Building on the counter-cyclical consensus: A policy agenda

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Abstract
The current financial crisis shows that pro-cyclical behavior is inherent to financial markets. Regulation reform needs to be comprehensive, to avoid regulatory arbitrage, and counter-cyclical, to manage the effects of boom-bust cycles. Policy makers now agree on implementing counter-cyclical regulation for financial regulation reform to improve capital, provisions, and liquidity requirements. The paper discusses different instruments that can be used in parallel, referring to the successful Spanish central bank use of counter-cyclical dynamic provisioning. Arguments in favor of implementing counter-cyclical regulation through rules, rather than discretion, as well as the trade-offs between stronger regulation and access to credit are highlighted.

JEL Classification: G2, G18, G24, G28.

Keywords
Financial Crises; Financial Contagion; Financial shocks; Systemic risk; Financial regulation; Counter-cyclical macroeconomic policies.

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[*] This paper would not have been possible without the invaluable collaboration of Ariane Ortiz, Master of Public Administration Candidate 2010 from Columbia University. A previous version of this paper was prepared for the High-level Roundtable in Brussels on October 12, 2009 on "Towards Basel III? Regulating the Banking Sector after the Crisis", and the Conference organized by the IPD and the Czech Central Bank on "Introducing Counter-Cyclicality into Prudential Regulation: Its role in Basel II"" held in Prague on October 23, 2009. We thank Stefano Pagliari for insightful suggestions. Research support from FEPS and GTZ is kindly acknowledged.

The case for and early proposals of counter-cyclical prudential regulation

The long history of financial cycles, of which the current global crisis is an example, shows that pro-cyclical behavior is inherent to the functioning of financial markets. Pro-cyclicality is characterized by excessive risk-taking and financial activity in good times, followed by insufficient risk-taking and financial activity in bad times. During times of boom, risk premia decline, credit expands, and strong balance sheets and increasing competition bring an expansion of lending and a loosening of credit standards, partly in an effort to compensate for the fall in profitability derived from lower interest rate margins. In a self-fulfilling cycle, credit expansion is largely backed by collateral whose value increases with the expansion of lending. On the other hand, during a recession, when nonperforming loans rise and banks face higher provisions and tighter capital buffers, financial intermediaries turn very conservative and tighten credit standards well beyond what fundamental conditions would warrant.

There are ample theoretical explanations and empirical evidence of this pattern. That instability is inherent to the functioning of financial markets was, of course, one of Keynes' (1936) insights, which was emphasized by his follower, Minsky (1982). The basic reason is that finance deals with future outcomes that cannot be forecast with certainty. Therefore, opinions and expectations about the future rather than factual information dominate financial market decisions. This is compounded by asymmetries of information that characterize financial markets (Stiglitz, 2001). Financial agents thus rely to a large extent on the actions of other market agents, leading to interdependence in their behavior, which is particularly manifested in the twin phenomena of contagion and herding. Contagion of opinions and expectations, both positive and negative, are central features of the alternating phases of euphoria and panic (Ocampo, 2008).

Moreover, herding and volatility are accentuated by the increasing use of similar market-sensitive risk management statistical techniques (Persaud, 2003) and the dominance of investment managers aiming for very short-term profits, and evaluated and paid at very short term intervals (Griffith-Jones, 1998).

The pro-cyclical nature of finance calls for regulation that "leans against the wind". After the Asian crisis in 1998, some analysts began proposing that counter-cyclical prudential regulation should be put in place, as part of broader counter-cyclical macroeconomic policy frameworks. However, prior to the current crisis, support for counter-cyclical regulation was very limited and restricted mainly to a few academics and some international organizations, particularly the United Nations and the Bank for International Settlements (BIS). Spain pioneered implementing counter-cyclical regulation, indicating that they are both feasible and effective.

In January 1999, the United Nations pointed out, in its report *Towards a New International Financial Architecture* that the unpredictability of key macroeconomic variables needed to be taken into account in designing prudential regulation and supervision. It suggested, in particular that capital adequacy requirements "should be raised during periods of financial euphoria to take account of the increasing financial risks intermediaries incur". The United Nations Economic Commission for Latin America and the Caribbean, ECLAC, underscored soon after that, depending on the type of operation, higher capital or complementary liquidity buffers should be required in a counter-cyclical way, and limits should be set on the proportion of the value of financial or fixed assets that can be used as loan collateral when asset prices are rising (ECLAC, 2000, ch. 8).

In the same line, at the BIS, Turner (1999 and 2000) began already emphasizing the need for introducing counter-cyclicality into bank regulation. He discussed different ways how counter-cyclicality could be introduced, such as increasing capital ratios, forward looking provisions, an emphasis on genuine equity capital as well as loan-to-value ratios for property loans. Furthermore, Borio, Furfine, and Lowe (2001) argued that pro-cyclicality stems from inappropriate responses by financial system participants to changes in risk over time, proposing the use of regulation and supervisory instruments in an explicitly counter-cyclical fashion to limit the development and consequences of serious financial imbalances. The

instrument proposed should "encourage the building-up of a protective cushion in good times that can be drawn down in bad times".

Furthermore, the concern that risk assessment and traditional regulatory tools, including Basel standards, had a pro-cyclical bias in the way they operated, adding to the pro-cyclical nature of the credit cycle, began to be raised (Goodhart, 2002). Indeed, in a system in which loan-loss provisions are tied to loan delinquency, precautionary regulatory signals are ineffective during booms, and thus do not hamper credit growth. On the other hand, the sharp increase in loan delinquency during crises reduces financial institutions' capital and, hence, their lending capacity (Ocampo, 2003). This, in conjunction with the greater perceived risk, triggers the "credit squeeze" that characterizes such periods, thereby reinforcing the economic downswing.

In 2003, Ocampo (2003; see also Ocampo and Chiappe, 2003) argued for comprehensive counter-cyclical prudential regulation to manage the effects of boom-bust cycles. Such comprehensive regulation should include: 1) forward-looking provisions for latent risks of new lending (the system that Spain had already introduced – see next section); 2) strict regulation of currency and maturity mismatches, particularly in the first case for non-tradable sectors in developing countries; 3) liquidity requirements to manage imbalances in the maturities of assets and liabilities in banks' balance sheets; and 4) limits on loan-to-collateral value ratios and rules to adjust the values of collateral to reflect long-term market trends in asset values rather than cyclical variations.

Proposals to include counter-cyclical elements in the new Basel Capital Accord, to mitigate the inherent pro-cyclicality of the IRB approach, were put forward as early as 2002 (Griffith-Jones, Spratt and Segoviano, 2002; Griffith-Jones and Ocampo, 2003; Ocampo, 2003). They included suggestions for introducing counter-cyclical instruments, such as Spanish style provisions or counter-cyclical capital charges, simultaneously with Basel II, to compensate for the pro-cyclical nature of the Basel Accord (see also Banco de España, 2005).

The Spanish experience with dynamic provisioning[1]

Banco de España, Spain's central bank and its banking supervisor, was the first to adopt a tool to cope with the pro-cyclical behavior of the financial sector (Banco de España, 2000). This early reform was a response to the evidence that a rapid increase in loan portfolios during periods of financial euphoria is positively associated with an increase in nonperforming loan ratios later on. Loans granted during boom periods have a higher probability of default than those granted during periods of slow credit growth (Fernández de Lis *et al*., 2000; Jiménez and Saurina, 2006).

In particular, Banco de España introduced dynamic forward looking provisioning in July 2000 to cope with a sharp increase in credit risk on Spanish banks' balance sheet after a period of important credit growth. Intense competition had led to under-pricing of risk and to a reduction of specific provisions following a significant decline in nonperforming loans in the late 1990s. Spain was the OECD country with the lowest ratio of loan loss provisions to loans in 1999 and the highest correlation between provisioning ratio and GDP growth rate (-0.97) for the period 1991-1999.

The dynamic provision complemented the specific and general provisions already in place. These "statistical" provisions were meant to account for the "latent" risks of homogenous categories of assets (loans, guarantees, interbank or fixed income portfolio investments) according to the possible loss that an average asset in that category was expected to have over a full business or lending cycle. These statistical provisions were accumulated in a fund, together with special provisions and recoveries of non-performing assets. The fund could be used to cover loan losses, thus in effect entirely substituting for special provisions if resources were available in adequate amounts. Since they were tied to the growth of assets in

[1] For an excellent presentation of the Spanish system, see Saurina (2009), from which we draw in this section.

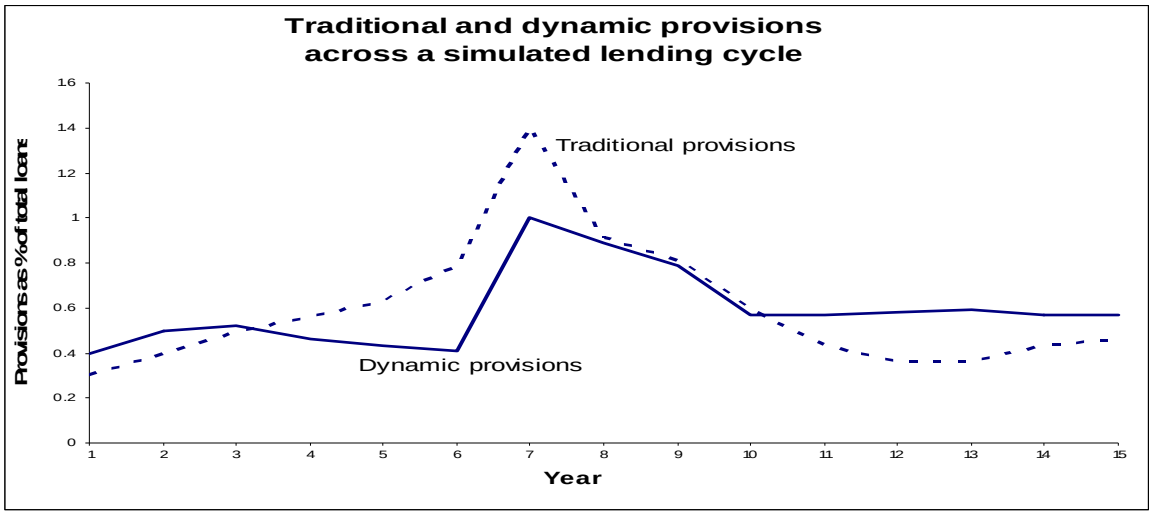
different classes, the more distant in terms of credit growth a bank's behavior was from that of the system, the larger the impact of these provisions would be (Fernández de Lis *et al.*, 2000; Jiménez and Saurina, 2006).

One interpretation of the Spanish system that Ocampo (2003 and 2008) and others put forward is that the Spanish system correctly identifies that the credit risk is incurred when a loan is *disbursed*, not when it comes due and becomes (or is expected to become) delinquent, the rule followed by traditional provisioning rules. In this sense, it makes the principle of provisioning in the banking industry similar to that of the insurance industry. As indicated, the system builds up a cushion during an upswing, which can be drawn down in a slump to cover loan losses, thus generating a counter-cyclical effect.

Since loan portfolios are not homogenous in credit risk, the latent risk differed depending on the type of assets. Banco de España offered banks a standard model to calculate the latent loss with the parameters fixed according to different portfolio components. It defined six homogenous risk categories, ranging from negligible risk (cash and public sector exposures), medium risk (unrated corporate loans) to high risk (credit card exposures and overdrafts). Banco de España also allowed banks to use internal models – i.e., their own information on probabilities of default and loss given default through the business cycle — to calculate the latent loss, but only a few sophisticated banks had such detailed information.

In 2004, the adoption by the European Union of the IASB (International Accounting Standards Board) standards obliged Banco de España, which is authorized by the Ministry of Economy to establish the accounting rules for credit institutions, to eliminate the statistical provision as they had been implemented since July 2000. It reverted to a system of only two types of loan loss provisions: specific and general. However, the latter has two components: one that covers the latent losses of an asset class in a cycle-neutral year, and another that captures the difference between the average specific provisions over a whole business cycle and specific provisions effectively made in a given year. The latter component can, therefore, be either positive (when loan delinquencies are low – i.e., during a credit boom) or negative (when delinquencies are high during a crisis), thus allowing again provisions to be built up during booms and drawn dawn to pay for effective delinquencies during crises.

The new accounting rules maintained the macro-prudential nature of the previous framework while complying with IASB standards. According to Banco de España's simulations of a lending cycle (see attached graph), at the peak of a recession, provisions for loan losses would be 40 percent lower than the traditional provisions, while during good periods, both before and after the recession, provisions would be higher.



Note: Traditional provisions are specific plus general provisions. Dynamic provisions are specific provisions plus general provisions with a counter-cyclical component. Source: Saurina (2009).

To avoid excess provisioning, there is a cap (125 percent of the latent loss), preventing that the growth of provisions for too long a period would produce unrealistic coverage ratios. Since the components of the provisions are based on historical information on credit losses, dynamic provisions are a backward-looking but a transparent rule-based system.

The dynamic provisions account on average for 10 percent of the net operating income of banks during the years that preceded the current crisis. At the end of 2007, the total accumulated provisions covered 1.3 percent of the total consolidated assets of Spanish deposit institutions, while the capital and reserves represented 5.8 percent of those assets. Spain thus accumulated a buffer that has started to draw down as individual loan losses began to increase when economic conditions deteriorated. Although, given the depth of the current crisis, there is no guarantee that the amounts provisioned will be enough to cover the loan losses that banks are currently facing, dynamic provisions have allowed Spanish banks to deal with the crisis in a better way compared to banks in other countries.

Spanish regulators addressed several issues to effectively implement dynamic provisioning: accounting rules, tax treatment, and data requirements. With respect to the first issue, critics of the Spanish scheme have argued that it is not compatible with international accounting and financial reporting standards, since it may allow banks to mange earnings. However, this criticism is unwarranted, as banks must publish the amount of their general provisions in a fully transparent way, allowing investors and analysts to isolate the impact of the dynamic provisions in their assessments. The rules-based character of the framework and the cap on the provisions make it difficult for banks to misuse the provisions account. On the contrary, Spanish regulators consider that accounting standards should aim at providing accurate information about a firm's financial condition. A system of provisions that recognizes credit losses not yet individually identified on specific loans, as they are incurred along the lending cycle, thus provides better information on financial conditions than one that does not, which in fact underestimates the risk incurred by the financial institution and overestimates profits during the boom, as becomes evident during the succeeding crisis.

The Spanish provisioning system was not tax deductible before 2004. Today general provisions are tax-deductible expenses up to 1 percent of the increase in gross loans, excluding mortgages. The latter seems counter-intuitive, as precisely real-estate is one of the most pro-cyclical economic activities.

Finally, the rich data that Banco de España has accumulated on loan delinquency was important to build an accurate system of provisions. However, Spanish regulators suggest that the lack of a credit register is not a reason to dismiss the use of dynamic provisions. Regulators may use many different sources of information to implement a similar system. In particular, they could use private credit bureaus, or they may use overall loan loss provisions over the business cycle.

Since dynamic provisioning is usually designed using information on credit losses over previous lending cycles, there is no guarantee that the system will be enough to cope with all credit losses in a downturn. Furthermore, the Spanish provisioning system was unable to deter credit growth during the recent boom. As Spanish regulators themselves argue, the rapid increase of the value of collateral linked to the property boom probably prevailed over the higher lending costs derived from dynamic provisioning. The system should therefore be complemented with restrictions to loan-to-value ratios, which may be absolute or more restrictive when property values are rapidly increasing. In this regard, in what we will refer to as the Geneva Report, Brunnermeier *et al.* (2009) have argued that the quantitative effect that the Spanish mechanism had in moderating the credit cycle was not enough because it puts more weight on credit growth, while the mechanism they suggest puts more weight on leverage ratios and maturity mismatches.

In any case, as the Geneva Report has pointed out, the Spanish dynamic provisioning scheme was the only current macro-prudential instrument in place before the current crisis that met two important criteria: it is rule-based (which is important, in their view, because discretion will be hard to use during

periods of boom/euphoria), and it is time and state-varying (light during normal periods, increasing as systemic threats build up), in other words, counter-cyclical.

The new consensus on counter-cyclicality

As the global financial crisis grew more acute, the depth of discussion on counter-cyclical regulation, as a way to avoid in the future the build up of systemic risk and to dampen economic cycles, became clearer and widespread. All major reports on regulatory policy responses to the crisis (such as Geneva Report, 2009; Larosière Report, 2009; Turner Review, 2009; the Report of the Commission of Experts of the UN General Assembly on Reforms of the International Monetary and Financial System, hereon referred to as the UN Stiglitz Commission, 2009; and the Warwick Commission, 2009) highlight the importance of counter-cyclical, as well as macro-prudential regulation. Also, national reports (such as those of the U.S. and U.K. Treasuries) increasingly supported not just the principle of counter-cyclicality, but started entering the specifics on how to implement it. In fact, some countries, like Switzerland, are already moving to implement a simple version of counter-cyclical regulation, distinguishing between minimum capital adequacy requirements for "bad" times and doubling them for "good" times.

Furthermore, the G-20 leaders since their first November 2008 meeting have endorsed the need for counter-cyclical regulation. So have international regulatory bodies, such as the expanded Financial Stability Forum (now Board), FSF/FSB, and the Basel Committee on Banking Supervision. The BIS, in its 2009 *Annual Report*, provides an in-depth analysis of how counter-cyclicality could be implemented (BIS, 2009).

The consensus indicates that it is not enough to just reduce pro-cyclicality of existing regulations, but it is also necessary to design new, proactive counter-cyclical regulations "to offset the impact of unavoidable pro-cyclicality elsewhere", as the Turner Report puts it. In terms of the UN Stiglitz Commission, the basic aim is "improving the stability of the macro-economy and particularly reducing the pro-cyclicality of finance and its effects on the real economy".

Most of the aims of macro-prudential regulation are widely shared. Thus, the September 3, 2009(b) U.S. Treasury Statement gives the following objectives for counter-cyclical regulation: (1) reduce the extent to which capital and accounting frameworks permit risk to accumulate in the boom, exacerbating credit cycles; (2) incorporate features that encourage or force banks to build large capital cushions in good times; (3) raise capital requirements for bank and non-bank financial firms that pose a threat to financial stability due to their combination of size, leverage, interconnectedness and liquidity risk, and for systemically risky exposures; and (4) improve the ability of banks to withstand specific and system-wide liquidity shocks.

There continues to be a debate on what instruments are best to introduce counter-cyclicality – i.e., capital vs. provisions or reserves, limits on leverage, as well as liquidity requirements. In the case of solvency, with current accounting practices – which do not allow or severely limit forward looking provisions –, counter-cyclical capital adequacy requirements should be the preferred instrument. However, the current dialogue between international regulators and accounting associations may facilitate the active use of provisions. If Spanish style statistical provisions are allowed, they may be preferable, as they follow the international principle that provisions should cover *expected* losses, while capital should be able to cover *unexpected* losses (UN Stiglitz Commission; Ocampo, 2003). By restricting total assets to capital, maximum overall leverage ratios could also be an important regulatory tool. Complementary liquidity requirements should also be set, as we argue below.

The case for provisions or similar mechanisms comes also in different forms in other reports. Thus, as the U.K. Treasury and Turner Report have pointed out, counter-cyclical buffers should be held in the form of non-distributable reserves, which therefore cannot be distributed either as excessive dividends, share buy backs, remunerations or bonuses. Although using reserves rather than provisions for loan losses, this is the essence of the Spanish system. It is encouraging that, in their recent Pittsburgh meeting, the G-20 leaders endorsed this principle.

Recent reports and official statements tend to opt for a combination of policy instruments. This may reflect a "belt and braces" philosophy, given the seriousness of the problem and the limitations of different instruments. Interestingly, the U.S. Treasury (2009a) also sees this as a way to avoid regulatory arbitrage: "Although it may be relatively easy for banks to arbitrage any free-standing risk-based capital requirement and relatively easy for firms to arbitrage any free-standing simple leverage constraint, it is much more difficult to arbitrage both frameworks at the same time."

Some Reports (for example the Larosière Report, Turner Review, and the UN Stiglitz Commission) argue for complementary instruments to be included, such as making rules on loans to value more restrictive during credit booms or, more generally, varying them with the cycle. Though this may add to complexity, it will tackle directly one of the key problematic links during booms: rising credit increases asset prices, but the latter facilitate, in turn, credit growth thanks to higher valued loan collaterals, a process that can generate asset price bubbles. Furthermore, the UN Stiglitz Commission, as well as Ocampo (2003 and 2008) argue that limiting or discouraging currency mismatches, especially for banks, is essential to limit financial risks for developing economies, which are subject to strong pro-cyclical capital flows. We return to these issues below.

To a certain extent, different proposals reflect the features of different countries' financial systems and the problems they have encountered. Thus, when the September 2009(b) U.S. Treasury Report argues from a macro-prudential perspective for higher risk-based capital charges for certain systemically risky exposures, due to their high correlation with the economic cycle, it refers in particular to exposures like the structured finance credit protection purchased by banks from AIG and other thinly capitalized special purpose derivatives companies. For a developing or emerging economy, higher risk-based capital charges would refer to far simpler instruments (e.g., mortgages) that are also highly correlated – but in a more traditional way – with the business cycle.

The emphasis that the U.S. Treasury (2009a) and other Reports place on higher capital requirements for "systemically important institutions" draws on the research at the BIS and elsewhere, which shows that large banks, and those more exposed to system-wide shocks, contribute more than proportionally to systemic risks. Both the size of individual banks, and of the total banking – or even financial system — are important, as in situations of crisis they may need to be bailed out. To an important extent, therefore, the total amount of acceptable systemic risk is determined by how much the public sector can afford to spend, without creating major future damage to the fiscal accounts and the economy. Thus, as Buiter (2009) has argued, a solution may be to limit the size of the banking sector, by making capital requirements of individual banks a function not only of their own size, but of the size of the total banking balance sheet relative to the government's capacity to raise taxes and cut spending. The emphasis in the BIS analysis is not however particularly on size of institutions, though this is important, but on the degree of correlation among institutions' balance sheets. However, as correlations tend to change so much during crisis periods, it seems difficult – though potentially worthwhile – to try to determine *ex ante* which institutions are more systemically important, so their capital and other requirements will not just reflect the likelihood of their own failure, but also their potential contribution to systemic risk. Furthermore, if stricter regulation (e.g., tighter capital requirements) is imposed on "systemically important institutions", the list of such institutions must be carefully revised as the financial system evolves.

Outstanding issues and complementary policies

Rule-based vs. discretionary interventions

One important choice that has emerged is whether counter-cyclical buffers (capital or provisions) should be designed as a discretionary instrument or, rather, as a formula driven rule. As the Turner report points out:

(1) With a discretionary system, bank regulators would need to judge the appropriate level of required capital ratios in the light of analysis of the macroeconomic cycle and of macro-prudential

concerns. Such an approach could build on the Basel II Pillar 2 system, which already gives bank regulators the discretion to increase required bank capital above that indicated by Pillar 1 calculations, even though it was not originally designed to serve counter-cyclical purposes. The discretionary system would have the advantage of allowing a nuanced analysis of macroeconomic and macro-prudential conditions to guide decisions, but it would depend crucially on the quality and independence of the judgments made.

(2) Under a formula-driven system, the required level of capital would vary according to some predetermined metric such as the growth of the balance sheet. It would provide a pre-set discipline not dependent on judgment and, particularly important, not subject to the influence of lobbying and to cycles of optimism and pessimism, which also affect regulators. Indeed, the Spanish system, which is based on a pre-set formula that determines general provisions, is a practical proof that rules defined ex-ante can work well, and thus provides a template on which the international community can draw upon.

(3) The Turner and other (e.g., Geneva) Reports believe that there is merit in making the regime at least to a significant extent formula driven. This could be combined with regulatory discretion to add additional requirements on top of the formula-driven element if macro-prudential analysis suggested that this was appropriate. This was also the approach suggested by Ocampo (2003), who recommended mixing the Spanish provisioning rules with discretionary rules which would be put in place if overall credit growth is considered excessive by the authorities, if there is a bias in lending towards sectors subject to strong cyclical swings (e.g., real estate), in which case such lending would be subject to additional provisions, and if credit growth by individual banks expands relative to a benchmark. The possibility of actively managing regulations to cool down credit and, more generally, asset growth, including in specific segments of the market, is also a feature of a generalized system of Asset Based Reserve Requirements suggested by Palley (2004). Interestingly, during the recent boom, although not applying a mechanism similar to that of Spain, some countries did establish additional provisions for credit in specific sectors that were experiencing rapid growth (India in relation to real estate, for example).

The third approach is probably the most appropriate. It is important, indeed, to put in place fairly simple counter-cyclical rules that cannot be weakened in good times, when "this time is different" arguments try to undermine regulatory criteria. The rule or formula could be tightened by imposing additional requirements if there was a very large and long boom that poses threats to financial and macroeconomic stability, or if loans to certain sectors grow very rapidly.

Furthermore, financial innovations, some of which may have been designed precisely to arbitrage regulations, may also require further tightening of counter-cyclical rules if they are deemed by regulators to pose increased systemic risk (D'Arista and Griffith-Jones, 2009b; U.K. Treasury, 2009). More broadly, it is essential that regulations should be similar for similar types of financial transactions, whether they are undertaken by the banking system or in capital markets. Indeed, one of the limitations of loan loss provisioning is that they only apply to the banking books, and not to trading books. Furthermore, the latter are increasingly valued at market prices, a fact that, in the absence of any system to correct for the pro-cyclicality of asset prices, introduces another pro-cyclical feature into the system. Thus, as argued in the section later on the comprehensiveness of financial regulation, security issuance in capital markets, which is equivalent to bank lending, and derivatives should also be subject to counter-cyclical regulations (e.g., on collateral and margin requirements or, alternatively, asset based reserve requirements).

Furthermore, financial innovations increase during booms, when new and untested instruments that are difficult to value become widespread. This exacerbates pro-cyclicality, as such new, often opaque, as well as complex instruments hide and under-price risk. Regulators should either limit or ban use of such instruments, or at least tighten counter-cyclical rules for financial institutions that extensively use them.

A more direct approach was suggested as an option by Joseph Stiglitz in his October 2008 Testimony to the US House Financial Services Committee. This direct approach would imply designing "speed limits restricting the rate at which banks can expand their portfolio of loans". This is an interesting alternative to implementing indirect incentives to achieve the same objective. Indeed, in the past, countries

like the U.K. and developing countries, and even the U.S., pursued such an approach rather effectively, when they fixed limits for growth of total lending by individual banks and for the banking system. Should indirect approaches for counter-cyclical regulation prove to be insufficient, there seems to be a strong case for the use of a more direct approach, which could perhaps also be done through limiting the expansion of leverage.

Assuming counter-cyclical indirect policy instruments are used, a key issue is what indicators are best to determine when capital charges or provisions would need to be built up or could be drawn down as bad times come. The BIS 2009 *Annual Report* provides an analysis of the impact of three possible variables suggested in the literature: credit spreads (the variable suggested by Gordy, 2009), change in real credit (by Goodhart and Persaud, 2008) and a composite indicator that combines credit/GDP ratio and real asset prices (by Borio and Drehmann, 2009). The conclusion that it draws is that it seems possible to identify macroeconomic indicators that signal correctly when buffers should be built up, but deciding their release is more difficult; especially for the latter variable. For this reason, they recommend more discretion, combined with a rule that creates predictability and helps avoid regulatory capture during the boom.

The regulation of liquidity

There is increasing support in different reports and statements on the need for regulating liquidity, including introducing a counter-cyclical element into this regulation. This is because the recent crisis showed that the risk profile of banks and financial institutions in general critically depends on the way that they fund their assets. As the U.S. Treasury September 2009(b) Report argues, excessive funding of longer term assets with short term liabilities (deposits or debt) by a bank can contribute as much or more to its failure as insufficient capital. Furthermore, the Report states: "liquidity is always and everywhere a highly pro-cyclical phenomenon". Indeed, because capital, even though high, may be insufficient to deal with liquidity problems in a crisis, sufficient independent liquidity requirements are also very important.

In fact, it was a major and absurd omission of the pre-crisis framework that there was practically no regulation of liquidity. This has not always been the case. Thus, in 1951, U.S. banks held reserve balances with the Federal Reserve at a level of over 11 percent of bank deposits, giving them a very comfortable cushion. By the early 2000s, this cushion had practically been wiped out with banks' reserves balances shrinking to 0.2 percent of their deposits (D'Arista and Griffith-Jones, 2009b). There is now growing consensus on the need for a strong regulatory framework that focuses not just on safeguarding the liquidity positions of banks in the face of firm-specific stress events, but also help preserve the funding liquidity of banks if system-wide liquidity contractions occur.

There seems to have been relatively less specific international discussion on the best method to ensure sufficient liquidity, and possibly to do it counter-cyclically, than on the issue of solvency relating to capital and provisioning requirements. One approach can be to estimate liquidity requirements on the basis of the residual maturity of financial institutions' liabilities, thus generating a direct incentive for the financial system maintaining an appropriate liability structure. The quality of the assets with which liquidity requirement are met is also crucial (Ocampo and Chiappe, 2003). An alternative, which draws from the system of reserve requirements typical of past practices, as summarized in the previous paragraph, would be to establish a regime that facilitates central banks to increase and reduce financial institutions' liquidity though variations in some form of reserve requirements (D'Arista and Griffith-Jones, 2009a).

Regulation of liquidity needs to be complementary with regulation of solvency. Though arguing that the liquidity regime should be independent from the regulatory capital regime, the September 2009(b) U.S. Treasury Report correctly says that it is equally important to recognize that they are highly complementary. Indeed, this Report considers the merits of making regulatory capital requirements a function of the liquidity risk of banking firms. Though clearly higher capital cannot be totally relied on to prevent a run by creditors, it may be consistent with macro-prudential goals to require banks with larger structural funding mismatches, or that rely on volatile short-term funding sources, to hold more capital.

This would force the banks to internalize the cost its higher liquidity risk imposes on the financial system, thus encouraging them to seek longer term funding.

The Geneva and Warwick Reports are going further by recommending that regulators increase the existing capital requirements by two multiples, one linked to the growth of credit, and the other to maturity mismatches. The first multiple for capital adequacy requirements would be a function of the growth of lending. Regulators would meet with monetary policy officials (where they are separate) in a financial stability committee. This would produce a forecast of the growth of aggregate bank assets consistent with the central bank's target for inflation and long-term estimated growth. The forecast would have a reasonable band around it reflecting uncertainty. If a bank's assets grow less than the lower bound, it may put aside a lower multiple.

An example given in the Warwick Report, supposes that the Financial Stability Committee concluded that growth in aggregate bank assets of between 7.5 percent and 12.5 percent was consistent with its inflation target of 3 percent. Very high growth in a bank's assets by 25 percent, or twice the upper range, may lead to a doubling of minimum capital adequacy level from 8 percent to 16 percent of risk-weighted assets.

A second multiple on capital requirements would relate to the mismatch in the maturity of bank assets and liabilities. One significant lesson of the crisis is that the risk of an asset can be determined largely by the maturity of its funding. Northern Rock, as well as other banks might have survived with the same assets if the average maturity of its funding had been longer.

A liquidity multiple to capital adequacy requirements is added to discourage banks from a reliance on inappropriately risky sources of funding. Assets that cannot be posted at the central bank for liquidity are assumed to have minimum maturity of two years or more. If a pool of these assets was funded by a pool of two-year term deposits, there would be no liquidity risk and no liquidity charge. But if the pool of funding had a maturity of one month and so had to be rolled over every month, the liquidity multiple on the base capital charge would be near its maximum, say two, so the minimum capital adequacy requirement would rise from 8 percent to 16 percent.

For example, in a boom in which the first counter-cyclical multiple is also two, the final capital adequacy requirement would be 32 percent of risk-weighted assets (8 percent x2x2). Clearly this is an extreme number, that would be applied only when both credit was growing very rapidly and maturity mismatches were very high. Liquidity multiples would give banks an incentive to find longer-term funding, and where they cannot do so, to hold a liquidity buffer or liquidity reserve that could be drawn down in times of stress and would buy time for institutions to deal with a liquidity problem.

Accounting rules

It is important that building of counter-cyclical buffers as required by financial stability be matched by the integrity and transparency of financial statements. An important issue, as we have noticed, is the design of accounting rules that would allow provisions for latent loan losses to be build up during periods of credit growth, indeed possibly shifting to a system in which provisions are made when credit is *disbursed*, as the Spanish system implies. There are reasons to believe that accounting standards setters will modify standards to include macro-prudential regulation. The FSF/FSB, along with the G-20 leaders in the London Summit in April 2009, have urged for cooperation between accounting standards setters and regulators to improve standards of valuation and provisioning.

The Turner Report has suggested an approach which would imply that existing accounting rules would be used to determine profits and losses, reflecting fair value mark-to-market approaches for the trading book and known information on actual loan servicing and incurred loss on the lending book. This would be complemented by the creation of a non-distributable Economic Cycle Reserve that would set aside profits in good years to anticipate losses likely in the future. As pointed out above, this proposal is exactly equivalent to the Spanish system. This Economic Cycle Reserve would also appear on the profit

and loss account, allowing profits and earnings per share to be estimated before and after the reserve. Thus, two measures of profitability could be reported: the "traditional" accounting one and another calculated after counter-cyclical reserves.

It is important to emphasize that, although mark-to-market pricing in the trading book is desirable from the point of view of transparency, it introduces a strong element of pro-cyclicality that must be corrected through these counter-cyclical reserves or similar mechanisms. Furthermore, to avoid the pro-cyclical behavior of asset prices from enhancing the pro-cyclicality of lending, complementary reforms are needed, as argued below.

Complementary regulations

Given the role that foreign currency denominated loans have played in emerging and developing country financial crises – as indicated again in several central and eastern European countries and Iceland during the current crisis – preventing currency mismatches in portfolios should be an important regulatory objective in these countries. One simple approach, which some countries follow, is forbidding currency mismatches in the portfolios of financial institutions and prohibiting or discouraging lending in foreign currencies to agents that have no revenues in those currencies. Thus, for example, Uruguay increases capital requirements by 25 percent (from 8 to 10 percent) if there are such currency mismatches. As discussed above, liquidity requirements are also important to manage maturity mismatches.

Besides regulating currency and maturity mismatches, it is also important – not only for emerging and developing economies, but for all economies – to limit loan-to-value ratios, especially for loans to real estate and equity financing. Rules to adjust the values collateral for cyclical price variations can also be used. A complementary mechanism that seems to work well is minimum limits on down payments by borrowers for mortgages, which can be fixed (e.g., Canada) or vary with the cycle (e.g., China). Such methods can also be applied to other very cyclical instruments, such as credit cards. Thailand has used variable minimum payments of credit cards as a counter-cyclical tool.

The trade-offs between tighter regulation and the supply of credit

There is some trade-offs that needs to be struck in increasing strictness of regulation of both solvency and liquidity to counter pro-cyclicality. Rules have to consider the economic benefits of higher bank capital, which both decreases the probability of bank defaults (and major crisis) and the reduced danger that, in bad times, insufficient capital will lead to a credit squeeze with negative efforts on the real economy. However, it also has to consider that the requirement of higher overall capital will increase the cost of intermediation in good times, and thus will have some negative effect on borrowers, particularly less creditworthy ones. This could be most serious for small and medium enterprises, with limited access to other sources of funding.

In any case, after the major financial crisis that started in 2007, the optimal level of capital is recognized to be significantly higher than what regulators considered appropriate in the past. This re-evaluation is based on the massive scale of economic and financial losses suffered across the world due to the crisis. Increasing capital requirements may increase costs of financial intermediation, but the benefits of reduced probability of bank failure and economic harm are now seen as extremely high and "tips the balance in favor of setting higher capital requirements" (Turner Report).[2]

Similarly, limiting maturity transformation by banks, as discussed above, to safeguard their liquidity in periods of stress, may have some negative effects on their borrowers, in that it allows less long term lending. This cost will however be accompanied by a reduction of the major systemic risk caused by large

[2] This argument is similar to that used by economists who favor controls on excessive capital inflow to developing countries in boom times. Whilst recognizing that there are certain micro-economic costs, they feel the benefit of diminished risk of future crises outweighs those benefits.

maturity transformation by banks, which has required massive central bank liquidity assistance during the current crisis to avoid banks' collapse and to help restore lending.

Should in future more tightly regulated banks be able to provide more expensive and shorter maturity credit, there may be a need to design new instruments to provide long term credit.

How comprehensive should counter-cyclical regulation be?

At the national level

The case for tighter and counter-cyclical regulation of banks is increasingly accepted. However, stronger and more counter-cyclical regulation just of banks would encourage migration of transactions and risk from banks to non-banks. Banks would be tempted to hide their own lending in associated off-balance sheet vehicles, like conduits and Special Investment Vehicles (SIVs). This would pose new threats to financial stability (U.S. Treasury, 2009a, UN Stiglitz Commission, as well as other Reports).

There is therefore a very clear case for more counter-cyclical and stronger equivalent regulation to be applied to all markets (including OTC trading), to all banking and non-banking financial institutions, such as investment banks and hedge funds –or, using the more appropriate European terminology, alternative investment funds—, and to all instruments, such as derivatives. Furthermore, equivalent regulations need to be applied to banks and capital markets (BIS, 2009; UN Stiglitz Commission; D'Arista and Griffith-Jones, 2009a; Palley, 2004).

The principle of comprehensive counter-cyclical regulation seems the clearest and most transparent one. As the BIS 2009 *Annual Report* puts it, "no part of the financial system should be allowed to escape appropriate regulation." This will reduce the likelihood of future crises.

This would imply that all off-balance sheet transactions of banks would have to be placed on their balance sheet. Securities issued in capital markets should also be subject to equivalent regulation. The FSF/FSB 2009 Report on Addressing Pro-cyclicality of the Financial System also recommends enforcing minimum initial margins for over-the-counter derivatives (OTC) and securities to reduce leverage while requiring margins or haircuts to be relatively stable over the cycle. This is very welcome, as it would reduce the tendency for margining and collateral practices to fall in boom times and create adverse effects in times of market stress. Making collateral and margin requirements cycle-neutral, so they do not decline in booms, as the FSF/FSB suggests, would be positive. An issue to explore is whether such collateral and margin requirements (which are conceptually equivalent to capital requirements) should not go beyond this, and also have counter-cyclical elements. This would seem desirable, as when security issuance and derivatives were growing excessively (e.g., well beyond historical average), collateral and capital requirements could be increased.

Implementing cycle-neutral or counter-cyclical collateral and margin or reserve requirements of derivatives and, more broadly, controlling many of the systemic risks generated by derivatives will be greatly facilitated if bilateral arrangements are replaced by central counterparties (CCPs), where requirements would be common to all participants.

Similarly, all financial institutions (including alternative investment funds and, in general, all private pools of capital) should have equivalent regulation, both of solvency (especially their leverage) and of liquidity, to avoid the migration of risky activities to less regulated institutions. There seems to be growing rhetorical international consensus for this, but it is essential that such broad consensus is reflected in sufficiently comprehensive and counter-cyclical regulation in practice. This will inevitably be opposed by those who should be regulated, who will be driven more by their wish to maximize short term profits rather than by the aim of financial stability. The importance of a clear commitment by policy makers and legislators to financial stability is essential in this regard.

Another concern is the understandable wish to define "ex-ante" what are systemically important institutions, and regulate them more tightly. Is this possible? It may in fact be simpler to regulate all entities that invest or lend on behalf of other people, using other people's money and providing some type of

leverage This will avoid regulatory arbitrage, and the more rapid growth of risk in more lightly regulated institutions. As pointed out, this problem could be partially reduced if the list of systemically important institutions were regularly revised.

At the international level

Clearly, financial risks and crises are transmitted from one country to the other through contagion. However, given that cycles do have some national features, there is growing consensus (e.g. in the Geneva, UN Stiglitz Commission and Warwick Report) that regulation, in general, and counter-cyclical policies, in particular, should be implemented mainly nationally and by the host country, thereby shifting some of the emphasis in regulation from the home to the host country. This would imply that branches of foreign owned banks branches would be required to becoming separately capitalized subsidiaries. This is also linked to the fact that most bailouts are done by host national authorities, so that the country that is the lender of last resort also would need to be the regulator. Indeed, the economic authority designing the counter-cyclical rules in the host country should probably be the Central Bank, as it focuses on macro and financial stability broadly defined.

Even though counter-cyclical measures should be implemented nationally, it would be best if the criteria for implementing them would be coordinated internationally, to avoid regulatory arbitrage. Certainly at the level of the European Union, countries should coordinate counter-cyclical measures on a wider regional basis, as the de Larosière Report suggests. In fact, the European Union has the precise instrument, the Capital Adequacy Directive (CAD) that implements Basel regulation within the EU, which could be modified for such a purpose. The creation of European Union level regulatory bodies, as the de Larosière Report suggests, would further facilitate European coordination of national counter-cyclical regulation.

There are strong reasons for going further, and having international coordination of counter-cyclical regulation. This is related, first of all, to the fact that international economic and, especially, financial linkages have been steadily growing as markets become increasingly globalized. As White (2009) points out, this greater integration implies that purely domestic indicators of pro-cyclical behavior will underestimate the threat to financial stability, to the extent that other countries are subject to similar pressures. Therefore, account needs to be taken of relevant pressures in related countries or globally.

Secondly, a crisis in another important country (especially if it is a creditor or debtor, or a major trading partner) can have a significant effect on the financial stability or output of countries linked to it through strong financial or trade links, even though it itself did not build up systemic risk nationally. Therefore, from a policy perspective, greater integration implies that all countries have a legitimate concern to avoid pro-cyclical excesses to occur in other countries, especially in large ones.

Thirdly, for short-term competitive reasons, countries – and especially their financial institutions – may be more willing to implement counter-cyclical regulations if they know that other countries are also doing so. One basic reason is, of course that if some countries were to implement counter-cyclical regulation, whilst others did not, this would inevitably lead to regulatory arbitrage. It could, however, be argued that in the long term, better regulated (including via counter-cyclical rules) financial centers will be more financially stable, and therefore should become more competitive.

For all those reasons, it seems desirable that the criteria for designing counter-cyclical regulation be agreed internationally. An important issue that may require further research is the extent to which in implementing national counter-cyclical regulation, purely domestic variables should be examined, or some account should be taken of international trends, such as global credit or asset price growth.

This regulation would then be implemented nationally by host countries. In doing so, countries may need to adapt them somewhat to the specific features of their financial systems and their economies. However, increasingly strengthened international regulatory bodies should strongly encourage all countries

especially larger ones and with more internationalized financial system, to implement counter-cyclical regulation.

A last point relates to the issue of timing of regulatory reform. It is important that such changes be adopted soon, whilst appetite for regulatory reform remains high. However, their introduction should be done with a lag, to avoid increased capital and liquidity requirements putting pressure on weak banks, thus extending the credit crunch.

Conclusions

In a modern market economy, regulation is very important, as it significantly influences the level of credit at particular moments, and its evolution through time. As Greenwald and Stiglitz (2003) have shown, the level of credit is the critical variable in the determination of output and employment. Indeed, the important role of credit had been underestimated by academics and policy-makers, which tend to place more emphasis on monetary policy. To the extent that credit is an important macroeconomic variable, good and effective regulation becomes an essential policy tool.

The need for regulation to be counter-cyclical was initially recognized by only a small and fairly isolated group of academics and some international institutions. However, after the global crisis became acute, international commitment by policymakers to counter-cyclical regulation became widespread.

Counter-cyclical regulation needs to be an important part of economic strategies aimed at stabilizing the economy by reducing the pro-cyclicality of finance and its effects on the real economy. It does so by explicitly incorporating the impact of macroeconomic risks, and changing crucial regulatory variables in a counter-cyclical way to discourage lending booms and prevent credit crunches.

As agreement on implementing counter-cyclical regulation is very broad amongst policy makers, there is also ever growing consensus that it is not enough to reduce pro-cyclicality of existing regulations (like Basel II), it is also essential to design strictly counter-cyclical regulations, to offset the natural tendency of banking and financial markets towards boom-bust patterns. The key questions are now practical; how best should counter-cyclical regulation be implemented?

Initially, there was a debate about what instruments would best be used to achieve regulatory counter-cyclicality, especially in solvency requirements, but also for liquidity. There is now increasing agreement that several instruments need to be used in parallel.

In the case of solvency, those instruments would include counter-cyclical capital requirements and loan provisioning or non-distributable reserves, as well as counter-cyclical leverage ratios and loan-to-value ratios. An alternative for the latter are rules to adjust the values of collateral for cyclical price variations, especially for real estate prices.

The only problem with using such a large array of instruments may be their excessive complexity, which partly reflects the complexity of problems posed by the financial system. An alternative, more direct approach would be for regulators to limit the growth of bank credit. This could become relevant if the more indirect counter-cyclical regulation instruments discussed above were not sufficiently effective.

Counter-cyclical provisions have the virtue that they have already been implemented successfully by the Spanish authorities for almost ten years. They provide an excellent precedent for other countries. They are clearly very valuable, especially for strengthening banks, though apparently less effective in curbing excessive expansion of credit. One problem has been tensions between implementing counter-cyclical provisions and accounting rules, initially moderated in Spain because the Banco de España designs accounting rules. However the dialogue between international regulatory bodies and accounting associations after the global crisis is helping ease this problem more widely. It is also interesting that though availability of good and long term data eased the implementation of counter-cyclical provisions in Spain, Spanish experts argue that simulations may be used for countries that do not have such good data.

An important choice is whether counter-cyclicality should be implemented through rules or in a discretionary way. There seems to be an overall preference for predetermined rules, that will reduce the

risk of regulatory capture, either by narrow interests or by the over-enthusiasm that characterizes booms. Rules could be tightened, in special circumstances, but never loosened during booms. Appropriate indicators (such as growth of credit and/or asset prices) need to be chosen to ensure counter-cyclical capital buffers vary effectively with the cycle.

Though assuring enough capital, provisions and reserves is key for financial stability, so is liquidity, even though the latter has been less discussed. Prudential regulation needs to ensure adequate levels of liquidity for financial intermediaries. One good way of doing it is to set liquidity requirements based on the residual maturity of financial institutions' liabilities.

As solvency and liquidity are complementary, there may be a case for implementing requirements jointly, which would imply requiring more capital in a counter-cyclical way for institutions with large maturity mismatches. However, as capital will never be enough to deal with serious liquidity problems, there is a clear case for having a separate liquidity requirement.

As regards accounting disclosure rules, these should satisfy both the needs of investors and those of financial stability. An optimal approach may be to rely on a dual disclosure approach, where both current profits and losses are reported, as well as profits after deducting forward looking provisions or a non-distributable Economic Cycle Reserve that set aside profits in good years for likely losses in the future.

There are some important trade-offs between stronger and more counter-cyclical regulation and access to credit. Such stronger regulation will result in higher spreads in domestic financial intermediation. They may result in a suboptimal supply of financing, especially in the supply of long term credit for small and medium sized firms (SMEs). Therefore, additional instruments may be necessary to provide sufficient and sufficiently long term credit, particularly to SMEs. Higher spreads may also generate incentives for corporations with direct access to international capital markets to borrow abroad, thus increasing the likelihood of currency mismatches in the portfolios of these agents. Hence the need for international coordination of regulatory policies, as well as specific policies to deal with currency mismatches in financial portfolios.

To avoid regulatory arbitrage, the comprehensiveness of counter-cyclical regulation is an important issue, both nationally and internationally. The best approach seems equivalent comprehensive counter-cyclical regulation for all institutions, instruments, and markets. This would include also all non-banking financial institutions, such as alternative investment funds (the so-called "shadow banking system"), as well as all instruments within banks –by consolidating all activities onto the balance sheet; it should also include counter-cyclical margin and collateral requirements on all securities and derivatives instruments.

Counter-cyclical regulation needs to be implemented nationally, as cycles vary by countries; they should be implemented by host countries. However, the broad criteria need to be defined nationally or regionally (e.g., within the European Union) but coordinated internationally, as markets are subject to contagion. Thus, a crisis in another important country (especially if an important creditor, debtor, or trade partner) can seriously harm financial stability or output in countries, even though they have not accumulated systemic risk. Therefore, in a globalized economy, all countries have a legitimate concern to avoid pro-cyclical excesses in other countries.

The case for international coordination for defining broad criteria for counter-cyclical regulation is therefore strong. This seems to require a considerable strengthening of regional and global regulatory institutional arrangements.

A final point relates to the timing of introducing counter-cyclical and stronger regulations. It is important to agree to such regulations in the wake of a crisis, when political appetite for regulatory reform is highest. This will also help restore confidence in the financial system. However, such rules should begin to operate gradually and only after the economy is clearly recovering, and financial institutions have become stronger. This will prevent the undesired effect of tighter regulation worsening or prolonging a credit crunch in the immediate aftermath of a crisis.

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