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DEAR READER,

In my new role as CEO of Capco, I am very pleased to welcome you to the latest edition of the Capco Journal, titled **Balancing Innovation and Control**.

The financial services and energy sectors are poised for another transformative year. At Capco, we recognize that this is a new era where innovation, expertise, adaptability, and speed of execution will be valued as never before.

Success will be determined based on exceptional strategic thinking, and the ability to leverage innovative new technology, including GenAl, while balancing a laser focus on risk and resilience. Leaders across the financial services and energy industries recognize the transformative benefits of strong governance while needing to find the optimal balance between innovation and control.

This edition of the Capco Journal thus examines the critical role of balancing innovation and control in technology, with a particular focus on data, Al, and sustainability, with wider corporate governance considerations. As always, our authors include leading academics, senior financial services executives, and Capco's own subject matter experts.

I hope that you will find the articles in this edition truly thought provoking, and that our contributors' insights prove valuable, as you consider your institution's future approach to managing innovation in a controlled environment.

My thanks and appreciation to our contributors and our readers.

Annie Rowland, Capco CEO

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HIGHER CAPITAL REQUIREMENTS ON BANKS: ARE THEY WORTH IT?

JOSEF SCHROTH | Research Advisor, Financial Stability Department, Bank of Canada¹

ABSTRACT

Following the 2007-09 global financial crisis, policymakers and standard setters made an important change in how they think about the regulation of banks. While they have always been focusing on the health of banks, they now explicitly do so to make sure that there are no sudden contractions in credit supply. Consequently, success of regulatory policy is now measured not only by market liquidity or whether there are losses to deposit insurance agencies, but also by whether the supply of credit is sufficiently stable. Higher capital (buffer) requirements, paired with regulatory stress tests, are key policy innovations to support stable credit supply. These policy innovations impose costs on banks today but their intended future benefits are not well understood. This article discusses design features that determine whether the innovations' intended benefits would materialize.

1. A NEW APPROACH TO BANK CAPITAL REGULATION

Policymakers are still in the process of implementing, or phasing in, new bank regulations based on the so-called Basel III guidelines. There are two key innovations. First, regulatory capital requirements on banks are now higher on average. Second, stress tests help to determine how high capital requirements should be. Stress tests are sophisticated exercises that use granular bank level data to examine how banks would be affected in hypothetical adverse macroeconomic scenarios. They give a good idea of how banks' capital or lending would be affected in case of severe adverse economic outcomes.

Stress tests can help inform the appropriate level of additional capital (buffer) requirements levied on all banks broadly, such as in Canada, or on individual banks such as in the U.S. The idea is that when banks hold additional capital that can absorb losses during adverse times, then they should be able to maintain their lending activity better. Let us unpack this.

Conventional capital requirements force banks to reduce the size of their balance sheets when losses reduce their capital. This would be bad for economic activity, such as business investment, that relies on credit. Consequently, if banks hold additional capital buffers, on top of conventional capital requirements, then they can use those buffers to absorb losses and would not be forced to reduce lending.

So far, so good. One problem that banks face when they use their capital buffer to absorb, or provision for, losses is that their capital is now below the sum of conventional capital requirement and capital buffer requirement. In this case, capital buffer requirements typically stipulate restrictions of payouts to shareholders. But banks' primary objective is not to maintain a stable supply of loans, but to maintain a stable flow of payouts to their shareholders. It is, therefore, conceivable that banks' response to losses is not to let their capital ratio fall below the sum of conventional capital requirement and capital buffer requirement — but rather to lower their assets, which means reducing loans.

¹ Any views expressed are my own and not necessarily those of the Bank of Canada.

In other words, the main effect of Basel III reforms may be to further strengthen existing microprudential regulation, which concerns the health of banks' balance sheets, but may end up falling short of their macroprudential objective, which concerns the stable supply of loans to the economy. What a bank regulator can do to make capital buffer requirements more effective is to lower them when a severe adverse scenario, such as the ones envisioned in stress tests, materializes. As a result, banks would have to be less concerned about how maintaining lending would affect their ability to make payouts to shareholders.

When banks face uncertainty about their ability to make payouts, it reduces their shareholder value, increases their funding cost and, ultimately, lowers their ability to make loans. Regulators should alleviate this uncertainty by clearly answering two questions. First, is there a highest possible level of capital buffer requirements? Second, what are the criteria for a reduction of capital buffer requirements? In other words, regulators need to tell banks what the "upper bound" on capital buffer requirements is, "when" requirements would be reduced, and "by how much" and "for how long". If regulators fail to communicate clearly in this way, then capital buffer requirements will needlessly create uncertainty about banks' payouts. Buffers would then be a source of dismay for both banks and regulators rather than a powerful new regulatory tool.

A straightforward way of coming up with an upper bound on capital buffer requirements is to set it equal to the hypothetical drop in banks' average capital ratio in a stress test with a particularly adverse scenario. The key is to stick with this upper bound for a substantial period of time and to not change it every time a new potential risk emerges. In particular, emerging risks related to, for example, pandemics, wars, or overall indebtedness may affect how regulators set the buffer requirement within a given range but should not affect the upper bound of that range. This is consistent with the idea that the size of buffer requirements is not the only determinant of their effectiveness: how long they are reduced also matters in terms of stabilizing banks' loan supply. Intuitively, it would be inefficient to require banks to be able to absorb losses from every imaginable risk. The cost of carrying all that capital would simply be too high for bank shareholders. In case things turn out much worse than reasonably anticipated, then the regulator can keep buffer requirements reduced for longer.

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Banks' primary objective is not to maintain a stable supply of loans, but to maintain a stable flow of payouts to their shareholders.

Determining when to reduce buffer requirements is also relatively straightforward: they should be reduced when households and firms struggle to obtain loans. While there are potentially many financial indicators that can be used to measure "financial stress", a useful criterion has been formulated, in a different context, by U.S. Supreme Court Justice Potter Stewart as "I know it when I see it." For example, when bank stock prices are suddenly down and credit spreads up, then the economy is most likely experiencing financial stress.

It is comparatively more challenging for regulators to determine by how much or for how long to reduce buffer requirements. In particular, regulators will likely face the dilemma of an increase in risk at the same time as financial stress materializes. But it would make no sense to first reduce the buffer requirement, because of financial stress, and then to increase it back up, perhaps to an even higher level than before, because of heightened risks. This would only confuse banks, and financial markets, and have no beneficial effect on loan supply.

One way to address this dilemma is the following: keep the buffer requirement equal to the upper bound as long as there is no financial stress and reduce it to zero for a meaningful period of time when stress materializes. Once loan supply has recovered, regulators should require banks to rebuild capital buffers at a pace consistent with not triggering financial stress. This simple approach recognizes that it is too late to build capital buffers for risks at the time when those risks can be reliably detected by regulators, banks, or financial markets. Detecting risks associated with their balance sheets is at the core of banks' business models; hence, it is not obvious that regulators should attempt to do it for them.

While there are many different capital buffer requirements in practice, this article refers to their sum. In fact, Sam Woods, Deputy Governor for Prudential Regulation at the Bank of England and Chief Executive Officer of the Prudential Regulation Authority, has discussed in a recent speech how the various capital buffer requirements resemble a single capital buffer requirement (http://tinyurl.com/ycxx48hc).

It is true that the rationale for bank regulation is that regulators evaluate risk differently from banks. Regulators, in contrast to banks, care about the broad social and economic implications of risks faced by banks, such as business failures or unemployment. As a result, they prefer banks to hold more capital for given risks. But this does not mean that regulators are better at measuring or detecting those risks. For example, when banks detect risks, they provision for expected loan losses. This reduces their capital and requires them to retain earnings to meet capital (buffer) requirements. Increasing regulatory capital buffer requirements at that point would be too late. Ideally, regulators would like banks to retain earnings before they start provisioning. But this would mean that regulators would have to be able to detect risks earlier than banks — and it is not clear how regulators would achieve this.

While banks have scope to use discretion in applying accounting rules, this does not necessarily imply a role for capital regulation. For example, following rapid interest rate increases in 2022, Silicon Valley Bank abused hold-to-maturity classification related to their bond holdings to avoid timely recognition of expected losses. In doing so, the bank had ignored that its liquidity risk in fact called into question the appropriateness of such classification choices. But, of course, at that point it would have been of little prudential benefit to raise the bank's capital buffer requirement.

The remainder of this article discusses the design and operation of capital buffer requirements in more detail. It also discusses caveats related to the credibility of the financial regulator and the impact of bank regulation on inequality.

2. OPTIMAL DESIGN OF CAPITAL BUFFER REQUIREMENTS

Choosing the size of regulatory capital buffers involves an efficiency-stability tradeoff. On the one hand, there is the efficiency loss from higher bank capital during normal times, when there is no financial stress. The reason is that banks consider capital costly and will increase loan interest rates when they are required to fund a larger fraction of lending with capital rather than with, for example, deposits. On the other hand, there is a financial stability benefit in terms of a lower frequency and magnitude of financial crises.

If we are talking about a conventional, pre-Basel III, capital requirement, then efficiency losses and stability benefits can simply be traded off against each other by calculating them separately for different levels of capital requirement. But this approach is not feasible in the case of capital buffer requirements. The reason is that the latter are dynamic in a way that responds to non-linear macro-financial linkages.



Such linkages are non-linear because the lower bank capital is throughout the economy, the stronger will a given capital buffer requirement constrain lending to the economy. Moreover, the expected path of capital buffer requirements affects banks' lending decisions today, analogous to expectations regarding future monetary policy rates.

To capture the efficiency-stability tradeoff related to capital buffer requirements, one needs to model jointly the banking sector, the bank regulator, and the overall economy consisting of firms and households. While this can be done in a relatively parsimonious model framework, capturing three elements is key. First, the banking sector makes capital and lending plans conditional on the state of the economy and on bank regulation. Second, firms rely in part on banks to fund their investments while banks rely in part on uninsured deposit funding. The latter provides market monitoring of banks whereby a bank's funding availability is positively related to its shareholder value. Funding availability has a crucial interaction with capital regulation because shareholder value not only depends on banks' capital but also on the timing of capital payouts to shareholders. Third, the regular sets capital buffer requirements conditional on the state of the economy and on banks' capital and lending plans. It is natural to assume that the objective of a bank is to maximize its shareholder value and the objective of the regulator is to maximize some welfare criterion (such as the net present value of gross domestic product).

The model should match quantitatively important financial-cycle statistics such as the frequency of financial stress and banks' average target leverage. The former statistic can be obtained from historical (panel) data and the latter from banks' financial and regulatory reports. Stress tests can be used to gauge the size of shocks that can affect the banking sector at a given time.

Overall, the model would imply a capital buffer requirement during times when there is no financial stress as well as paths to rebuild capital buffers following a reduction of the capital buffer requirement during financial stress. Critically, the optimal paths depend on the severity of the financial stress that precedes them. Bank regulators should give banks more time to rebuild capital buffers, the more severe financial stress has been.

3. OPERATIONALIZING CAPITAL BUFFER REQUIREMENTS

The model framework discussed above produces a capital buffer requirement for given credit spreads and for given aggregate bank capital and shareholder value. But no regulator in their right mind would expect implementation to be easy. The reason is that economic models achieve internal consistency — needed to compute optimal capital buffer requirements — by making very specific assumptions about how communication takes place and about how expectations are formed. In reality, the intentions of regulators are often less clear than in stylized models. It is, therefore, necessary to carefully consider the market impact of announcing capital buffer requirements.

Any reduction of the capital buffer requirement needs to be accompanied by clear communication regarding the path of capital buffer requirements going forward. A model can help to communicate such "forward guidance". As in the case of monetary policy, it is important to convey conditionality because the future is not known at the time that the forward guidance is given. For example, severe financial stress might be followed by capital buffer requirements that are "low for long", which implies future capital buffer requirements that are low relative to banks' earnings. At the same time, it should be made clear that buffer requirements will be "low for longer" in case financial stress worsens.

In communicating with the banking sector, and financial markets more broadly, a bank regulator would likely adopt some of the lessons learned from monetary policy authorities. Specifically, during financial stress, a bank regulator would want to carefully calibrate its language to target a specific credit gap for given health of the banking sector (as measured by aggregate capital and shareholder value of the banking sector). If the credit gap is too large, then language about capital buffer forward guidance can be adjusted to be more accommodative, and vice versa.

3.1 Caveat: Credibility of the bank regulator

Banks' expectations about how long capital buffer requirements remain reduced following financial stress are key for the ability of a reduction in buffer requirement to alleviate financial stress. The reason is that banks consider capital to be costly. Consequently, it is necessary that bank regulators are seen as credible when giving forward guidance about buffer requirements. Banks' lending would not respond much to any reduction in capital buffer requirements that banks expect to be short lived.



It is reasonable that regulators may not wish to reduce capital buffer requirements too much during severe financial stress. For example, the capital conservation buffer is part of the regulatory capital buffer requirement stack in most jurisdictions and cannot be reduced. It imposes automatic payout (dividends and share buybacks) restrictions on banks in times of severe financial stress. The idea is that payout restrictions are very beneficial for banks' health at times when bank capital is low; their negative effects on banks' lending can be offset by promising banks capital buffer requirements that are reduced for longer.

However, initial payout restrictions may rebuild banks' capital to the point where promising banks capital buffer requirements that are reduced for longer is not necessary anymore to induce banks to lend. Banks will then have enough capital so that they provide lending that is close to socially optimal. At that point, it would be reasonable for the regulator to increase capital buffer requirements at a faster pace — to guard against future financial stress. But then the initial promise of reduced capital buffer requirements is not credible, and thus ineffective.

Banks have reasons to worry about tough payout restrictions during severe financial stress – because such restrictions make regulators' promises of reduced capital buffer requirements less credible. Regulators can address this

credibility challenge by reducing the size of constant capital buffer requirements (such as the capital conservation buffer) and instead increasing the upper bound on time-varying capital buffers (such as the countercyclical capital buffer). It would then be possible to support bank lending more during times of severe financial stress.

Regulators may impose payout restrictions during times of moderate financial stress when they do not need to reduce any capital buffer requirements (and when regulators also make no promises about doing so in the future). In such cases, there is no credibility challenge. For example, during the COVID-19 pandemic, against the backdrop of unprecedented fiscal support for much of economic activity, most major jurisdictions imposed restrictions on banks' dividends and share buybacks.

3.2 Caveat: Impact of bank regulation on bailouts and inequality

When banks have more capital ex-ante, then it is less likely that they need to be bailed out ex-post. However, it is not possible to rule out financial crises and the need for ex-post resolution and bailouts. The reason is that even though some households may be much more affected by financial crises than others, it would be prohibitively costly, in terms of social welfare, to require banks to hedge all their risk taking (just

as no household would purchase full insurance against all the risks it faces). At the same time, it is possible to consider how accounting for household inequality would affect the efficiency-stability tradeoff.

Bailouts of banks typically involve equity injections funded by the treasury department that are being repaid by banks over time. The Bagehot principle stipulates that the interest rate implied by initial equity injection and subsequent repayments should be steep, such as in the case of the Troubled Asset Relief Program during the 2007-08 financial crisis. When households differ in the amount of wealth they hold, then they may be affected differently by bailouts.

On the one hand, equity injections enable banks to maintain lending. This stabilizes labor demand of firms and the supply of deposits (that banks use to fund lending). Consequently, wages and the return on savings are stabilized in the short-run, which benefits both poor and wealthy households. On the other hand, when banks need to repay equity injections, they pass the cost of the implied steep interest rate on to borrowers. This increases the borrowing costs of firms who respond by somewhat lowering labor demand. In the long run,

therefore, wages are depressed, which especially affects poor households because they rely primarily on labor income. On net, wealthy households benefit from bank bailouts while poor households may be somewhat worse off. Taking into account adverse ex-post distributional implications from banking sector bailouts means that capital buffer requirements should be higher ex-ante.

4. CONCLUSION

Policymakers have developed a new regulatory tool designed to better insulate economic activity from fluctuations within the financial sector. The key benefit of capital buffer requirements is that they aim to constrain bank payouts rather than bank lending. However, regulators' intentions are not necessarily reflected in banks' actions. Banks may be less willing to lend when their payouts are being restricted. For the new regulatory tool to work as intended, it is crucial to take into account how banks react to it. Banks also need to know what they are supposed to be reacting to. Consequently, it is crucial that regulators have a coherent framework when communicating the timing of any payout restrictions to banks and financial markets.

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Capco, a Wipro company, is a global technology and management consultancy focused in the financial services industry. Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its award-winning Be Yourself At Work culture and diverse talent.

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