

**CENTRAL BANKS AND
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SOME REFLECTIONS FROM
THE SPANISH EXPERIENCE**

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Abstract

The view that central banks must play a greater role in preserving financial stability has gained considerable ground in the aftermath of the crisis and macroprudential policy has become a central pillar to deal with financial stability. The policy frame of macroprudential policy, its toolbox and interactions with other policies is not completely established yet, though. In this context, Spain's ten-year experience with its dynamic provision is a key reference. The analysis shows that, during the current financial crisis, dynamic provisions have proved useful to mitigate —to a limited extent— the build-up of risks and, above all, to provide substantial loss absorbency capacity to the financial institutions, suggesting that it could be an important tool for other banking systems. However, it is not the macroprudential panacea: it needs to be complemented and be consistent with the rest of policies, either within the macro-prudential or in the broader context of macroeconomic management, including monetary policy. While there is a higher awareness of the contribution of monetary policy to financial stability, its role is in practice limited. The case of the euro area is particularly telling in this respect: macro-financial imbalances developed in sectors where financial integration was low and the effects hence were confined to the domestic economies. The asymmetry between a supranational monetary policy plus macroprudential surveillance and domestic implementation of macroprudential policies raises a set of issues which are worth exploring.

JEL Classification: E52, E58, G28.

Keywords: Macroprudential policy, Dynamic provision, Central banks.

Resumen

La visión de que los bancos centrales asuman un papel central en la preservación de la estabilidad financiera ha ganado peso tras la crisis financiera, y las políticas macroprudenciales se han convertido en un pilar fundamental para este objetivo. El marco de la política macroprudencial, sus instrumentos e interacciones con otras políticas no están completamente establecidos aún. En este contexto, la experiencia española, de más de una década, con la provisión dinámica o genérica es una referencia clave. El análisis muestra que, en la actual crisis financiera, la provisión dinámica ha sido útil para mitigar, hasta cierto punto, la acumulación de riesgos y, sobre todo, para dotar de una capacidad sustancial de absorción de pérdidas a las instituciones financieras, lo que sugiere que podría constituir un importante instrumento para otros sistemas financieros. Sin embargo, no es la panacea macroprudencial; debe ser consistente con el resto de políticas, sea en el ámbito macroprudencial o en el más amplio de las políticas macroeconómicas, incluyendo la monetaria. Si bien existe una mayor consciencia de la contribución de la política monetaria a la estabilidad financiera, su papel en la práctica no deja de ser limitado. El caso del área del euro es ilustrativo: los desequilibrios macrofinancieros se acumularon en los sectores con menor integración financiera y sus efectos se mantuvieron en los límites domésticos. La asimetría entre una autoridad monetaria y macroprudencial supranacional y la instrumentación nacional de las políticas macroprudenciales suscita una serie de cuestiones que vale la pena analizar.

Códigos JEL: E52, E58, G28

Palabras claves: Política macroprudencial, provisión dinámica o genérica, bancos centrales.

1 Introduction

The financial crisis erupted in a context of financial excesses and underlying financial fragility, fostered by loose economic and financial conditions, low inflation, high risk appetite, lack of due diligence by some investors and inadequate regulation and supervision. The magnitude of the damage has forced central banks, financial authorities and many other policy institutions throughout the world, to react swiftly in order to mitigate its fallout, a process in which they are still engaged,, in particular in advanced economies. At the same time, the financial origin of the crisis has strengthened the commitment of central banks to improve their surveillance and reinforcement of financial stability, a process still underway.

From the perspective of central banks, there has traditionally been a rather clear division of tasks financial stability was mostly achieved through financial supervision and regulation —microprudential policy— while price stability was the role of monetary policy. Within this framework, monetary policy contributed to financial stability by attaining an environment of macroeconomic stability. In the aftermath of the crisis, this is not seen as enough, so that there is a growing consensus that monetary policy and financial stability should be more integrated in the overall policy framework within the central banks. However, this move is plagued with complexity and it might interfere with the paramount monetary policy objective of attaining price stability.

In this context, macro-prudential policy —that is the set of instruments to prevent the building up of financial imbalances that could lead to a crisis and/or mitigate its impact— appears as a key building block in the new policy environment. An adequate design of macro-prudential policy could address effectively the financial stability objectives and, through its interaction with the monetary policy and micro-prudential policies could adapt better goals and instruments in the central banks' policy framework.

The integration of a more articulated macro-prudential framework in the policy toolbox of central banks consists of two components: macro-prudential tools and surveillance. In this second area, there have been remarkable advances in the last two years both at a global level —Financial Stability Board (FSB), Basel Committee, etc.— and at the national or regional level, for instance, with the settlement of the European Systemic Risk Board (ESRB). In terms of instruments implementation there is a certain lag, due —in part— precisely to the overall assessment that those institutions are making of the macroprudential toolbox and its practical application.

Spain is among those countries where macro-prudential instruments have been applied for one decade. Thus, our experience with the dynamic provisions is being prominent in the international economic discussion as a reference and example. Moreover, this 'domestic' tool has been implemented within the euro area, where monetary policy is set at the supranational level, a specificity which is worth analyzing.

The focus of this paper is to describe and assess the Spanish dynamic provision frame it in the context of the more general current reflection on the role of central banks in promoting financial stability, in general, and in the euro area, in particular.

2 Central banks, monetary policy and financial stability

Maintaining price stability over the medium-term in the euro area as a whole is the primary objective of the monetary policy strategy of the European Central Bank (ECB). That notwithstanding, as an important financial authority, the Eurosystem devotes substantial efforts to promote European financial integration and financial stability. Indeed, the ECB's Statute explicitly mentions the task of contributing to the latter, a task which needs to be carried out without prejudice of the primary objective. This institutional framework will not be affected by the creation of the European Financial Stability Board, where both the ECB and the central banks of the ESCB participate.

2.1 The interaction between monetary and financial stability. The conventional pre-crisis view

When thinking about the relationship between monetary policy and financial stability it is useful to distinguish between two time horizons: the short and the long term. In the long-term, a clear-cut conclusion from economic theory is that there is no trade-off between monetary stability and financial stability, since the two concepts are mutually reinforcing: Low and stable inflation and a monetary policy strategy focused on this goal tend to promote financial stability¹. The empirical evidence available also supports this view by showing that monetary instability is one of the main factors that historically have caused episodes of financial instability².

This long-run complementarity suggests that the stance of monetary policy that is appropriate for the maintenance of price stability would, in general, not need to be in contradiction with financial stability requirements. However, history and recent experience show that financial imbalances may develop in an environment of stable prices. Price stability should therefore be seen as a necessary but not a sufficient condition for financial stability and the short-term relation between the two objectives is more complex than suggested by the long-term link between them. As argued in Issing (2003), "there may be situations where it is optimal to deviate from the desired rate of inflation in the short-run in order to best maintain price stability over the medium run". Hence, how should monetary policy deal with potential conflicts that might arise at shorter horizons?

The so-called Tinbergen principle advocates that only one policy instrument be assigned to each separate objective, reinforcing the idea that monetary policy should remain firmly anchored on the objective of price stability. Policy instruments other than interest rate, including regulatory and supervisory tools but also the provision of liquidity by the central bank, would in principle be better suited for coping with problems of financial stability.

However, it should be underscored, that monetary policy has a legitimate interest in the financial stability objective, as this is a necessary condition for the proper functioning of

1. See, for instance, Schwartz (1988).

2. See, for instance, Bordo et al. (2000) or the experience of the previous decades in Latin America. There are several channels through which this can occur. Firstly, high and volatile inflation obscures expected returns, adding to the information asymmetry between lenders and borrowers. Secondly, cyclical expansions that are accompanied by high inflation are often the breeding ground of over-investment and asset prices bubbles. And thirdly, excess credit and excess liquidity are frequently at the very basis of financial instability.

the transmission mechanism. Moreover, a second principle of monetary policy is that placing excessive emphasis on short-term inflation targeting is not optimal and entails risks. Indeed, by deviating from short-term inflation targeting the monetary policy strategy of the ECB permits to accommodate financial stability considerations. In particular, the so-called monetary analysis, which assesses, among other things, the evolution of monetary and credit indicators —is potentially useful in this regard. But above all, it's the medium-term orientation (and the abstention from specifying a fixed-term horizon for policy) what permits to assign sufficient weight to medium- to long-term risks and thus take into account possible conflicts that may arise between these two objectives in the short-term. Nonetheless, when navigating these conflicts, the central bank must keep the primacy of its price stability objective, as loss of credibility on this front may have serious consequences.

2.2 The case of asset prices

It is convenient to focus on the debate on the role of monetary policy in regard to excessive asset prices growth, since provides a good example of the conventional position of central bankers in the years before the crisis, and how it has evolved in its aftermath.

Asset prices constitute, together with agents' balance sheets, an important channel in the transmission mechanism of monetary policy. When, for example, stock or housing prices increase, a central bank that is targeting, say, a weighted average of inflation and the output gap will raise interest rates because, *ceteris paribus*, wealth effects could increase aggregate demand too fast, leading to an intensification of inflationary pressures. That policy action would not be seen as controversial by anybody within the economic profession.

Economists' views, however, have been more diverse when it comes to whether monetary policy should react to movements in asset prices beyond their indirect effects on price stability. Two situations can be distinguished. When asset prices reflect current and expected value of fundamentals, economic theory suggests that, given their character of endogenous variables, monetary policy should not react to their evolution as such but to the underlying, not directly observable shocks³.

On the contrary, the views of economists have diverged, sometimes dramatically in the case of misalignments, when asset prices detach from fundamentals. Whilst some in the profession have long promoted a more active role of monetary policy in that context⁴, the majority of academics and policymakers have until recently favored a more hands-off approach⁵. This latter group tended to emphasize that monetary policy, should not be overburdened with objectives that may prove over-ambitious and for which it does not have the appropriate instruments either. Adjusting the monetary policy stance to prick a financial bubble on the basis of financial stability considerations would require an increase in interest rates that would possibly be incompatible with macroeconomic stability, in particular as bubbles can only be identified relatively late. Moreover, attempts to identify misalignments early enough are hopeless, giving rise to numerous false positives. As Blinder⁶ has put it, the central bank "...may see bubbles where there are none, or fail to recognize them until it's too late —or probably both". This line of reasoning leads to the conclusion that central banks

3. Rising asset prices do not always point to inflationary pressures. There are a number of disturbances such as productivity shocks or certain structural reforms that may increase asset prices while reducing in parallel inflationary pressures, at least at short- to medium-term horizons.

4. See Borio and Lowe (2002), Cecchetti et al. (2001) or Walsh (2009).

5. See, for instance, Bernanke and Gertler (2000).

6. New York Times, 15 June 2008, *Economic View*: "Two bubbles, two paths".

should remain focused on its primary objective of preserving price stability and act only ex-post, as aggressively as necessary, to counter the fallout of the bubble burst, limiting collateral damage and ensuring financial stability⁷.

The response of the Federal Reserve following the burst of the tech bubble in 2000 followed that script and was successful: the financial damage was limited without prejudice to price stability and the country confronted only a very mild recession. The then majority view had been vindicated and the debate vanished in the years prior to the crisis. However, the burst of the subprime bubble in August 2007 has given rise to a protracted period of severe financial instability and the largest global recession since World War II. Not only the strategy to let financial bubbles deflate according to their own dynamics and restrict the action of monetary policy to damage control has not worked this time, but the aggressive monetary response to mitigate the impact of the dotcom bubble led to a period of loose global financing conditions, which has is now seen by some as a contributor of the financial excesses behind the current crisis.

Therefore, the recent experience is leading to a profound reassessment of the prior consensus, which goes beyond the asset price management to encompass whole area of financial stability. As a consequence the view that central banks should be assigned a stronger role in preserving financial stability is gaining considerable ground.

2.3 The reassessment of the role of central banks in providing financial stability after the crisis

From today's perspective it is clear that the long period of stable, non-inflationary growth experienced by the global economy during the "The Great Moderation" made us forget that the vulnerabilities that lead to macroeconomic instability are conceived precisely in good times, characterized by excessive optimism. The "Great Recession", of which the advanced economies are recovering, has been a powerful reminder of the enormous welfare costs that financial instability inflicts on societies and illustrates the difficulties of monetary policy to counter episodes of severe financial turmoil. With the benefit of hindsight, we can conclude that these elements, at the root of the previous consensus were not well calibrated. Moreover, the rethinking is spreading to other dimensions, which reinforce the evolving position of central banks.

On the one hand, the course of events since August 2007 also shows that the structural changes through which the financial system has gone in recent decades bring new challenges for economic policies. Those changes underline the importance of proper regulation and supervision as the first and main lines of defense against financial instability. But they highlight the strengthened link between financial stability and macroeconomic policies, particularly monetary policy, and raises the case for some role of monetary policy to counteract financial excesses.

On the other hand, the evidence is seen now under a different light, more receptive to recognizing a role for monetary policy in financial stability⁸. Regarding bubbles, recent empirical analysis permits to be more confident that at least those asset prices misalignments for which consequences would be most severe can be detected sufficiently early to allow

7. See Blinder and Reiss (2005).

8. See, for instance, Blanchard et al. (2010).

preemptive action⁹. Furthermore, research is highlighting the effects that loose financing conditions may have on financial stability through the so-called risk-taking channel¹⁰.

Finally, from the comparison of the recent crisis with past experiences it has been acknowledged that not all bubbles are alike. For some, as was the case with the technology bubble at the beginning of the past decade, central banks don't seem to have comparative advantages and it is doubtful that monetary policy has the appropriate tools to counter excesses in the valuation of technology companies or, more generally, stock prices. By contrast, in the case of bubbles originated in the banking system, central banks are well positioned to observe and understand banking practices. In fact, one could argue that, in particular when they are also the supervisors, central banks are actually in a better position than any other institution to identify speculative excesses fueled by inadequate behavior of banks.

This set of revisions of the previous positions implies that the mindset of central banks has evolved towards a more proactive stance to deal with financial stability, beyond the traditional regulation and supervision. The way to implement this new consensus is not completely settled yet, in particular the specific role of monetary policy in conjunction with alternative instruments, v.g. macroprudential policies.

Regarding monetary policy there is an increasing support to the case for acting preemptively —adjust the monetary policy stance by changes in interest rates—, when exceptional circumstances so warrant, to counter medium and long term risks associated to the emergence of macrofinancial imbalances, in particular those arising from the banking sector. In any case, we should note that, —as mentioned above—, the monetary strategy of the ECB already accounts for the possibility of 'leaning against the wind' of the financial cycle and leaves some leeway to act preventively¹¹.

However, the mentioned limitations and constraints of monetary policy still apply with full strength: first, the paramount objective of price stability cannot be jeopardised by a conflicting objective of financial stability; second, focusing on another objective entails a communication challenge and risks confusion, which could be detrimental for the management of price stability; third, in any case, interest rates may be too bold instruments to deal with specific financial stability imbalances; finally, the Tinbergen principle applies, in that additional instruments should be designed to deal with an additional objective.

It is in this context where macroprudential policy —where central banks also play a leading role— covers an important niche, as a key element to deal with financial stability at the macro or systemic level, beyond —but not completely detached from— both monetary policy and microprudential policy (standard supervision and regulation).

9. See, for instance, Borio and Drehmann (2009) or Alessi and Detken (2009).

10. For instance, recent research shows that not only the current level of interest rates explains loan defaults, but also the (low) level of interest rates when the loan was granted is also important. [Jiménez et al. (2008)].

11. Such possibility was clearly admitted well before the crisis erupted. See, for instance, Trichet (2005).

3 The role of macroprudential policy and the Spanish experience

3.1 Concept and goals of macroprudential policy

The idea of macroprudential policy is to combat the fallacy of composition: if each individual bank is sound, the whole banking system must be sound. The current financial crisis has shown that correlations across assets and banks' balance sheets can sharply increase and pose systemic risk. Therefore, the micro-prudential approach to supervision needs to be complemented with a macro-prudential approach.

So far, no formal definition of macro-prudential policy exists. However, most approaches to prudential concepts concentrate on the following basic features. A macro-prudential policy should have a preventive nature in orientation and should provide the economy with specific tools and instruments so that in case of crisis its impact on the financial and real sector is minimised. Broadly speaking, a macro-prudential policy should rest on helping the financial system to withstand shocks and to continue functioning in a stable way without receiving emergency support in the form of public aid.

In articulating this objective, two aims can conceptually be distinguished: on the one hand, emphasis should be placed on reinforcing the overall resilience of the financial system. On the other hand, importance should also be placed on establishing the grounds for moderating the financial cycle, something commonly known as to lean against the financial cycle.

The first aim focuses on strengthening the financial system's resilience by endowing it with the adequate levels of loss absorbency capacity rather than on influencing the build-up of risks, the target of the second aim, mainly focused on trying to reduce the probability of a crisis occurrence. As these aims are not exclusive, one major question is the appropriate degree of emphasis on each aim.

The implementation of macroprudential policy to achieve both aims rests on the adaptation of micro-prudential instruments to a system-wide dimension, which requires a adequate assessment —at the systemic level— and tools.

The aim of reinforcing the overall financial system resilience extends the micro-prudential function of strengthening an individual institution's loss absorbency capacity to the extent of the whole system level. This is usually achieved by taking into consideration the correlations of shocks and risk factors beyond individual institutions to the total system. Moderating the financial cycle involves the application of dynamic elements in response to the creation of vulnerabilities when they are building-up with the final purpose of using the loss absorbency buffers created during the upswing when the risk of contraction starts to materialize.

Counter-cyclical elements such as dynamic provisions are the type of tools more orientated towards this kind of macro-prudential aim¹². Dynamic provisions reinforce the resilience of banks and help to limit the build-up of risks. They help mitigate part of the pro-cyclicality of the banking system supporting the aim of moderating the credit cycle.

12. Additional examples of counter-cyclical elements can be found in Repullo et al. (2010).

They enable earlier detection and coverage of potential credit losses in banks' loan portfolios building up a buffer in lending booms to be used during recessions.

3.2 The Spanish dynamic provision. Motivation and functioning

The accumulation of underlying problems in the previous long expansion applies to the banking sector. Indeed, the widespread experience among banking supervisors across the world shows that banks' lending mistakes are more prevalent during upturns. Borrowers and lenders are overconfident about investment projects. Banks' over-optimism implies lower lending standards. During recessions, banks suddenly turn very conservative and tighten their lending standards, with the possibility of a credit crunch ensuing.

Furthermore, financial markets have imperfections, as the current financial crisis has reminded us.¹³ From time to time, significant mispricing of risk (i.e. credit risk, or liquidity risk) may appear and are not quickly arbitrated away. The main theoretical arguments to rationalise fluctuations in credit policies are based on information imperfections (disaster myopia, herd behaviour, agency problems).¹⁴ The value of collateral which tends to be procyclical, also play a role in credit cycles. For certain types of loans and borrowers may happen that in boom periods collateral requirements are relaxed while the opposite takes place during recessions. Furthermore, too much competition among financial intermediaries can worsen financial stability.¹⁵ There is robust empirical evidence of looser credit standards during expansions. For instance, Jiménez and Saurina (2006) show that there is a direct, although lagged, relationship between credit growth and credit risk, so that a rapid increase in loan portfolios is positively associated with an increase in non-performing loan ratios later on. Moreover, loans granted during boom periods have a higher default rate than those granted during periods of moderate credit growth. Finally, a sustained period of low interest rates and volatility —such as the one previous to the crisis in a context of also low inflation pressures tends to increase risk— taking incentives by banks (search for yield), too.¹⁶

Overall, the risk in bank portfolios builds up during the expansion periods. In recessions, the ex-ante credit risk increase materialises in ex-post credit losses, so that banking supervisors' concerns are well rooted on theoretical, empirical and prudential grounds. For prudential reasons, it is important that banks recognise the increase in credit risk/credit losses in their loan portfolios at the time that risk is building up. In doing that, bank managers and shareholders will be much aware of the financial position of the bank and may have more incentives to control the risks. Loan loss provisions, an accounting item to cover credit losses, is the natural tool to be used in this case. A proper recognition of credit risk and credit losses along the lending cycle will enhance the soundness of each bank as well as that of the banking system as a whole, helping to curb pro-cyclicality in lending. There is nothing more pro-cyclical than an improperly managed bank [Caruana (2005)]. Therefore, loan loss provisions that account for the increase in credit risk in the upturn can help to cope with the potential damage that lending cycles can inflict on the real economy, the growth potential and the level of employment and welfare of any society.

Spain has had such a system of loan loss provisions for a decade, under the denomination of general provision (provisión genérica) —although it is sometimes referred

13. See, for instance, the *Turner Review* [FSA (2009)] for a detailed catalogue of recent imperfections.

14. Jiménez and Saurina (2006) contains a more detailed discussion of the literature. Rajan (1994) analyses the impact of market imperfections on the fluctuations of the lending cycle.

15. An erosion of the franchise value of the bank as a result of more competition may rise the incentives of the bank to increase risk-taking and leverage [Keeley (1990), Salas and Saurina (2003)].

16. See BIS (2009) for a more extended discussion and Jiménez et al. (2008) for empirical evidence in Spain.

to as dynamic, statistical or countercyclical¹⁷— and it has attracted the global attention from regulators and supervisors as an example macro-prudential tool to enhance financial stability.

The current provisioning framework in Spain refers to the collective assessment for impairment. That is to say, it is necessary to assess the potential losses incurred in homogenous credit portfolios where losses have not yet been identified in specific loans, but where statistical experience shows that a certain proportion of them will materialize in the future. In other words, the provisioning framework recognises that credit risk is incurred during expansions when loan portfolios are mainly being built up, so that loan losses are already lurking on the balance sheets of banks, although they have not yet been identified in a specific loan.

Moreover, regulation requires institutions to develop internal methodologies to estimate impairments in the loan portfolio (whether specific transactions or collective assessment). For banks which do not have their own model, the Banco de España provides a model based on loss data information for homogenous groups of loans, so that it can be used for the collective assessment. This historical credit loss information is obtained from its Credit Register (CIR), a comprehensive database that covers information on any loan granted in Spain by any bank operating in Spain above 6,000 euros.¹⁸ The Banco de España model applies to cover incurred losses only for credit activity in Spain.

Dynamic provisions were first set up in Spain in 2000. In 2005 to comply with IFRS, the provisioning system was slightly changed with respect to the original one.

The basic formula describing how the flow of general provision is currently computed is as follows.

$$\text{General provision} = \alpha \Delta C_t + (\beta C_t - \text{Specific provision})$$

where C_t is the stock of loans at the end of period t and $\alpha \Delta C_t$ its variation from end of period $t-1$ to end of period t (positive in a lending expansion, negative in a credit crunch). α and β are previously defined parameters set by the Banco de España. This is a simplification of the full formula —described in the box—, which discriminates among six credit risk groups, each with different parameters¹⁹.

The formula is based on four components. The first is called component alpha, and it is obtained as the product of a certain parameter times the change in the amount of the loans granted: $\alpha \Delta C$. This component alpha reflects the inherent losses of the transactions granted in the period. The parameter α is the average estimate of the credit loss in a period (collective assessment for impairment in a year neutral from a cyclical perspective).

However, as incurred losses not yet identified materialize at a different speed, depending on the business cycle, α has to be supplemented by another parameter, β , giving rise to the second component of the provision. This second component, beta, is the product of the parameter β , times the total amount of outstanding loans in the period, C . β , reflects

17. In Spain, this provision was known as statistical provision when it was first put into force in year 2000. After the 2005 revision to comply with IFRS it changed its name to general provision.

18. This means that virtually any loan granted to any firm as well as any mortgage is in the CIR. For consumer loans the coverage is not full, but a significant amount of those loans should be reported. The CIR contains information, among other items, on whether the loan is in default or not and on how long its status has been such.

19. More details and further explanation about Spanish dynamic provisions can be found in Saurina (2009a and 2009b).

the average specific provision²⁰ over a business cycle, so that its comparison with the current specific provision is indicative of the economy's current position in the economic cycle.

The third component consists of the combination of the specific net provisions made in the period, that is, the provisions that account for actual detected impairments of assets in order to correct their value in a certain period. The interconnection of this and beta components allows to take into account the effect of the business cycle on inherent losses and, therefore, these last two components form the basis of the macro-prudential dimension of the provision.

To obtain an idea of how the provisioning system works, note that during expansion periods non-performing loans and specific provisions are very low; thus, the difference between the beta and the third component, the term in brackets in the expression above, is positive and that amount is charged against the profit and loss account, increasing the general loan loss provision fund and, therefore, accumulating provisions. On the contrary, during recession non-performing loans surge and so do specific provisions; in this case the difference between the second and third components becomes negative. Additionally, if credit declines, the first component, alpha, becomes negative. The overall negative amount is drawn down from the general fund, provided the fund has a positive balance, and credited in the profit and loss account (i.e. a reversal of impairment or back to the P&L).

The three components cited above are used to calculate the theoretical general provision. The resulting number is not necessarily the final provision to be made, since there is a limit to the general provision (the fourth component of the provisioning system), fixed at 125% of the product of parameter α and the total volume of credit exposures. The objective of this cap is to avoid an excess of provisioning²¹.

20. Specific provisions are those provisions set aside in a certain period that account for actual detected impairments of assets in order to correct their value.

21. Excessive provisioning might occur in a long expansionary phase as the term in brackets in the formula would remain positive, and the alpha component positively would contribute further to the accumulation of provisions in the fund. The cap is intended to avoid a fund that keeps growing indefinitely producing unnecessarily high coverage ratios of non-performing loans through provisions.

Computing the dynamic provision

The formula above is a simplification. Banco de España, based on historical information of credit losses, identifies six risk buckets, or homogeneous groups of risk, to take into account the nature and risk of different types of credit products (distinct segments of types of loans), each of them with a different α and β parameter.

The groups (in ascending order of risk) are the following: i) Negligible risk: includes cash and public-sector exposures (both loans and securities) as well as interbank exposures; ii) Low risk: made up of mortgages with a loan-to-value (LTV) ratio below 80% and exposures to corporations with an A or higher rating, and iii) Medium-low risk: composed of mortgages with an LTV ratio above 80% and other collateralized loans not previously mentioned; iv) Medium risk: made up of other loans, including unrated or below-A rated.

The values for α are (moving from lower to higher risk levels): 0%, 0.6%, 1.5%, 1.8%, 2%, and 2.5%; and those for β : 0%, 0.11%, 0.44%, 0.65%, 1.1%, and 1.64%. The final formula to be applied by each bank is therefore:

$$\text{dot.gen}_t = \sum_{i=1}^6 \alpha_i \Delta C_{it} + \sum_{i=1}^6 \left(\beta_i - \frac{\text{dot.espe}_{it}}{C_{it}} \right) C_{it} = \sum_{i=1}^6 \alpha_i \Delta C_{it} + \left(\sum_{i=1}^6 \beta_i C_{it} - \text{dot.espe}_t \right)$$

where *dot.gen* is the general provision and *dot.espe* is the specific provision.

The above parameters imply, for instance, that for a traditional mortgage with LTV above 80% a bank has to set aside 0.71% (0.6% alpha plus 0.11% beta) of its amount as a general provision; assuming a 15% of loss given default the commented amount would be sufficient to cover for a non-performing loan ratio of close to 4.75%, which compares with a 3.85% ratio for mortgages at the peak of the last recession in 1993.

It is worth noting that a rules-based system of loan loss provisions like the one explained in this paper enhances transparency and comparability across banks. Loan loss provisions are fully transparent. Banks must publish the amount of their general provisions so that investors and analysts can isolate the impact of dynamic provisions. Banks are required to disclose the amount of the dynamic provision, apart from the specific provision. Thus, users of accounting statements can “undo” its impact on the profit and loss (P&L) statement. The ultimate aim, from an accounting point of view, is that financial statements

properly inform users about the true financial situation of the bank, i.e. they recognise the credit risk/losses when they appear, in order to avoid biases in profits, dividends, and bonuses as well as to deliver the proper incentives to bank managers and investors.

Finally, regarding the tax treatment, general provisions are tax-deductible expenses up to 1% of the increase in gross loans, as long as they are not mortgages. Non-deductible amounts (i.e. those above that threshold) are accounted for as deferred tax assets, because they will become specific provisions in the future, and therefore deductible, when the impairment is assigned to an individual loan. Tax deductibility made dynamic provisions more popular among banks. Nevertheless, the Spanish experience shows that they can still be implemented even if they are not fully tax-deductible.

3.3 Facts and results

Using data from July 2000 to December 2010, we show the mechanism and functioning of dynamic provisions, in particular the build-up of the countercyclical provision and its use in the downturn. It is important to clarify that the data and charts provided are based on individual bank data, as opposed to consolidated figures. It should also be noted that, in principle, dynamic provisions mostly apply to domestic exposures. Furthermore, when referring to provisions as such, we mean the flow of provisions, otherwise mention will be made of the consideration of provision funds (the stock of provisions). Finally, the data scope refers to the group of Spanish deposit institutions (commercial banks, savings banks and credit cooperatives).

Chart 1 shows the economic expansion and the high credit growth rates —over 25% y-o-y rates at some point— that took place in the early years of this century and that allowed banks to have low levels of non-performing loans and, at the same time, to experience a declining path in the level of the ratio of specific loan loss provisions to total loans. However, by the second half of 2007, economic growth and lending started a significant slowdown, with a sharp rise in the non-performing loan (NPL) ratio in 2008, to just below 6% —as the Spanish economy headed for its deepest recession in more than 60 years.

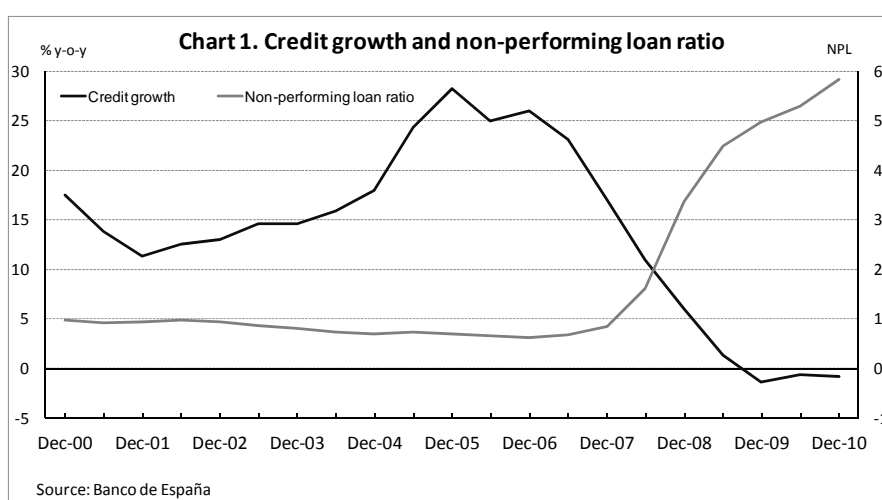
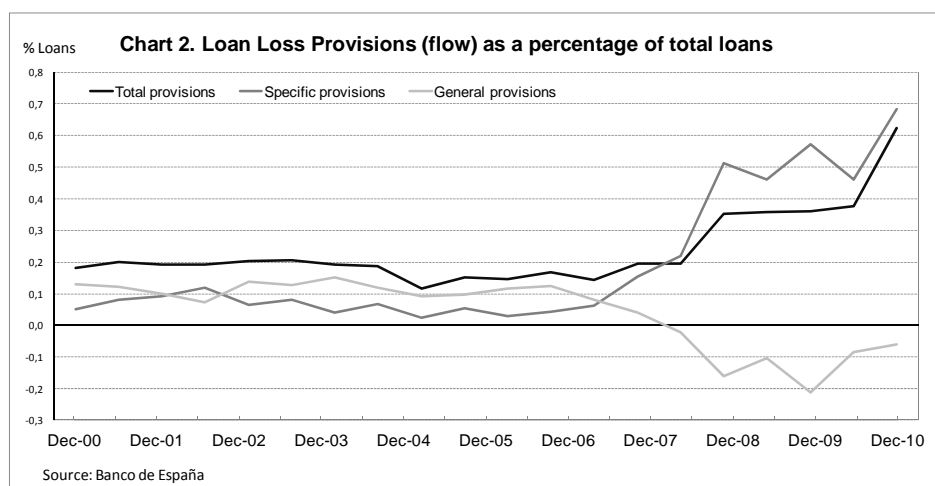


Chart 2 presents provisions in relative terms (i.e. as the percentage of total credit to the private sector). Specific provisions (over total loans granted) represented a very small

share of credit exposures (around 0.05%) during the expansion years, while the dynamic or general provisions were more than twice that figure during the same period. However, in 2008, due to the change in general economic conditions, a deep and rather sharp change took place in the lending cycle and specific provisions increased very rapidly while statistical provisions moved into negative territory, with the final result of a much less pronounced increase in total provisions.

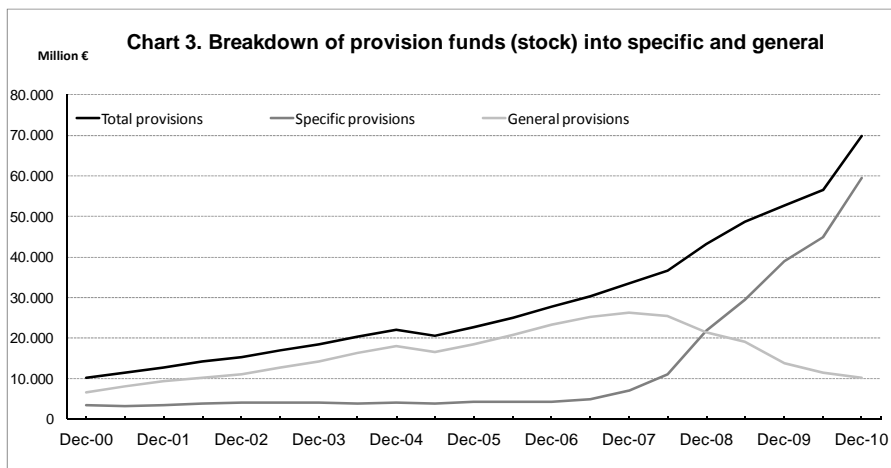
Precisely, Chart 2 illustrates the countercyclical nature of dynamic provisions. If Spain had had only specific provisions, in around two years these would have jumped from around 0.05% of total credit to more than 0.5% (a tenfold increase). However, current total provisions have evolved from a minimum of around 0.15% of total loans two/three years ago to a level of around 0.4% currently. Loan loss provisions are, therefore, still increasing and have an impact on the profit and loss account of banks, but a much smaller one thanks to the countercyclical mechanism which contributes to the resilience of the whole banking sector. This corresponds to the graphical description of how the macro-prudential dimension of dynamic provisions operates.

The loan loss provision fund (stock) has evolved accordingly (Chart 3). The countercyclical nature of dynamic provisions can also be seen in the changes in the stock of the general fund which starts to be depleted as the effects of the crisis gained momentum. The buffer of provisions accumulated in the expansion phase was used in the downturn, therefore, it starts to be depleted since 2008. It was not the idea of the regulator to build up a permanent buffer of provisions. Therefore, the general fund built up in the upturn can be depleted as specific provisions keep growing as a result of the increase in non-performing loans.

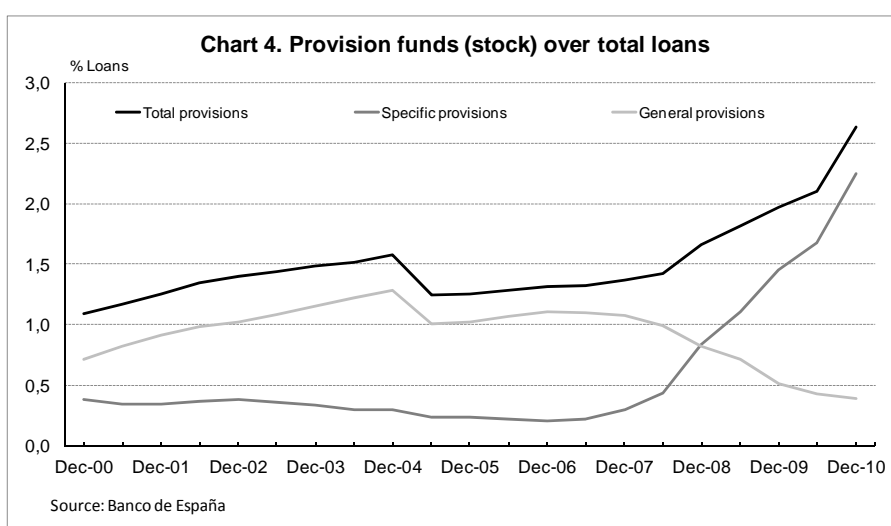


It is also interesting to analyse the stock of provisions in relative terms. The specific provision fund relative to the overall amount of non-performing loans is around 50% for almost the whole period under study, while the most relevant changes are for the general fund, as expected. During the upturn, the coverage of doubtful loans with general loan loss provisions reached a maximum of around 250%, which reflects the very low level of problematic loans in good times as well as the fact that the latent credit risk in banks' balance sheets had not yet materialized in individual loans. As those losses materialized, the coverage of the general provision fund relative to non-performing loans started, as expected, to decline

sharply, because the former increased significantly forcing the latter to start to be depleted. Following the same path, the stock of total provisions also declined. Although much smaller than in previous years, the total provision fund currently offers an acceptable level of coverage taking into account the average loss given default expected for the aggregated Spanish bank portfolios.



In terms of total loans, Chart 4 shows that a countercyclical loan loss provisioning system smoothes the total loan loss provision coverage. As it can be seen, the specific provision fund relative to total loans has increased more than six-fold over the last two years whereas the total loan loss provision fund in relation to total loans has only increased by 50% as a result of the application of the general provisions set up for this purpose. Again, this shows the macro-prudential aspect of dynamic provisions.



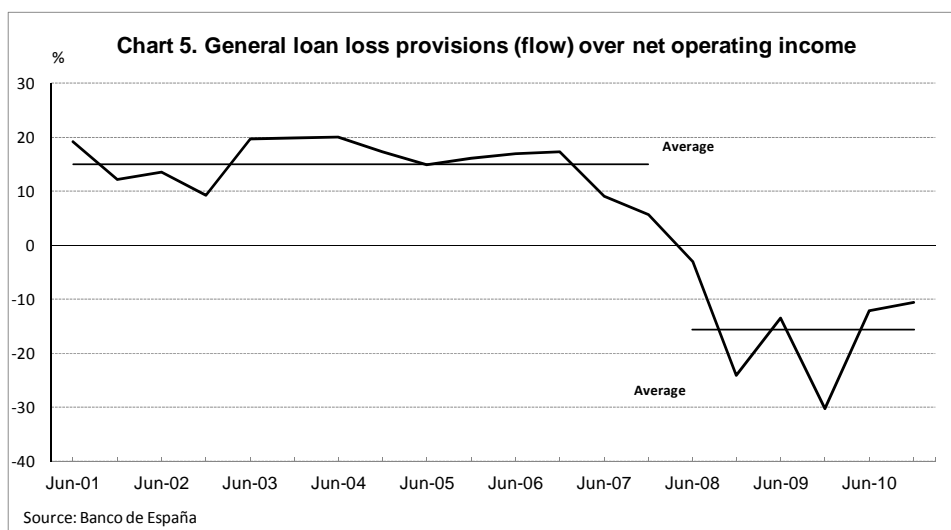
If we focus on those exposures subject to positive general or dynamic provisioning requirements (i.e. excluding exposures to the public sector as well as interbank exposures)

the ratio of general provisions to total loans was 1.1% and relative to credit subject to positive dynamic provisioning requirements was 1.44% at the end of 2007 at a consolidated level.²²

At the end of 2007, before dynamic provisions started to being depleted, the stock of total loan provisions were 1.33% of total consolidated assets (excluding branches from EU countries, not subject to dynamic provisions). This figure compares with a ratio of 5.78% between bank capital and those total assets. Therefore, the total loan loss provision buffer meant an additional 27.1% of core capital or 26.6% addition to the tier 1 figure. It should be taken into account that Spanish banks did not have conduits or SIVs, thus the amount of off-balance sheet assets was much more limited than in other banking systems, which reinforces the importance of the buffer coming from loan loss provisions.

Arguably, the relevant benchmark to assess the impact of Spanish dynamic provisions is not consolidated data but rather individual data centered on the Spanish lending market. The ratio of general provisions to total credit subject to the general provision at the end of 2007 for individual balance sheets was 1.22%. If we exclude those exposures with a 0% weighting, the coverage ratio climbs to 1.59%. For non-consolidated data in Spain, the general provisions were 78.9% of total provisions at the end of 2007.

Another interesting issue about dynamic provisions is their impact on the profit and loss account. Chart 5 shows that the impact of the flow of general provisions on net operating income is material, accounting in average terms for around 15% of it during the period before the general provision fund started to be used. This explains why banks are usually not much in favor of them in an expansionary phase. It can also be seen that when dynamic provisions are used (i.e. when the general fund is being drawn down), the impact on net operating income is also very significant, helping banks to protect their capital during recessions.



²² Not all consolidated assets are subject to credit risk and, therefore, do not require a loan loss provision. If we focus on the assets which require general loan loss provisions, at the end of 2007 Spanish banks at a consolidated level had 1.20% of general provisions for total credit granted. General provisions were 73.2% of total loan loss provisions at that time.

3.4 Assessment

The analysis of dynamic provisions in Spain has shown that they can help to deal with part of the pro-cyclicality inherent in the banking system. By allowing earlier detection and coverage of credit losses in loan portfolios, they enable banks to build up a buffer in good times that can be used in bad times. Loan loss provisions, in particular those that are made earlier in the cycle increasing the resilience of each individual bank and that of the whole system. Thus, based on the experience gained, a countercyclical loan loss provision should be part of the toolbox for macro-prudential oriented supervision.

However countercyclical loan loss provisions are not the perfect silver bullet for dealing with a classical lending cycle. Counterfactuals are not possible in economics, thus we do not know what credit growth in Spain would have been without the dynamic provisions. It is clear from Chart 1 that credit growth was strong in Spain during the period when dynamic provisions were being built up by banks. It could be argued that the parameters of the Spanish system were too low, but considering coverage ratios, the fact that they were calibrated using data from the early ninety recession, and given the impact of general provisions on net operating income (around 15%), it is difficult, even ex post, to argue for requiring more stringent parameters.

Moreover, while for the Spanish financial institutions there is no doubt that the provisioning buffer has helped them withstand the shock and deal with the crisis from a much better starting point there is no guarantee that, on their own, they will suffice to cope with all the credit losses of the downturn. Clearly, for some institutions the answer is no, and they will need to make additional provisions further impacting their profit and loss accounts or, at an extreme, denting their capital buffers.

4 Conclusions. The Spanish experience in the new European and international context

The case for macroprudential policies —institutions, surveillance and tools— is well established in the aftermath of the financial crisis. The policy frame and toolbox of macroprudential policy is not completely settled yet, and how it interacts with other policies, in particular, monetary policy is not nitidly established, neither. Central banks are key players in this process, given their privileged position in the surveillance of the banking and financial system and as the monetary policymakers.

In this paper, we have reviewed the Spanish dynamic provision experience, in order to contribute to the debate in two different spheres: its value as an instrument in the macroprudential policy toolkit and its interaction of this type of tool with the overall economic policy framework. This interaction is determined in the Euro area context by the supranational nature of the monetary policy and the macroprudential institutional framework.

As a macro-prudential tool, dynamic provisions have proved useful in Spain during the current financial crisis in the two dimensions that have been identified for macro-prudential tools: mitigating the build-up of risks —albeit to a limited extent— and, above all, providing substantial loss absorbency capacity to the institutions of the system. In this regard, they could be an important prudential tool for other banking systems.

But dynamic provisioning is not the macro-prudential panacea, since the lending cycle is too complicated to be dealt with using only loan loss provision policies. Indeed the Spanish experience shows that even well targeted and calibrated instruments cannot cope perfectly with the narrow objective for which they are designed, among other things because the required size to fully achieve its goals would have inhibited and distorted financial and banking activity. Thus, the management of the lending cycle and more in general the reinforcement of financial stability should be consistently complemented with other instruments, either within the macro-prudential sphere —tighter control over lending standards and concentration of risks, countercyclical capital buffers or provisions, for instance—, with microprudential policies and in the broader context of macroeconomic management, including monetary policies.

Regarding the general framework of macroprudential policies, it follows that a thorough assessment of the design, intensity, scope and use of the macro-prudential tools and their compounded impact is required. In this sense, the settlement of new macroprudential institutions to assess macrofinancial vulnerabilities should also devote efforts to assess these issues.

In addition, in the EU and, in particular, in the euro area, there is a clear differentiation between assessment and implementation..The European Systemic Risk Board (ESRB), the new institution to assess systemic and macroprudential risks is supranational. The ESRB —whose secretariat is located within the ECB and is chaired by the ECB president— has just started to function and it will issue warnings and recommendations. National authorities will remain in charge of macro-prudential policies²³, even when they heed the recommendations

23. The ESRB functions will be complemented, at the supervisory level by the three new European Supervisory Authorities, which complete the new financial oversight framework at the EU level The new ESAs will be: the European

of the ESRB, which is consistent with their regulatory and supervisory expertise in their domestic markets.

Regarding the link of macroprudential tools with the rest of economic policies, a first guideline is that they should be consistent. In particular, the role of monetary policy to support financial stability, complementing macro and microprudential policies has also been reinforced after the crisis, as discussed above. However, it faces limits, not only by the paramount objective of achieving price stability, but also by the boldness of the available instruments (interest rates) to deal with specific financial stability imbalances-be it credit booms or price assets.

Moreover, in the context of EMU, the use of monetary policy instruments to deal with financial stability issues face additional difficulties, since interest rates are set on the basis of area-wide considerations, while experience shows that credit and asset price developments in member countries may differ considerably.

The setting of monetary policy at the euro area level and macroprudential policy at the domestic level implies that countries can adapt the type and intensity of their macro-prudential regulations to their specific circumstances. Indeed, dynamic provisions were introduced in Spain in 2000, just after the Single Monetary Policy started to operate, although other considerations related to the domestic banking sector were at play in their inception. It could hence be argued that macroprudential instruments can be used to modulate the effects that the one-size-fits-all monetary policy has on domestic credit and asset prices developments,

While recognising that macro-prudential tools can adapt common financial conditions to the domestic situations, some risks arise, so that a thorough assessment of their risks and externalities of macroprudential policies should be made.. First, there is a risk of overburdening macro-prudential policy with additional goals which might displace their central role. Second, it is important that the expected extension and higher intensity of their use does not translate into barriers to financial integration in Europe. Risks to financial integration arise because domestic-oriented macroprudential policies are likely to be more effective in sectors where financial integration is not complete (e.g. banking). It is hence important to ensure that attempts to maximize the effectiveness of domestic policies are without prejudice to European financial integration.

All in all, the proved usefulness of Spanish provisions and the acknowledgment of its limitations is a key reference for macro-prudential policy in the euro area and also at the global level in this new phase of financial regulation where macro-prudential tools to improve the resilience of financial system have acquired a key role.

Banking Authority, the European Insurance and Occupational Pensions Authority, and the European Securities and Markets Authority.

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