

# Are All the Sacred Cows Dead?

## Implications of the Financial Crisis for Macro and Financial Policies

*Aslı Demirgüç-Kunt*  
*Luis Servén*

The World Bank  
Development Research Group  
Finance and Private Sector Team  
&  
Macroeconomics and Growth Team  
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## Abstract

The recent global financial crisis has shaken the confidence of developed and developing countries alike in the very blueprint of financial and macro policies that underlie the western capitalist systems. In an effort to contain the crisis from spreading, the authorities in the US and many European governments have taken unprecedented steps of providing extensive liquidity, giving assurances to bank depositors and creditors that include blanket guarantees, and structuring bail-out

programs that include taking large ownership stakes in financial institutions, in addition to establishing programs for direct provision of credit to non-financial institutions. Emphasizing the importance of incentives and tensions between short term and longer term policy responses to crisis management, this paper draws on a large body of research evidence and country experiences to discuss the implications of the current crisis for financial and macroeconomic policies going forward.

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This paper—a product of the Finance and Private Sector Team, and Macroeconomics and Growth Team, Development Research Group—is part of a larger effort in the department to study the causes and implications of the recent financial crisis. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at [ademirguckunt@worldbank.org](mailto:ademirguckunt@worldbank.org) and [lservern@worldbank.org](mailto:lservern@worldbank.org).

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# **Are All the Sacred Cows Dead?**

## **Implications of the Financial Crisis for Macro and Financial Policies\***

Aslı Demirgüç-Kunt  
(World Bank)

Luis Servén  
(World Bank)

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\*Demirguc-Kunt: World Bank ([Ademirguckunt@worldbank.org](mailto:Ademirguckunt@worldbank.org)); Servén: World Bank ([Lserven@worldbank.org](mailto:Lserven@worldbank.org)). Useful comments from Alan Gelb, Edward Kane, Michael Klein, Justin Lin, Martin Ravallion and Sergio Schmukler are gratefully acknowledged. Annamaria Kokenyne kindly contributed information on recent capital control measures. This paper's findings, interpretations, and conclusions are entirely those of the authors and do not represent the views of the World Bank, their Executive Directors, or the countries they represent.

## **I. Introduction**

The financial turmoil that started as a meltdown in structured securitization instruments in the summer 2007 in the U.S. and U.K. has quickly spread to the rest of the developed world, and has now become a full-blown global financial crisis. In an effort to contain the crisis from spreading, the authorities in the US and many European governments have taken unprecedented steps of providing extensive liquidity, giving assurances to bank depositors and creditors that include blanket guarantees, structuring bail-out programs that include taking large ownership stakes in financial institutions, in addition to establishing programs for direct provision of credit to non-financial institutions. In some developing countries, there is talk about re-introducing capital controls as a policy of last resort in the event of extensive bank runs and capital outflows. Also questioned is the wisdom of a monetary policy narrowly focused on goods prices without taking into account asset price inflation, and prudential regulation that does not recognize systemic vulnerabilities.

Hence the crisis has shaken the confidence of developed and developing countries alike in the very blueprint of financial and macro policies that underlie the western capitalist systems. It is not surprising that many analysts are already declaring capitalism, and the mainstream policy view associated with it, dead.

This paper argues the “sacred cows” of financial and macro policies are very much alive. It seeks to make clear that (i) the on-going crisis does not *simply* reflect a failure of free markets, but a reaction of market participants to distorted incentives; and (ii) managing a systemic crisis requires policy decisions to be made in different stages of the crisis - the immediate containment stage as well as the longer term resolution and

structural reforms that follow – which often entail difficult trade-offs between reestablishing confidence in the short term and containing moral hazard in long term.

Keeping in mind the importance of incentives and tensions between short term and longer term policy responses to crisis management, we address the following questions about the implications of this crisis for financial and macroeconomic policies going forward:

- Are blanket guarantees inevitable to halt a systemic crisis?
- Should governments bail-out and own financial institutions?
- Should governments regulate finance much more aggressively given the failures in market discipline?
- Should monetary policy target asset prices?
- Should countries resort to capital controls to contain the crisis?

Crises recur in part because people forget the lessons from the previous ones. While every crisis is different, past crises also provide important lessons that need to be learned to prevent policy makers from reinventing the wheel every time a new crisis erupts. This paper draws on past research and country experiences to address the issues that are in the forefront of policy debate today.

## **II. Use of blanket guarantees in containing a systemic crisis**

Crises go through different stages. The first stage is called the “containment” stage where crises often emerge unexpectedly and evolve very quickly.<sup>1</sup> This is the stage that attracts the most attention, with bank runs, emergency liquidity loans, and

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<sup>1</sup> Honohan and Laeven (2005) bring together research and first-hand crisis experience to catalog lessons on a variety of issues that regularly arise in crises.

weekend crisis meetings. In the containment stage, time is of the essence and the need for speed generally takes over good judgment. How should the authorities judge whether liquidity support or official guarantees should be employed in the hope of preventing collapse, but potentially at high long-term costs?

Part of the answer lies in better crisis preparedness. Systemic crises are infrequent events. Hence, the incumbent policymakers often claim there is “no playbook” for handling crises. This lack of experience and knowledge leads to trial-and-error policymaking and copying of policy responses -and often mistakes- that are being employed elsewhere.

In the latest crisis the US and European governments provided extensive assurances to bank depositors and creditors that include blanket guarantees in many cases. Some developing countries copied these arrangements providing blanket guarantees in order to prevent capital outflows and assure the public about the safety of their banking systems.<sup>2</sup> But other countries have resisted the need to do so.<sup>3</sup>

It is important to recognize that careful crisis containment strategies are very difficult to devise in the midst of an actual turmoil. Political pressures to rescue powerful interest are often too difficult for the authorities to resist. Because the crisis seriously threatens the political future of the incumbent governments, the usual short-termism in policy decisionmaking is even more exaggerated. Avoiding such mistakes requires that crisis-management decisions are made in an open debate outside of an actual crisis. Accountability would be improved by requiring that regulators establish

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<sup>2</sup> Hungary and Jordan are such examples.

<sup>3</sup> See for example, Switzerland, Czech Republic, Poland, Slovakia.

and regularly test a well-publicized benchmark plan for crisis resolution (Caprio, Demirguc-Kunt and Kane, 2008).

*What should be done in the containment stage?*

Walter Bagehot's classic policy advice for managing liquidity during a systemic crisis is for the central bank to lend freely to solvent banks – but to minimize subsidizing risk-taking (moral hazard), the loans are to be made at penalty interest rate and only on good collateral. Put differently, the advice is for governments to avoid lending to insolvent banks at all, even on good collateral and certainly not at below-market interest rates. Unfortunately, as the recent events illustrate, modern governments pay only lip service to this principle. For governments to embrace Bagehot's advice, they need to be able to distinguish relatively quickly between deeply insolvent banks and those that are solvent enough to be salvageable. The governments also need to have the strength to resist the pressures a crisis generally generates to rescue powerful interests.

In a banking crisis, just like at a battlefield, regulatory authorities need to run to the aid of wounded deposit-losing institutions and temporarily stabilize their condition by providing liquidity. Effective crisis containment requires effective triage: treatment-worthy institutions need to be identified and they should be provided enough liquidity to restore public confidence in their ability to continue operation. Unless emergency response teams are assembled and trained in advance, it is difficult to conduct good triage, again stressing the importance of crisis preparedness.

Also very important are information problems, as the recent sub-prime crisis amply illustrated. Distinguishing viable institutions at short notice becomes more

challenging in environments characterized by low levels of transparency. Therefore it is the duty of regulators to identify and remedy gaps in information well in advance, recognize the gradual reduction in transparency that come with financial engineering and regulatory arbitrage and nip it in the bud by demanding improvements. Regulators also need to encourage the use of instruments and development of markets that would help in more accurate assessment of risks, both in and out of crisis situations.<sup>4</sup>

When transparency is allowed to deteriorate, information problems can tie the hands of authorities and limit their ability to engage in efficient containment strategies. For example, advocates of bailing out insolvent institutions to halt a systemic crisis argue that only sweeping guarantees and extensive support can stop the panicky flight of depositors and other creditors. This is of course true if the crisis entails a series of self-fulfilling runs as envisioned in Diamond and Dybvig (1983). However most modern financial crises, including the recent one, are driven instead by fundamental weaknesses in economic balance sheets, which reveal themselves initially as liquidity problems.

It must be recognized that the short-term benefits of guarantees will vary with the fiscal strength of the guaranteeing government. To hasten the end of an insolvency-driven banking crisis and to constrain the spread of insolvencies in the short term, the government must manifest a *substantial* capacity for absorbing losses. This is not a luxury most countries can afford since most governments do not have the required fiscal capacity. Depending on the depth of the systemic insolvency such support may not even halt the spread of crisis and delay healthy adjustments. This begs the question of whether social costs and adverse distribution effects could be reduced by following an alternative strategy.

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<sup>4</sup> See section IV for further discussion of these instrument and markets.

Even in the midst of a financial crisis, it is inefficient to set aside long-term goals completely. The manner in which a crisis is resolved affects the frequency and depth of future crises, through the significant impact it has on market discipline. If institutions can count on crisis resolution to be mis-managed, they will be more willing to risk insolvency, and safety-net subsidies will mainly flow to institutions that take excessive risks at the expense of taxpayers. Providing extensive liquidity support and guarantees to insolvent institutions subsidizes gambles for resurrection and distorts risk-taking incentives, undermining market discipline and spawning future crises (Kane and Klingebiel, 2004; Calomiris, Klingebiel and Laeven, 2005).

Moreover, the short-term benefits of such bailouts have been oversold. Such policies seldom actually speed the recovery of a nation's real economy from a financial crisis or lessen the decline in aggregate output. Instead, providing liquidity support for insolvent institutions often prolongs a crisis. It does this by distorting risk-taking incentives so extensively that sound investments and healthy exits are delayed and additional output loss is generated. Honohan and Klingebiel (2003) and Claessens, Klingebiel and Laeven (2005) measure the impact of different crisis management strategies on the ultimate cost of resolving financial distress in a broad set of countries. They find that not only providing generous support –in terms of open-ended liquidity support and blanket deposit guarantees -increases the ultimate fiscal cost of resolving crises, but it also does not speed the recovery, instead prolonging the duration of the crisis.<sup>5</sup>

Finally, it is important to note that empirical evidence suggests that governments incur most of the fiscal costs of resolving the crisis during the containment phase.

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<sup>5</sup> Bordo et al. (2001) confirm these findings.

Honohan and Klingebiel show that much of the variation in the fiscal costs of crises is explained by differences in the way a government handled its liquidity crisis, with highest costs associated with governments that provided open-ended liquidity support and blanket deposit guarantees.

#### *Alternatives to Blanket Guarantees*

Providing blanket guarantees poses many challenges to government authorities. The first important challenge is to convince creditors and depositors that they have the political will and fiscal capacity to afford the cost of such guarantees. This may be quite difficult for many developing country governments. If the emergency response is seen as inadequate, it may quickly compound the problems, requiring emergency funding from external sources, such as resource rich governments, or the International Monetary Fund.

Even if the guarantees provided are deemed credible and the crisis is contained, the governments still face a second set of important challenges. These include the need to control the additional (guaranteed) debt insolvent institutions will continue to attract; to make sure the guaranteed institutions invest these new resources prudently; and to reduce or eliminate the guarantees once the containment stage of the crisis is over. Regulators are likely to find it very difficult to address the moral hazard created by these guarantees. Because fully-guaranteed institutions can attract funding independent of the risks they take, managers of insolvent institutions can be easily tempted to abuse their government assistance by gambling for resurrection.

There is already a large literature that establishes in normal times overly generous safety-net policies and deposit insurance lead to moral hazard and financial instability.<sup>6</sup> The longer the guarantee remains in place, and insolvent banks are allowed to operate, the more difficult it will be to curb these excessive risk-taking incentives. Furthermore, once installed, such guarantees are difficult to claw back and more importantly, they seriously undermine the credibility with which future safety net arrangements can be limited.

While introduction of blanket guarantees may be tempting for policymakers in the short term, they are not inevitable. Provision of such extensive guarantees represents an extreme measure that is best resisted before other alternatives are exhausted. Ideally, policymakers must be ready to take the time to separate hopelessly insolvent institutions from potentially viable ones, and to provide liquidity support, guarantees or haircuts in a way that would protect taxpayer interests. Hence an alternative strategy to an indiscriminate blanket guarantee, is to take a several day “banking holiday” to identify insolvent institutions and to recommend and impose preliminary haircuts on uninsured depositors and nondeposit creditors before they can liquidate their claims (Kane and Klingebiel, 2004). Using the holiday to prepare a program of limited guarantees and to write down the uninsured debt can restore public confidence both in the government’s ability to deal with the crisis and in the banking system.

Baer and Klingebiel (1995) examine the aftermath of pre-1992 systemic crises in a number of countries and find that in cases where the governments assigned losses to depositors of insolvent banks, the positive effects of reducing depositor uncertainty

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<sup>6</sup> See Demirguc-Kunt and Detragiache (1998, 2002); Demirguc-Kunt and Huizinga (2002), Demirguc-Kunt and Kane (2002) and Demirguc-Kunt, Kane and Laeven (2008a,b).

quickly overcame the negative effects that surviving banks experienced from depositor write-downs. Fairness requires that small depositors – who are often more than covered by explicit deposit insurance schemes – have immediate access to their funds. By the same token, at the end of the holiday, larger uninsured depositors should also be allowed immediate fractional access to their transaction balances. Clearly the speed with which the authorities can deal and resolve these situations depends on the extent to which they have engaged in contingency-planning and crisis-management simulations.

A holiday that lasts for weeks or months is called a “deposit freeze,” which reduces depositors’ liquidity and the nation’s aggregate money supply, and may also have long-term adverse effects on depositor confidence.<sup>7</sup> Hence to minimize these adverse effects, insured depositors should be granted access to their funds as soon as this is feasible.

Broader timeout strategies for creditors that follow bankruptcy proceedings can also be employed. Productive assets can be conserved by instituting a grace period during which major creditors do not receive payments of principal or interest due on existing bond or loan contracts, but use the time to work out a replacement contract structure, with the help of courts and or mediators. Forcing private creditors to renegotiate unenforceable contracts is called “bailing-in,” and like haircuts imposed on uninsured depositors, is intended to trap creditors that financed weak institutions into participating more fully in loss-sharing.

Whichever strategy is used, ultimately the damage the crisis causes to the country’s financial sector and its real economy is reduced by separating the insolvent from viable institutions as quickly as possible and providing support and allocating

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<sup>7</sup> Argentina’s reduced deposit mobilization after 2001 deposit freeze is an example.

losses in ways that protect taxpayers and avoid subsidizing insolvent institutions' go-for-broke strategies. Prior crisis planning and commitment to these plans are important steps in being able to retain a long-term perspective in the containment stage of any crisis.

### **III. Role of the State in Financial System**

After the panic abates, confidence is restored and markets start functioning, the crisis moves into its resolution stage. With the crisis contained, now policies must be chosen to deal with the undercapitalization and insolvencies that are often revealed. Past research and experience provide many valuable lessons on how best to deal with systemic insolvencies, an issue we discuss below.

Given the intensity of this crisis, direct interventions in the financial system have been so massive that by the end of 2008, governments will be the largest shareholders in most developed economies' financial industries, reversing a trend of state retreat over the last 20 years.<sup>8</sup> With \$500 billion or more invested, this is equivalent to roughly state ownership of a quarter of the industry's market value which strongly contrasts with the ideology of western capitalist systems. Indeed, the extent of these interventions and the increasing government stake in financial institutions have led to questions whether financial systems should be privately-owned in the first place, shaking the commitment of developing country policymakers to on-going bank privatization programs. If private banks are prone to excessive risk-taking leading to crises and costly bail-outs, is it not better to have the governments own and operate the financial system in the first place?

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<sup>8</sup> "Bank bail-outs: Quids pro-quo," *The Economist*, November 22, 2008, p.84-86.

In answering this question it is important to recognize that bank nationalizations are very common in dealing with systemic financial crises. Indeed, governments have always taken ownership positions in banking either deliberately or indirectly as a result of banking crises. In almost every major banking crisis in recent history – in East Asia, Latin America and others – governments have become temporary caretakers of financial institutions.<sup>9</sup> Hence, the recent crisis is not the exception in this regard. The way in which this is done has important implications for maintaining and restoring a functioning financial system and minimizing the short term and long term costs of such interventions.<sup>10</sup> But, the fact that governments find themselves involved in resolution of insolvencies does not imply this role should be permanent. To the contrary, all evidence suggests that they would be well-advised to do otherwise.

#### *Bureaucrats as Bankers?*

Government ownership of banking has been popular throughout history.<sup>11</sup> Early proponents of state control argued that the government can better allocate capital to highly productive investments. Gerschenkron (1962) was among the first to argue that private banks would not be able to overcome deficiencies in information and contracting in weak institutional environments. State ownership also makes appropriation of the surplus from finance and directing credit much easier, making it attractive for policymakers. Moreover, there is the concern that, private ownership and concentration in banking may lead to limited access to credit by different parts of the society,

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<sup>9</sup> Indonesia, Philippines, South Korea, Mexico, Chile are examples. See Caprio and Klingebiel (updated 2005) for a complete list.

<sup>10</sup> Whether or not the control of the bank completely passes into public hands during the resolution stage is secondary to the fact that after the resolution, the bank should be well-capitalized. Problems often emerge because governments are unable to do the financial restructuring properly; and banks that continue to operate with insufficient capital have every incentive to resume reckless risk-taking. We discuss different ways of restoring solvency below.

<sup>11</sup> See World Bank (2001) for a discussion.

hampering the development process. Indeed, government banks are often expected to expand access making financial services more broadly available. A final argument is rooted in the fragility of finance, and that private financial institutions are too prone to excessive risk-taking, which is difficult to keep under check; a popular sentiment that resurfaces with every significant crisis.

By now, there is significant amount of empirical research that suggests state ownership of banks is associated with less financial sector development, lower growth and lower productivity and that these negative effects are more pronounced at lower levels of income with less financial sector development and with weaker property rights protection (La Porta et al., 2002; Barth et al., 2001). Despite explicit mandates for government banks to expand outreach, in banking systems dominated by state banks, there are fewer bank branches and automated teller machines. Customers in such systems face lower fees but they also experience poorer service quality (Beck, Demirguc-Kunt, and Martinez Peria; 2007, 2008).

Instead, the evidence suggests that state-owned banks tend to lend to cronies, especially around the time of elections, as vividly illustrated by the recent empirical studies of Cole (2004), Dinc (2005) and Khwaja and Mian (2005). For example, Cole has shown that state banks in Indian states ramped up agricultural lending in tightly contested districts in election years. Dinc showed that increased lending by government-owned banks right before elections is not specific to India but can be observed in data from 22 developing countries. Drilling down to the individual loan level, Khwaja and Mian found evidence from Pakistan that politically active borrowers

were able to secure larger and cheaper loans from state-owned banks and defaulted on these loans much more than other business borrowers.

Given the extent to which lending policies are politicized, it is not surprising that state ownership appears to heighten the risk of crises instead of reducing it. If anything, research suggests that greater state ownership is associated with various measures of financial instability, including a greater probability of banking crises (La Porta et al., 2002; Barth et al., 2001; Caprio and Martinez Peria, 2000).

These results and other related evidence explain why many countries embarked on privatization programs, selling their state banks. Indeed, evidence also suggests bank privatization, if well-designed, can significantly increase bank performance (Cull and Shirley, 2005; Megginson, 2005). To be sure privatization is difficult and can lead to problems in weaker institutional environments. Hence the sequencing is important: moving slowly but deliberately with bank privatization, while preparing state banks for sale and addressing the weaknesses in the overall incentive environment and regulations seems to be the preferred strategy. Ultimately, gains from privatization - if designed properly - can be substantial since the alternative of maintaining large state ownership can significantly undermine real sector reforms and deter economic development.<sup>12</sup>

So what explains the poor performance of bureaucrats as bankers? As often the case in finance, incentive problems are at the root of this issue since bureaucrats do not face incentives designed to reward efficient resource allocation. Not only government officials often lack the expertise to be effective managers, but they also face conflicts of interest due to their desire to secure their political base and reward supporters, which

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<sup>12</sup> Similar trade-offs are considered in liberalizing financial systems, since premature liberalization without adequate attention to developing institutions increases financial fragility. See Demirguc-Kunt and Detragiache (1998).

often goes against efficient resource allocation. These problems become worse with fewer checks and balances and in poorer institutional environments, explaining why state ownership is more damaging at lower per capita income levels (La Porta et al. 2002; Keefer, 2000).

Hence, while governments may inevitably find themselves as stakeholders in financial institutions as the outcome of systemic crises, they would do well to see this as a temporary arrangement, and plan for their exit as part of the crisis resolution exercise. Despite its weaknesses, a well-functioning private financial system is crucial for promoting development, and substituting government provision of financial services for that of the market is likely to lead to inferior outcomes. Economic growth does not resume on a sustainable basis until productive assets and banks are back in the hands of well-capitalized private parties.

But how should financial crises be resolved and solvency of institutions restored? In other words, how should bail-out programs be designed in the event of crises, and what should be the government's role in this process? We turn to these questions next.

#### *Bureaucrats as Caretakers*

If bureaucrats are not good bankers in good times, they are not likely to do better in bad times, given the tendency for political forces to dominate economic judgments will be even worse. As we have seen in the latest crisis, systemic crises often involve injection of substantial sums and determining the financial fate of powerful interests. But systemic crises often require comprehensive solutions by the government, so how should governments behave?

While governments should be prepared to act in a systemic crisis, the approach and the actions they take still need to be designed to reduce conditions for moral hazard and the likelihood of a subsequent crisis. This should be done by imposing real costs on all responsible parties and getting the resources back in productive use as soon as possible (Demirguc-Kunt, 2008).

To see the importance of attention to incentives, consider what happens to firms outside the financial sector that fall into a state of insolvency. Those in control of the firm find it difficult or impossible to raise new funds in any form. They can no longer act on profitable investment opportunities and may be forced to sell important assets. Creditors recognize this situation may distort the incentives of managers, making them more susceptible to fraud and moral hazard, and at the very least reduces the incentives of the owner and managers to exert effort. In a market economy, the solution is bankruptcy. As long as the firm is economically viable, it makes sense to continue its operations, but only after restructuring. This restructuring generally wipes out existing equity holders, while debt holders often have a portion of their claims converted to equity. Alternatively, debt holders can agree to cut down the face value of their debt, in exchange for some warrants. Old management is often replaced, a substantial portion of the firms' assets are sold, workers are laid off. This restructuring is not a mere reworking of the firms' balance sheet, but represents very real changes to the way it does business, perhaps even in the business it does. The happy result for the economy is that resources continue in their best use while all responsible parties incur some costs for the firms' poor performance.

To a large extent dealing with financial insolvencies should follow the same general principles. Admittedly financial sector is special due to its particular fragility, possibility of contagion and major macro implications when it is in systemic distress. However, although these differences may justify different approaches, they do not suggest that incentives matter any less. Any government involvement should be designed to protect the interests of the taxpayers, impose losses on the responsible parties, and use the private sector to pick the winners and losers. For example, any plan that purchases bad assets from troubled financial institutions or recapitalization without extracting some claim from the institutions, amounts to a transfer from taxpayers to shareholders, which is the group that keeps the residual value of the entity.

Recapitalization of the banking system should be designed so that those banks that need assistance with recapitalization are helped in an incentive-compatible way. Such a plan would limit taxpayers' loss exposure, and in environments with good information and contract enforcement, leave resolution of bad assets to the banks themselves. But how should the banks be recapitalized? Just as bureaucrats are likely to make poor bankers, the selection of individual winners and losers is also what markets, not governments, do best.

One way for the authorities to inject funding only to those institutions that are able to meet the following criteria (World Bank, 2001; Honohan, 2005):

- Those institutions that are in a strong position should be able to raise capital privately, say from a syndicate of private banks. If the institution has difficulty raising capital, it should at least be able obtain some proportion of it— at least half of it or more- from the private sector before applying for government

recapitalization assistance. Only those institutions that can secure private sector funds would be eligible for the plan. This will ensure that the private sector plays an important role in picking the survivors.<sup>13</sup>

- Those institutions that are eligible, receive government assistance in the form of preferred stock. Preferred stock status would force private parties rather than taxpayers to bear the first-tier losses.
- Any bank participating in the plan will have to suspend all dividend payments (and restrict the amount and structure of its compensation plans for its senior managers) until the government is fully “bought out.” The bank will also agree to complying with strict regulations on its leverage and risk-taking, transparency and disclosure to participate in the plan. This will give incentives to banks to retire their preferred stock as soon as possible.

These are tough criteria and only desperate banks will agree to these terms.

Which is exactly the point: government assistance should only be injected into banks in dire straits, yet simultaneously to those with a real chance of survival. As long as the amount of funding is such that some banks fail, this approach removes government from decisions as to which banks survive. The availability of private sector funding serves to identify the candidates, and restrictions on different ways to take these funds out of the banks, combined with greater transparency makes it more likely that the banks will not be looted or engage in gambling with tax-payers money. By openly stating the terms on which it will assist banks, and ensuring that those terms provide good incentives for the restructured bank going forward, the government will have made best use of market

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<sup>13</sup> Notice there was also significant private equity injected into financial institutions in the latest crisis. The figures reached 500 billion US dollars by September 2008, which is larger than in any other crisis in history.

forces while minimizing its direct ownership involvement. Many of these features characterized the U.S. Reconstruction Finance Corporation's (RFC) program of taking temporary preferred equity positions in banks after the great depression.<sup>14</sup>

Another alternative that has gained popularity after its successful application in Spain in the early 1980s, is a centralized approach where banks' nonperforming loans are carved off into an asset management company (AMC) which continues the restructuring process. The carving-out of an insolvent bank's bad loan portfolio and its organizational restructuring under new management and ownership may be appropriate when large parts of the bank's information capital is dysfunctional. The bad loan portfolio may be sold back into the market, or disposed of by a government-owned AMC.

A survey by Klingebiel (2000) shows, however, that the AMCs formed in developing countries have not been as successful in restructuring nonperforming loans. The effectiveness of AMCs has been quite mixed, better when the assets to be disposed are primarily real estate, less good when they are loans to large politically connected firms. In countries with developed private markets and institutions, individual banks –if well capitalized – would be in a superior position to engage in restructuring their own assets. But policymakers in weak institutions should not expect to achieve the same level of success in restructuring as in more developed economies, and may do well to design simple resolution mechanisms that offer little discretion to government officials (Honohan and Laeven, 2005).

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<sup>14</sup> It is difficult to evaluate the success of programs such as RFC, but in this case it is credited to have contributed to a recovery of confidence and output (until monetary tightening reversed both in 1937). The government recovered its initial capital and did not bail out nonviable banks. See Mason (2000) for an analysis.

In summary, governments are not good at providing financial services in normal times or in crises, and those governments that find themselves as bankers as a result of such crises should focus on their exit strategy as quickly as possible, using the market to identify winners and losers. And although drawing on public funds to recapitalize some banks may be unavoidable in systemic crises, they must be used sparingly to leverage private funds and incentives (World Bank, 2001). Where governments have a very important role to play in finance, it is in providing the regulatory and supervisory arrangements that help reinforce incentives that limit excessive risk-taking and fraudulent behavior. In the next section we turn to issues of prudential regulations and the implications of the recent crisis for their design.

#### **IV. Design of Prudential Regulations**

One important implication of the recent crisis is the wide-spread calls for reforms of regulation and supervision. The initial reaction to the emerging crisis was one of disbelief: how could the crisis emerge in countries whose supervision of credit risk had been thought to be the best in the world? Indeed, the regulatory standards and protocols of these countries were in the process of being emulated worldwide through the international Basel capital accords.

Basel II – which is currently in its implementation stage - grew out of concern that the Basel I accord was unable to address the range of risks in bank activities, as evidenced by the growth of securitization.<sup>15</sup> Basel II is built on three Pillars: (1) minimum regulatory capital requirements for credit risk, operational risk and market risk;

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<sup>15</sup> The Basel committee itself notes that Basel II arose in response to the growth of securitization, giving the impression that this growth was an exogenous development rather than at least in part a response to Basel I and its “loan-by-loan” approach to assessing a firm’s overall risk exposure.

(2) the supervisory review process; and (3) market discipline and disclosure. The minimum capital requirements are determined by either external ratings from ratings agencies for smaller banks or by outputs from the larger banks' own internal ratings models.<sup>16</sup>

Many interpreted the crisis as a vivid example of market failure, evidence that there is no such thing as market discipline, reinforcing calls for stronger regulations through improvements in Basel II accord. But the crisis also spawned a growing argument about the role Basel I accord may have played in causing the crisis. Indeed, it is no secret that Basel I contributed to the growth in securitization by assigning lower capital charges and thus giving incentives to institutions to move their assets into off-balance-sheet securitization vehicles. While advocates claimed that Basel II, had it been implemented earlier, could have lessened or prevented the turmoil, critics of the Basel approach to capital regulation pointed out that the crisis has simply reconfirmed fundamental flaws that have been evident in this approach.<sup>17</sup>

The financial turmoil challenged the Basel II framework in important ways. First, the events raised serious questions about setting capital requirements based on external ratings. These ratings proved excessively optimistic and confirmed longstanding concerns about the conflicts of interest that arise out of having the issuers pay the agencies for ratings required by regulators. More importantly, credit ratings are not appropriate for setting capital requirements. Ratings are based on expected default rates, but capital is intended for unexpected losses. Ratings can be useful for establishing loss

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<sup>16</sup> See Caprio, Demirguc-Kunt and Kane (2008) for an in-depth discussion of Basel I and Basel II accords and recommendations for reforms.

<sup>17</sup> See Caprio, Demirguc-Kunt and Kane (2008) and statements of the Shadow Financial Regulatory Committee, which can be found on the American Enterprise Institute (AEI) website.

reserves for particular assets, but they do not consider correlations among assets, hence they are not helpful in assessing how a bank's net worth or its portfolio of assets may vary. Therefore, the amount of capital required for an institution's safety has to be linked explicitly to measures of volatility of its earnings, which is not information that ratings provide.

Second, the crisis raised serious concerns about the accuracy of internal risk models employed by even the largest and most-sophisticated market participants. These models proved inadequate, and illustrated how financial models and datasets can be manipulated to provide desired outcomes.

Finally, the way the crisis emerged in subprime lending but spread to other securities revealed problems with inadequate documentation, the disconnect between source of risks and bearers of those risks, and lack of knowledge about how risks are ultimately distributed.<sup>18</sup> All these point to weaknesses in the disclosure provisions included in the market discipline pillar of the Basel accord, and how fundamental issues of transparency were not addressed.

Given the intensity and persistence of the crisis, many proposals for regulatory reforms are emerging. Some proposals originate from sources that interpret recent events as evidence that market discipline is not reliable and want to focus on designing tougher and more comprehensive regulations. These proposals range from re-establishing extensive activity restrictions, to speedier implementation of Basel II, to revising the

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<sup>18</sup> For a discussion of tensions between the goals of expanding access and maintaining stability see World Bank (2007)

accord in order to address the weaknesses discussed above, or enhanced opportunities for further official intervention.<sup>19</sup>

Others continue to believe in the reliability of market signals and market discipline, and argue that the Basel approach is fundamentally flawed. On the hypothesis that investors would be quicker to recognize changes in risk and risk premiums, such sources propose an alternative approach where official supervision would focus on generating and using better market signals.

The main features of this approach can be summarized as follows.<sup>20</sup> While the Basel Committee has been responsive to its critics by trying to make the capital requirements more reflective of the ways in which risks and vulnerabilities are assessed, this has led to greater and greater complexity. Increased complexity in bank regulation reduces transparency, increases the scope for regulatory arbitrage and forbearance, without necessarily increasing accuracy. Indeed, these critics argue that while the task of computing correct economic capital for banks is very difficult and complex, bank capital regulation need not be. An alternative is to rely in large part on the market itself to provide a measurement of risk, together with the enforcement of simple rules such as the leverage ratio and prompt corrective action, which are not subject to manipulation. Supervisors must not only draw on –but also help develop– informative market signals such as those imbedded in prices of credit default swaps and subordinated debt. By requiring large institutions to engage in these markets, regulators would be able to

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<sup>19</sup> These include proposals by Krugman (2008), the Institute for International Finance (IIF), Counterparty Risk Management Policy Group (CRMPG) and the Financial Stability Forum (FSF). Goodhart (2008a) and Goodhart and Persaud (2008) recommend authorities set countercyclical capital requirements, introducing a leverage ratio that would move inversely to the business cycle.

<sup>20</sup> See American Enterprise Institute (AEI) statements and Caprio, Demirguc-Kunt and Kane (2008).

incorporate market-generated information to their risk assessments. Hence this alternative combines supervisory and market oversight, helping to generate and harness the information markets are capable of producing. The job of the supervisors would be significantly easier if this can be done effectively.

However, as Caprio, Demirguc-Kunt and Kane (CDK, 2008) emphasize, prices in credit default swap or subordinated debt markets can be a strong source of discipline only under two conditions: (1) market participants do not expect to be bailed out when trouble develops, and (2) investors have access to regular flows of high-quality information. This underlines the importance of establishing incentives that would lead both supervisory authorities and market forces to operate more effectively.

CDK argue this crisis exemplifies not just the limits of market discipline, but the power of government-induced incentive distortions – and the limits of official supervision as commonly practiced. The failure of private parties to exercise sufficient due diligence was rooted in the failure of government supervisors to challenge decisions made by private accountants and credit-rating organizations. Authorities neglected their duty of examining and publicizing the implications that these decisions might have for safety-net loss exposure. By tolerating a decline in transparency, supervisors made it difficult to recognize and price the risk expansion not only for themselves, but also for the market participants.<sup>21</sup>

Hence, CDK propose reforms that improve the chain of incentives under which market discipline and official supervision operate, which include reforms for lenders, credit rating organizations, securitization, accounting and government officials. Perhaps

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<sup>21</sup> Investigating the impact of compliance with Basel Core Principles on bank soundness, Demirguc-Kunt, Detragiache and Tressel (2008) show that compliance with information provision and transparency is the most robustly associated with financial strength of institutions.

most important among these are their proposals for enhancing accountability of government officials, through better crisis preparedness, greater use of market information to track risks and subsidies, publicizing estimates of safety-net subsidies, and deferred compensation schemes.

First, as already discussed in section II above, crisis preparedness is important to avoid short-termism in crisis-management. Accountability would be greatly improved by requiring that regulators establish and regularly test a well-publicized benchmark plan for crisis resolution. Second, regulators need to draw on market signals to overcome information problems and improve their ability to track risk in and out of crisis. Requiring the largest banks to issue at regular intervals a series of credit default swaps or uninsured subordinated debt would provide such signals, since the holders of these instruments would apply the market discipline that pillar three of Basel II seeks to harness.<sup>22</sup>

Third, the safety net needs to be strengthened by making authorities more accountable for its cost. This requires the development of a system of fair-value accounting for intangible safety-net subsidies, to establish political accountability for controlling them. Important institutions and their supervisors must be required to model, estimate, and expose to outside review, the value of this intangible source of income – both at individual institutions and in the aggregate. Finally, the decision-making horizons of government officials can be lengthened if employment contracts included a fund of deferred compensation that heads of supervisory authorities would have to forfeit if a

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<sup>22</sup> Subordinated debt has advantages in terms of improving market discipline since subordinated debt holders have incentives to negotiate covenants that would protect their interests. However, credit default swaps (CDS) have advantages in tracking risk since unlike subordinated debt (which are illiquid instruments) CDS are continuously traded, providing useful signals on a timely basis.

crisis occurred within a couple years after leaving their office. Calomiris and Kahn (1996) show that such a system worked well in the 19<sup>th</sup> century Suffolk banking system, where claims to deferred bonuses were paid only after losses were deducted.

While the discussion of how best to reform regulation and supervision of financial institutions is likely to continue, it is important to keep in mind that ultimately the goal of financial regulation and supervision is not to reduce financial institution risk-taking, but to manage the safety net so that private risk-taking is neither taxed nor subsidized. This goal implies that supervisors have a duty to see that risks can be fully understood and fairly priced by investors. No one should expect that, in a risky world, risk-neutral regulation and supervision can eliminate the risk of financial crises; what it can do is to reduce their frequency and cost.

## **V. Monetary policy, asset prices and macro-prudential regulation**

Most observers agree that lax monetary policy in the U.S. in the early 2000s helped fuel the housing bubble, at least in its initial stages. In light of the devastating effects of its bursting, one major policy question looking forward is the proper role of monetary policy. Should central banks respond systematically only to inflation in goods prices, as they do at present, or should they also respond systematically to inflation in assets prices? To put it more bluntly, should monetary authorities attempt to ‘prick bubbles’ through monetary tightening?

Attempts by the authorities to deflate an asset price bubble -- through monetary policy or other means -- in the absence of obvious symptoms of inflationary or financial distress face serious political economy obstacles. Lenders and borrowers riding the

bubble euphoria are likely to condemn such seemingly unwarranted course of action, and politicians may oppose it under the view that, rather than a bubble, rising asset prices actually reflect the beneficial effects of improved policies.<sup>23</sup>

Political economy concerns aside, the monetary policy response to bubbles has been debated mainly in industrial countries in the context of inflation targeting regimes, under which monetary authorities react solely to inflation forecasts and the output gap (the “Taylor rule”). But the relevance of the question is much broader. Among developing countries, it is of special significance for the growing number of emerging economies that in recent years have adopted inflation targets to guide monetary policy. More generally, it matters to all countries whose monetary authorities are entrusted with inflation control and macroeconomic stability.

The conventional view of inflation targeting assigns no role to asset prices in the conduct of monetary policy, except to the extent that changes in asset prices signal changes in expected inflation (Bernanke and Gertler 2000). In this view, the authorities should deal with asset price bubbles only as their consequences, if any, arise in terms of the inflation objective<sup>24</sup> – e.g., by supplying the needed liquidity in the event of a bubble burst. In other words, the authorities should not attempt to ‘prick’ bubbles.<sup>25</sup>

An alternative view advocates a more proactive response of monetary policy to asset prices. Of course, asset prices may rise or fall for many reasons, including changes in fundamentals – i.e., reassessments of the anticipated future productivity of the assets -- and hence the alternative view holds that monetary policy should react to deviations of asset prices from their underlying fundamentals, that is, to asset bubbles, rather than to

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<sup>23</sup> Goodhart (2008b).

<sup>24</sup> Greenspan (2004).

<sup>25</sup> This view is also stated by Mishkin (2008).

deviations from any particular target level.<sup>26</sup> Formally, while the monetary authorities' objective function should continue to be defined only in terms of goods inflation, their reaction function should include not only inflation forecasts and the output gap, but also measures of asset price misalignment – what has been labeled 'flexible inflation targeting' (Cecchetti, Genberg and Wadhvani 2003).

In theory, adding one more argument to the monetary policy reaction function should allow the authorities to do no worse, and possibly to do better, than in the standard framework. But in practice implementation of the approach poses significant difficulties.

First, not all asset price bubbles are alike. Some bubbles create risks to the financial system, while others do not.<sup>27</sup> The former kind of bubble typically involves a feedback loop between asset prices and credit conditions: a credit expansion raises asset prices, which in turn encourages further lending and hence further asset price rises, and so on. When the bubble bursts, asset prices collapse, and the loop goes in reverse, eroding the balance sheets of financial institutions, causing a credit crunch and a fall in economic activity. Other bubbles, however, do not have these features – e.g., the dot-com bubble of the late 1990s in the U.S. was not associated with a credit boom, and its crash did not weaken lenders' balance sheets.<sup>28</sup> Hence the pursuit of financial stability would pose a greater need for the monetary authority to react to some bubbles than to others.

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<sup>26</sup> However, Bordo and Jeanne (2002a,b) outline an insurance-based model in which optimal monetary policy should tighten in response to asset price booms, irrespective of whether they reflect the presence of bubbles, if they raise the risk of a credit crunch in the event of a bust. Importantly, the optimal policy rule that results from this framework cannot be characterized in simple terms akin to a Taylor rule.

<sup>27</sup> Indeed, bubbles can be welfare-enhancing, to the extent that they provide stores of value that would otherwise not be available to savers. The best example is that of fiat money in Samuelson's overlapping-generations model; see also Ventura (2004) for a recent open-economy example.

<sup>28</sup> However, collapse of the bubble may have prompted the authorities to allow larger fiscal deficits to counteract the potentially adverse wealth effect on aggregate demand; see Kraay and Ventura (2007) for a discussion of this point.

Second, asset price bubbles are not easy to spot in real time – at least at their early stages, when policy action might be most useful to stop them. Identifying a misalignment of asset prices requires a reliable assessment of their fundamentals. But available models of asset price fundamentals are inherently imperfect, and in addition some fundamentals – e.g., investors’ perceptions of risk and future asset productivity --- are not readily observable. A simpler alternative would be to use of rules of thumb, such as a threshold above which asset price increases would be deemed to involve bubbles. However, aside from their arbitrary nature,<sup>29</sup> simple rules of thumb would likely lead to frequent identification errors, especially in narrow and illiquid asset markets (such as those of most emerging countries) characterized by high asset price volatility. And reacting to a misidentified bubble may be very costly – e.g., tightening in response to an asset price rise that in reality is driven by improving fundamentals will both hamper growth and interfere with the role of asset prices in allocating resources. Of course, one possible solution to this problem is to react only to bubbles once they become self-evident, but by then it may be too late for monetary policy to mitigate their effects. Indeed, if the authorities tighten when the bubble is already nearing collapse on its own, the contractionary effects of the tightening could compound, rather than mitigate, those of the bubble collapse.

Third, what asset prices should the monetary authority watch? Not all asset prices are synchronized, and at any one time bubbles may be present in just a few of the many

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<sup>29</sup> How fast should asset prices rise to safely conclude that a bubble is at work? Too low a threshold would lead to the (incorrect) detection of too many bubbles. Even modest changes in key fundamentals – such as investors discount rates or their anticipations of the rate of growth of future dividends – can lead to large changes in the prices of long-lived assets over short periods. In turn, too high a threshold (say 20% or 40% per year) could fail to detect many bubbles altogether. For example, during the recent U.S. housing bubble real estate price increases remained consistently below 15% per annum, according to the Case-Shiller U.S. national home price index.

assets available in the economy. Some observers suggest that the price of housing may be the best candidate for close monitoring, given that housing values have major wealth effects on spending – and hence are more relevant than other asset prices for inflation and the output gap -- and that housing cycles of boom and bust are more frequent than equity market cycles.<sup>30</sup> Still, monetary policy may be too blunt an instrument, in the sense that a monetary tightening would affect all asset prices rather than just those being driven by a bubble. Other instruments, related to regulatory and prudential policies, are likely to be superior in this regard.

Fourth, the timing and magnitude of the effects of monetary policy on asset prices are uncertain. As a consequence, raising interest rates may be an ineffective and costly way of bursting a bubble. For example, the international evidence suggests that very large interest rate hikes may be necessary to bring housing prices down to any noticeable extent – so large in fact as to result in huge output losses (Assenmacher-Wesche and Gerlach 2008).

Overall, the tentative conclusion is that trying to use monetary policy to prick bubbles may do more harm than good. And gearing policy to prick hard-to-identify bubbles may detract from the transparency and predictability of monetary policy, especially in emerging markets that are still at the early stage of establishing the credibility of their inflation targeting regimes or, more generally, their commitment to price stability.

To approach the problem from a different angle, it is important to recall the basic fact that monetary authorities in most countries face two different objectives: price stability and financial stability. Attempting to achieve two objectives with one single

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<sup>30</sup> The role of housing prices is stressed by Bordo and Jeanne (2002) and Cecchetti et al (2003).

instrument – monetary policy – is not a promising strategy. A second instrument is needed for financial stability, and the best option is a prudential regime capable of dampening financial cycles of boom and bust, by preventing feedback loops between asset price bubbles and credit supply.

This is what has been termed “macro-prudential” regulation. Its thrust is to complement regulators’ traditional focus on the risk management of the *individual* financial institution with a focus on the risk management of the financial *system* as a whole. Macro-prudential regulation intends to deal with increases in systemic vulnerabilities due to (i) periodic business downturns that effect all financial institutions, and (ii) increases in the number of financial institutions that have become too large, too inter-linked and therefore too difficult to fail and unwind (TDFU). The first is an age-old problem, which is exacerbated by the amplitude of the business cycle as discussed above. The second has become increasingly more important as safety net subsidies provided to large, interconnected firms have increased over time, giving them more incentives to become even larger and more interlinked.

While monetary authorities possess a variety of tools to pick up the pieces after a financial crash, they lack the regulatory instruments to contain the lending boom that usually precedes it. However, provisions, leverage ratios, loan-to-value ratios, and additional capital buffers can all be designed to be countercyclical, i.e., to move inversely with the business cycle, in order to make financial intermediaries hold more liquid assets in good times, so that they can be run down in bad times (Goodhart, 2008a,b; Goodhart and Persaud, 2008). The idea is to switch the basis of capital adequacy requirements from levels of risk-weighted assets to their rates of growth, hence requiring additional

capital and liquidity when bank lending and asset prices are rising fast, and relaxing such requirements in the downturns. This can be seen as an alternative (or a complement) to monetary policies to prevent the growth of asset bubbles (and their busts). To date, however, this kind of instruments has seen little use, except for Spain's countercyclical 'dynamic provisioning', as well as the introduction of time-varying loan-to-value ratios in a few small economies.

Aside from practical questions – e.g., over what periods should applicable credit growth rates be calculated – these proposals also raise other potential difficulties that require deeper consideration.<sup>31</sup> As prudential requirements are tightened in the upswing, they will encourage disintermediation to less-regulated entities (or countries), and this may weaken the effectiveness of the regulations. In addition, the cost of intermediation will rise in the boom, possibly constraining growth and financial innovation. Lastly, macro-prudential regulation adds to the informational burden on the regulators and the complexity of their task. Moreover, as with monetary policy, significant political will is required to enable the authorities to tighten regulation in the upswing. Although reliance on well-defined rules (rather than reliance on discretionary regulatory changes) and independence from government may be helpful in this regard, it is still questionable whether without appropriate incentive reforms this will be possible.

Finally, to deal with too large or too interconnected firms, reform proposals intend to increase supervisory scrutiny (potentially through a college of supervisors) or additional capital charges imposed on these institutions. However, proper identification and increased regulation of these institutions require credible estimates of the safety-net

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<sup>31</sup> Goodhart (2008b).

subsidies that are provided to them. Estimating and publicizing safety-net subsidies as advocated by CDK discussed in the previous section would be one step in this direction.

## **VI. Capital Controls**

While the financial crisis originated in the North, emerging markets have quickly suffered, to varying degrees, sharp increases in their external borrowing premia and abrupt declines of capital inflows, in the face of a sudden reassessment of risks and an ensuing flight to safety by international investors. These financial shocks add to the real shock accruing through the global slowdown, and conform to the experience of previous crises whose propagation was facilitated by a variety of direct and indirect financial links across economies (“financial contagion”).<sup>32</sup>

Should developing countries introduce controls on capital outflows to mitigate the effects of the current turmoil – as some observers have proposed?<sup>33</sup> In spite of the global scope of the crisis, only a handful of countries have resorted to controls on outflows so far. Ukraine, Russia and Belarus have introduced some restrictions on outflows, while Ecuador has imposed a tax at the rate of 1 percent. In turn, Indonesia and China have tightened reporting requirements.<sup>34</sup>

Controls on capital outflows have a long tradition in economic policy making. Their introduction dates back to Germany in the 1930s, and was soon followed by other countries in Western Europe in an environment of capital flight and competitive

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<sup>32</sup> These links have been documented by extensive theoretical and empirical research. See for example Calvo (1999), Broner et al (2006), and Didier et al (2008).

<sup>33</sup> Calls for a reconsideration of controls on capital outflows in the context of the current crisis span a broad range of observers, from leading academics like Calvo (2008) and Subramaniam and Rodrik (2008) to the World Council of Churches (2008).

<sup>34</sup> Argentina has also recently sought to prevent sales of ADRs abroad by domestic residents.

depreciation. They became a permanent fixture of the economic setting, until their gradual dismantling that began in the 1960s.

More broadly, the term “capital controls” has come to encompass a wide diversity of mechanisms employed at one time or another by industrial and developing countries to restrict international capital movements. They range “from the explicit to the subtle, and from the market-friendly to the coercive”.<sup>35</sup> They include explicit taxes as well as implicit ones in the form of quantity restrictions and outright prohibition of specific financial or foreign exchange transactions. But ultimately all controls share a common rationale. In the textbook world of complete markets and rational investors, unrestricted capital mobility leads to an efficient allocation of resources through competition, risk diversification and equalization of risk-adjusted returns. In contrast, in the real world of incomplete markets, informational asymmetries, and less than fully-rational investors, the result may instead be moral hazard, excessive risk-taking, and disproportionate macroeconomic and financial instability.<sup>36</sup> In such context, capital controls offer a potential second-best tool.

From the point of view of crisis management, however, it is essential to distinguish between controls on capital outflows and controls on capital inflows. Controls on outflows represent primarily a crisis containment tool, while controls on inflows may serve a prudential purpose to prevent future crises. Hence this section focuses mostly on the former, but it also considers briefly controls on inflows. Throughout, the focus is on

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<sup>35</sup> Magud et al (2007).

<sup>36</sup> These market imperfections have been stressed by many distinguished observers, going as far back as Tobin (1978), and including Harberger (1982), Diaz-Alejandro (1985), Bhagwati (1998), Cooper (1998), and Stiglitz (2002).

developing economies that might consider (re-)introducing controls to weather the current crisis (or its future recurrence).<sup>37</sup>

### *Controls on Capital Outflows*

Temporary controls on outflows have been used frequently at times of turmoil. By raising the explicit or implicit cost of outflows, they seek to prevent an otherwise disorderly retreat of investors, thereby giving the authorities some time to set things straight.<sup>38</sup> Their immediate objectives are to protect the stock of reserves of the Central Bank, relieve pressure on the exchange rate, and provide some room for independent monetary policy – an impossible task when capital mobility is completely unrestricted and policy makers also try to pursue exchange rate targets. Capital outflow restrictions have often been applied selectively, aiming to deter short-term transactions deemed “speculative”.

Past episodes of outflow controls in crisis times include Spain, in the context of the 1992 ERM crisis; Venezuela, at the time of the banking crisis of 1994; Malaysia and Thailand, on occasion of the 1997-98 East Asia and Russia crises; and Argentina, at the time of collapse of the Convertibility Plan in 2001. In all four countries, the controls were imposed after international financial transactions had been extensively liberalized.<sup>39</sup> They were introduced with the exchange rate under pressure and rapidly declining foreign reserves.

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<sup>37</sup> A related, but different, question is how economies that, in relative terms, are still financially closed should approach international financial integration. This issue has been extensively debated; see for example the recent overviews by Henry (2007) and Prasad et al (2006). The two questions are distinct, however. Most importantly, the initial conditions are very different: introduction of capital controls in countries whose international financial integration is already advanced amounts to an attempt to “turn back the clock” on links, practices and contractual arrangements already established across national boundaries, and this poses a set of problems rather different from those of more financially-closed economies.

<sup>38</sup> In this sense, controls on outflows are similar in spirit to a bank holiday or a suspension of stock market trading.

<sup>39</sup> See Ariyoshi et al (1999) for details.

These controls took a wide variety of forms. They frequently exempted current account transactions and/or foreign direct investment flows. In Spain the controls involved an unremunerated deposit requirement on banks' long positions on nonresidents. In Malaysia and Thailand, where active offshore markets had developed, the measures sought to segment the onshore and offshore markets, by curtailing the buildup of domestic-currency positions in the latter. In the case of Malaysia, wide-ranging controls closed virtually all the legal channels through which domestic funds flowed to the offshore market, leading to its effective closure. The measures also included a temporary prohibition of repatriation of portfolio capital by nonresidents. In Venezuela, the controls involved an outright prohibition of outflows, with the exception of those for repayment of external debt. Finally, in Argentina the controls were similarly comprehensive – they prohibited all investors, domestic and foreign, from transferring funds abroad.

The effects of the controls in these and other episodes have been the focus of a multitude of studies; see for example the overviews by Ariyoshi et al (1999) and Magud et al (2007). The case of Malaysia is perhaps the one that has attracted the most attention. Observers agree that the controls succeeded in limiting outflows and segmenting markets, providing some breathing space for monetary and financial policy. The extent to which this alleviated exchange rate pressures remains disputed, however. Even less agreement exists regarding the effective contribution of the controls to easing the cost of the crisis, as some observers contend that the worst of the global turmoil was already over at the time the controls were instituted, and that Malaysia's subsequent recovery path was no better than that of countries that did not introduce controls, while others argue that the

controls did allow a speedier recovery than would have otherwise occurred given the higher vulnerability of the Malaysian economy compared with that of other East Asian countries.<sup>40</sup>

Analyses of other episodes of controls on outflows yield mixed conclusions.<sup>41</sup> In Spain and Thailand, the controls helped contain outflows and relieve pressure on the exchange rate only temporarily, and eventually both countries had to abandon their pegs – Spain through an ERM realignment, and Thailand by floating the exchange rate. In Venezuela, the controls did not fully succeed in containing outflows either, but there is evidence that they helped ease pressure on the exchange rate and gain some degree of monetary policy autonomy which, through lower interest rates, reduced the immediate fiscal cost of the country's banking crisis.

The differential between the prices of identical assets traded in onshore and offshore markets offers a concrete indication of the action of the controls. Among such assets are the ADRs issued abroad by an increasing number of large emerging market firms. The onshore-offshore price differentials on ADRs have been recently examined by Levy-Yeyati et al. (2008) for several episodes of inflow and outflow controls. The finding is that controls on outflows generate a positive differential between onshore and offshore prices, as investors buy equity at home and sell it abroad in order to transfer their wealth out of the country (inflow controls have the opposite effect).<sup>42</sup> This suggests that even if capital controls fail to bring outflows to a halt, they usually do succeed in

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<sup>40</sup> See Ariyoshi et al (1999), Dornbusch (2001), Kaplan and Rodrik (2001) and Magud et al (2007).

<sup>41</sup> Ariyoshi et al (1999) and Magud et al (2007) review other experiences of controls on outflows.

<sup>42</sup> Notice that these transactions do *not* entail a net capital outflow, as the gross outflow implied by the non-repatriation of the proceeds of the asset sale abroad is matched by the gross inflow implied by its purchase with foreign funds, without any net effect on the foreign reserve stock; see Levy-Yeyati et al (2004). However, this kind of international asset migration may have consequences for the tax collection capacity of the local authorities, as domestic residents effectively shift assets out of the domestic jurisdiction.

temporarily segmenting asset markets, by creating ‘no-arbitrage’ bands that effectively decouple rates of return at home from those prevailing abroad.

However, there is also evidence that this market segmentation is short-lived and vanishes with the passage of time (Kaminsky and Schmukler 2000). This finding accords with the fact that capital controls develop leakages over time as investors find arbitrage strategies and loopholes to circumvent the controls. As this process unfolds, the effects of capital controls gradually weaken. Evasion mechanisms for controls on outflows range from the traditional overinvoicing of imports and underinvoicing of exports, to misreporting of capital account transactions in order to make them fit under those categories of flows left unrestricted by the authorities.

More broadly, the enforcement of controls on capital outflows at times of crisis poses major challenges, because investors typically face huge anticipated return differentials between domestic and foreign assets, especially in the event of a large exchange rate depreciation. These anticipated differentials often dwarf the increase in the cost of taking capital out under the controls. Moreover, imposition of controls on outflows may be perceived by investors as a signal that worse times are to come, and thus may further encourage flight from domestic assets.

The implication is that controls require a substantial effort by the authorities at continuous monitoring and adaptation to counter the response of optimizing agents. Deeper international financial integration, as well as a higher degree of development of domestic financial markets, make the enforcement of controls harder, as they broaden the menu of evasion strategies available to sophisticated investors.<sup>43</sup> Because these strategies

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<sup>43</sup> This applies also to the case of inflow controls; see Carvalho and Garcia (2006) for a detailed account of evasion strategies employed by investors in Brazil.

typically involve costs (in addition to possible penalties), and some of them have to be borne up-front, evasion of controls is more easily available to large, wealthy and/or well-connected investors, and is often beyond the reach of small investors. In fact, evidence from several crisis episodes in Latin America shows that large investors typically liquidate domestic assets ahead of the full-blown crisis and the imposition of controls, so that the burden of controls falls mainly on small investors – while flight from domestic assets by large investors helps trigger the eventual crash.<sup>44</sup>

The international experience also shows that controls on outflows need to be comprehensive in order to be effective, because otherwise they open the door to evasion through those outflows left unrestricted. However, comprehensive controls risk discouraging legitimate transactions, such as those related to foreign direct investment and trade-related exchange rate hedging strategies, as was seen in the episodes of Malaysia and Spain, respectively.

Controls on outflows also entail costs in terms of investors' confidence. Because they are usually imposed ex-post, as an emergency measure, they typically lead to violation of explicit or implicit contracts. As a result, they may raise the perceived riskiness of inward investment and reduce access to foreign capital, and this adverse effect may last well after the removal of the controls on outflows, as investors considering future capital inflows factor into their risk-return assessment an increased perception of the likelihood that they may be unable to take their capital out when needed, at least without cost. While this credibility effect is hard to quantify, there are strong indications that it was at work in the Malaysia episode, in which the evidence

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<sup>44</sup> This is one of the mechanisms identified by Halac and Schmukler (2004) through which the cost of financial crises is disproportionately borne by small investors.

suggests that the controls on outflows also had a lasting deterrent effect on capital inflows, including long-term ones (Goh 2005).

Finally, capital controls tend to create room for cronyism and rent-seeking around exceptions and loopholes. By sheltering domestic firms from the forces of competition governing the allocation of capital, they also open the door to political favoritism benefiting ‘connected’ firms and investors. In the Malaysia episode, for example, there is evidence that politically connected firms did much better under the controls than unconnected firms.<sup>45</sup>

In summary, while there may be a case for introducing controls on outflows as an emergency crisis-containment measure, to deter a run on domestic assets at times of crisis and provide breathing space for setting things straight, overall the evidence on their effectiveness is far from conclusive. If the authorities have strong enforcement capabilities, the controls may provide a temporary respite, of uncertain duration, to introduce corrective measures to strengthen the financial system and/or the external accounts. The risk is that the controls may become a substitute for the actual measures, with the eventual result of an even bigger crash, and perhaps a lasting retreat of inward investment, as the anticipated cost of shifting assets abroad in the future is revised upward.

#### *Controls on Capital Inflows*

Aside from controls on outflows, the current financial crisis may also prompt a reassessment of the usefulness of controls on capital inflows to prevent or mitigate future episodes of financial turbulence. Controls on inflows can be viewed as a prudential

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<sup>45</sup> Johnson and Mitton (2004).

measure, introduced ex-ante –hence it does not pose the same credibility problems that ex-post outflow controls create.

In recent years, an increasing number of observers have voiced support for market-based controls on inflows. In symmetry with controls on outflows, controls on inflows aim to limit exchange rate appreciation at times of large inflows, which could hamper the competitiveness of domestic producers in world markets; limit the overall volume of flows to avoid asset price bubbles and excessive risk-taking by domestic financial intermediaries; and protect monetary policy autonomy – usually in a framework of monetary tightening. In addition, however, their use has specifically sought to alter the composition of flows, especially discouraging short-term inflows (“hot money”) susceptible of rapid reversal.

Since the early 1990s, recourse to controls on capital inflows has become frequent, as a number of emerging countries have tried to navigate global inflow booms. A partial list includes Indonesia (where controls were introduced in 1991), Malaysia (1994), Thailand (1995, and again in 2006), Brazil (1994), Chile (1991), Colombia (1993, and again since 2004), Mexico (1990) and the Czech Republic (1992).

Like in the case of outflows, controls on inflows included a variety of instruments – from explicit taxes on foreign borrowing by local firms and fixed-income investments by foreigners (Brazil) to unremunerated reserve and minimum-stay requirements for direct foreign borrowing by domestic firms (Chile and Colombia, as well as Thailand over 2006-2008), and limits on banks’ foreign borrowing (Indonesia, Malaysia, Thailand, Czech Republic and Mexico). Several of these countries matched the introduction of

controls on inflows with a removal of barriers to outflows and with various reforms in the prudential framework of the domestic financial system.

The case of Chile in the 1990s has been closely scrutinized by a host of empirical studies. The controls were based on a mandatory unremunerated one-year deposit (or *encaje*) at the Central Bank equal to a given fraction (initially set at 20 percent) of eligible inflows. The two distinguishing features of the scheme were (i) its implicit cost was higher for short-term inflows than for long-term ones, and (ii) the cost was determined by the prevailing level of world interest rates. Initially the regime was applied only to foreign loans (except trade credit). As investors succeeded in finding a variety of loopholes, it was gradually extended to encompass non-debt creating flows as well – even including foreign direct investments deemed “speculative”. The scheme was eventually eliminated as inflows evaporated at the time of the 1998 Russian crisis.<sup>46</sup>

In spite of the often-heard view (especially outside Chile) that the inflow controls were highly successful, their effectiveness seems to have been limited. On the whole, the large literature concerned with the Chilean experience suggests that (i) the controls were successful at giving the Central Bank some degree of monetary autonomy, allowing it to keep domestic interest rates above international levels – although by most estimates this effect was quantitatively small and temporary; (ii) there is some weak evidence that the composition of inflows was altered in favor of longer-term flows; (iii) no clear result emerges regarding the impact on total capital inflows; (iv) there was no discernible effect on exchange rates.

Evidence from other episodes of controls on inflows is mixed. Colombia’s unremunerated reserve requirement, which was in effect over 1993-2000, and then again

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<sup>46</sup> Nadal and Sorsa (1999) provide a detailed description of Chile’s controls on inflows.

in 2007, was designed along the same lines as Chile's. Moreover, during 2004-2006, and then again in 2007, additional restrictions were imposed on short-term portfolio investment (initially including its outright prohibition).<sup>47</sup> Overall, there is little evidence that these measures made any difference for the volume of inflows, the share of short-term flows in the total, or the level of the exchange rate – although there is some indication of a very modest reduction in the short-term volatility of the latter (but not that of other asset prices). In contrast, there is some indication that short-term inflows were reduced in the control episodes of Malaysia and Thailand in the 1990s. In Brazil the controls were seemingly ineffective in all dimensions. Thailand's recent imposition of unremunerated reserve requirements in 2006 was followed by shift of portfolio inflows away from debt instruments and toward equity, and a substantial differential between offshore and onshore interest rates.<sup>48</sup>

Like with controls on outflows, these episodes also show that enforcement of controls on capital inflows posed major demands on the authorities, as investors found creative strategies to get around the restrictions. The most common mechanism was the misstatement of the purpose of the inflow. A variety of specific methods to achieve this have been documented for the cases of Brazil (Carvalho and García 2006) and Chile (Nadal and Sorsa 1999) in the 1990s. Like with controls on outflows, the result was a weakening of the controls over time – especially rapid in the case of Brazil – in spite of the authorities' constant efforts to close loopholes and deter unwanted flows.

In addition to their significant enforcement costs, controls on capital inflows also entail other costs. Persistent barriers to capital inflows may deter the development of

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<sup>47</sup> Concha et al (2008) provide a detailed analysis of Colombia's experience with controls on capital inflows.

<sup>48</sup> McCauley (2008) documents Thailand's recent experience, as well as those of other Asian countries.

local financial markets, which in turn may hamper efficiency and growth.<sup>49</sup> And controls on capital inflows also entail an associated increase in domestic financing costs, as the controls permit local interest rates to remain above international levels. Microeconomic studies have found large adverse effects of Chile's higher domestic interest rates on firms' availability and cost of financing.<sup>50</sup> Moreover, because larger firms could better afford the cost of evasion strategies, or had direct access to foreign financing, the cost of the controls – in the form of a higher cost of borrowing -- was disproportionately borne by small and medium-sized firms.

Finally, what about the ability of controls on capital inflows to prevent volatility and crises? Overall, there is not much evidence that they have helped in this regard. Many observers have noted that the *encaje* did not prevent Chile from suffering a major sudden stop in 1998, like most other emerging markets. In effect, the *encaje* may have helped Chile mitigate the 'normal' ups and downs of capital inflows in the 1990s, but not a major global disruption like the Russia crisis (Edwards 1999). In retrospect, perhaps this should not be surprising. At times of acute financial turmoil, the run for the exit is not limited to the unwinding of short-term domestic asset positions – the kind that the *encaje* and similar mechanisms try to deter -- but includes also that of longer-term ones, and involves domestic and international investors alike. The only deterrent is the possibility that the entry cost would have to be incurred in the future, should investors decide to rebuild their positions again. But in past crisis episodes most countries have in fact dismantled their inflow controls, so not even this deterrent remains. This puts into

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<sup>49</sup> See for example Bekaert, Harvey and Lundblad (2003).

<sup>50</sup> Forbes (2007).

perspective the capacity of inflow controls to deliver stability in times of extreme financial turmoil such as the present ones.

## **VII. Conclusions**

The intensity and the breadth of the on-going financial crisis have surprised nearly everyone. Perhaps more importantly, the policy responses to the crisis have led to considerable confusion and shaken the confidence of the development community in the wisdom of financial and macroeconomic policies that underpin western capitalist systems.

This paper draws on a large body of analytical research, econometric evidence and country experience to argue that the “sacred cows” of financial and macro policies are still very much alive. For the most part, the confusion arises from not being able to recognize incentive conflicts and trade-offs inherent in short-term and long-term responses to a systemic crisis. Policies employed to contain a crisis - often in a haste to reestablish confidence and with disregard of long-term costs- should not be interpreted as permanent deviations from well-established policy positions. The fact that governments may end up providing blanket guarantees or owning large stakes in the financial sector in an effort to contain and deal with the crisis does not negate the fact that generous guarantees over the long term are likely to backfire or that government officials make poor bankers.

Financial crises often do expose weaknesses in the underlying incentive frameworks and the regulation and supervision systems that are supposed to reinforce them. But finance is risky business and it is naïve to think that regulation and supervision

can – or should- completely eliminate the risk of crises, although they can make crises less frequent and less costly. Neither monetary policy nor capital controls can substitute for well designed prudential regulation.

Despite their inherent fragility, financial systems underpin economic development. The challenge of financial sector policies is to align private incentives with public interest without taxing or subsidizing private risk-taking. Public ownership or too aggressive regulation would simply hamper financial development and growth. But striking this balance is becoming increasingly complex in an ever more integrated and globalized financial system.

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