Małgorzata Olszak, University of Warsaw
Sylwia Roszkowska, University of Lodz
Iwona Kowalska, University of Warsaw
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Do Macroprudential Policy Instruments Reduce the Procyclical Impact of Capital Ratios on Lending? Cross-Country Evidence

In this brief, we ask about the capacity of macroprudential policies to reduce the procyclical impact of capital ratios on bank lending. We focus on aggregated macroprudential policy measures and on individual instruments and test whether their effect on the association between lending and capital depends on bank size. We find that macroprudential policy instruments reduce the procyclical impact of capital on bank lending during both crisis and non-crisis times. This result is stronger in large banks than in other banks. Of individual macroprudential instruments, only borrower-targeted LTV (loan-to-value) caps and DTI (debt-to-income) ratios weaken the association between lending and capital and thus act countercyclically. With our study, we are able to support the view that macroprudential policy has the potential to curb the procyclical impact of bank capital on lending and therefore, the introduction of more restrictive international capital standards included in Basel III and of macroprudential policies in general are fully justified.

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Macroprudential policy after the GFC

The Global Financial Crisis (GFC) highlighted the need to go beyond a purely microprudential approach (i.e. focusing on the health of individual firms) to regulation and supervision of the banking sector. The empirical literature supports the view that macroprudential policies (i.e. those addressing the general condition of the whole financial system) are able to decrease the vulnerability of the banking sector (see Claessens et al., 2013 for a review, and Cerutti et al., 2015). The increased resilience of the banking sector means that banks are able to absorb losses of greater magnitude – due to higher capital buffers (or provisions) or better access to funding sources, thus reducing the likelihood of a costly disruption to the supply of credit (CGFS, 2012), in particular during crises or recessionary periods. Considering this, macroprudential policies are expected to reduce the procyclical impact of capital ratios on loan supply.

Lending activity of banks and capital ratio nexus

It is a well-known tenet in the banking literature that capital adequacy rules have an impact on the behaviour of banks (Borio & Zhu, 2012). They are expected to protect banks from economic death, i.e. from insolvency or going bankrupt. Previous literature stresses the importance of capital ratios for lending behaviour, during both good economic conditions and in crisis or recessionary periods, in particular in banks with thin capital ratios, and thus insufficient buffers needed to cover loan-losses, (see Beatty & Liao, 2011; Carlson, Shan, & Warusawitharana, 2013) or in large banks (Beatty & Liao, 2011). The problem of the effect of capital ratios on bank lending has been studied extensively since the 1990s, when the first Basel Accord was introduced as an international capital standard (see Jackson et al., 1999). In the wake of the recent GFC, the topic has attracted renewed attention as concerns have arisen that large losses at banks would hinder their capital adequacy and restrain their lending. Capital is found to affect lending behaviour in large publicly-traded banks by Beatty and Liao (2011) and in US commercial banks by Carlson et al. (2013). Additionally, in a cross-country study, Gambacorta and Marqués-Ibáñez (2011) show that publicly traded banks tend to restrict their lending more during recessions or crisis periods due to insufficient capital ratios. Such an effect is referred to as a procyclical capital ratio on bank lending (Beatty & Liao, 2011; Peek & Rosengren, 1995a).

However, previous literature on the link between lending and capital can be roughly subdivided into two groups: The studies that considered macroprudential policy instruments have been limited to individual countries (United States by Beatty & Liao, 2011 and Carlson et al., 2013; France by Labonne & Lame, 2014; United Kingdom by Mora and Logan, 2011), so that all banks were equally affected by the country's banking policy and regulations. In turn, the studies that focused on the link between lending and capital across countries, have not accounted for macroprudential policy and its instruments (Gambacorta & Marqués-Ibáñez, 2011).

In our recent paper (Olszak, Roszkowska, and Kowalska, 2019) we extend the existing research by exploring the countercyclical effects of macroprudential policy factors on the association between loan growth and capital ratios on a large cross-country panel.

Why can macroprudential policy affect the link between lending and capital ratios of banks?

While policy standard-setters argue that the new macroprudential approach to regulation and supervision should reduce procyclicality in banking, and in particular by increasing banks' resilience, it should diminish the effect of capital ratio on loan supply, the empirical evidence on this subject is not available.

In our paper, we employ a cross-country data-set to examine whether the application of macroprudential policies affects the link between loan supply and capital ratios, before and during the 2007/2008 crisis period in a sample of over 4500 banks from 67 countries. The main purpose of the paper is to examine whether macroprudential policy instruments, which were in use before the GFC, had a significantly negative impact on the positive association between lending and capital ratios, during the crisis and in the non-crisis period. If we identify such a negative effect, we will be able to empirically test the view that macroprudential policy is effective in increasing the resilience of banks and thus affects the procyclicality of bank capital regulation.

Based on the previous evidence, we first hypothesize that the link between lending and capital is positive, and is reduced in countries which applied macroprudential policies in the pre-crisis period. Following the capital crunch theory (see Peek & Rosengren, 1995a; and Beatty & Liao, 2011), we expect that the link between lending and capital is strengthened in the crisis period, and is reduced in countries in which the use of macroprudential instruments was more extensive in the pre-crisis period and continued to be used during the crisis. As the association between loan growth and capital ratios, in particular during crisis periods, was found to be stronger in large banks (see Beatty & Liao, 2011), we also examine whether macroprudential policy effects on the association differ between large and other banks (i.e. medium and small).

We use the Bankscope database and data-set on macroprudential policies available in Cerutti et al. (2015) to test our hypotheses. We analyse the effects of macroprudential policies on the association between lending and capital ratio using individual commercial bank data from 67 countries over the period of 2000–2011.

Findings

We find a consistent and strong effect of macroprudential policies on the association between loan growth and capital ratios.

Further, unlike previous studies on the link between bank vulnerability and macroprudential policy, we differentiate between large, medium and small banks, because previous evidence shows that capital ratios affect bank lending with a different magnitude, depending on the bank size (see Beatty & Liao, 2011). Indeed, we find evidence in favour of the expectation that bank size matters for the impact of macroprudential policies for the link between lending and capital.

Analysis of the role of individual macroprudential policy instruments shows that only loan-to-value caps and debt-to-income ratios weaken the positive effect of capital ratios on lending. This means that in countries which apply such instruments, bank lending is not prone to shortages in capital buffers, in particular during financial crisis. Thus, the banking sector does not add to business cycle fluctuations.

We also identify which instruments are better at curbing the procyclicality of capital standards. In particular, we find that borrower targeted macroprudential instruments (such as loan-to-value caps) or restrictions on balance sheets of financial institutions (such as dynamic provisions or leverage ratios), are more effective in reducing the procyclicality of capital standards.

Policy implications

Our finding that macroprudential policies are able to alleviate the impact of capital ratio on lending, in particular during the crisis, may have certain implications for policy makers in the area of implementation of commonly recognized standards targeted at the reduction of borrower risk-taking. Our results suggest that more frequent use of these instruments may create additional buffers in large banks and in emerging and closed-capital-account economies, thus making large banks' lending and lending of banks in emerging markets and closed economies less affected by capital ratios during crisis periods. Therefore, in the current work aimed at creating macroprudential regulations, more attention should be focused on instruments which have the potential to reduce borrower risk.

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Małgorzata Olszak

University of Warsaw
Molszak@wz.uw.edu.pl
https://orcid.org/0000-0001-8920-5309

Małgorzata Olszak (PhD, Associate Professor) conducts research in banking and finance at Faculty of Management, University of Warsaw and has published as an author and co-author over seventy academic works covering these fields. She has been principal investigator in several research projects on procyclicality in banking and effects of macroprudential policy. Her activity also covers attendance at international conferences as a presenter, discussant and chair of sessions as well as reviewing manuscripts in JCR journals.

Iwona Kowalska

University of Warsaw
ikowalska@wz.uw.edu.pl
https://orcid.org/0000-0002-1208-2790

Iwona Kowalska (PhD) is a researcher at Faculty of Management, University of Warsaw. Her field of expertise covers quantitative methods (econometrics and statistics) applied in economics and finance. She has been involved in research projects on procyclicality in banking, macroprudential policy and competition in the banking industry. She has merged academic experience with professional work in the banking and the mobile industry.

Sylwia Roszkowska

University of Lodz
Sylwia.roszkowska@gmail.com
https://orcid.org/0000-0002-6043-8210

Sylwia Roszkowska (PhD) works as an economist at the Center for Social and Economic Research (CASE) in Warsaw and as an academic teacher at University of Lodz. Her over ten years professional experience in conducting analyses on modelling economic trends, mainly covering labour market issues, has been achieved in NBP and several research projects. She has published over 50 papers (regarding labour market, education, economic growth and macroprudential policy) as author or co-author.