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Macroprudential Policies: General Analysis and a Look into the Chilean Experience

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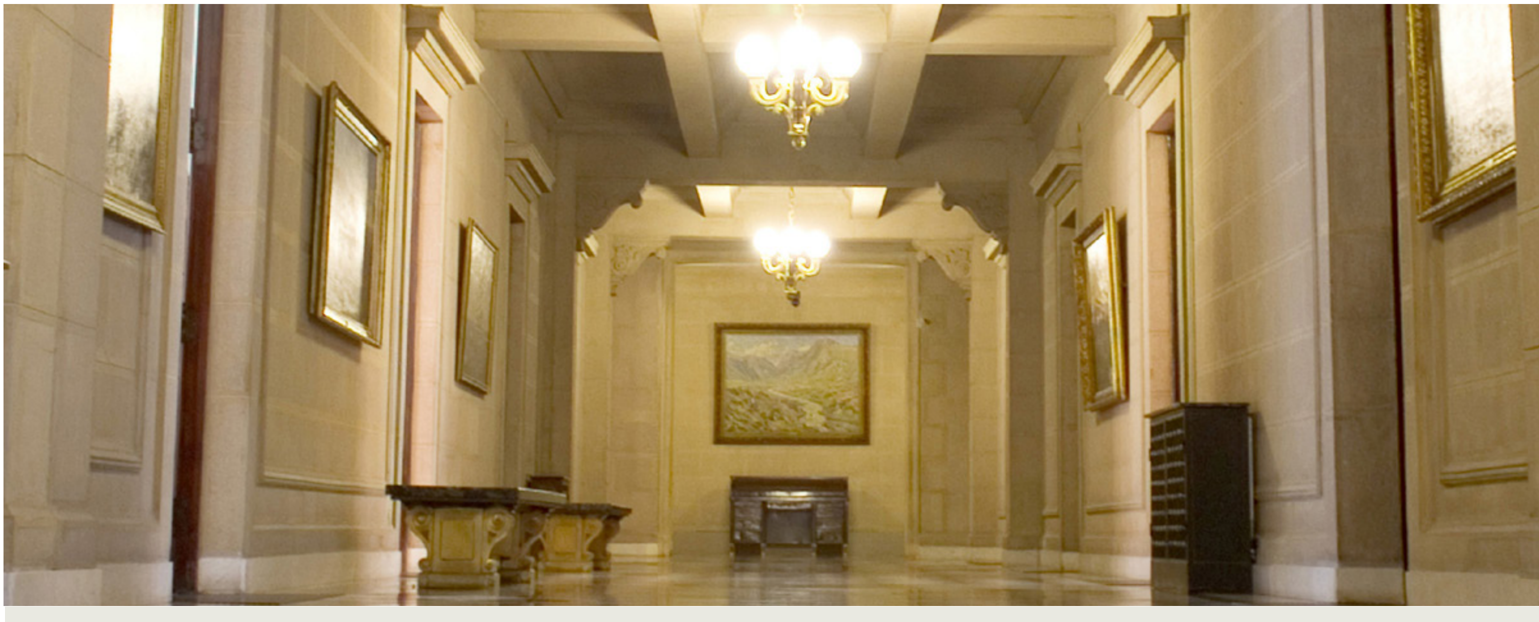

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Políticas Macroprudenciales: Análisis General y una Mirada a la Experiencia Chilena[*]

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Resumen

Desde la crisis financiera de 2008 el término "macroprudencial" ha estado continuamente presente en la discusión tanto académica como de política económica. Luego de estar en el margen de estas discusiones por décadas, en los últimos años se han realizado docenas de artículos, notas de política, reportes de prensa y conferencias académicas sobre este tema. El objetivo de este artículo es discutir y analizar el concepto de política "macroprudencial", sus objetivos e instrumentos y los principales debates que hoy están presentes en círculos académicos y de política económica en esta materia. Además, revisamos las principales políticas "macroprudenciales" implementadas en Chile en las últimas dos décadas.

Macroprudential Policies: General Analysis and a Look into the Chilean Experience

Summary

Since the financial crisis of 2008, the term "macroprudential" has been recurrent in academic and policy circles. After standing at the fringes of these discussions and outside mainstream academia for decades, dozens of research papers, policy notes, press reports, and academic conferences have been conducted around this concept in the last several years. The purpose of this paper is to discuss and analyze the concept of "macroprudential" policy, its objectives and tools, as well as the main ongoing debates on this issue. We also take stock of the main "macroprudential" policies applied in Chile in the last couple of decades.

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1. Introduction

Since the financial crisis of 2008, the term "macroprudential" has been permanently present in academic and policy circles. After remaining at the fringes of these discussions and outside mainstream academia for decades, dozens of research papers, policy notes, press reports, and academic conferences have been conducted around this concept in the last few years.[1]

The rise of macroprudential is closely related to the criticisms to the prevailing framework of macro and financial stabilization before the crisis. They have crystallized in an emerging consensus that achieving financial stability requires having it as an explicit goal and adding macroprudential policies to the traditional monetary policy and regulatory framework. This view also reflects the shift in the "lean versus clean" debate produced by the financial crisis, whose depth and persistence convinced many that the clean approach is unable to fully dampen the consequences of a crisis. [2]

This policy paper aims to discuss the main aspects of the international debate around macroprudential policies and link them to the Chilean context. The next section provides a brief review of the definition of macroprudential policies and how they differ from monetary policies. Section 3 discusses the types of macroprudential tools and their effectiveness. Section 4 tackles some ongoing debates on the convenience of using monetary policy for macroprudential purposes, and the institutional organization of the macroprudential objective. Section 5 focuses on the Chilean experience with these policies. The note closes with some final thoughts in section 6.

2. What is a macroprudential policy?

The objective of safeguarding the stability of the financial and payment systems has a long history in central banking. Indeed, it can be argued that the role of lender of last resort, that allows central banks to reduce the likelihood of a financial crisis, existed before its more modern role of preserving price-level and macroeconomic stability. Thus, the call by some authors to central banks to consider financial stability as a mandate appears to be based on the experience of specific institutions and jurisdictions rather than on a historical and global perspective (Peek *et al.*, 2015).

However, the global financial crisis that began in 2008 underscored the importance of the goal of financial stability and prompted an intense international debate on the need for a policy framework that would explicitly focus on this objective because its achievement would not be guaranteed by just macroeconomic stability and good prudential regulation and supervision. This new policy framework, aimed at preserving financial stability by filling the space between monetary policy and microprudential regulation, is what has come to be known as macroprudential policy.

Although at first the purpose, tools and implementation of macroprudential policies were unclear, the heated debate of some years has gradually created some common beliefs and visions.

[1] See Hanson, et al. (2011), Hahm, et al. (2012), and Galati and Moessner (2011) among others. See also Clement (2010) for a historical review of the term "macroprudential."
[2] See Hahm et al. (2012) for a summary of the lean-versus-clean debate and the changes in the monetary policy paradigm after the crisis.

For example, significant consensus has been reached that the objective of macroprudential policy is to reduce the systemic risk resulting from credit being too procyclical and from interconnections between financial institutions, among other factors. It is also relatively accepted that actions taken under this scheme are designed to increase the resilience of the financial system and its participants when dealing with shocks, or the flip side of the coin, to reduce their vulnerabilities.

These definitions have also allowed to specify that macroprudential policy is different from monetary policy, as long as their objectives, as well as their emphasis and tools, are different. While monetary policy focuses on price stability and operates on the basis of projections of the most likely scenarios for the economy over a given period, macroprudential policy focuses on financial stability and operates based on unlikely risk scenarios that are therefore less frequent.

As for the tools they use, monetary policy is mainly conducted with just the benchmark interest rate, whereas macroprudential policy has been associated with many and varied tools, including limits to leverage or credit users' financial expenditure, limits to banks' foreign currency mismatches and the use of some sources of funding, application of reserve requirements and other restrictions to credit growth. Several of these tools may also be used for microprudential purposes, and the classification of them also as macroprudential depends on the reason for using them, with their potential adjustment to the financial cycle, or with the type of triggers that activate them.

About the latter, it is worth noting that, while it is possible to motivate the need for macroprudential policies based on various externalities and market failures, so far its implementation has progressed in an ad hoc and experimental manner, so the tools used are not necessarily aimed at resolving such externalities at their origin. Rather, their implementation has been motivated by the perception that the dynamics of some financial prices or ratios are indications of vulnerabilities in all or part of the financial system that could create problems upon the occurrence of one or more shocks. Therefore, many of the tools used are intended to directly restrict or limit the growth of certain financial ratios or aggregates.

There is also consensus that macroprudential policies should focus on the goal of preserving financial stability and not substitute for adequate monetary policy or microprudential regulation. A rapid expansion in aggregate demand may not only create inflationary pressures, but also a fast increase in credit or asset prices. But the cyclical aggregate demand conditions should be dealt with using the normal monetary policy framework instead of direct restrictions to credit growth. Furthermore, differences in the length of the financial and business cycles could result in situations where they are in opposite phases and where monetary and macroprudential policies may need to go in different directions.[3] Similarly, overall restrictions to banking activity should not be used as substitutes to adequate regulation and supervision of banks' credit risk management policies. Having a clear and properly implemented monetary policy framework, and microprudential regulation and supervision that guarantees the resilience of individual institutions, is crucial for a well-focused and effective macroprudential policy.

[3] See Borio et al. (2012)

3. Macroprudential tools and their use

In its quest to reduce the vulnerabilities of the financial system, macroprudential policy has made use of multiple tools in different countries. After several years in place, we already have some evidence on their frequency of use and effectiveness.

A host of different macroprudential policies have been identified across countries. A possible classification of them (based on Claessens et al., 2013) identifies four groups, according to the nature of their objectives. One group considers measures aimed at reducing borrowers' vulnerability, with caps to loan-to-value (LTV) and debt-to-income (DTI) chief among them. A second group covers measures that reduce—directly or indirectly—credit growth, where the instruments here are caps on credit growth, reserve requirements, dynamic loan loss provisioning, and countercyclical capital requirements. A third type of policy aims to limit foreign currency risks via limits to foreign currency lending, while a fourth type considers measures aimed at improving bank buffers, with restrictions on profit redistribution being a policy implemented in different latitudes.

Out of 48 countries considered in the study, 35 adopted some of the macroprudential policies identified. This amounts to 73%, a significant fraction. However, there is a large concentration in few policies.

In effect, the most commonly adopted policies are those aimed at reducing the vulnerability of borrowers. For instance, the most widely used measure across countries is caps on Loan-to-value. They have been present in 24 of 48 countries studied in the period ranging from 2000 to 2010. Two more countries should be added that adopted similar policies (debt-to-income caps). Overall, 54% of countries applied this type of measure.

The second most common objective of the macroprudential policies adopted was reducing credit growth, with 14 out of 48 advanced and emerging countries (29% of the sample) having used one or more of the instruments in this group. Six countries opted for direct caps on credit growth, five for reserve requirements, nine countries for dynamic loan loss provisioning among which two also applied countercyclical capital requirements.

Finally, limiting foreign currency exposure was adopted by eight countries, while restrictions on profit distribution by six.

Several studies have assessed the impact of various macroprudential policies in individual countries and in cross-country settings.[4] While specific results vary across studies, some patterns start to emerge.

Measures aimed at taming developments in housing markets, especially those that impose restrictions on borrowers such as constraints on LTV and DTI ratios are found by a large majority of studies to have a significant impact on reducing credit growth, banking leverage and growth of housing prices.

Various studies also find evidence that the tightening of loan loss provisions—including the use of dynamic provisions—and capital requirements has a statistically significant impact on constraining the dynamism of the variables mentioned before. The findings for the significant

[4] Lim *et al.*, 2011; Tovar Mora *et al.*, 2012; Claessens *et al.*, 2013; Kuttner and Shim, 2013; Bruno *et al.*, 2014; Zhang and Zoli, 2014; Akinci and Rumsey, 2015; Cerutti *et al.*, 2015.

impact of higher capital requirements, including the use of countercyclical capital buffers, on credit growth and bank leverage are particularly relevant for the current discussion on the implementation of such buffers and systemic surcharges in the context of Basel III. Results based on the Swiss experience with sectoral countercyclical buffers also provide support to these types of measures (see Basten and Koch, 2015)

On the contrary, there is much less empirical support for the effectiveness of reserve requirements, caps on credit (or its growth), and capital controls in constraining credit growth, bank leverage, and housing prices.[5]

From a different perspective, the existing evidence suggests that measures aimed at borrowers (LTVs, DTIs) have a clearer impact on taming the credit cycle than those aimed at financial intermediaries and, among the latter, those aimed at strengthening their buffers fare better than those aimed at the assets or liabilities side (see Claessens et al., 2013).

Despite the increasing and encouraging evidence on the effectiveness of some macroprudential tools in reducing variables such as credit growth, bank leverage, or other indicators of the financial cycle, there is little to no evidence on the side effects of these policies. By distorting the allocation of resources, they have the potential to reduce welfare if not properly calibrated to outweigh the externalities they are aiming to tackle. Furthermore, these policies may favor the migration of credit activity out of the banking sector into non-bank financial institutions, or away from the regulated financial system into the shadow banking sector. Thus, we will probably see continuing research on this topic in the coming years.[6]

4. Monetary Policy and Macroprudencial Policy

As mentioned above, there is enough consensus that macroprudential policy is distinct from monetary policy, in the sense that they have different targets, methods and tools. But there is still valid debate about the connection between the two policies, focusing on whether monetary policy should be used for macroprudential purposes, and how the monetary authority should be involved in the implementation of macroprudential policy.

With regards to the first question, at the Central Bank of Chile we are rather skeptical about using the monetary policy rate as a financial stability tool, for several reasons.

Firstly, it is not clear that the interest rate is an effective tool for dealing with the overextension of the financial system during booms, nor to contain systemic events during busts. The interest rate is too broad an instrument to play this role, as it affects not only the financial system, but real businesses and households as well. Economic history is full of episodes in which a preemptive rise in rates had a negative economic effect on the real economy, but was ineffective in controlling financial speculation and asset price inflation (the Great Depression being perhaps the most salient).

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[5] An exception to these findings is the analysis of the effectiveness of Capital Flow Management policies in South Korea by Bruno and Shin (2015), which finds them to have a significant impact on bank flows and bank credit growth.

[6] Another consideration is that even if variables such as credit growth have a reduced form relation with the occurrence of financial crises, the effectiveness of a macroprudential tool that tames credit growth in increasing financial resilience would depend on whether it affects the underlying causes that are behind the reduced form relation.

Moreover, it is not clear that raising interest rates will necessary work in containing the expansion of the financial system: after all, a larger interest rate differential may also attract foreign capital. This force can be of particular importance in EMEs, often subject to carry-trade strategies which can lead to strong currency appreciations in countries that raise rates and create additional problems. Furthermore, as mentioned above, there could be differences in the state of the financial and business cycles. Using the monetary policy instrument for achieving macroprudential goals in those conditions would go against its main goal and the mandate of monetary policy.[7]

Secondly, credibility and transparency are key assets in the design and implementation of an inflation targeting regime. It is hard enough to communicate the logic behind monetary policy decisions that seek solely to stabilize inflation around our stated target, given the complex interrelations between shocks, transmission mechanisms, and model uncertainty that central banks have to deal with. After long years of sticking to our framework and showing consistency between our actions and our inflation objective, we have built a reputation which is essential for isolating longer-term inflation expectations from transitory shocks (both external and internal), which as we all know facilitates the job of central banks enormously. We worry that using the same framework and tool to achieve a second objective of financial stability will most likely create an important degree of confusion and discretion, putting our transparency and credibility at risk.

Nonetheless, while we do not think that the policy rate should be part of a macroprudential framework, we cannot completely rule out its use with financial stability considerations when facing a critical situation.

The second question refers to the institutional framework for macroprudential policy decision making. In this regard, a first issue relates to who should make the decisions concerning macroprudential policies at a system-wide level. A second issue refers to the decision making process within the central bank in relation to the macroprudential tools within its mandate.

The aftermath of the financial crisis of 2008 has been widely active in institutional design around the world; particularly in countries were the crisis imposed large losses on tax-payers.

Many countries created financial stability councils to facilitate coordination among financial sector authorities. However, the extent to which these councils play a direct role in the activation or implementation of macroprudential tools, or issue binding pronouncements instead of simple recommendations varies considerable across countries, depending largely on their pre-existing institutional conditions.

In the United Kingdom, a specific committee, the Financial Policy Committee was set at the Bank of England with the responsibility for delivering financial stability through macroprudential regulation. Decisions by this committee, which is chaired by the Governor of the Bank and where the Treasury has the right to speak but not to vote, are mandatory for the prudential regulator (the Bank of England).

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[7] While some authors have argued that macroprudential policies are more effective when they complement monetary policy (see Bruno and Shin (2015)), this does not immediately imply that monetary policy has to follow macroprudential goals. Rather it suggests that taming both, the financial and business cycle is easier when they are both in the same phase and can be jointly tackled than when they are in opposite directions and the actions of one policy outweigh those of the other.

In the case of the United States, the Financial Stability Oversight Council was formed to identify systemic risks and gaps in supervision and to recommend regulatory enhancements. It is chaired by the Treasury. The central bank (the Federal Reserve) is part of the Council alongside the heads of eight main federal regulatory agencies. The Council determines systemically important financial institutions, which are supervised by the Federal Reserve and recommends policies to its members. These recommendations are non-binding and operate on a "comply or explain" system: an authority that does not implement a policy action recommended by the FSOC has to explain the reasons for not doing so.

In Chile, as in many other countries in the world, a Financial Stability Council was created that gathers supervisors and the Central Bank. It is chaired by the Ministry of Finance. The Council assesses issues of financial stability and coordinates information sharing across participants. The Council's recommendations are non-binding for its members, and the policy tools that could be used with macroprudential purposes remain with the sectoral supervisors and the CBC.

An area where there seems to be some convergence around major jurisdictions is the institutional framework for the implementation of two macroprudential tools that form part of the Basel III solvency framework: the designation of systemic financial institutions, and the activation of the countercyclical capital buffer (CCB). Since both types of measure require a broad and systemic view of the financial system and its interconnections, their implementation usually involves institutions that have the same vision, such as the integrated solvency supervisor in countries that have one, or the central bank. Table 1 shows the authorities in charge of these macroprudential tools in a selected sample of major jurisdictions. While the details of the institutional process vary, in most jurisdictions these types of authorities play an important role.

With regards to the decision making within the central bank in relation to its macroprudential instruments, one question is whether it would be necessary to set up a different body for taking these decisions within the central bank. Arguments in favor of this idea are the different nature of expertise required by its members, and the potential tension that there might be among the objectives of monetary policy and those of financial stability. Arguments against it are that, leaving aside potential tensions between policy objectives for a moment, both polices require coordination, and the most efficient way to do this is within the same decision making body.

Finding examples of central banks in a similar institutional setting to that prevailing in Chile, i.e. independent central banks without banking supervision, is not easy. The Bank of Japan and the Riksbank of Sweden are two cases that fit the requirements. In their case a single board makes both monetary and financial stability related decisions.

While both these aspects are still debated and countries have found different arrangements based on their existing institutional arrangements, in most jurisdictions the central bank plays a prominent role either directly or indirectly in the implementation of macroprudential policies. This is not surprising considering that central banks, being at the core of a country's financial system and having a macro perspective, have a privileged position for visualizing systemic financial risks. Our existing framework recognizes the relevance of the central bank role, and any further developments in our macroprudential framework also should.

5. Macroprudential policies in Chile

In Chile we have followed prudently from some distance how macroprudential policies have been implemented and used recently around the world. The main reason is pragmatic. Due to good macroeconomic management and adequate regulation and supervision, the Chilean financial system did not suffer a crisis or excessive stress at the height of the global financial crisis and subsequent years. Neither have we had the perception of over-expanding credit. Specific developments in the housing market and bond issues abroad have been analyzed and addressed promptly. In that context, we have been lucky enough to be able to let the use of these policies to decant and wait for evidence to accumulate on the effectiveness of various tools so we can conduct an educated analysis on how to progress in the implementation of this type of policies in our country.

Although one can still question conceptually the need to have a macroprudential framework in place from a cost-benefit perspective, we think it is important to recognize that the macroprudential agenda has gained ground in the international debate, and is increasingly a part of the framework of stabilization policies that are inherent to a modern, financially integrated economy. In fact, as previously mentioned, some of these policies are an integral part of the new solvency requirements of Basel III.

Accordingly, there are reasons of substance and form that suggest that in the coming years we will need to take determined action and progress in the implementation of a macroprudential policy framework in Chile.

It is worth noting, however, that although we have monitored from a distance the widespread recent use of new tools with macroprudential purposes, both the conduct of economic policy in our country and its financial regulation and supervision already contain several macroprudential aspects.

To begin with, the Central Bank of Chile is constitutionally mandated to safeguard the stability of domestic and external payments. As there is a clear link between the payment system and the financial system, this mandate has been interpreted as extending to the stability of the financial system. The concern for financial stability is reflected not only on the regulations that the CBC is responsible for issuing, but also in a permanent monitoring and assessment of the Chilean financial system, its vulnerabilities and the risks it faces. This is done by analyzing many sources of information and the ongoing communications with the financial market's players and supervisors. Whenever the view emanating from this analysis so warrants, it is verified with the respective institutions and communicated to the competent supervisors.

Aside from the continuous monitoring by the CBC, the view of the Bank on the status and risks of the Chilean financial system is communicated twice a year in our Financial Stability Report (IEF), which is made available to the public and presented to Congress together with the respective Monetary Policy Report (IPoM). The Bank's communication of risks in the IEF seeks to inform financial system participants of the Bank's vision regarding the main vulnerabilities and risks in the financial system from a forward-looking perspective and thus encourage them to take action to reduce those vulnerabilities.

This scheme has proved effective. For example, after following the accelerated development of post-crisis housing prices, in the December 2012 IEF the Central Bank expressed its concern about this trend and the risk that it implied in a context of high leverage in the origination of credits.

After this warning, we saw a fall in the LTV of new loans, especially noticeable in the significant drop in loans carrying an LTV of 100%.

A second macroprudential aspect is that our regulatory system contains several ingredients designed to limit the complexity of financial institutions, the risks coming from major institutions, and the interconnections between financial intermediaries.

Regarding the complexity of financial institutions, in particular of banks, our General Banking Law clearly defines the activities that banks are allowed to perform (Art. 69). For instance, banks cannot trade stocks or commodities and they can participate in a limited set of derivative contracts defined by the Central Bank of Chile. This set of derivatives includes mainly plain vanilla currency and interest rate derivatives (e.g. forwards and swaps), and explicitly excludes credit derivatives. Thus, banks' assets correspond mainly to loans, with a limited participation of the trading book for the majority of banks. While these measures are microprudential, in the sense of aiming at single institutions and not varying through the financial cycle, the constraints they impose on the complexity of banks' balance sheets help limit the degree of opaque interconnections that caused trouble during the recent financial crisis.

The General Banking Law grants the Superintendent the possibility of making additional capital charges to institutions that, due to a merger, reach a significant market share, which the Superintendency of Banks and Financial Institutions (SBIF) has set at 15% or more of the system's total loans, or to deny the merger authorization with the ratification of the Central Bank. While the additional capital requirement does not apply where such participation is achieved organically, something that probably should be examined in light of the new directives of Basel III, it is a disincentive to the rapid growth of an institution that resembles charges to systemic banks that have been promoted in other jurisdictions as a partial solution to the "too big to fail" problem.

In addition, the same General Banking Law sets limits on concentration by counterparty. Banks cannot lend more than 10% of their total capital to the same counterparty (including banks). The limit can be extended to 30% if the 20% difference is backed up by real guarantees. But it also shrinks to 5% in case of companies related to the lending bank (25% for guaranteed loans). These constraints limit the extent to which a single counterparty can affect the financial health of a bank. However, in light of the experience of the global financial crisis and local developments, it is probably necessary to consider the need to establish limits to the exposure of a bank to a given sector or conglomerate.

Central Bank regulation has also imposed some limits on the interconnections between banks on the funding side. In fact, a bank cannot have short term liabilities larger than 5% of its liquid assets with another bank. Additionally, the sum of all these liabilities cannot exceed 40% of its liquid assets.

The regulation of credit risk provisions that the Superintendency of Banks has issued over time contains several macroprudential aspects. Perhaps the most explicit one has to do with the guidelines established for the creation of Additional Provisions which explicitly considers the role of macroeconomic fluctuations, explicitly stating that such provisions may be established to ward off the risk of unpredictable economic fluctuations that may affect the macroeconomic environment or the situation of a specific economic sector, and that such provisions, and I quote from Spanish, "should anticipate situations of reversal of expansionary economic cycles that, going forward, could end up in a worsening of the conditions of the economic environment. Thus, such provisions should act as a countercyclical mechanism for accumulating additional provisions when conditions are good and releasing or allocating specific provisions when the times turn bad." Admittedly, however, few institutions constitute this type of additional provisions.

The regulations on required credit risk provisions also introduce some macroprudential aspects as they establish that these should be forward-looking and based on the expected probability of future repayment, not the current level of default or delay, and consider the sensitivity to the cycle of the industry where the debtor operates. In addition, regulations establish a minimum level of provisions that does not vary with the cycle and prevents them from falling excessively during favorable cycles of payment behavior. Finally, after the crises that hit emerging economies in the late 1990s, the law ruled that banks, when assessing the financial situation of borrowers, must consider their currency, term, and interest rate mismatches.

An element that is absent from our legal framework and has been incorporated in all major jurisdictions in the process of implementing Basel III solvency requirements is the countercyclical capital buffer. As discussed above, these buffers have the advantage of taming credit growth in the upside of the financial cycle by requiring banks to raise additional capital. Furthermore, they may allow freeing bank capital during the downside of the financial cycle to limit its impact on the real economy. Incorporating these buffers in our legal framework would add a useful policy tool, and it is also relevant for the convergence of our regulation with international standards. Consistently with the institutional frameworks prevailing in most jurisdictions that have implemented these buffers, in Chile the Central Bank should play a relevant role in their implementation. While the specific interaction between the CBC and other authorities in the activation of these types of measures could be debated, it is important to keep in mind that our existing legal framework already establishes a mechanism of checks and balances with the Ministry of Finance (Art. 19, LOC).

A tool that has proved effective in taming credit growth in other jurisdictions and that would be more complex to implement in Chile is the possibility of imposing limits on debt-to-income (DTI) or debt-service-to-income ratios. While, in theory, it could be possible to issue regulation relating bank provision expenses to these type of indicators, the compliance with such regulation would be complicated by the lack of a comprehensive credit registry where originating institutions could have timely information on a borrower's total debt with the financial system (i.e. beyond banks). Thus, in absence of such registry, the implementation of DTI limits would have to be constrained to bank debt and be applied only by banking institutions. While it is true that banking debt is the main source of household financing, non-bank debt is especially relevant for low income segments of the population that are particularly vulnerable.[8] Therefore, advancing in the approval of such a registry is necessary to consider these types of measures as part of a potential macroprudential policy toolkit.

The CBC's legal framework includes a number of powers that can be used to mitigate excessive credit cycles if deemed necessary. For one, the Central Bank Board has the authority to establish reserve requirements over foreign exchange operations. This tool was used in the past (1990s) to control capital inflows to Chile and their impact on macro balances. Our practical experience with the use of this tool in the 1990s taught us that its success in taming capital inflows and currency appreciation is limited because it is always possible to find ways to circumvent the restrictions and

[8] According to Chile's 2014 Survey of Household Finance, only 15% of the poorest 50% of households had consumer bank debt, while 47% had debt with retail stores. The corresponding figures for the richest 20% are 54% and 45%.

because the levels of reserve requirements that could have a quantitative impact on flows are implausibly high. Furthermore, in those days these restrictions were applied in the context of a somewhat different macroeconomic policy framework where Chile was still converging towards a full-fledged inflation targeting regime and maintained an exchange rate band. Our current framework of capital account openness, exchange rate flexibility and full inflation targeting is not amenable to this type of measures as a regular part of the policy toolkit, and, consistently, we haven't used them in the last 15 years. Nevertheless, although we do not consider this type of measures particularly attractive, its use under exceptional circumstances cannot be ruled out.

Our powers as a financial regulator also include other dimensions that some countries have used as part of their prudential toolkit. For instance, the CBC determines the level of reserves to be kept by banks that take deposits from the public during an operating cycle (reserve requirement) and the interest yield of such resources. Several jurisdictions (e.g. China and Peru) have controlled credit growth and currency composition by imposing differentiated reserve requirements. Moreover, the CBC has the authority to regulate the relations that should exist between the assets and liabilities of commercial banks, which have led to our standards of liquidity and market risk. Similar types of regulations have been used in other jurisdictions to limit banks' net open position in foreign currency (e.g. Peru and Korea).

In a nutshell, our current regulatory and legal framework, as well as the actions of financial regulators and supervisors, including the CBC and the SBIF, contains elements that are consistent with a financial stability and macroprudential approach, and grants powers that may be used with these purposes if deemed necessary.

6. Final thoughts

The recent financial crisis was a reminder, especially for the developed world, of how costly a financial crisis can be and how important it is to minimize their probability of occurrence and costs, by explicitly safeguarding financial stability. Although this concern has been present for quite some time in many central banks, including the Central Bank of Chile, the international debate has stressed the need to have a macroprudencial policy framework in place, with its own tools to tackle this objective, and countries have already begun to consider this framework as one of the pillars that sustain good economic policy making.

Having been spared a crisis or acute stress from our financial crisis since the 1980s, and in particular after the latest global financial crisis, has allowed us to watch this debate with prudence and pragmatism, without needing to take hasty policy measures. We already have some policies in place, but as the international debate on these policies settles and the evidence about the efficiency and costs of different tools accumulates, it will be important for us to assess their efficiency and carefully study how to introduce a set of comprehensive macroprudential policies into our general policy framework.

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Table 1. Authorities in Charge of CCB and Systemic Bank Designation and Financial Supervision System

A. Activation of CCB

	Supervisory System			
Authority that activates CCB[1]	**Twin Peaks**	**Integrated**	**Functional**	**Institutional**
Central Bank	UK (FPC), Netherlands	Switzerland Singapore	Spain, Italy, Brazil	Hong-Kong PRC. India
Financial Supervisor	Australia	Sweden, Germany	--	--
Financial Stability Council	--	--	France	--
Finance Ministry	--	Denmark, Norway[2]	--	--
Joint decision	--	Luxemburg, Canada[3]	--	--

B. Designation of Systemic Banks

	Supervisory System			
Authority that designates systemic banks	**Twin Peaks**	**Integrated**	**Functional**	**Institutional**
Central Bank	UK (PRA)	Singapore, Russia	Brazil, USA[5]	Hong Kong PRC, India, Argentina
Financial Supervisor	Australia	Sweden, Canada, Switzerland, Indonesia[4], Germany.		China
Financial Stability Council	--	--	--	--
Finance Ministry	--	--	--	--
Joint decision	--	--	--	--

[1] It refers to the authority in charge of the final decision. Most jurisdictions consider some form of consultation with other entities.

[2] In Norway, the Ministry of Finance sets the CCB based on the recommendation of the Central Bank.

[3] In Canada, there is still some debate about the authority in charge of the final decision

[4] In coordination with the Central Bank

[5] The US supervisory system post Dodd-Frank has some elements of integrated supervision, especially for large entities.

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