

Box C

The Countercyclical Capital Buffer

One of the Basel III measures intended to improve the resilience of the global banking system is the countercyclical capital buffer (CCyB). The stated purpose of the CCyB is to protect the banking system against potential future losses caused by credit growth associated with an increase in system-wide risk.¹ The underlying rationale of the CCyB is that excessive credit growth is a key contributor to or cause of banking system distress. In Australia, the CCyB regime came into effect in January 2016.²

Capital Buffer Policy Framework

Under the Basel III capital framework, banking institutions must hold a buffer of Common Equity Tier 1 (CET1) capital over and above the minimum requirement. The buffer includes a capital conservation buffer equal to 2.5 per cent of risk-weighted assets (higher for systemically important banks), and the CCyB, which can typically range between 0 and 2.5 per cent of risk-weighted assets (and operates as an extension to the capital conservation buffer). The CCyB is set at a rate above zero by the local regulator during periods of credit growth that are judged to be associated with the build-up of system-wide risk and released when the credit cycle turns. When the CCyB is increased, regulators are to provide banks with advance notice of up to 12 months, while decisions to lower the buffer take effect immediately to reduce the risk of credit supply being constrained by regulatory capital requirements.

For all member jurisdictions of the Basel Committee on Banking Supervision (BCBS), international reciprocity arrangements are in place to ensure a level playing field between domestic and foreign banks and to account for different buffers across jurisdictions. Each bank's countercyclical capital requirement is calculated as the weighted average of the jurisdictional buffers in locations where the bank has private sector credit exposures.

The Credit-to-GDP Gap

The BCBS recommends that national authorities use the aggregate private sector credit-to-GDP gap to help guide decisions on setting the level of the CCyB. The credit-to-GDP gap is the difference between the current ratio of credit to GDP and its long-term trend; a positive gap may indicate excessive credit growth. The BCBS suggests that a credit-to-GDP gap between 2 and 10 percentage points should correspond to a buffer of between 0 and 2.5 per cent of risk-weighted assets.

The BCBS selected the credit-to-GDP gap because analysis by the Bank for International Settlements (BIS) suggested that it was the best-performing *single* early warning indicator of banking crises.³ This work assessed a broad range of indicators including aggregate macroeconomic, banking sector and cost of funding variables. It found that the credit-to-GDP gap performed better than any of the other indicators alone in anticipating financial crises often rising strongly before the emergence of financial stress.

1 See BCBS (2010), 'Guidance for National Authorities Operating the Countercyclical Capital Buffer', December.

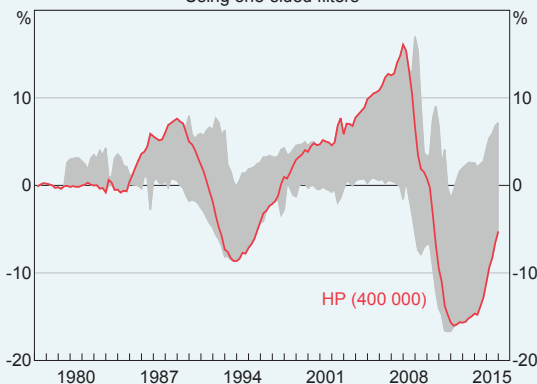
2 See APRA (2015), 'The Countercyclical Capital Buffer in Australia', *Information Paper*, December.

3 See Drehmann M, C Borio, L Gambacorta, G Jiménez and C Trucharte (2010), 'Countercyclical Capital Buffers: Exploring Options', *BIS Working Papers*, No 317, July.

Even so, limitations of the credit-to-GDP gap have been identified, including:

- The trend of the credit-to-GDP ratio needs to be established for the credit-to-GDP gap to be measured. Estimates of the trend are sensitive to the choice of filter, smoothing parameters and sample period. Although different statistical methods can be used to establish the credit-to-GDP trend, the BCBS specifically recommends a one-sided Hodrick Prescott (HP) filter with a smoothing parameter of 400 000.⁴ Estimating the credit-to-GDP gap with different detrending methods leads to a large variation in the range of gap measures obtained. For Australia, the various measures of the credit-to-GDP gap would have provided different signals of buffer magnitudes and the timing of activation (setting above zero) and release in the past (Graph C1).⁵

Graph C1
Credit-to-GDP Gap Measures*
Using one-sided filters



* Shaded area reflects the range of credit-to-GDP gaps measured using: HP filters with smoothing parameters set at 400, 4 000, 40 000 and 400 000; the Baxter-King filter; and the Christiano-Fitzgerald filter

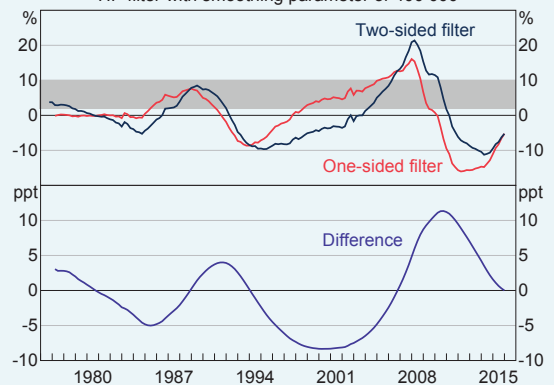
Sources: ABS; RBA

4 See the BCBS guidance paper for further details on the rationale for this method.

5 In addition, in assessing the level of the credit-to-GDP gap, the RBA and APRA use the measure of total credit published in the RBA Financial Aggregates statistical release. The BIS use total credit to the private non-financial sector for Australia, which is broader than the RBA measure and generates different credit-to-GDP gap estimates.

- As the gap must be measured in real time, only past information can be used (a one-sided filter). But some research has found that estimates of the trend in the credit-to-GDP ratio – and hence the gap – can be revised substantially as new information becomes available, due to the unreliability of trend estimates at the end of the sample period.⁶ For example, using the full sample of the data now available to measure the gap (a two-sided filter) suggests a later timing for the activation and release of the CCyB around the financial crisis relative to the gap measured using the one-sided filter (Graph C2).

Graph C2
Credit-to-GDP Gap Measures*
HP filter with smoothing parameter of 400 000



* Shaded area represents range of credit-to-GDP gap consistent with applying a countercyclical capital buffer

Sources: ABS; RBA

- As highlighted by APRA, the credit-to-GDP gap may understate the excessiveness of credit growth following lengthy periods of very strong credit growth and does not take into account whether the absolute level of credit and indebtedness is of concern. In addition, it may not differentiate between harmful credit growth episodes and more benign booms, for instance, due to financial deepening following periods

6 See Edge RM and RR Meisenzahl (2011), 'The Unreliability of Credit-to-GDP Ratio Gaps in Real Time: Implications for Countercyclical Capital Buffers', *International Journal of Central Banking*, 7(4), pp 261–298.

of disinflation or deregulation. Australian authorities, including APRA and the RBA, have expressed some reservations in the past about the specific credit-to-GDP gap measure recommended by the BCBS as a buffer guide.⁷ The BCBS has similarly noted that the gap does not work well at all times for all countries as an indicator of potential banking crises, and recommends that national authorities also examine other indicators and apply judgement in setting their buffers.

The Australian Policy Framework

APRA is responsible for setting the level of the CCyB that applies to Australian authorised deposit-taking institutions (ADIs) and the Australian exposures of foreign banks operating in Australia. In accordance with jurisdictional reciprocity arrangements, overseas banking institutions with private sector credit exposures to Australia would also apply the Australian CCyB, up to a ceiling of 2.5 per cent of these risk-weighted assets.

APRA's framework examines other indicators of systemic risk associated with financial activity, is forward-looking, and judgement-based. Henceforth, the framework will be informed by core indicators within four key areas of systemic risk: credit growth (including the credit-to-GDP gap), asset prices, lending indicators and financial stress. APRA will also monitor supplementary metrics and more granular information as necessary to guide decisions on the appropriate level of the CCyB.

APRA's approach differentiates between indicators that would support decisions to increase the buffer and indicators that would support decisions to release the buffer. During an upswing, APRA will focus on whether there is a build-up of unsustainable cyclical leverage, by assessing

whether there is excessive credit growth, inflated asset values and/or system-wide lowering of lending standards. During a downturn, APRA has indicated that indicators of financial stress, such as non-performing loans and loan-loss provisions, will be important in guiding decisions to release the capital buffer.

Importantly, the core indicators will not translate formulaically into decisions about setting the buffer, and these decisions will give due regard to dispersions and differences across markets, institutions, households and businesses. In addition, APRA will consider other factors such as bank capital positions, prudential concerns and the broader economic outlook.

APRA has set the CCyB applying to Australian private sector credit exposures at 0 per cent from 1 January 2016. The set of core indicators will be monitored by APRA on a quarterly basis and discussed regularly at the Council of Financial Regulators. ✎

⁷ See RBA and APRA (2012), 'Box C: Application of the Counter-Cyclical Capital Buffer', *Macprudential Analysis and Policy in the Australian Financial Stability Framework*, September, pp 19–20.