

Working paper summary

[The value of bank capital buffers in maintaining financial system resilience](#)

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The Financial System Inquiry (FSI) has identified several ways to improve the efficiency and resilience of the Australian banking system. In particular, bank capital levels are expected to be unquestionably strong. However, limited empirical guidance on the size of such buffers exists. We analyse the impact of increased capital buffers on the resilience of the system. Our analysis is based on confidential data for Australian banks from 2002 to 2014, provided by the Australian Prudential Regulation Authority (APRA), and the annual public accounts from 1981 to 2014 of the four major domestic banks.

The paper makes three key contributions to the body of knowledge on systemic resilience.

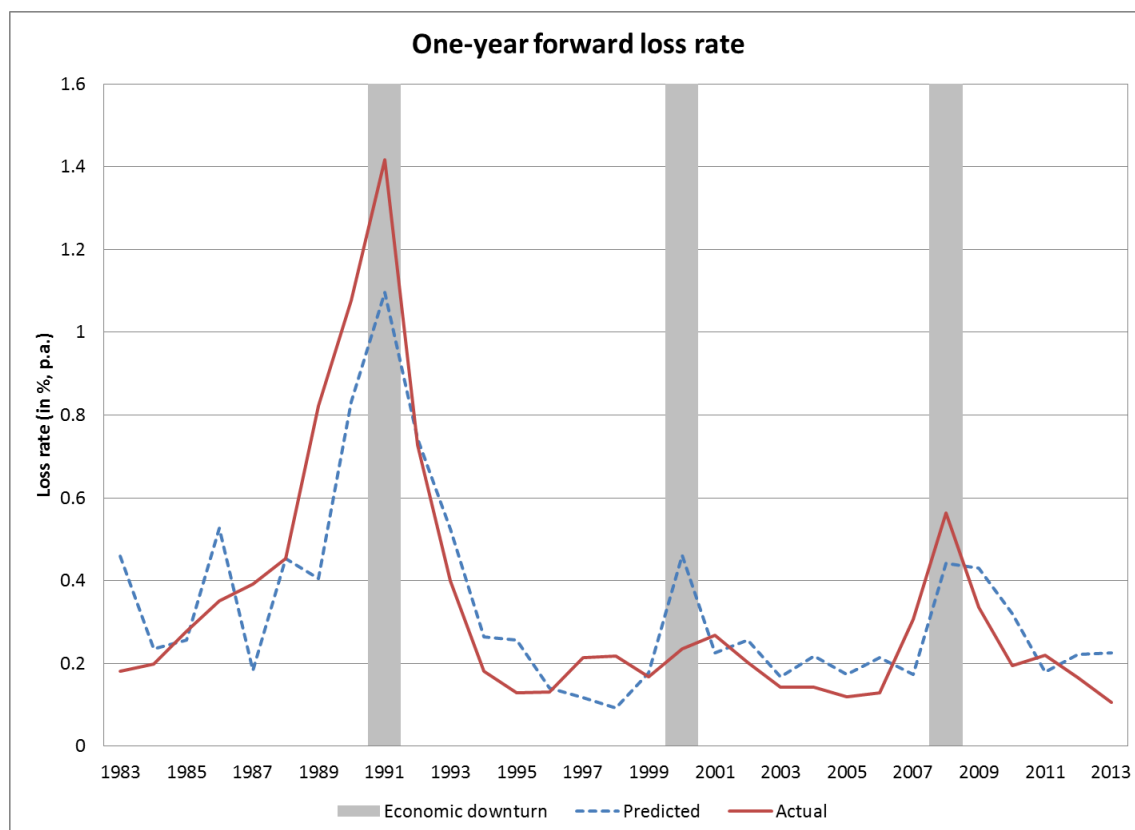
Firstly, we provide empirical evidence on the role of loan-loss dynamics and capital buffers in supporting the resilience of the financial system in Australia. This is important, as the digitalisation of data in the Australian banking industry started around 2000. Much of our knowledge is based on the years thereafter, which is a period during which Australia has experienced persistent growth without a severe economic downturn. Nevertheless, since 1981 Australia has experienced three episodes of low GDP growth. These were in 1991, 2000 and 2008, when growth slowed to -1%, 1.1% and 1.5%, respectively. The downturn of 1991 is not included in most existing studies. To the best of our knowledge, this study is the first that analyses the systemic risk of the Australian banking system and incorporating the downturn data from that year. The extended data allows us to analyse the patterns and predictability of the banks' loss rates during crises, which could be very different to those in tranquil times. We compare the role of economic downturns on the parameterisation of a model that explains future loss rates by contrasting the outcomes based on APRA data starting in 2002 and hand-collected annual data for the top four Australian banks since 1981. As regulatory capital is reported, the paper analyses the role of capital buffers in excess of regulatory capital.

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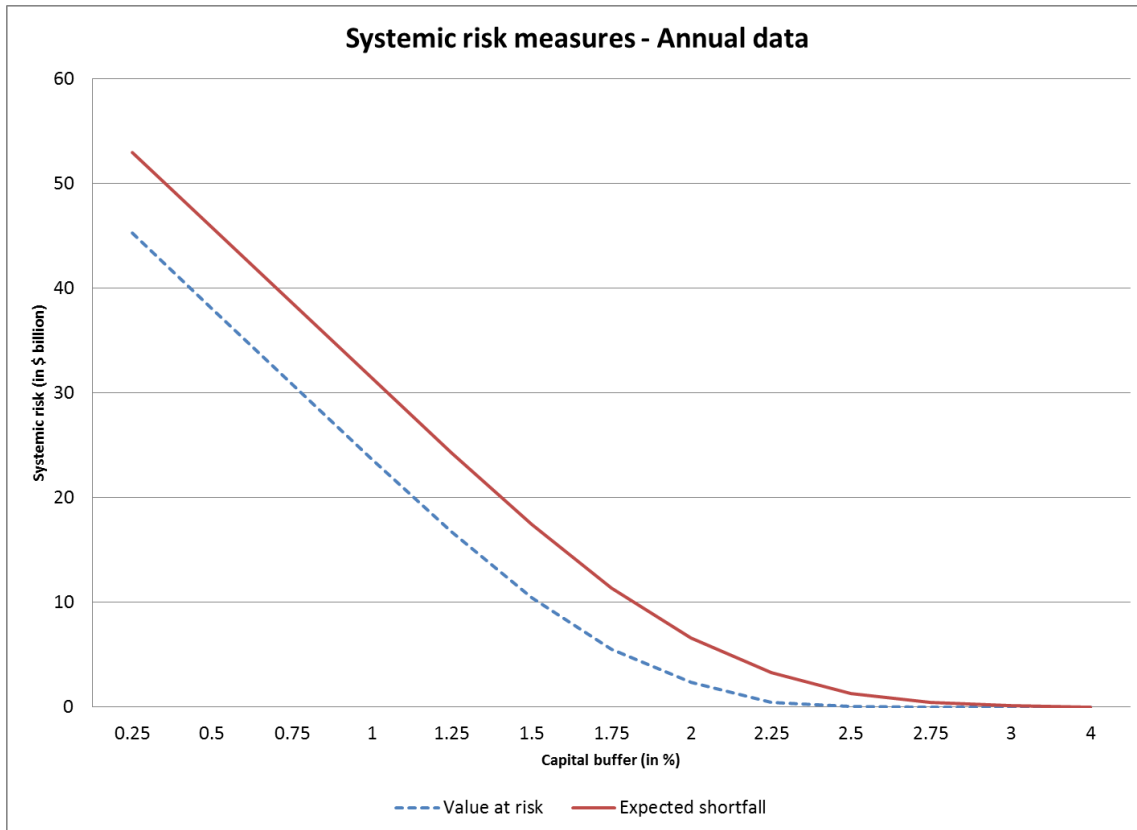
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Secondly, we find that Australian bank loss rates are positively related to past loss rates and lagged loan growth, and are negatively related to the GDP growth rate, deposit ratios, and bank size. Hence, the paper confirms that the results found in previous literature using US data also hold for the Australian financial system. The following chart shows the one-year loss rates and economic downturns (i.e. periods of lower economic growth) in grey shaded bars.



Thirdly, we provide a sensitivity analysis of system resilience by using banks' capital buffers. The size of the Australian financial system protection scheme is measured by computing the absolute losses in excess of capital buffers (i.e. the difference between economic capital and regulatory capital) in the system that are not explained by loan provisioning models, and are hence a reflection of model risk. Specifically, we examine two main risk measures – Value-at-Risk (VaR) and Conditional Value-at-Risk (referred to as Expected Shortfall). These measures are useful for assessing the minimum adequacy and thus the size of protection schemes necessary for creditors. The analysis of the systemic losses with regard to banks' capital buffers allows us to assess the impact of the FSI recommendations on the strength of the overall financial system. Financial system protection schemes such as the Australian Financial Claims Scheme can be analysed in terms of their adequacy and the costs transferred to stakeholders, based on such metrics. The Australian government has recently decided against a transfer of such costs from taxpayers to banks. The following chart shows the sensitivity of systemic risk measures to banks' capital buffers:



The findings in this study have two key policy implications.

First, we find that the inclusion of an economic downturn scenario is paramount in modelling systemic risks. It allows us to show that higher capital requirements are essential in order to avoid financial system failures.

Second, absolute loss levels, based on the likelihood and magnitude of future bank losses after loss mitigation by capital levels proposed by the FSI, are quantified. Bank regulators may apply the developed methodology to assess the adequacy of capital buffers and the likelihood and magnitude of losses exceeding such buffers, and hence the implied costs to society.