

## *Chapter II*

### **Financial regulation: fighting today's crisis today**

#### **A. It was not supposed to end like this**

For the past two decades, financial innovation was promoted and protected with scant regard for the downside risks. The most serious financial crisis since the Great Depression, the *de facto* nationalization of a large fraction of the United States financial system, and the deepest global recession since World War II are now casting doubts on the assumptions that led former Chairman of the Fed, Alan Greenspan, to state: "Although the benefits and costs of derivatives remain the subject of spirited debate, the performance of the economy and the financial system in recent years suggests that those benefits have materially exceeded the costs".<sup>2</sup>

There are certainly some elements in which the current crisis differs from previous ones. These new elements were exactly those supposed to increase the resilience of the financial system. They include the "originate and distribute" bank business model, financial derivatives like credit default swaps, and the creation of a "shadow banking system". There are, however, many elements that are not new. As in previous crises, the roots of the current turmoil lie in a self-reinforcing mechanism in which high growth and low volatility lead to a decrease in risk aversion. This, in turn, leads to higher liquidity and asset prices, which eventually feedback into higher profits and growth and even higher risk-taking. The final outcome of this process is the build-up of risk and large imbalances that, at some point, must unwind. The proximate cause for the crisis may then appear to be some idiosyncratic shock (in the current case, defaults on subprime mortgage loans), but in many markets, the true harbinger of the crisis was the unchecked build-up of risk during the boom.

Arguing that the current crisis has many common elements with previous ones has important implications for financial regulation today. Because of their faith in the self-discipline of the marketplace, policymakers made avoidable mistakes. For example, they disregarded the basic fact that market-based risk indicators (such as high-yield spreads or implicit volatility measures) tend to be low at the peak of the credit cycle, exactly when risk is high (Borio, 2008).

The financial sector acts as the central nervous system of modern market economies. It distributes liquidity and mobilizes the capital necessary to finance large investment projects; it allocates funds to the most dynamic sectors of the economy; it provides households with the necessary funds to smooth consumption over time; and, through its payment system, it allows managing the complex web of economic relationships that are necessary for economies characterized by a high degree of division and specialization of labour.

Finance is intrinsic to successful economic development, but like most powerful tools, it can also cause great damage. The presence of informational asymmetries and maturity mismatches that ensue from high-powered leverage make financial systems inherently unstable and prone to boom and bust cycles. As a consequence, almost every country has hundreds of pages of legislation aimed at regulating the domestic financial sector.

There are, however, several misconceptions regarding modern financial regulation. The most fundamental of these is the assumption that "markets know best" and that regulators should take a back seat and not try to second guess them. As is argued here, Governments and regulators can and

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<sup>2</sup> Remarks by Chairman Alan Greenspan at the 2003 Conference on Bank Structure and Competition, Chicago, Illinois, 8 May 2003 (<http://www.federalreserve.gov/boarddocs/speeches/2003/20030508/default.htm>).

should play an active role in monitoring and controlling markets. They are able to do so because they are privy to the same information available to market participants, but only they are in a position to detect and avoid systemic risk by understanding better than market participants the limits to and the dangers of “irrational exuberance”.

### ***1. Financial efficiency and gambling***

Financial markets can provide many different products, and they can do a decent job at evaluating all available information. However, if they do not contribute to long-run economic growth, they do not provide any social return. From a regulator’s point of view, social (or functional) efficiency should be the only relevant definition of financial efficiency. Inefficiencies in information arbitrage or fundamental valuation, such as those, which contributed to the current crisis, are of concern to regulators to the extent that they create social inefficiency. In discussing the status of the United States financial system in the early 1980s, Tobin (1984) concluded that markets were becoming more efficient in processing a large number of transactions at low cost but less efficient in terms of their contribution to growth. In his view, the United States financial market was becoming more and more similar to a casino, where gambling dominated activities with true social returns. Tobin’s early assessment is corroborated by the fact that the US financial system has had to be bailed out three times in three decades and has now managed to completely recapitalize itself.

A standard assumption underlying most regulatory systems is that all financial products can potentially increase social welfare and that the only problem to be dealt with is that some products may increase risk and reduce transparency. If these issues could be addressed, the argument goes, more financial innovation would always be beneficial from society’s point of view. This argument is wrong. Some financial instruments can generate high private returns but have no social utility whatsoever. They are purely gambling instruments that increase risk without providing any real benefit to society. They can be efficient in the narrow sense of transactional efficiency but they are not functionally efficient.

Policymakers should not prevent and stunt financial innovation as a rule. However, they should be aware that some types of financial instruments are created with the sole objective of eluding regulation, increasing leverage and maximizing investor’s profits and bankers’ bonuses. Financial regulation should aim at limiting the proliferation of such dubious instruments. A step in this direction could be achieved with the creation of a Financial Products Safety Commission aimed at evaluating whether new financial products can be traded or held by regulated financial institutions (Stiglitz, 2009). Such an agency may also provide incentives to create standardized financial products, which are more easily understood by market participants, thus increasing the overall transparency of the financial market.

In some cases it will be easy to identify products, which provide no real service besides the ability to gamble and increase leverage. For instance, credit default swaps (CDS) are supposed to provide hedging services. But when the issuance of CDS reaches ten times the risk to be hedged (see following section), it becomes clear that 90 per cent of these CDS do not provide any hedging service. Clearly, regulatory limits are needed for the issuance of CDS to reflect the amount of underlying risk. Such regulation would not be too different from laws that do not allow home-owners to over insure their houses or that prevent individuals from buying insurance contracts that make payments when an unrelated person dies.

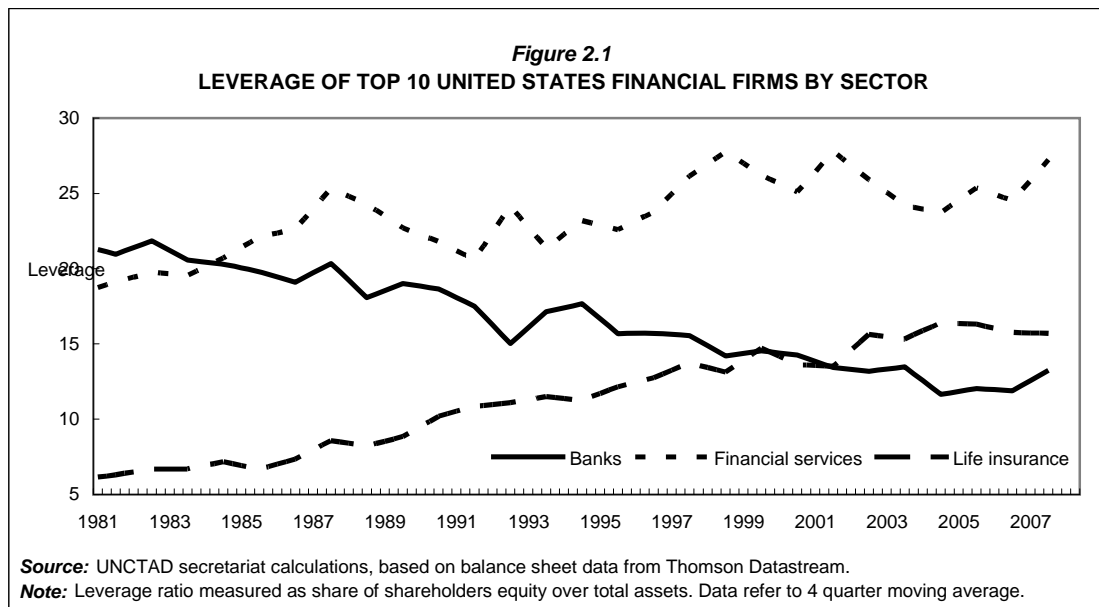
Likewise, there are instances where weeding out these (socially) inefficient forms of finance will be more difficult. For instruments that provide both real and gambling services, regulators will need to evaluate the costs and benefits of each product and only allow instruments for which the benefits outweigh the costs. Others may have high potential social returns yet increase risk and opaqueness. Therefore, they should be properly regulated and monitored. Choices will not be easy. They will require value judgments and the risk to overshoot with regulatory measures. However, this is the case for any policy decision. The decision of not taking any action is a regulatory action in itself

and uncertainty cannot be used as an excuse for avoiding regulation. The current crisis shows that erring on the other side may be the most costly outcome.

## 2. Avoiding regulatory arbitrage and the role of securitization

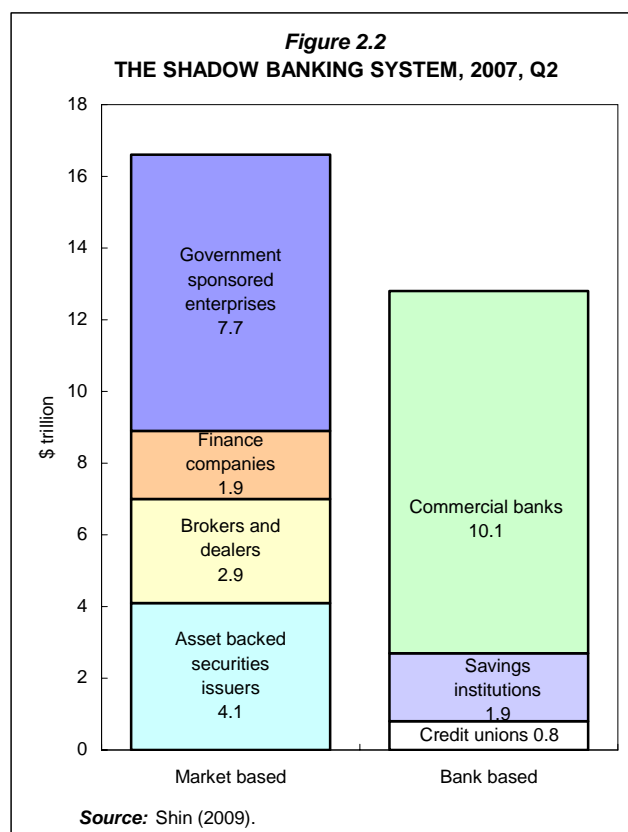
Poorly designed regulation can backfire and lead to regulatory arbitrage. This is what happened with banking regulation. Usually, banks take more risk by increasing leverage and modern prudential regulation revolves around the Basel Accords, which require banks with an international presence to hold a first-tier capital equal to 8 per cent of risk-weighted assets. Regulation has been effective in increasing the *measured* capital ratio of commercial banks. Over the last twenty-five years, the ten largest United States banks substantially decreased their leverage (figure 2.1), going from a non-risk adjusted first-tier capital ratio of approximately 4.5 per cent (which corresponds to a leverage of 22) to a non-risk adjusted first-tier capital ratio of approximately 8 per cent (which corresponds to a leverage of 12.5).<sup>3</sup>

Since capital is costly, bank managers try to circumvent regulation by either hiding risk<sup>4</sup> or by moving some leverage outside the bank. In fact, the decrease in the leverage ratio of commercial banks was accompanied by an increase in the leverage ratios of non-bank financial institutions (the dotted and dashed lines in figure 2.1). This shift of leverage created a “Shadow Banking System” consisting of over-the-counter derivatives, off-balance sheet entities, and other non-bank financial institutions such as insurance companies, hedge funds, and private equity funds. Thanks to credit derivatives, these new players can replicate the maturity transformation role of banks, while escaping normal bank regulation. At its peak, the shadow banking system in the United States held assets of more than \$16 trillion, about \$4 trillion more than regulated deposit-taking banks (figure 2.2).



<sup>3</sup> The capital ratio plotted in figure 2.1 is not risk adjusted. United States banks try to maintain risk-adjusted capital ratios of approximately 10 per cent, as this is considered a safe level of capital by United States regulators.

<sup>4</sup> It has been argued that AAA rated tranches of collateralized debt obligations (CDO) were in high demand because, by providing high return while demanding low capital charges, they exploited a regulatory loophole built into the Basel Accords (Kashyap, Rajan and Stein, 2008).



Regulators did not seem to be too worried by this shift in leverage because they assumed that, unlike deposit taking banks, the collapse of large non-bank institutions would not have systemic implications.<sup>5</sup> The working hypothesis was that securitization had contributed to both diversifying and allocating risk to sophisticated economic agents who could bear such risk. As a consequence, the system could now take a higher level of total risk. The experience with Structured Investment Vehicles (SIVs) shows the flaws with this line of reasoning (UNCTAD, 2007a). While regulation focused on banks, it was the collapse of the shadow banking system which kick-started the current crisis.

In order to avoid regulatory arbitrage, banks and the capital markets need to be regulated jointly and financial institutions should be supervised on a fully consolidated basis (Issing et al., 2008). The build up of hidden systemic risk can be limited by designing an objective-based regulatory system (Lukken, 2008). All markets and providers of financial products should be overseen on the basis of the risk they produce. If an investment bank issues insurance contracts like CDS, this activity should be subject to the same regulation that applies to insurance companies. If an insurance company is involved into maturity transformation, it should be regulated like a bank (Congressional Oversight Panel, 2009).

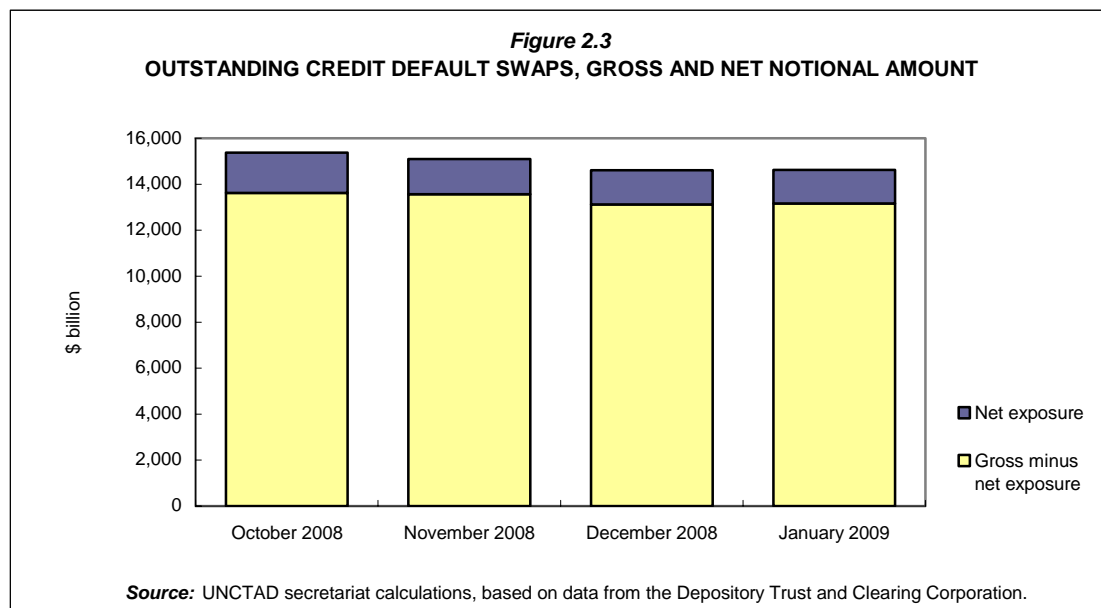
In 2006, the IMF (2006: 51) found that “there is growing recognition that the dispersion of credit risk by banks to a broader and more diverse group of investors ... has helped make the banking and overall financial system more resilient ... commercial banks may be less vulnerable today to credit or economic shocks”. It clearly did not work that way. UNCTAD (2007a) discusses several reasons why securitization did not deliver. The key point is that securitization offered the law of large numbers as a compensation mechanism for the loss of soft information built into traditional lending.

<sup>5</sup> In fact, in 2000, the United States Congress ruled out the possibility of regulating Credit Default Swaps (CDSs) and in 2004, the United States Securities and Exchange Commission allowed large investment banks to increase their leverage (Congleton, 2009).

However, the statistical models used by the financial industry failed miserably. Some of the assumptions at the basis of these models were plainly wrong (some models assumed that real estate prices could only increase; Coval et al., 2008). Others were more subtly incorrect, but even more dangerous.

Among the latter was the assumption that the risk associated with each debt contract packaged in a collateralized Debt Obligation (CDO) is *uncorrelated* with the risks of the other debt contracts included in the same CDO. At first glance, that of uncorrelated (or idiosyncratic) risk appears to be a reasonable assumption, and it is probably so in normal times. However, in bad times things work differently because asset prices tend to collapse at the same time. In the presence of correlated risk, small mistakes in measuring the joint distribution of asset returns may lead to large errors in evaluating the risk of a CDO. These problems are compounded by the fact that all models used in the financial industry use historical data to assess risk. But, by definition, historical data do not contain information on the behaviour of new financial instruments.

Another problem with standard models of risk is that they do not control for *network and counterparty risk*. Several financial institutions are both buyers and sellers of risk and gross exposure to risk is often much higher than the real underlying risk. Brunnermeier (2008) shows that even in a situation in which all parties are fully hedged, the presence of counterparty risk amplifies uncertainty. This is not just a hypothetical example. UNCTAD secretariat estimates confirm that the gross exposure from CDS in the United States market is about 10 times the net exposure (figure 2.3), demonstrating that counterparty risk played a key role in the panic that followed Lehman Brothers’ bankruptcy in September 2008. This is another example of instruments, which were supposed to diffuse risk but have increased systemic fragility (Brunnermeier, 2009).



Creating a clearinghouse that would net out the various positions could increase transparency (Segoviano and Singh, 2008). Even better, prohibiting excessive use of CDS by preventing the gross national value of CDS contracts to exceed their net notional value would allow hedging but limit gambling (Soros, 2009).<sup>6</sup>

<sup>6</sup> For a defence of CDS, see Wallison (2009).

### **3. Micro and macro prudential bank regulation**

The current regulatory framework assumes that policies aimed at guaranteeing the soundness of individual banks can also guarantee the soundness of the whole banking system (Nugée and Persaud, 2006). It is micro-prudential but not macro-prudential. This is problematic because there are instances in which what is prudent for an individual institution has negative systemic implications. Consider the case of a bank that suffers large losses on some of its loans. The prudent choice for this bank is to reduce its lending activities and cut its assets to a level which is in line with its smaller capital base. If the bank in question is small, the system will have no problem in absorbing this reduction in lending. If, however, the bank in question is large, or the losses affect several banks at the same time, the individual bank's attempt to rebuild its capital base will drain liquidity from the system. Less lending by some banks will translate into less funding to other banks, which, if other sources of liquidity are not found, might be forced to cut lending and thus amplify the deleveraging process and affect investment in fixed capital. This seems to be the rut in which large parts of the global credit system remain stuck through the early part of 2009.

Another channel through which the current micro-regulatory system may have negative systemic implications relates to "mark-to-market" accounting, according to which banks need to value some assets by using their current market price. A large bank realizing losses needs to reduce its risk exposure. Presumably, this bank will sell some of its assets and thus depress their price. This will lead to "mark-to-market" losses for banks that hold the same type of assets. If these losses are large enough to make capital requirements binding, the affected banks will also need to reduce their exposure. If they start selling assets, they will amplify the deleveraging process and the debt deflation. As the opposite happens in boom periods, this mechanism leads to leverage cycles.

In light of this, some of the assumptions at the basis of the Basel Accords do not make much sense. Risk weighted capital ratios impose high capital charges on high-risk assets and low capital charges on low-risk assets. This can increase systemic risk and amplify the leverage cycle because during good times certain assets are considered to be less risky than they actually are, and during bad times the same assets might be viewed as riskier than they actually are. Required capital ratios will end up being too low in good times and too high in bad times.

Moreover, relatively safe assets can have very high systemic risk. In a continuum of debt securities, going from super-safe assets (e.g., AAA German bunds) to high-risk junk bonds, the assets that are more likely to be downgraded if a systemic crisis come about, are not the super safe (because of flight to quality), nor the high risk (because they cannot be downgraded by much). The assets that are most likely to be downgraded are those on the safe side of the spectrum, but not super-safe (e.g. AAA-rated tranches of CDOs). But these are the assets that were required by low regulatory capital during the boom period and, because of the downgrade, need a higher regulatory capital in the crisis period (Brunnermeier et al., 2009).

Consequently, micro-prudential regulation has to be complemented by *macro-prudential* regulation, which, rather than protecting depositors, has the objective of guaranteeing the stability of the system and avoid large output losses. Regulators should internalize regulatory arbitrage and be aware that both banks and non-bank financial institutions can be a source of systemic risk. The key consideration for macro-prudential regulation is each institution's contribution to systemic risk. Other things equal, larger institutions should be subject to a heavier regulatory burden than smaller institutions. However, size is not a sufficient indicator because small institutions, which are subject to correlated risk, may have the same systemic importance as a large institution. Regulators should also be concerned about leverage, maturity transformation, provision of essential services (such as payment or market-making) and interconnectedness.<sup>7</sup> The time dimension of risk can be assessed by

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<sup>7</sup> New research aimed at developing CoVaR models (i.e., models that measure the value at risk of financial institutions conditional on other financial institutions being under distress, Adrian and Brunnermeier, 2008) can

building early warning systems and by the recognition that booms (and the subsequent crashes) are fuelled by imprudent lending and high leverage, both built on the misperception that risk has permanently lowered.

#### **4. The need for international coordination**

Regulatory arbitrage does encompass institutions within a jurisdiction, but it also extends across jurisdictions. It is therefore necessary to add an international dimension to financial regulation. At the least, regulators based in different countries should communicate and share information. At this stage, it is impossible to implement a global early warning system because there are no data on cross-border exposure among banks and on derivative products (Issing and Krahn, 2009). Regulators should work together towards developing joint systems for the evaluation of cross-border systemic risk and should share information on liquidity and currency mismatches in the various national markets. Regulators should also coordinate the oversight of large international banking organizations and add clarity to the responsibilities of home and host countries, especially for crisis management (Group of 30, 2009; Issing et al., 2008).

But international cooperation needs to go further. It needs to focus on regulatory standards and avoid races to the bottom in financial regulation. Without international coordination, the impression may arise that a country can become an international financial centre if only its financial markets are deregulated. In some countries there has also been reluctance to share data on cross-border exposure in the belief that an increase in transparency may have a negative effect on the competitiveness of the domestic financial sector (Issing and Krahn, 2009). This position is wrong. Investors want transparency and proper regulation; a race to the bottom may end up being a negative sum game and reduce the efficiency and size of the world's financial system (Stiglitz, 2009). Cooperation among regulators should converge towards a homogenous application and enforcement of regulatory standards (Group of 30, 2009) and should focus on closing regulatory gaps, especially in offshore centres.

However, there is no one size that fits all. Regulatory systems, just like policies, have to be adapted to the different institutional conditions prevailing in different countries. Allowing countries to pursue alternative regulatory approaches can also provide regulators with a better understanding of the trade-offs implied by different regulatory models (Pistor, 2009). A better appreciation for these different needs and approaches could be achieved by increasing the participation of developing countries in the various standard setting bodies and international agencies in charge of guaranteeing international financial stability.

#### **5. Financial regulation and incentives**

In many countries financial deregulation rested on the idea that bank managers would not do anything that would prejudice the long-term value of their firms (e.g., Greenspan, 2008). It is now clear that this idea is fundamentally flawed. Economists and policymakers have always been aware that managers' incentives are not aligned with those of shareholders, but they operated under the assumption that, because of their reputation capital, long-lived institutions can be trusted to monitor themselves. However, large corporations are composed of individuals who always respond to their own private incentives, and those who are in charge of risk control are often subject to the same type of incentives that dictate the behaviour of investment officers (Acemoglu, 2009).

In fact, even self-interested individuals who spot potential profit opportunities driven by an episode of collective market irrationality may find it difficult to swim against the tide. If an episode of "irrational exuberance" lasts too long, any investment manager who goes against the trend will

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help regulators in measuring risk spillovers and thus assessing the systemic importance of individual institutions.

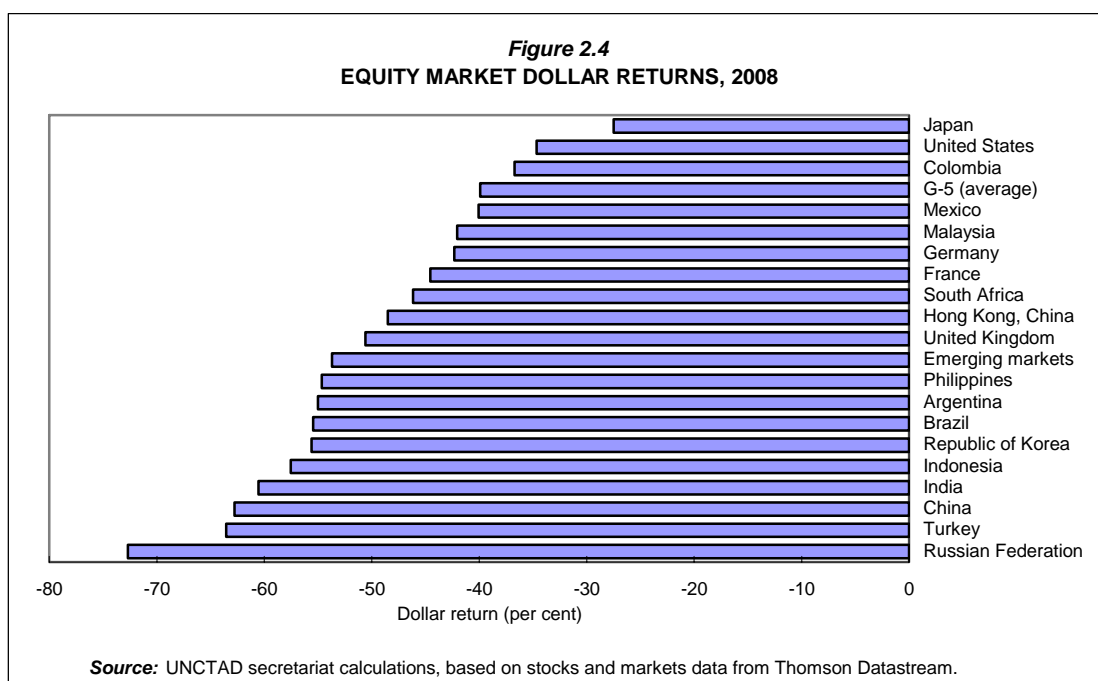
underperform and be likely to lose his clients and job. Lamont and Thaler (2003) have shown that the presence of long-lasting deviations from fundamental asset values is made possible by the fact that very few investors try to fight the trend. It is not surprising that one of the mottos of the financial industry is: “the trend is your friend”.

The list of distorted incentives at the basis of the current crisis is long, but executive remuneration in the financial industry and the regulatory role of credit rating agencies are paramount. With respect to executive pay, regulatory reform should aim at promoting remuneration structures that reduce incentives for excessive risk-taking. Greater transparency and the design of remuneration structures that do not focus on yearly returns may be a positive step in this direction. Problems related to credit rating inflation could instead be addressed by subjecting rating agencies to regulatory oversight (UNCTAD, 2007a; Congressional Oversight Panel, 2009) and by regularly publishing rating performance (Issing et al., 2008).

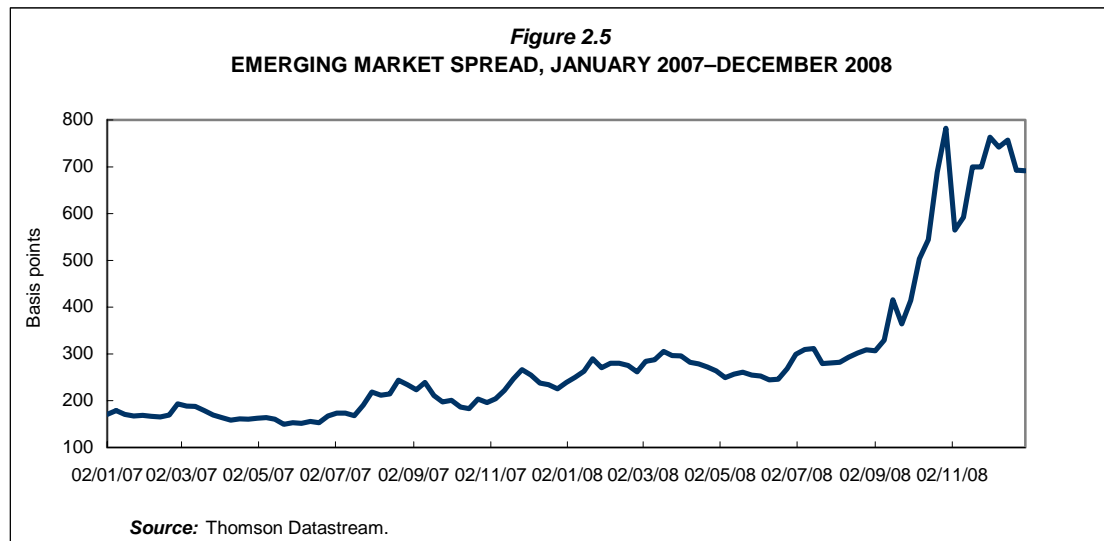
### **B. Lessons for developing countries**

Developing countries are paying a steep economic price for a crisis that originated at the centre of the world’s financial system. They need to consider how they can protect themselves from external financial shocks. Moreover, most developing countries are rightly trying to build deeper and more (functionally) efficient financial systems, and this crisis should be seized as an opportunity to expose the hidden risks of financial development and how more sophisticated financial systems require more, and not less, regulation.

During 2008, the United States stock market lost about 35 per cent of its value. Compared with other industrial countries and with the largest emerging markets, it did relatively well. All large emerging markets had dollar returns which were well below those of the United States (figure 2.4). Sovereign spreads tripled in the second half of 2008 (figure 2.5) and private capital flows to emerging economies collapsed by 80 per cent with respect to 2007. At the same time, interest rates on United States Treasuries are at historically low levels. There seems to be a flight to quality in the country at the centre of the crisis. So much for decoupling! Contagion is not purely financial. The most recent estimates show a sudden drop of GDP growth in both transition and developing economies.







### ***1. Financial development requires more and better regulation***

Developing countries tend to have financial systems that are less functionally efficient than those of the advanced economies. Given the importance of finance for investment in fixed capital and growth, several developing countries adopted ambitious structural reform programs aimed at modernizing and improving their own financial systems. However, there are serious doubts as to whether these pro-market policies were successful in their aim of increasing the social efficiency of their financial sectors (UNCTAD, *TDR 2008*, chapter IV).

Developing countries are often characterized by a non-competitive financial system in which banks make good profits by paying low interest on deposits and charging high interest rates on loans, which they only extend to super-safe borrowers. Shareholders and bank managers are content with rents arising from limited competition, but the financial system is hardly conducive to investment in fixed capital and to economic development. Credit will be limited and unlikely to flow to potentially high-return investment projects in the productive sector. If the country decides to reform its financial system and if policymakers are well aware that the reform process should target functional efficiency, the task is not an easy one. Even if policymakers know that financial instruments that may have high social returns in a more developed country may not be appropriate for their less developed economy and try to target the reform process to the real needs of their country, financial regulators will soon start facing new problems. By reducing bank margins, the reform process leads to a whole new set of incentive problems.

The old system was inefficient but relatively easy to control. A more competitive environment alters the incentive structure of bank managers in two ways (Rajan, 2005). First, as their compensation now depends on returns to investment, bank managers will face more upside risk-taking. This is problematic if bank officers are used to operating under the “3-6-3 risk management rule” (borrow at 3 per cent, lend at 6 per cent, and be on the golf course by 3 PM) and end up assuming risk that they do not understand. Along similar lines, regulators used to an inefficient but stable banking system may not understand the new risks and vulnerabilities. Second, since bank managers know that they are evaluated against their peers, they have incentives to herd and take hidden tail risk. Detecting this behaviour, which has the potential for generating large systemic shocks, requires sophisticated regulators.

On the investment bank side, the loss of stable income from brokerage activities may provide incentives for increasing leverage and entering into activities that involve maturity transformation; in other words, for the creation of a shadow banking system. But, again, regulators may not be ready for

this new structure of the financial system and still work under the assumption that only commercial banks have systemic importance.

This example shows that one perverse outcome of otherwise successful financial reforms is that, by reducing margins, they may induce bankers to take more risk than they are prepared to absorb or than regulators are able to understand. This does not mean that developing countries should not try to improve the functional efficiency of their financial system. However, the process needs to be gradual and accompanied by a stronger and more comprehensive regulatory apparatus.

## **2. There is no one-size-fits-all financial system**

Developing countries face a difficult trade-off regarding the design and regulation of their financial systems. On the one hand, access to finance is necessary for economic development. On the other hand, as seen above, a more sophisticated financial sector is also likely to lead to an increase in total risk. If the second effect dominates the first, financial development may lead to an increase of systemic risk. Until recently it was believed that good financial regulation could be a solution to this trade-off and most countries could build financial systems that are both sophisticated and stable. The current crisis suggests that this objective may not be within the reach of most developing countries, at least in the near future. In choosing where to position themselves in the continuum between financial sophistication and stability, developing countries should recognize that there is no model that is right for all countries or at all times. Each country needs to find the model, which is most appropriate for its current level of development, needs, and institutional capacity.

Countries with stronger regulatory and institutional capacity may want to adopt a more aggressive process of financial liberalization and embrace a more market-based financial system. Other countries may want to be more cautious and stick to traditional banking. Some countries may find that their regulatory capacities do not even allow the proper working of private banks and may decide to rely more on State-owned banks. If they decide to do so, they should not be discouraged by the claim that “State ownership tends to stunt financial sector development, thereby contributing to slower growth” (World Bank, 2001). Many examples in developed economies have shown that the prejudice against State-owned banking is not justified and that “sophisticated” financial systems may badly fail. After all, the current crisis shows that once the chips are down and all bets are off, all banks are public.

### **C. Conclusion: closing down the casino**

It is often argued that financial regulators should not fight the last crisis. And yet, this is exactly what agencies in charge of air traffic safety do with considerable success. Some argue that things are different for finance, as the principles of physics that keep airplanes in the air do not respond to regulatory changes, but financial markets, designed and operated by human beings, do. Financial innovation, the argument goes, is viral and reacts to regulation by producing more complex and opaque financial instruments. Hence, the argument continues, each financial crisis is different from the previous and is thus unpredictable. According to this view, nothing can be learned and new regulation can only do more harm. This line of reasoning is certainly true for the particular instruments, which are the *proximate* cause of any financial crisis. In 1637 it was tulip bulbs, in 1720 it was stocks of the South Sea Company, and in the current crisis it is mortgage-backed securities. Nobody knows which financial instrument will be at the centre of the next crisis, most likely *not* mortgage-backed securities. Probably this instrument has not yet been invented.

However, the *mechanism* that leads to the crisis is always the same: a positive shock generates a wave of optimism which feeds into lower risk aversion, greater leverage and higher asset prices which then feed back into even more optimism, leverage and higher asset prices. Sceptics will claim that asset prices cannot grow forever at such a high rate but the enthusiasts will answer that this time it is different. If the boom lasts long enough, even some of the sceptics will end up believing that

this time, it is indeed different. Those who remain sceptical will be marginalized. Of course, things are never that different. At some point the asset bubble will burst, the deleveraging process, the debt deflation and economic crisis will begin. A regulatory framework that takes this mechanism into account could have prevented some of the excesses that led to the current crisis.

The problem is that after a crisis there is widespread political support for regulation, and this may lead to overregulation. However, after a long period of stability, characterized by small non-systemic crises, policymakers forget the lessons of the previous crisis and no longer understand the rationale for the existing regulatory apparatus. This is when the deregulatory process starts and it may be fuelled, as it was this time, by the general belief in free markets and unfettered competition and it tends to overshoot. A possible solution to this regulatory cycle is to follow the example of air safety regulators who, besides learning from relatively rare airplane crashes, also put a great deal of attention on near misses. For instance, there was much to be learned from the Long-term Capital Management (LTCM) collapse of 1998, from the Asian crisis in the second half of the 1990s and the Argentinean crisis at the beginning of the century. A proper regulatory response at the national and international level would have played an important role in limiting the built-up and the consequences of the current crisis.

Regulators around the world must be chastened by what has befallen global finance, but equally determined to draw the lessons and be up to the reform tasks that lay ahead. A Herculean effort will be called for not only as penance for what has already occurred but as proof that the system can be fixed and can deliver the functional/social efficiency expected of it. Therefore, the most important task is to ensure that financial efficiency is defined as the sector's ability to stimulate long-run economic growth. Transaction costs, the number of available instruments, or the overall size of the financial system are only relevant if they contribute to increasing social welfare, they should not be objectives per se.

Financial markets in many advanced economies have come to function like giant casinos, where the house almost always wins (or gets bailed out) and everybody else loses. Twenty-five years ago, Tobin (1984) argued that there may be something wrong with an incentive structure, which leads the brightest and most talented graduates to engage into financial activities "remote from the production of goods and services", and that the private rewards of financial intermediation might be much higher than its social reward. More recently, Rodrik (2008) asked, without finding a convincing answer, "What are some of the ways in which financial innovation has made our lives measurably and unambiguously better". The key objective of financial regulatory reform must be to devise a system that allows weeding out of financial instruments whose functional/social efficiency is dubious - effectively taking the wagering (betting on uncertain outcomes) out of modern finance.

In concluding, the collapse in the market for subprime mortgages in the United State was the spark that ignited the crisis, but it is *not* the fundamental cause. At the root of the current crisis are the global imbalances and the underestimation of risk that led to excessive leverage in the years *before* the crisis. The build-up of risk could have been avoided if financial policies had been guided by a sense of pragmatism rather than by market fundamentalist ideology.

However, it would be far-fetched to interpret the crisis as challenging the basic functioning of all capitalist markets. It was the combination of financial and technological innovation in banking and credit markets, unaccompanied by adequate regulation and supervision that led to today's predicament. Certainly, policymakers were remiss in not accounting for human greed in evaluating the risks of financial deregulation or new instruments as they were invented. In 1983, the financial sector generated 5 per cent of the United States' GDP and accounted for 7.5 per cent of total corporate profits. In 2007, the United States financial sector generated 8 per cent of GDP and accounted for

40 per cent of total corporate profits.<sup>8</sup> Policymakers should have wondered about an industry that constantly expects to generate double digit returns in an economy that grows at a much slower rate (UNCTAD, 2007a), especially if there are strong indications that this “industry” does not contribute much to overall productivity and needs to be bailed out every decade or so. Given the paramount influence of asymmetric information on economic decision-making, financial markets are different from goods market, and therefore need to be subject to stricter regulation. This is not a failure of the market system. It is a failure of financial deregulation.

More finance and more financial products are not always better. Financial markets may be efficient in the sense that they produce many different instruments and have low transaction costs, but their contribution to social welfare is nil in good times and negative in bad times. Social efficiency is the only definition of financial efficiency that should be relevant for policymakers. Financial regulation should be aimed at reducing the proliferation of such instruments, which seem to be more efficient at masking the risk to investors than in minimizing it. International coordination along this dimension is of utmost importance.

Finally, there is a fundamental flaw with a regulatory apparatus based on the assumption that protecting individual institutions will automatically protect the whole system. This is partially a reflection of the same theoretical mindset that assumes that the rational behaviour of one economic agent can be an accurate model or guide for the expected behaviour of a free, perfect financial system grouping countless agents. There are cases in which actions that are good and prudent for individual financial institutions have negative implications for the system as a whole. It is thus necessary to develop a macro-prudential regulatory system based on countercyclical capital provisioning and to develop institutions for the supervision of all the different financial markets that are focusing systemic risk and nothing else.

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<sup>8</sup> The data for 1983 are from Tobin (1984) and the data for 2007 are from Wolf (2009) and the United States Bureau of Economic Analysis.