

**Dynamic provisioning:
Some lessons from existing experiences**

Alicia Garcia-Herrero

Chief – Economist Emerging Markets BBVA

1. **Why is the financial system so procyclical?**
2. How to reduce its procyclicality?
3. What is behind dynamic provisioning
4. The experiences of Spain, Colombia and Peru
5. Conclusions

- A wealth of reasons (more than 10 in the paper) and it does not even try to be a complete list
- Some are inherent in the financial system:
 - Laxer risk assessment in good times (Tversky 1973, Kindleberger 1978)
 - Even risk management instruments, such as VaR (Haldane 2009)
 - Fluctuations in the value of collateral and cash flow (Kiyotaki and Moore 1997)
 - Herd behavior (Rajan 1994)

- Others are more related to the institutional structure of the financial sector
 - Human capital reasons (Udell, 2003)
 - Retribution policies (IMF 2009)
 - Competition (Nys 2008, Lepetit et al. 2008)
- Somewhat ironically, even financial regulation can exacerbate procyclicality
 - True for capital requirements. Some argue that even more so for Basel II (Saurina and Trucharte, 2007 and Repullo and Suarez, 2008)
 - And also for provisions

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- Important to realize that procyclicality CANNOT be eliminated but only MITIGATED
- **Then how?:**
 - Big discussion whether monetary policy (or others) can manage reduce procyclicality of financial system
 - This paper focuses on one single tool: regulation
- **Two main issues to be considered**
 1. **Rules vs discretion**
 2. **Capital vs provisioning**

1. Rules vs discretion

Rules help in terms of some problems such as

- time inconsistency
- global application (which would be necessary if we want to avoid unequal treatment specially for large institutions operating in several jurisdictions)

However, some discretion might be needed special during the first years since it is so difficult to calibrate the cycle (this is even more relevant for emerging economies)

- How to allow for discretion without destroying a rule?

This can be done: Basel II is a good example of it (specially through second pillar)

2. Capital vs provisioning

- Main argument in favor of provisions is that their objective is to cover expected losses (capital is for unexpected losses).
 - If we believe that the financial system exacerbates procyclicality (and thus excesses), new losses should be expected out of those excesses
- However, provisions accumulated during the boom could be used to distribute higher profits in the bust, whereas capital is not subject to this problem
- These two reasons – and the fact that procyclicality is hard to mitigate – call for ***measures both on capital and provisions.***
 - However, making sure they do not clash

2. Capital vs provisioning (II)

- Countercyclical capital measures are either existing proxies or just proposals
- Some of the proxies are:
 - Limits on leverage
 - Setting a capital charge on off-balance sheet credit growth (in Spain exactly the same as on balance sheet)
- Among the proposals
 - Multiplying parameter for capital on macroprudential criteria (Geneva report)
 - Quality of capital: how much core capital, Tier 1 and Tier 2 (FSB)
 - More stress testing and less VaR as analysis of risks (FSB)
 - Contingent capital arrangements (Rajan)

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- **The objective of dynamic provisioning is the proper accounting recognition of ex ante credit risk.**
 - **Expected loan losses exist from the moment a loan is granted, which should be reflected in the risk premium and hence in the income stream coming from the loan**
- **It, thus, seems logical to build up the corresponding provision for loan losses also at that time and, thus, mitigate the excessive volatility of profits due to the procyclicality of**

- **However, not all agree, including IAS which criticized Bank of Spain's dynamic provisioning because it would smooth the stream of bank profits!**

For economists, trained to smooth cycles, this sounds odd!

- **Dynamic provisioning should also be regarded as a mechanism to overcome the co-ordination problems of individual banks at the peak of the cycle and to reinforce medium-term bank solvency.**

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- **Dynamic provisioning was introduced in Spain in 2000.**
- **It was a macroprudential response an inappropriate economic environment: too low interest rates, specially in real terms (inflation differentials did not converge in the euro area as expected)**
- **Given that very instruments were left for macroeconomic management after the introduction of the euro**
 - **No monetary policy, no exchange rate policy**
 - **Only fiscal and not necessarily with the right incentive structure (fiscal policy was actually utilized)**
- **The macro-prudential objective was simple: limiting credit growth**

- Banks can decide to use their own internal models to determine the amount of provisioning (after model approval by BE)
- Otherwise, they can take the formula calibrated by BE.

$DP = \alpha \Delta \text{Credit} + \beta \text{stock of Credit} - \text{Specific provisions}$

where $0 \leq \alpha \leq 2.5\%$

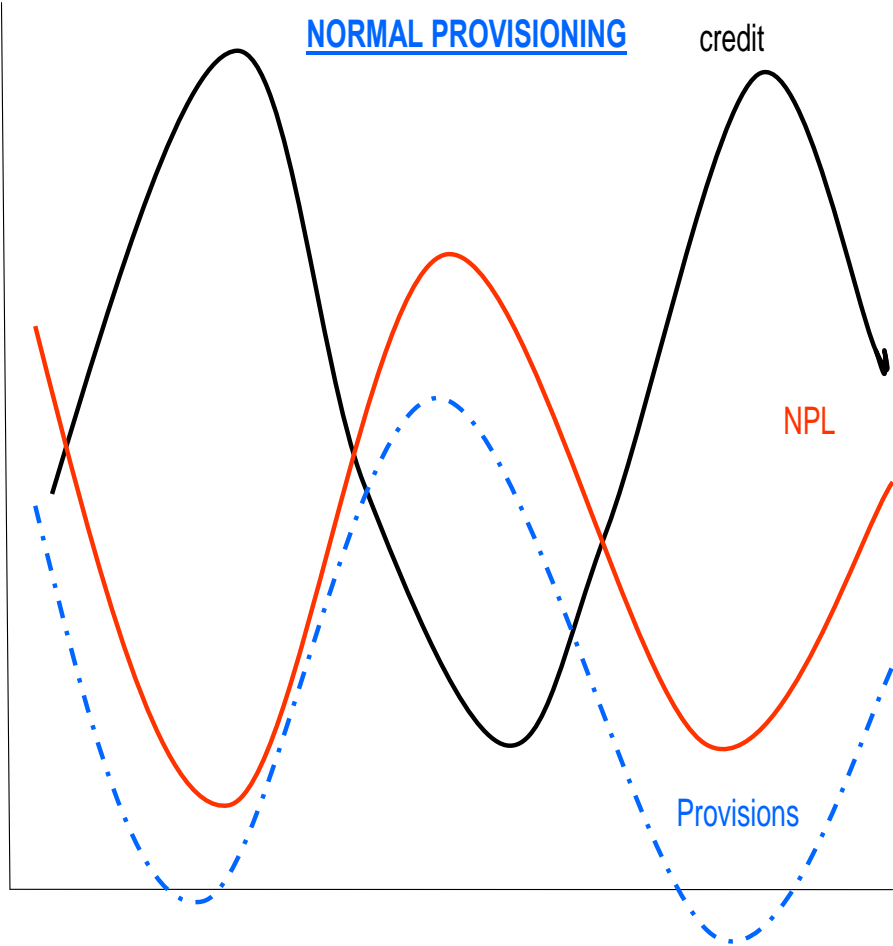
and $0 \leq \beta \leq 1.64\%$

depends on the risk behind different assets

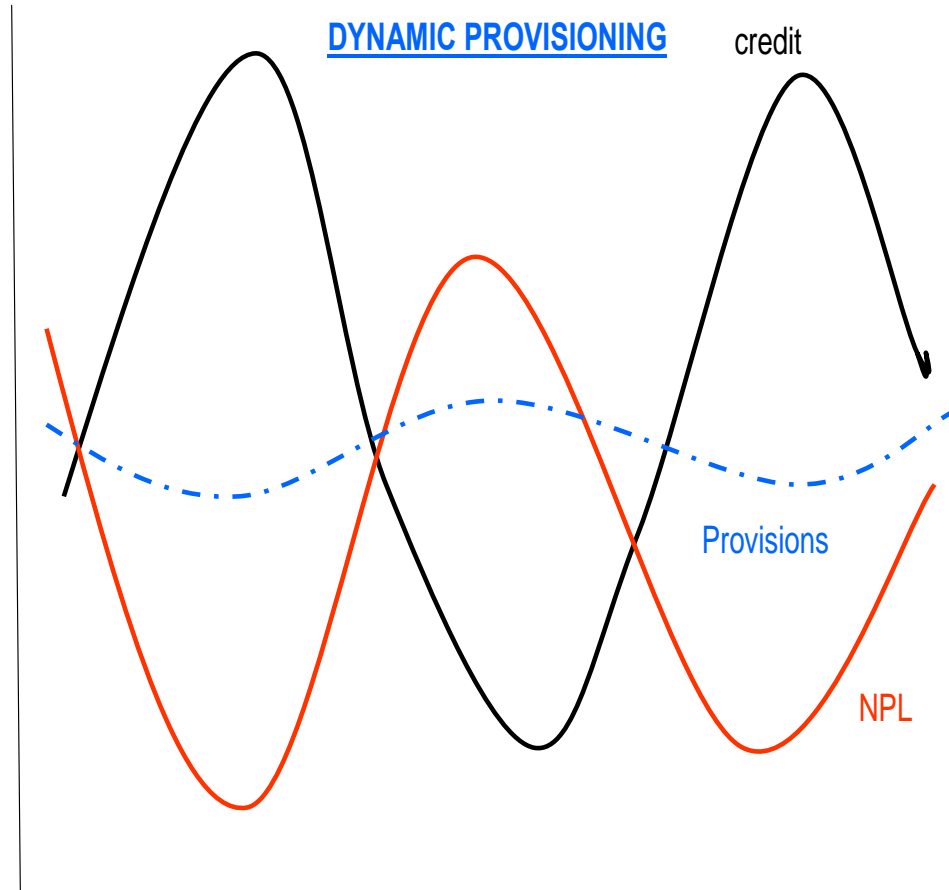
Note that because it is the difference between the estimated latent exposure and specific provisions (contemporary bad loans), DP could be positive or negative (clearly negative in bad times as today)

4. Spain: How was the system designed?

NORMAL PROVISIONING

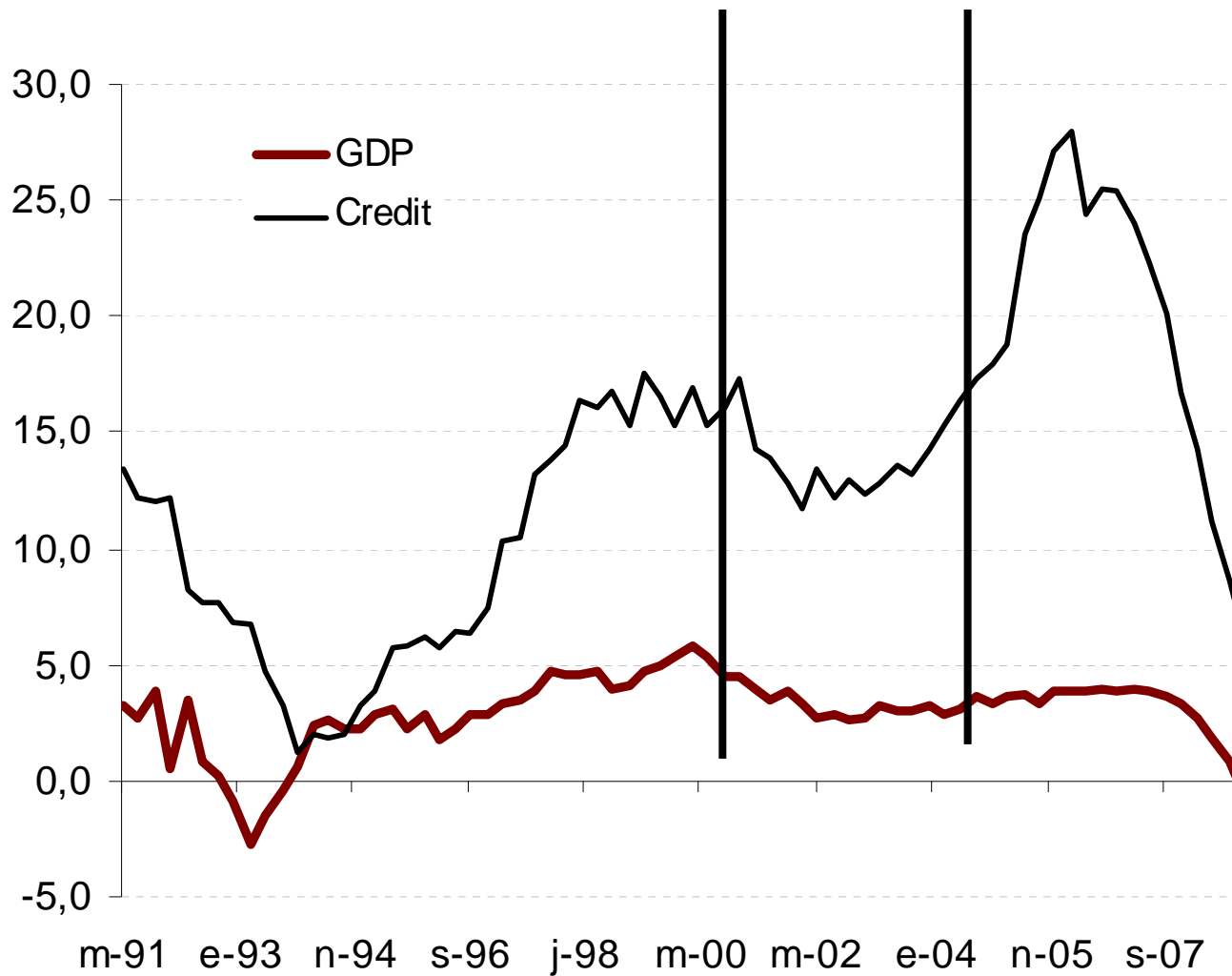


DYNAMIC PROVISIONING



- **When looking at the fast credit growth in Spain during the last few years, dynamic provisioning may not look very effective (see graph 1) but one would have to have the counterfactual to make such judgment**
- **Actually, it had an impact but clearly not enough**
 - **the dynamic provision absorbed 20% of Spanish banking institutions' pre-tax profits during 2002-2004 (Caruana 2005) and even more thereafter.**
 - **In fact provisions over credit resulted to be much higher than without the dynamic provisioning (Graph 2)**

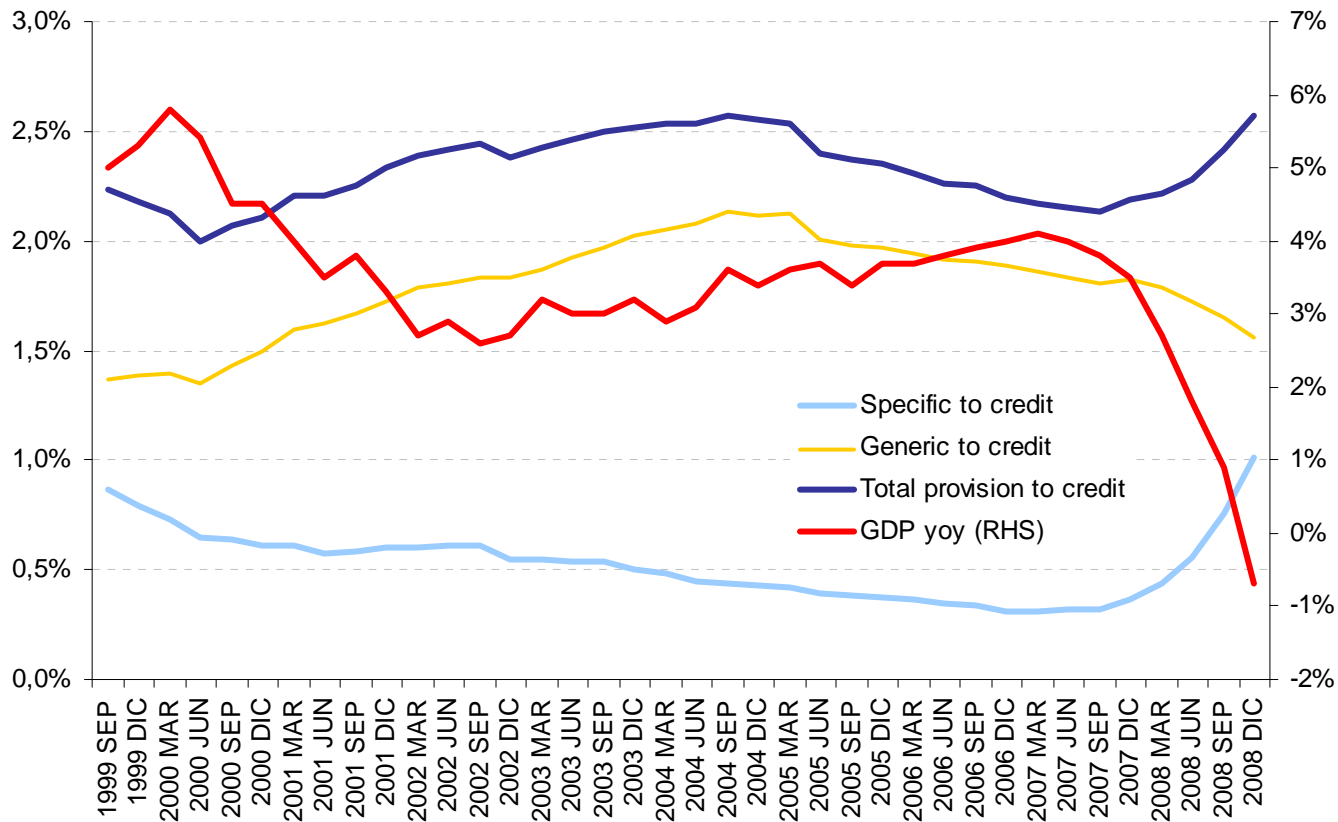
Credit grew too fast and the correction was abrupt



- **Actually, it had an impact but clearly not enough**
 - the dynamic provision absorbed 20% of Spanish banking institutions' pre-tax profits during 2002-2004 (Caruana 2005) and even more thereafter.
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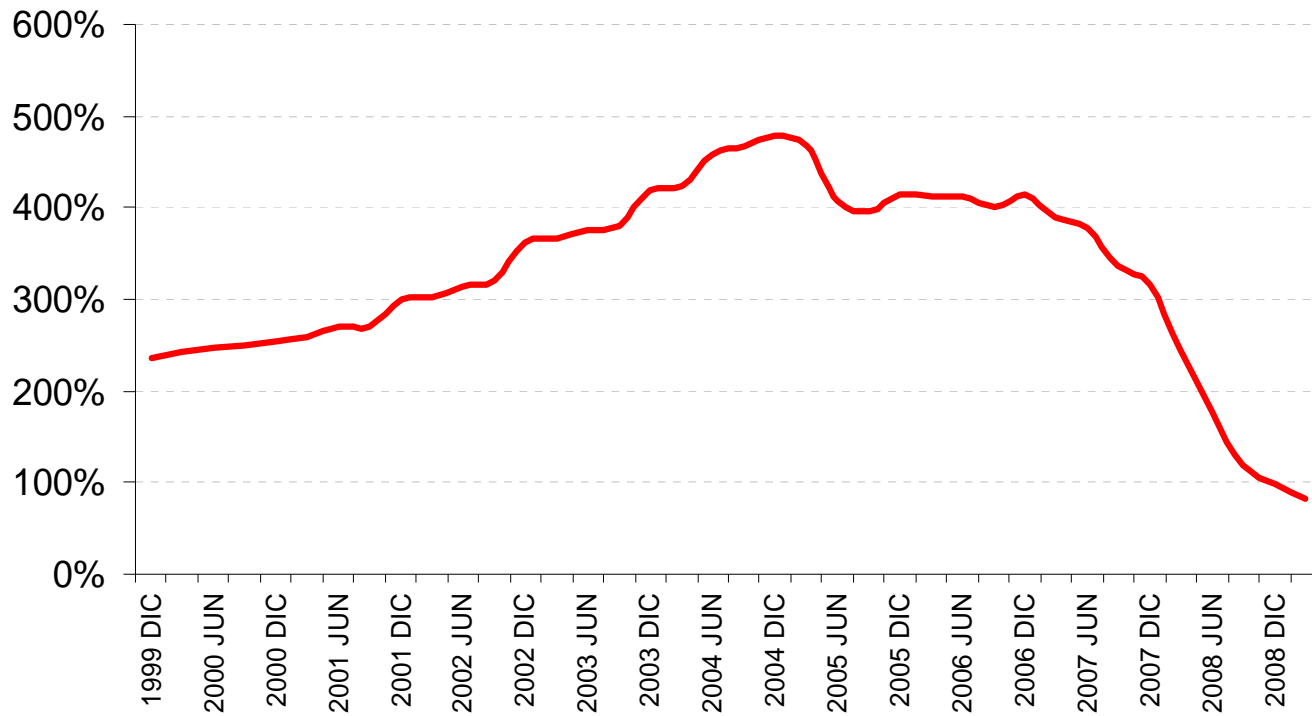
The data confirms these stylized facts to a large extent

Provisions over credit and GDP



- **What was the impact limited?: Mainly calibration issues**
 - **The rule based model could not have been calibrated right since it was based on Spain's average business cycle but this was the largest due to the euro impact
(↓ risk premia ↓ real int. rate ↑ credit growth & ↑ house prices)**
 - **Also mini business cycle in early 2000 coupled with a very rapid accumulation of provisions (close to 500% of NPLs) prompted the BE to make the criteria laxer**
 - **One must not forget that Spanish banks were the only ones facing this additional cost so easy for them to argue that there was no level playing field and thus hard to have a larger share of lending provisioned for**

Chart 6: Spain: provisions over bad loans



- **Impact on the downward side of the cycle hard to assess so far**
- **But what is clear is that the accumulated provisions have proved very useful in limiting the impact of the current crisis on the results of Spanish financial institutions**

- In 2007 Colombia adopted a model of dynamic provision for commercial and consumption loans, which represent about 90% of total outstanding loan portfolio. The banking regulator implemented reference models for commercial and consumption credit risk. Although each bank can use its own credit risk model, which must be approved by the regulator, at present all banks are using the reference model.
- The regulator, using historical data, calculates two risk scenarios, A and B (where B is a riskier scenario). The outputs of this calculation are two default probability matrixes which contain default probabilities for every type of credit and borrower.

- Provisions are the result of:

$$P = OVL * DP * LOD$$

Where:

OVL = Outstanding Value of the Loan

DP = Default Probability

LOD = Lost once Defaulted

- Every year the regulator decides which matrix will be used:
 - During years of high credit and economic growth, matrix A
 - Otherwise, matrix B

- The regulator can also exercise discretion in determining when banks can use countercyclical provisions to compensate the increase in individual provisions during an economic downturn.
- Once the regulator declares the *change of state* (from matrix A to B or otherwise) all banks can use countercyclical provisions, regardless of the financial health of individual institutions.
- The Colombian regulator has experienced two main problems with this model
 - On the one hand too discretionary: with no principles behind the change of state
 - On the other not enough discretion: institutions are treated equally independently on their behavior.
- Regulator has recently announced a revamp to move closer to Spanish definition.

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 1. **On the one hand too discretionary: with no principles behind the change of state**
 2. **On the other not enough discretion: institutions are treated equally independently on their behavior.**
- **Regulator has recently announced a revamp to move closer to Spanish definition.**
 - **More rule-based (specially on how to draw from Fund in bad times)**
 - **Change of state to be announced for individual institutions**

- Peru is a very volatile country, specially as credit is concerned.
- During the last boom, the regulator decided to introduce dynamic provisioning linked to GDP growth in December 2008.
 - Namely, cyclical provisioning is activated when the rate of growth of GDP exceeds a certain threshold (in boom periods), which is related to a conservative estimate of potential output growth.
 - Cyclical provisioning is part of generic provisions. When cyclical provisioning is activated, generic provision charges increase (although this depends on the type of debtor).
 - In times of economic slowdown, on the other hand, the rule is deactivated and generic rates are reduced. Accumulated cyclical provisions then constitute a buffer

- **Why is the rule based on GDP? Why not credit (a banking system variable)?**
- **GDP has been found to precede credit (and thus also future banks losses). Furthermore, CB in Peru is in control of GDP statistics, which are monthly!**
- **Another issue to consider is that a GDP based-rule is systemic. This means that its activation does not depend on a bank's behavior, but on the economy's (system) as a whole. So banks with different behaviors (more or less aggressive) have to provision the same amount**

- Too early to say (only 7 months' life)
- However, the fact that the cycle changed dramatically since it was introduced means that it will not have a large impact on this cycle
 - Provisions were accumulated only at the beginning now already decumulating

1. How system is activated/deactivated very different
 - Spain/Peru is rule-based (not Colombia)
2. Reference variable different (from more to less specific)
 - Spain: individual credit (issues with calibration and internal vs supervisory model)
 - Colombia: aggregate credit (for countries in need of financial deepening, target hard to choose). Also large institutions have advantage
 - Peru GDP: (domestic demand probably better for countries with current account deficit)

Note that in Colombia and Peru a prudent institution or one loosing market share will need to provision more

3. Compensation between specific and generic provisions

In Spain, compensation is automatic: objective is to reach a constant total provisioning along the cycle

No benchmark in Peruvian case

There are probably many more differences but time is need for Peruvian and Colombian models to work and then be assessed

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- There is ample evidence that the financial system amplifies cycles (specially after this crisis!)
- Also growing evidence that financial regulation can make it even worse
- Countercyclical regulation is not a silver bullet but it can, at least, help:
 - Not so much to avoid a bubble (maybe smaller but still a bubble...)
 - But to have a buffer when it bursts
- The design of countercyclical regulation is clearly important
 - Too much discretion seems inappropriate
 - Perhaps also too rigid rules specially in the first stages (calibration is hard if not impossible)

- **The choice of capital vs provisioning may be less relevant:**

Both better than one in as far as they are compatible (remember that it seems hard to have too much countercyclical effect anyway)

- **Equal treatment of institutions is an important issue**

Not only at national level (which puts aggregate reference variables at risk, specially credit)

But also at international level: dynamic provisioning should be applied globally if it wants to survive.

- **Incompatibility with IAS is being tackled. The only reason being that macroprudential regulation is now being recognized and accounting reasons being put aside**

- **In any event, proposals to make it compatible exist:**

Restoy and Roldan (2009) propose to distinguish regular profits from distributable profits in public financial statements

Accounting principles would govern the distribution of regular profits and how the P&L is prepared.

Regulators would, however, set rules as to how such profits can be distributed: the difference would be a set of publicly-reported compulsory reserves.

This could be through-the cycle earmarked against future losses

**Comments/questions
welcome
Thank you**