

# New macro prudential tools: The counter-cyclical buffer in Norway

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## 1 Introduction

The BCBS introduced a countercyclical capital buffer (CCyB) as part of the Basel III capital framework (Basel Committee on Banking Supervision (2011)). The CCyB has later been implemented in most countries, but only a handful of countries have so far applied a CCyB of more than 0 percent.

In December 2013, Norway became one of the first countries to announce that it would introduce a positive CCyB rate.<sup>1</sup> The CCyB rate in Norway is currently 1.5 percent and will rise to 2 percent in December 2017.

Higher capital requirements have increased bank capital. With the introduction of the CCyB, resources have been directed towards identifying indicators for predicting the probability of a financial crisis and increasing the emphasis on the cyclical aspects of financial regulation. Further, the CCyB has created more transparency with respect to capital requirements. However, a number of challenges remain:

- Higher capital ratios increase the incentive for banks to prioritise low risk-weighted loans (mortgages) over high risk-weighted customers (non-financial corporations).<sup>2</sup>
- Under an inflation targeting regime, the lopsided effect across sectors might increase the potential conflict between the application of the CCyB and monetary policy.
- It is still uncertain how banks will respond to a release of the CCyB.

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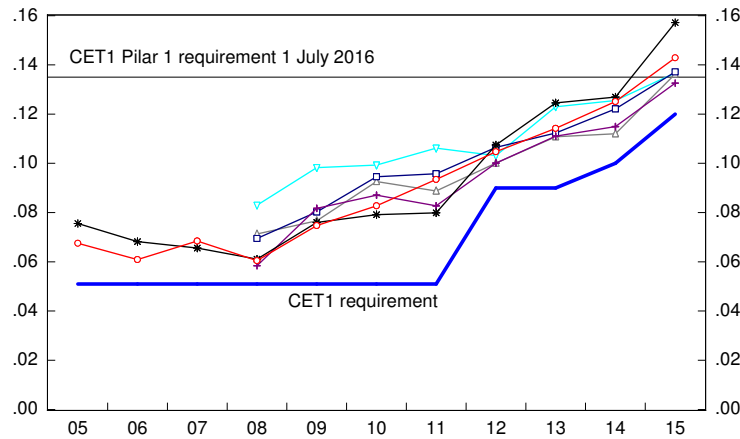
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<sup>1</sup>Switzerland was the first country to introduce a CCyB, but this was a sector-specific buffer on mortgage lending.

<sup>2</sup>There is also a bigger question about the regulation of banks versus other types of lending institutions (i.e. shadow banking), but this is a question that goes beyond a discussion of the CCyB, and will not be addressed in this paper.

## 2 How have banks responded to higher capital requirements?

**Chart 1:** CET1 requirement in Pillar 1 and actual CET1-capital ratio held by Norwegian banks. Six largest Norwegian Banks. Annual data. 2005-2015



Source: Statistics Norway and Norges Bank

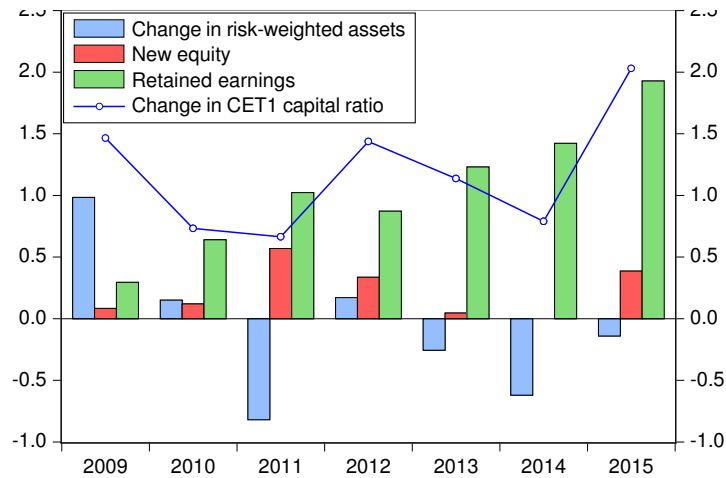
Standard macro finance theory implies that the cost of capital requirements should be minimal, since the share of equity financing should have no impact on investors' risk-weighted return (the Miller-Modigliani theorem). However, market imperfections - such as a lender of last resort for banks - might lower the relative price of debt financing, thereby increasing the optimal level of leverage for banks' investors.

While the cost of holding more capital is uncertain, there is most certainly a cost associated with increasing the share of equity financing. Banks can choose to increase the CET1 capital ratio through an increase in equity or a change in assets:

- Increase the level of capital:
  1. Reduce dividends
  2. Issue new equity.
- Reduce the relative size of risk-weighted assets:
  1. Reduce lending
  2. Shift lending to assets with lower risk weights.

If the Miller-Modigliani theorem holds, banks should accept a lower return-on-equity (ROE) when the level of equity increases, as risk associated with equity investment should fall. However, if holding more equity in the banking sector is a constraint on total lending, banks might try to increase their income by raising interest margins.

**Chart 2:** Decomposition of change in banks' CET1 capital ratio. Contribution from different factors.<sup>1</sup> Six largest Norwegian Banks. Annual data. 2009-2013



1) Contributions from regulatory changes not included. Numbers in bars will not perfectly add up to the change in the CET1-ratio.

Source: Banking groups annual reports and Norges Bank

Since 2005 the CET1 requirement in Norway has increased 160 percent - from 5.1 percent to 13.5 percent.<sup>3</sup> Banks' capital ratios have increased in line with the change in requirements, see Chart 1. About 30 percent of the increase is due to the introduction of the CCyB. In total, 11 percent of the current Pillar 1 CET1 requirement is CCyB.

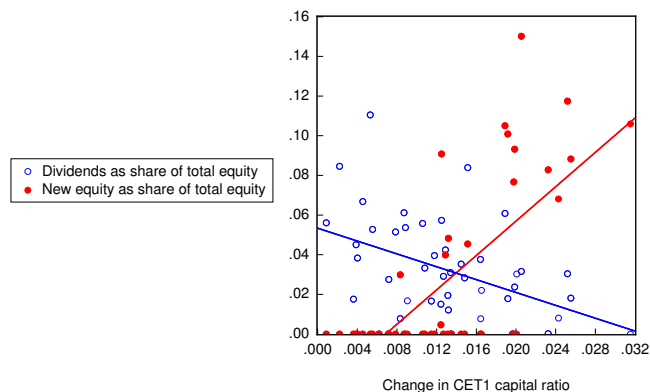
With the exception of the stressed period in 2009, the biggest contributions to increasing the CET1-ratios in banks have come from retained earnings and new equity, see Chart 2. Retained earnings, in large part due to lower dividend payments, are clearly most important. Historically, dividends have been a significant source of income for bank investors, and banks tend to be conservative in their dividend policy. When the same regulatory shock applies to all banks, banks can adjust dividends at the same time, thereby reducing the negative idiosyncratic shock to share prices.

Issuing new equity is seen as expensive. However, when we look at a panel of the six largest banks and plot changes in the capital ratio towards dividends and new share issues as a share of existing equity, we find that new share issues are important as a source of capital when banks make larger changes in the capital level, see Chart 3. So far, banks have been able to compensate for increased equity in the form of higher earnings. There is no evidence that higher CET1 capital ratios have come at the cost of a lower ROE, see Chart 4.

There is some evidence that banks' lending growth tend to fall in periods when the CET1-ratio increases. According to what banks report in the Norges Bank's

<sup>3</sup>This applies to the two largest banks. For other banks, the requirement is 11.5 percent. The CET1 requirement will increase by 0.5 pp when the CCyB rate increases to 2 percent in December 2017. The FSA has also announced that the largest bank has a 1.5 percent public Pillar 2 requirement.

**Chart 3:** Change in CET1 by bank. Dividends as a share of total equity. New equity as a share of total equity.<sup>1</sup> Six largest Norwegian Banks. Annual data. 2008-2015



1) Chart includes simple regression line between change in CET1-capital ratio and the series for dividends and new equity.

Source: Statistics Norway and Norges Bank

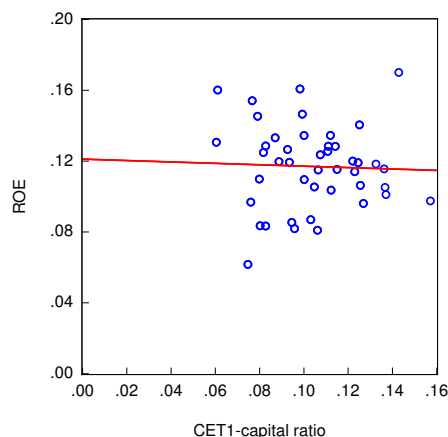
Lending Survey, changes in capital requirements should primarily affect the lending practices towards non-financial corporations primarily, see Chart 5.<sup>4</sup>

In the data we find that when banks increase the capital ratio, they have reduced lending to both non-financial corporates and households, see Chart 6. However, bank lending to non-financial corporates has been lower than lending to household after the financial crisis. We find that the share of lending to non-financial corporates has been declining as the CET1-ratio has increased, see Chart 7.

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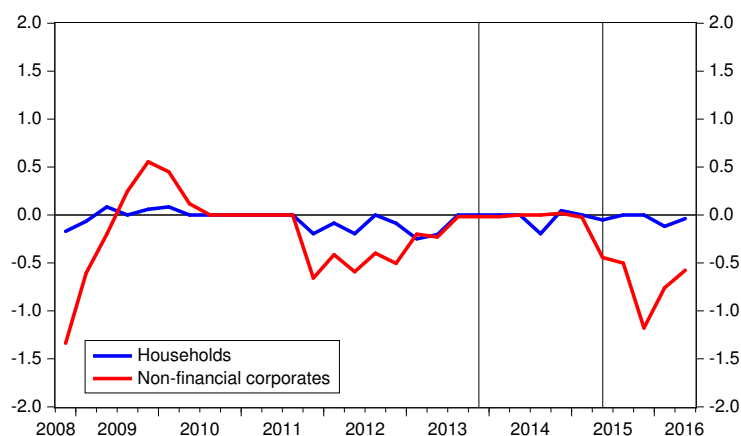
<sup>4</sup>The lending survey covers the nine largest banks operating in Norway. This will include three branches of foreign banks.

**Chart 4:** Level of CET1 by banks and ROE in the same institution.<sup>1</sup> Six largest Norwegian banks. Annual data. 2005-2015



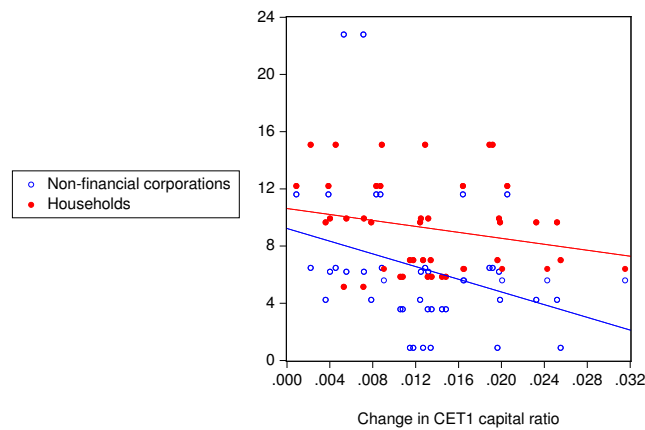
1) Chart includes simple regression line between CET1-capital ratio and ROE.  
Source: Statistics Norway and Norges Bank

**Chart 5:** Importance of capital requirements for introduction of stricter lending requirements to households and non-financial corporations. Negative value implies stricter lending conditions.<sup>1</sup> Norges Bank's Lending Survey. Quarterly data. Lines indicate announcement of CCyB rates. 2007Q4-2016Q2



1) Note: The value is a weighted response from the banks responding to the survey. Banks can either respond 0 (no change), 1 (some change) or 2 (large change).  
Source: Norges Bank

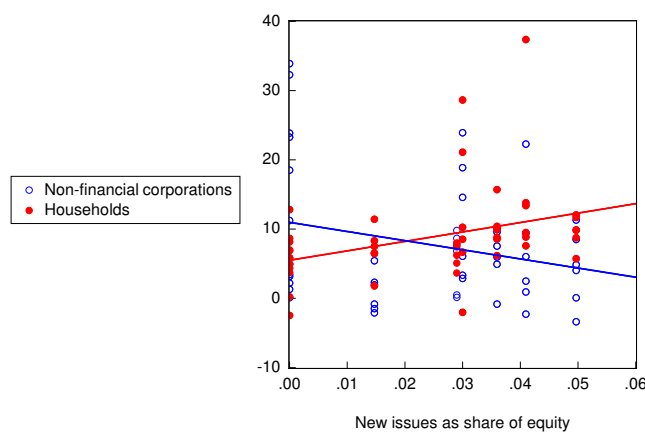
**Chart 6:** Change in CET1 by bank and lending growth to households/non-financial corporations by the same institution.<sup>1</sup> Annual data. 2008-2015



1) Chart includes simple regression line between change in CET1-capital ratio and lending variable.

Source: Statistics Norway and Norges Bank

**Chart 7:** New equity as a share of total equity. Lending growth to non-financial corporations and households by the same institution.<sup>1</sup> Six largest Norwegian banks. Annual data. 2005-2015



1) Chart includes simple regression line between new equity and lending series.

Source: Statistics Norway and Norges Bank

### 3 Coordination with monetary policy

Macroprudential instruments are often presented as instruments that can target credit growth. However, the CCyB targets banks' capital-not credit growth-and the effects on credit depend on how banks adjust to higher capital requirements. As pointed out above, higher capital requirements probably have an asymmetric effect on lending to households and non-financial corporations. So, while increasing the CCyB on the margin might improve banks' resilience, there is a risk that a higher capital buffer will force non-financial corporations to find other sources of financing than banks while having little or no effect on household lending, see Table 1.

In Norway and Sweden, the solution has been to increase the CCyB to improve banks' resilience, but complement it with other macroprudential instruments directed at the housing market. Both countries have imposed stricter requirements for household lending, like restricting interest-only borrowing for mortgages with high loan-to-value ratios. It is unclear whether such restrictions on borrowing should be structural or time-varying.<sup>5</sup>

So far the housing market has been the main target of macroprudential policies in advanced economies after the financial crisis. Evidence seems to indicate that targeted instruments have had the biggest effect (Damar, E and M Molico (2016), Akinci, Ozge and Jane Olmstead-Rumsey (2015)). While measures aimed at borrowers seem to be effective, evidence regarding countercyclical buffers seems to indicate little effect through the cycle (Claessens, Stijn, Swati R. Gosh and Roxana Mihet (2014)).

An alternative is to change the CCyB from a general buffer to a sector-specific buffer. Pointing to the special role of the housing market, Switzerland introduced a sectoral countercyclical capital buffer. So far this buffer has been applied to capital requirements for mortgage lending (Swiss National Bank (2016)). Evidence from Switzerland seems to indicate that a higher capital requirement has made capital-constrained banks raise prices more than other banks (Basten, Christoph and Cathrine Koch (2015)).<sup>6</sup>

That being said, other studies find that capital-based macroprudential tools affect both bank resilience and credit through macrofinancial feedback effects (Behn, Markus, Marco Gross and Tuomas Peltonen (2016)). Further, having a countercyclical instrument for which an international agreement of reciprocity exists is in itself a price worth protecting. We are still early in the development of a macroprudential framework, and we must expect the role of the CCyB to evolve in the years to come.

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<sup>5</sup>In Norway, regulation on bank lending practices has been time-limited. The current regulation, imposed in January 2017, is valid until June 2018.

<sup>6</sup>Note that in Norway there have been efforts to change the calculation of risk weights, e.g. by imposing a floor on mortgage risk weights to reduce distortions in lending that arise from large differences between risk weights in different sectors.

**Table 1:** Expected marginal effects of changes in the CCyB

		CCyB	
		<i>Up</i>	<i>Down</i>
<b>Bank lending</b>	<i>Households</i>	→	↑
	<i>Non-financial corporations</i>	↓	→
<b>Non-bank lending</b>		↑	?
<b>Bank resilience</b>		↑	↓

## 4 CCyB release and coordination with microprudential policy

Based on evidence from the use of "dynamic provisioning" in Spain, it has been argued that the potential impact of a release of the CCyB might be substantial (see Jimenz, Gabriel, Steven Ongena, Jos Luis Peydr, Jess Saurina (2013), p. 34 and Sveriges Riksbank (2014), p. 34). Unfortunately, dynamic provisioning is not fully equivalent to a CCyB as applied in Basel III or CRD IV and might not be relevant for understanding the effects of changing the CCyB.<sup>7</sup>

There are several levels of uncertainty about how banks will react in the case of a CCyB release:

- Will supervisors allow capital ratios to fall, or will they increase Pillar 2 requirements if banks react to a change in the CCyB by lowering its level of capital?
- If markets are uncertain about the solvency of the banking sector, how will funding costs react if a bank attempts to lower its capital levels?
- If banks view changes in the level of capital as expensive, will they respond to a release of the CCyB unless they see the change as long-lasting or permanent?

The response to a release of the CCyB will depend on the ability of authorities to reduce these uncertainties:

- A high degree of coordination between the micro- and macroprudential authorities is important. If the CCyB is released, an increase in Pillar 2 requirements should only affect banks that are genuinely weak.

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<sup>7</sup>Dynamic provisioning is a "general provision", i.e. a provision not based on expected losses on a specific loan, but based on general criteria such as industry or size, and set aside for each loan. When the loan is taken out of the portfolio, either because it has been repaid or because it has been written off, the provision is returned as a gain. CCyB decisions, on the other hand, are taken based on macro observations. They affect capital ratios, and not the income of the bank directly. There is reason to believe that dynamic provisioning is a more powerful and direct tool to produce countercyclical effects on lending. However, dynamic provisioning cannot be adapted to standard accounting practices. It has therefore been discontinued in Europe, but is, as far as we know, still in use in some Latin American countries.



- It is important that markets trust that banks that are weak will have to hold a higher level of capital due to Pillar 2 requirements. It will then be easier to accept that solid banks lower their capital levels.
- According to the BCBS suggestions for the CCyB, an announcement to release the buffer should be followed by a statement of a minimum period before the CCyB might be reimposed. A high degree of trust between banks and macroprudential authorities will increase the ability of banks to use this grace period to maintain lending.

## 5 Summary

So far, the CCyB has been only a small part of a broad increase in capital requirements. Evidence from Norway indicates that banks meet higher capital requirements by a combination of increased equity and a change in the composition of their loan portfolios. The important next step is to ensure that there are processes in place to assure that banks can extend credit if the CCyB is to be reduced or removed. This will require close coordination between micro- and macroprudential supervisors.

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