely, and that the downturn would need to be quite a bit larger or more prolonged for any banks to come close to breaching their prudential requirements. This mainly reflects the fact that Australian banks earn significant profits and are very well capitalised.