

crisisresponse

PUBLIC POLICY FOR THE PRIVATE SECTOR

Dynamic Provisioning

Jesús Saurina

Jesús Saurina is director of the Financial Stability Department at Banco de España.

This is the seventh in a series of policy briefs on the crisis—assessing the policy responses, shedding light on financial reforms currently under debate, and providing insights for emerging-market policy makers.

The Experience of Spain

Dynamic loan loss provisions can help deal with procyclicality in banking. 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. Their anticyclical nature enhances the resilience of both individual banks and the banking system as a whole. While there is no guarantee that they will be enough to cope with all the credit losses of a downturn, dynamic provisions have proved useful in Spain during the current financial crisis. They could be an important prudential tool for emerging economies, where banks dominate financial intermediation.

The current financial crisis is a clear, though painful, example of excess procyclicality in banking. Procyclical behavior is well rooted in both theoretical and empirical grounds.¹ Banking supervisors know that lending mistakes are more prevalent during upturns: borrowers and lenders become overconfident about investment projects and tend to lower credit standards. During recessions banks suddenly turn conservative and tighten lending standards. Moreover, a monetary policy that remains lax for too long may increase the risk-taking incentives of banks as they search for yield.

Tools are needed to cope with the excess procyclicality that the lending cycle injects into the real economy. One such tool is anticyclical loan loss provisions like those applied in Spain over the past nine years. Spain's provisioning system offers a way to both address the adverse

impact of the lending cycle on banks' financial positions and deliver appropriate information to investors by correcting the bias in the measurement of profits and incurred losses over time.² Anticyclical loan loss provisions are no "silver bullet" for dealing with the current crisis. But they are one of the tools that can be used to enhance the resilience and stability of the banking system.

Spain's anticyclical provisioning regime

Banco de España, Spain's central bank and its banking supervisor, put dynamic—or statistical—provisions into place in July 2000, to cope with a sharp increase in credit risk on Spanish banks' balance sheets following a period of significant credit growth.³ Moral suasion had proved to be inadequate in inducing banks to become more conservative. Moreover, intense competition



THE WORLD BANK



International Finance Corporation
World Bank Group

among banks had resulted in inadequate loan pricing—that is, risk premiums were too low. In addition, there had been a significant reduction in nonperforming loans in the second half of the 1990s, which meant that specific provisions were very low. Indeed, in 1999 Spain had the lowest ratio of loan loss provisions to total loans among OECD countries. It also had the highest correlation between the provisioning ratio and the GDP growth rate (−0.97) for the period 1991–99. Thus loan loss provisions were very procyclical in Spain: they were very low during periods of expansion and very high during recessions, while credit risk and underpricing of risk spread during the boom period.

The initial regime

It was these developments, coupled with the theoretical arguments about procyclicality in banking and the significant lag in problem loans after credit expansion, that led the supervisor to establish the statistical provisions. These anticyclical provisions, put into place on top of the specific and general provisions, were based on a comparison between a bank's current specific provisions and the average "latent loss" in its loan portfolio.⁴

During periods of expansion, when losses and specific provisions on individual loans are understated, a statistical provision is charged on the profit and loss account, building up a fund to be used when specific provisions grow above the average latent risk. Because loan portfolios are not homogeneous in credit risk (credit cards, mortgages, and small and medium-size enterprise loans, for example, have very different levels of losses), the latent risk differs depending on the type of loan. Banco de España offered banks a standard model to calculate the latent loss with the parameters fixed according to the loan portfolio class.⁵ To avoid an excessive increase in loan loss provisions, a cap was placed on the size of the statistical fund.

The revised regime

In 2004 Banco de España revised the statistical provisioning system in response to the adoption of the International Financial Reporting Standards by the European Union.⁶ The changes involved reverting to only two types of loan loss provisions: specific and general (statistical), although the general provisions now have two components, alpha and beta (box 1). Statistical provisions were

Box The mechanics of loan loss provisions in Spain

Total provisions are the sum of specific (*dot.espe*) and general (*dot.gen*) provisions. The formula for the general provisions is as follows:

$$\dot{gen}_t = \alpha \Delta C_t + \left(\beta - \frac{\dot{espe}_t}{C_t} \right) C_t,$$

where C_t is the stock of loans and ΔC_t its variation (positive in a lending expansion, negative in a credit crunch). α covers the latent loss, while β is the average specific provision for, ideally, a full lending or business cycle.

This formula is a simplified way of presenting things. In actuality there are six risk buckets, or homogeneous risk categories, each with a different α and β (for more detail on these groups, see Banco de España 2004, annex IX):

- *Negligible risk*—cash and public sector exposures (both loans and securities)
- *Low risk*—mortgages with a loan-to-value ratio below 80 percent and exposures to corporations with a rating of A or above
- *Medium-low risk*—mortgages with a loan-to-value ratio above 80 percent and other collateralized loans not previously mentioned
- *Medium risk*—other loans, including corporate exposures that are nonrated or have a rating below A and exposures to small and medium-size firms
- *Medium-high risk*—consumer durables financing
- *High risk*—credit card exposures and overdrafts

As noted, the six risk buckets have different alpha and beta parameters: for α , 0 percent, 0.6 percent, 1.5 percent, 1.8 percent, 2 percent, and 2.5 percent; and for β , 0 percent, 0.11 percent, 0.44 percent, 0.65 percent, 1.1 percent, and 1.64 percent. The final formula to be applied by each bank is therefore:

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

included in Tier 2 capital, that is, up to 1.25 percent of risk-weighted assets.

Intuitively, the alpha parameter is the average estimate of the credit loss or the collective assessment for impairment in a cyclically neutral year. It varies across homogeneous loan portfolios. The beta parameter is the average specific provision for those homogeneous loan portfolios. The alpha and beta parameters are the same for all banks, although the overall impact will differ for each bank depending on the structure of its loan portfolio.

During periods of strong credit growth and low levels of specific provisions, the beta component is positive because it recognizes the increase in incurred losses not yet individually identified on a specific loan. During recessions those losses quickly translate into specific losses and so the beta component becomes negative.

The overall profile of total loan loss provisions is much less procyclical than it would have been without dynamic provisions. Figure 1, based on a simulation of a lending cycle with a recession in the middle period, shows that at the peak of the recession dynamic provisions would be 40 percent lower than the traditional provisions, while during good periods, both before and after the recession, dynamic provisions would be higher. Of course, a different set of alpha and beta parameters would produce a different provisioning profile.

To avoid excess provisioning, there is a cap (125 percent of the latent loss) on the dynamic

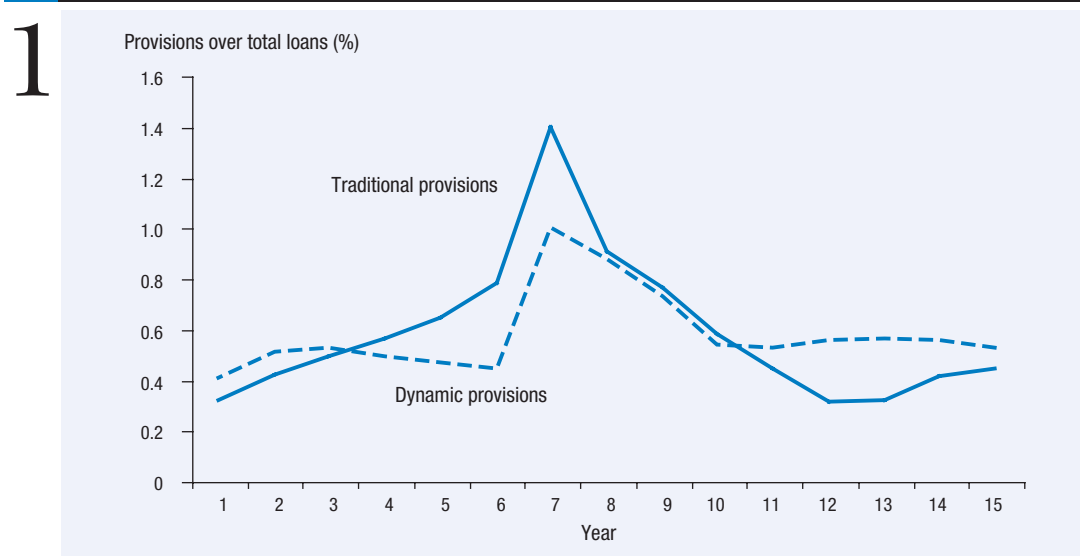
provision fund. Excess provisioning would occur in a long expansionary phase as specific provisions remain below the betas and the alphas also contribute positively. The cap is intended to avoid loan loss provisions growing for too long a period, producing coverage ratios (ratios of provisions to nonperforming loans) that are unrealistic.

The alpha and beta components refer to the collective assessment for impairment. They are based on historical information on credit losses (since 1987) from Banco de España's credit register, an extensive, loan-by-loan database covering all loans above €6,000 granted in Spain by any bank operating there. Dynamic provisioning is therefore a backward-looking but transparent rules-based system; that is, banks must use the alpha and beta parameters for predefined loan portfolios.

Outcomes

What has Spain achieved with dynamic provisions? They account on average for about 10 percent of the net operating income of banks. That is why bankers initially were not in favor of dynamic provisions. At the end of 2007 the total accumulated provisions (close to 75 percent were general provisions) covered 1.3 percent of the total consolidated assets of Spanish deposit institutions, at a time that capital and reserves represented 5.8 percent of those assets. Spanish banks had accumulated a significant buffer to cover incurred losses, a buffer that they have now started to draw down as individual loan losses

Figure 1 Traditional and dynamic provisions across a simulated lending cycle



Note: Traditional provisions are specific plus general provisions. Dynamic provisions are specific provisions plus general provisions with a countercyclical component.

have begun to mount in parallel with the deterioration in the economy. The buffer was never intended to be permanent. Instead, it is meant to be used in periods such as the current one, when problem loans and specific provisions are surging. By being drawn down, dynamic provisions fulfill their anticyclical purpose.

There is no guarantee, given the depth of the current crisis, that the amounts provisioned will be enough to cover the loan losses that banks are facing. Nevertheless, dynamic provisions have contributed to the stability of the Spanish financial system and allowed Spanish banks to deal with the crisis from a much better starting point.

Dealing with implementation challenges

Several issues need to be addressed when introducing a dynamic loan loss provisioning system similar to the one in Spain: accounting implications, tax treatment of provisions, and data requirements for implementation.

Accounting issues

Some analysts complain that Spain's dynamic provisions allow banks to carry out earnings management ("build up cookie jars," in the accounting jargon). This is not true. Loan loss provisions are fully transparent. Banks must publish the amount of their general provisions so that investors and analysts may, if they wish, "undo" the impact of the dynamic provisions. Moreover, the system is rules based, and there is a cap on the amount of the dynamic fund being built up. It is therefore very difficult for bank management to use these provisions to deceive investors.

On the contrary, dynamic provisions are a way to adequately cover incurred losses not yet individually identified on specific loans at a time that these losses are being built up on balance sheets. Thus they are a way to deliver accurate information to investors about the firm's financial position in terms of both income generation and risk taking. A profit and loss account that tells only of the increase in income generated, but says nothing about the risks and losses incurred to obtain that income, gives management the wrong incentives: to keep increasing credit growth at a time that over-optimism, strong competition, and underpricing of risk dominate the financial landscape.

The accountants' objective of providing the most accurate information to investors about a firm's financial condition should be well served

by a system of provisions that recognizes credit losses as they are incurred along the lending cycle. Exploring the collective assessment for impairment, as well as the transition from incurred losses not yet individually identified to specific losses on individual loans, may be a way to accommodate dynamic provisions in the current accounting framework. In light of the current crisis and the increased focus on macro-prudential regulation,⁷ there should be greater understanding among those setting accounting standards about the need for prudential buffers (such as dynamic provisions) in banking.⁸

Still, some accountants are unconvinced that Spain's dynamic provisions are compatible with the current International Financial Reporting Standards. One possible way forward would be to differentiate transparently between *regular profits* and *distributable profits*. That distinction could appear in the annual financial statements and be made part of the International Financial Reporting Standards. The difference between the two profit concepts would be publicly reported compulsory reserves set by banking regulators, which could be built along the lines of Spain's dynamic provisioning system and earmarked against future losses. In this way dynamic provisions would not interfere with the reporting of regular profits based on the International Financial Reporting Standards.

Loan loss provisions apply to the banking book. Most large, internationally active banks as well as investment banks concentrate a significant part of their exposures in the trading book. Dynamic provisions do not directly apply to those assets and would have been of little use in the subprime-mortgage-cum-structured-finance debacle. But it is possible to conceive a similar device to deal with procyclicality and valuation uncertainties of exposures in the trading book.⁹

Tax treatment

Until the end of 2004 the statistical provisions in the Spanish system were not tax deductible, although they were treated as deferred tax assets. Today general provisions are tax-deductible expenses up to 1 percent of the increase in gross loans, as long as they are not mortgages. Again, nondeductible amounts are accounted 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. If

dynamic provisions are tax deductible, they are more palatable for banks. But even if they are not deductible, they can still be implemented, as the Spanish experience shows.

Data requirements

As noted, the Spanish system is based on detailed information about credit losses from the credit register managed by Banco de España. The better the information, the more accurate a system of provisions can be built up. But lack of a credit register is no argument for dismissing dynamic provisions. Supervisors with no credit register can rely on private credit bureaus. If there is no central source of information about credit losses, supervisors can use banks' own information. Even in the worst case, when banks have not stored information on losses, it should still be possible to collect data on the overall loan loss provisions over the business cycle. With this information, a dynamic provisioning scheme can be simulated and adjusted to produce reasonable results in its impact on the profit and loss account and on the amount of provisions raised. Even where supervisors have full information, this reality check is important.

The Spanish system is simple and can be easily replicated in jurisdictions with much less information. Of course, a dynamic provisioning system should be created during a period of credit growth. There is no point in trying to develop such a system during a recession, when specific provisions would already be very high.

A final thorny issue relates to the calibration of parameters. A dynamic provisioning system is usually designed using information on credit losses over the previous lending cycle. But there is no guarantee that a system designed in this way will be enough to cope with all the credit losses of the next downturn. Even in Spain, where the period used for the calibration included the worst recession in 40 years, it is not clear that the system will be enough to cover all credit losses. Admittedly, the current crisis is the worst in almost a century, something difficult to foresee when the system was established.

Conclusion

Dynamic provisions are a macro-prudential tool for dealing with the procyclicality of 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. The anticyclical nature of dynamic provisions enhances the resilience of individual banks as well as the banking system as a whole. Moreover, the system is a transparent, rules-based one, with compulsory disclosures providing information that is comparable across banks. The system has proved to be useful for Spanish banks during the current crisis.

But dynamic provisions are no panacea. There is no guarantee that they will be enough to cope with all the credit losses of the next downturn. Nor are they an alternative monetary policy tool. The Spanish experience shows that they are not useful for taming the lending cycle, even if they could increase the cost of lending, since there has been strong credit growth in Spain during the period of their application. Dynamic provisions are an instrument solely to cover for the credit risk built up in the loan books of banks' balance sheets. Policy makers should focus primarily on an appropriate mix of monetary and fiscal policies, not on statistical provisions, to control the lending cycle.

Dynamic provisions could be an important prudential instrument for emerging economies, where there is greater macroeconomic volatility and the banking system plays a dominant role in financial intermediation. An anticyclical buffer should help strengthen the solvency of each bank and increase the stability of the system as a whole. A key lesson from the Spanish experience is that such buffers must be built up in good times, when banks have high profits and low levels of nonperforming loans. Dynamic provisions also should be fully transparent, to avoid earnings management. And each country should customize its provisioning system to fit its credit loss experience or desired degree of anticyclicity.

Notes

The author would like to thank Jim Hanson, Dimitri Vittas, and Erik Feyen for useful comments and especially Constantinos Stephanou for his thorough reading of a previous version of this policy brief as well as his

many insightful suggestions. All opinions expressed in the policy brief are those of the author and not necessarily those of Banco de España or the Eurosystem.

1. The main theoretical explanations for fluctuations in credit policies are based on information imperfections (disaster myopia, herd behavior, agency problems, and the like). There is ample empirical evidence of looser credit standards during expansions; for example, Jiménez and Saurina (2006) show that loans granted during boom periods have a higher probability of default than those granted during periods of slow credit growth.
2. For the purposes of this policy brief, the loan loss provisioning system in Spain is referred to as statistical, dynamic, anticyclical, or countercyclical.
3. Banco de España has the authority to set accounting rules for individual banks in Spain.
4. See Fernández de Lis, Martínez, and Saurina (2000) for a detailed explanation of the statistical provisions as set up in 2000.
5. Banco de España also allowed banks to use internal models to calculate the latent loss, that is, to use their own information on probabilities of default and loss given default. But only a few small, specialized banks had detailed information about credit losses on specific portfolios and thus received authorization to use their internal models.
6. See Banco de España (2005) for a more detailed explanation of the changes in provisions when the International Financial Reporting Standards came into effect.
7. See Borio (2003) for a thorough discussion of macro-prudential tools.
8. FSA (2009) contains an interesting discussion about distinguishing between banking-book-specific and portfolio provisions based on current accounting rules, and their possible augmentation by the creation of a nondistributable Economic Cycle Reserve that would set aside profits in good years in anticipation of likely future losses. It also addresses presentation issues, discussing whether the reserve should appear in the balance sheet or in the profit and loss account and arguing in favor of the latter. The G-20 Leaders' Statement at the London Summit in April 2009 calls for accounting standard setters to work urgently with supervisors and regulators to improve standards on valuation and provisioning.
9. This issue goes beyond the scope of this policy brief. For a more detailed explanation of the concept of valuation reserves, see Viñals (2008).

References

- Banco de España. 2004. *Entidades de Crédito. Normas de Información Financiera Pública y Reservada y Modelos de Estados Financieros*. Circular 4/2004. Madrid.
- . 2005. *Financial Stability Report*. Madrid. May.
- Borio, C. 2003. "Towards a Macroprudential Framework for Financial Supervision and Regulation." BIS Working Paper 128, Bank for International Settlements, Basel.
- Fernández de Lis, S., J. Martínez, and J. Saurina. 2000. "Credit Growth, Problem Loans and Credit Risk Provisioning in Spain." Working Paper 0018, Banco de España, Madrid.
- FSA (U.K. Financial Services Authority). 2009. *The Turner Review: A Regulatory Response to the Global Banking Crisis*. London.
- Jiménez, G., and J. Saurina. 2006. "Credit Cycles, Credit Risk, and Prudential Regulation." *International Journal of Central Banking* 2 (2): 65–98.
- Viñals, J. 2008. "Improving Fair Value Accounting." *Financial Stability Review* (Banque de France), no. 12:121–30.



crisisresponse

The views published here are those of the authors and should not be attributed to the World Bank Group. Nor do any of the conclusions represent official policy of the World Bank Group or of its Executive Directors or the countries they represent.

To order additional copies contact Suzanne Smith, managing editor, The World Bank, 1818 H Street, NW, Washington, DC 20433.

Telephone:

001 202 458 7281

Fax:

001 202 522 3480

Email:

ssmith7@worldbank.org

Produced by Grammarians, Inc.

Printed on recycled paper