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Market discipline and financial stability

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1. Introduction

The last quarter of the 20th century saw a profound transformation of the global financial system. Advances in information technology and financial liberalisation underpinned a quantum jump in the role of market forces in shaping economic outcomes. By the end of the period, the transformation from a government-led to a market-led financial system, to use a famous phrase, was largely complete.

This period also saw the emergence of financial instability as a key policy concern. In response, efforts intensified to put in place an effective prudential framework. Banking supervision and regulation moved to centre-stage in attempts to reform the "international financial architecture". And the thinking behind prudential policies experienced an equally significant paradigm shift. This has been crystallised in increasing efforts to work with, rather than against, the grain of market forces. Tangible examples of this shift include the growing reliance on institutions' own assessment of risks, on the qualitative aspects of risk control processes and on disclosure.

As a result, market discipline has come to play a greater role in ensuring financial stability. Today, I would like to examine in some detail the nature of this role, its strengths and limitations, with a view to drawing policy lessons. I will argue that more can and should be done to strengthen market discipline. At the same time, striking an appropriate balance between official and market discipline may call for a keener recognition of the comparative effectiveness of market forces and of the processes underlying financial instability.

The structure of my remarks is as follows: first, on the basis of historical experience, I will briefly explain why it is important to rely on market discipline, but also why it would be imprudent to expect it to deliver, on its own, the appropriate degree

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of stability. Next, I will examine in detail the prerequisites for effective market discipline, the mechanisms through which it is exercised and its limitations. Finally, I will draw some lessons about future directions for policy and research. In the process, I hope to touch on several of the themes addressed in this conference.

2. The importance of market discipline

In what follows I will use the term "market discipline" in a broad sense, to denote internal and external governance mechanisms in a free-market economy in the absence of direct government intervention. So defined, the question of whether market discipline can, by itself, secure financial stability comes pretty close to asking whether the financial system, left to its own devices, is inherently stable.

The government-led financial system that prevailed from the end of World War II to at least the early 1970s was characterised by financial repression. To varying degrees across countries, a web of regulations on activities, balance sheets, financial prices, domestic and cross-border transactions hindered market forces. These arrangements secured a degree of financial stability. Episodes of overt financial distress were limited. But stability came at a high cost in terms of the allocation of resources that became larger over time. Sheltered from competitive forces, bloated cost structures proliferated. Criteria other than perceived risk/return trade-offs determined the allocation of scarce financial savings. Governments could easily finance their growing deficits through captive savings or the inflation tax. The great post-war inflation found a fertile soil in this financial order. In turn, inflation was a clear symptom of lack of financial discipline.

The shift toward a market-led system was hastened by the consequences of inflationary tensions. But eventually market disciplines played a useful role in the successful fight against inflation. By being unforgiving of lax government policies, market forces underpinned the shift towards greater fiscal and monetary prudence. And they were instrumental in redirecting resources towards more productive uses, both within and across borders. However, even as inflation was coming down, and market forces were gaining ground, episodes of financial instability became more prominent.

To a considerable degree, the seeds of this instability had been sown in the previous regime. The rigours of competition exposed the hidden sources of fragility that had developed in the sheltered environment. Competition revealed high and rigid cost structures, the limited ability of bankers to manage and price risk, and the disruptive effects of ill-designed financial safety nets. In addition, efforts to bring inflation under control through higher interest rates added to the financial difficulties. The case of the Savings and Loan crisis in the United States is an obvious illustration of these points.

Even so, it is hard not to suspect that, to a significant degree, much of the observed instability is inherent in the behaviour of a liberalised environment. Episodes of instability in both industrial and emerging market countries, reflecting pronounced boom and bust cycles in the financial sector have been too recurrent to be transitional phenomena. And the similarities with comparable episodes during

the hey-day of the Gold Standard and leading up to the 1930s, when financial markets had last been as unfettered, have been too strong. It was the widespread instability in that earlier period that had led to the establishment of safety nets and the strict regulation of the commercial banking industry. As I will argue later, by numbing market discipline ill-designed safety nets may have affected the timing, frequency and characteristics of financial instability. But they are hardly a necessary condition for its emergence.

Occasional episodes of financial instability may well be part of the price to pay for the undoubted long-run economic benefits of a free-market economic system. There is in fact a long strand of economic thought that is consistent with this view. Schumpeter's process of creative destruction is probably the best known example. But even pure equilibrium finance theorists such as Fisher Black may be hinting at the same conclusion. Reasoning by analogy with portfolio returns, they point to the existence of a positive association between the variability and the mean of economic growth.

At the same time, the price paid in recent years seems unnecessarily high. Surely costs often running in the double digits of GDP forgone can be avoided without giving up on sustainable growth. The policy task is to improve on this potential trade-off. Doing so requires strengthening the current efforts to put in place a prudential framework that enlists and underpins as much as possible the disciplining forces of markets. But in order to do so, we need to recognise their strengths and limitations. It is to these that I now turn.

3. Strengths and limitations of market discipline

3.1. General considerations

The disciplinary strength of market forces derives from the immense power of the price system to aggregate information. The views of economic agents, sharpened by profit maximising instincts, are reflected in the constellation of prices at which funds are allocated and risks exchanged. In turn, these prices are a powerful and economical mechanism to summarise and convey information about those views. Market forces can raise the cost or restrict the volume of funding for those activities with unattractive risk/return trade-offs. Together with the ultimate threat of the demise of the enterprise, these mechanisms can deter excessive risk taking.

But for market discipline to be fully effective in ensuring financial stability this way, four prerequisites have to be met. First, market participants need to have sufficient *information* to reach informed judgements. Second, they need to have the *ability* to process it correctly. Third, they need to have the right *incentives*. Finally, they need to have the right *mechanisms* to exercise discipline.

Let me consider each prerequisite in turn. In doing so, I will take it for granted that a series of essential infrastructural requirements for the efficient functioning of the economic system are met, not least legal and institutional underpinnings. Their importance has been highlighted by a number of episodes of instability in emerging market countries.

First, then, information. Our economic system is arguably characterised by a chronic tendency to under-supply information relative to what is necessary for effective financial discipline. The costs of producing information are concentrated, while the benefits are diffused and not easily appropriated by its producers. Conflicts of interest abound between users and suppliers of funds, and they are especially important in "bad states", when bad news needs to be communicated.

In part, this may derive from difficulties in identifying the relevant information, but to a large degree it reflects other factors. Competitive pressures among the would-be suppliers of information are too strong and heighten confidentiality considerations. Likewise, competition among suppliers of funds is arguably too strong and free-rider problems may be too pervasive to ensure effective information extraction. Consider, for instance, how little counterparties knew about the exposures of LTCM. And how little information is still available about the risk profiles of financial institutions generally.

The ability to process information relevant for financial discipline is severely hindered by the object of the evaluation. I am not referring so much to the well-known difficulty of portraying complex risks in a simple and reliable form. Rather, I have in mind the daunting difficulties in assessing valuations and risks.

Fundamental value is to some extent in the eye of the beholder. We can of course break it down formally into expected cash flows, a discount rate and a risk premium. But this does not take us very far. How can we measure the components of value? Past experience is a flimsy anchor for expectations of returns and risk premia. Paradigms about how the world works shape our observations. And these observations are rarely sharp enough to adjudicate unambiguously between competing beliefs. Just think of the debate surrounding the New Economy. Under these conditions, it is easy to fall prey to shortcuts and cognitive biases. We may simply extrapolate current conditions, eagerly discount what is inconsistent with our theories, or allow waves of optimism and pessimism unduly to colour our perceptions.

But the real problem is not so much individual error or bias. If individual errors were uncorrelated, no major consequences would result. Rather, it is collective misjudgements, reflecting the interactions of individual behaviour. There are in fact several reasons why collective biases may and do arise – and it is here that ability to process information blends most clearly with incentives to use it.

One key reason is that valuations and risks are endogenous to the collective behaviour of economic agents. It is not so much what we individually believe that matters but, as Keynes taught us, what the majority thinks and how it acts. This is not only true of assets actively traded in markets, but of valuations generally. Prospects of future profits and high returns can sustain the economic expansion that, at least for a while, validates those expectations. Profiting from taking a contrarian view is risky, for these self-justifying movements can last for a long time and go a considerable distance. In the meantime, short-term profit opportunities are forgone, business may be lost and losses incurred.

A second reason is incentive structures that heighten further the tendency to conform behaviour to the prevailing norm, or "herding". Contracts that induce short

horizons are one example. Arrangements that lessen pain in the case of collective, as opposed to individual, failure, are another.

For much the same reasons, the mechanisms through which discipline is exercised may not always operate with sufficient timeliness and gradualism. The cost of funding may not rise early enough to prevent financial imbalances from building up. Even when it does, it might not be that effective if agents feel that they can shift it on to others. Restrictions on the volume of funding are more effective, but they, too, may start biting too late.

And when discipline is exercised, it may not always be in ways consistent with financial stability. The same endogeneity of outcomes that can allow valuations to drift too far in an upward direction can operate in reverse. Individual efforts to cut losses can, collectively, exacerbate overall losses. Anticipations of defensive actions can induce generalised defensive action. Historically, bank runs have epitomised this type of instability. Experience shows that countries as a whole are subject to analogous forces. More recently, the LTCM crisis has illustrated that markets can stop functioning for similar reasons. (The central banking community, through the Committee on the Global Financial System, has addressed these issues in its post-mortem examination of the LTCM crisis, and continues to analyse the operation of markets in stressful periods.)

These limitations of market discipline can by themselves be sufficient to result in an excessive degree of financial instability. Ill-designed safety nets, by keeping benefits private while socialising costs, without putting in place adequate safeguards, can add to the problems. They do so by numbing the incentives to gather and act on information in a responsible and prudent way.

Historically, the main effect of ill-designed safety nets has been to alter the characteristics and timing of financial instability. By weakening market discipline, safety nets allow the build up of financial imbalances to proceed further. Liquidity constraints are relaxed; insolvency is permitted to grow. And they can prolong the pain once the imbalances unwind if they mask the need for decisive action. For instance, historical experience appears to indicate that the recent banking crises, especially those of purely domestic origin, have tended to occur later in the business cycle as compared with those in the Gold Standard period, when official safety nets were absent or less well developed. Financial crises now tend to break out once the recession is underway rather than close to the peak of economic activity.

3.2. The financial cycle

Let me now bring together the various elements of the analysis into a highly stylised picture of the anatomy of financial instability in a liberalised financial system. I will intentionally abstract from the complexity of the problems that arise in practice and focus on their essential characteristics. And I will be primarily concerned with financial instability arising from exposures to common, rather than idiosyncratic factors. Of course, difficulties at individual institutions due purely to firm-specific factors can sometimes cause contagion and be a source of instability. But historically the more relevant and costly form of instability has been associated with common

exposures. And these exposures have in no small measure been the consequence of endogenous forces amplifying fluctuations in economic activity, rather than being exogenous to them.

Financial instability often derives from what, at least ex post, can be described as a financial cycle. In a stylised financial cycle, there is an over-extension phase in which financial imbalances build up, accompanied by benign economic conditions. This phase is typically triggered by improved economic prospects, which in turn may be due to technological innovations, the implementation of reforms or indeed many other genuine factors that can underpin sanguine expectations. In this phase, asset prices are buoyant and their surge tends to feed, and be fed by, rapid credit expansion and easier access to all forms of external finance. Leverage, in overt or hidden forms, accumulates in balance sheets, masked in part by the favourable asset price developments. These developments distort real expenditure decisions, above all investment.

The trigger and timing of the reversal is essentially unpredictable. It can reside either in the financial sphere (e.g., an asset price correction) or in the real economy (e.g., a spontaneous unwinding of an investment boom). The process then moves into reverse. In cases where the over-extension is contained, checked by the market and official disciplinary mechanisms, the financial system can withstand the subsequent downturn smoothly. But if the over-extension goes too far, widespread financial strains and instability may follow.

This kind of financial cycle is easy to identify ex post. It can be purely domestic in nature, or it can be driven by international capital flows. Beyond the specific characteristics of each episode, its imprint can be found in most of the cases of widespread instability since the 1980s. These include, among others, the experience of the Nordic countries in the 1980s, Japan in the 1980–90s, and the financial crises of a number of East Asian countries. Identifying the cycle ex ante, however, is much harder. What is a sustainable growth rate for the economy? Just when is "far", "too far"? I will return to this point later.

A close look at these cycles would reveal an intriguing aspect of risk perceptions. Economic agents can do a reasonable job of assessing and pricing the relative or cross-sectional risk of instruments, debtors and counterparties. Indeed, this is what most of the empirical academic literature on market discipline is about. However, they seem to be less well equipped to measure and price the absolute, undiversifiable risk associated with overall economic developments. Indicators of risk tend to decline during upswings and to be lowest at or close to the peak of the financial cycle, i.e. just at the point where, with hindsight, we can see that risk was greatest. Asset prices are buoyant, credit spreads narrow and loan loss provisions low. These indicators behave approximately as if risk fell in booms and rose only in downswings. And yet there is a sense in which risk increases during upswings, as financial imbalances build up, and materialises in recessions.

The length of the horizon and paradigms concerning the forces driving economic processes are crucial here. Greater prudence would be instilled by longer horizons in conjunction with a view of economic processes that regarded the boom as sowing the seeds of the subsequent downturn. This would instil greater doubts about the

continuation of unusually good times and mitigate some of the perverse incentives discussed before.

In practice, however, some aspects of existing practices and institutional arrangements do not appear very supportive of prudent behaviour. Several examples spring to mind. It is not uncommon for banks to measure risk over relatively short horizons, partly reflecting accounting conventions and the, often mistaken, belief that remedial action could be taken quickly at limited cost. Diversified shareholders with similarly short horizons can demand overly ambitious returns. Uncritical reliance on asset prices to measure risk can automatically impart excessive pro-cyclicality to institutions' own assessments; indeed, the typical assumption that asset returns follow a random walk, rather than being mean-reverting, adds to the possible bias. Nor is it unusual for contractual arrangements in the financial industry to have undesirable features, such as front-loading rewards in comparison with penalties, measuring relative rather than absolute performance or not seeking to adjust performance for risk. Obvious cases in point include the payment of fees up front, bonuses related to unadjusted profitability or the volume of business, and peer-group analysis of returns within the asset management industry.

4. Policy implications

It is now time to summarise the argument so far, say a few words about how market discipline compares with official discipline and then draw some conclusions on the appropriate balance. I hope you will excuse me if do not elaborate on the reasoning behind my observations regarding official discipline. This is not the focus of my remarks today and my points will not be particularly controversial.

- Market forces are at their best when allocating resources among scarce uses through an assessment of *relative* risk/return trade-offs, and in exercising discipline over a cross-section of institutions. They are less well equipped in dealing with the evolution of system-wide risk over time. Short horizons play a key role here.
- The effectiveness of market discipline is tempered by a tendency for information to be undersupplied, by the underlying difficulties in assessing fundamental values and related risks, by entrenched incentive problems and by a certain lack of gradualism in enforcing mechanisms. It can be further undermined by ill-designed safety nets.

In contrast, by comparison with market forces

- Official discipline is less well suited to deal and with the detailed measurement of *relative* risk/return trade-offs and hence with the allocation of resources among alternative uses. And prudential authorities, like markets, so far appear to have had difficulties in dealing with changes in *system-wide risk over time*. This may have less to do with horizons than with the conception of their task and of the mechanisms underlying financial stability. I will return to this point shortly.

- Supervisors have access to privileged information. As regards the ability to process given information, however, they do not have an obvious advantage over markets.
- Prudential authorities face a different incentive structure from market participants. Its main advantage is the prudence it induces; the main disadvantage is that it may encourage excessive intervention and, under certain conditions, forbearance.
- The mechanisms through which official discipline is exercised can potentially be more gradual and effective than those of markets, especially in dealing with system-wide disturbances. For this to be so, however, they need to be underpinned by proper incentives and a clear understanding of the system-wide implications of disruptions.

This configuration of comparative strengths and weaknesses and the previous analysis of the nature of financial instability suggest two conclusions regarding the balance between official and market discipline.

First, the current well-established trend to strengthen the reliance of the prudential framework on market discipline is welcome and could be strengthened further. This is especially so with respect to the assessment of relative or cross-sectional risk, which holds the key to the allocation of resources at a point in time. This would have the added benefit of limiting incentives to engage in wasteful and potentially destabilising regulatory arbitrage.

Second, we should pay greater attention to the system-wide aspects of risk, especially to its evolution over time. Such a shift in perspective could help us make headway in an area where both market and official discipline appear to have been insufficiently effective. Recognition of the potential value of this shift is of more recent vintage. The scope for strengthening it is correspondingly greater, but requires much more work at the conceptual and practical level.

The first conclusion is very familiar and widely shared. It has found reflection in greater efforts to rely on financial institutions' own risk assessments and to improve disclosure about the risk profile of individual institutions. From this perspective, the revised Capital Accord is a major milestone. No doubt more can and will be done in this area, not least in terms of comparability of disclosures across different types of financial institution. Similarly, it is worth exploring further the use of market information in the monitoring of the financial condition of individual institutions.

The second conclusion is perhaps less familiar. On earlier occasions I have referred to a system-wide focus as "macro-prudential" and compared it with a hypothetical micro-prudential perspective. This comparison can help to bring into sharper relief the shift in perspective I have in mind and its implications for the balance between market and official discipline.

Let me consider next the difference between the two stylised perspectives in terms of objectives and conceptions of economic processes. I will then highlight the implications of the macro-prudential perspective for the use of policy instruments in three key areas, namely information provision, safety nets and the financial cycle.

In terms of objectives, a macro-prudential approach would explicitly seek to limit the costs to the economy as a whole from financial distress. Its micro-prudential

counterpart would focus on the likelihood of failure of individual institutions, an objective probably best rationalised in terms of narrow depositor protection.

In terms of the conception of the mechanisms influencing financial stability, the macro-prudential approach would stress the endogeneity of system outcomes with respect to the collective behaviour of individual institutions. The micro-prudential approach would tend to view them as exogenous. It would thereby also play down the notion that individually rational decisions could lead to undesirable collective outcomes.

To highlight the contrast, think of the financial system as a portfolio of securities, i.e. the individual institutions. The macro-prudential perspective would focus on the *overall* performance of the portfolio; the micro-prudential vision would give equal and separate weight to the performance of *each* of its constituent securities. In the assessment of risk and calibration of prudential instruments, the macro-prudential approach would stress the correlations across securities and the systematic risk component; the micro-prudential approach would look at the volatility of each individual security and emphasise the idiosyncratic component. Finally, the macro-prudential approach would recognise how the structure of correlations and risks was endogenous to the decisions reflected in the pay-offs of the securities; the micro-prudential approach would treat the pay-offs as determined by "nature".

When considering policy towards information, a macro-perspective would stress not the risk profile of individual institutions but information about the correlation of exposures of institutions, i.e. their exposure to common factors. To some extent, efforts to develop indicators of financial crises and macro-economic vulnerabilities, including countries' external debt or banks' aggregate country exposures, are helpful here. But what I have in mind more precisely is information based on some form of aggregation of inputs from firms' risk management systems. What kind of information might have been helpful, for instance, in assessing the vulnerabilities which were building up before the 1998 market turbulence? Likewise, what kind of information could best capture the vulnerability of financial institutions to a downturn in economic activity, over and above the breakdown of their exposures by ratings?

This is a largely unexplored area. In considering this type of information, many issues would need to be addressed. Confidentiality is one. In contrast to VaR statistics, the information would need to be directional, such as that derived from stress tests. Effectiveness is another. Would making such information public be invariably stabilising? Issues of endogeneity and herding would be relevant here. Feasibility, complexity and costs are a third issue. We are only beginning to address these questions. The BIS Committee on the Global Financial System has taken some steps in this direction. Generally, more conceptual and empirical work needs to be done.

What is clear, however, is that further progress will in part depend on developments in firms' risk management and information systems. As financial institutions improve credit risk measurement, the raw material for aggregation will become more readily available. The same holds true for developments in the accounting field. For instance, if some variant of fair value accounting were to be implemented at some point, this would, in effect, help to integrate information about credit and market risk, which would be reflected in the variability of institutions' net worth. As

discussed below, however, this would also raise issues of its own in the context of the financial cycle.

A macro-prudential paradigm also has implications for the structure of safety nets. In particular, by stressing that the prudential objective should not be to avoid the failure of individual institutions per se, but to focus on their systemic consequences, the macro-prudential paradigm can limit the risk of providing excessive protection. It thereby also holds the promise of a better balance between market and official discipline.

How exactly to put this general principle into practice, however, taking into account the interrelationship between the various elements of the safety net and political realities, remains an open question. One appropriate step could be to ensure that specific means are in place to protect depositors in the event of failure, relieving public pressure to forbear and adding to the credibility of the exit threat. Targeted deposit insurance schemes can be useful in this context.

In dealing with the financial cycle, a key objective would be to ensure that adequate defences are built up in upswings so as to be relied upon when the rough times arrive. This would strengthen institutions' ability to weather deteriorating economic conditions, when access to external financing becomes more costly and constrained. Moreover, by leaning against the wind, it could reduce the amplitude of the cycle, thereby limiting the risk of financial distress in the first place.

The essence of any policy response would be to instill a measure of prudence or conservatism in relation to unfettered market perceptions of values and risks. This suggests, inter alia, that seen from this angle the implications of fair value accounting might be less helpful. Moreover, precisely because our state of knowledge about financial cycles is so limited and the timing of downturns is so hard to predict, in principle in-built stabilisers would appear preferable to discretionary action. This would not necessarily rule out discretionary adjustments in prudential instruments, but would at least counsel caution in their exercise. The proposed strengthening of the supervisory review pillar in the new Capital Accord could be very helpful here.

A range of instruments would seem worthy of consideration. These could include the more systematic use of stress tests, variants of forward-looking provisioning for prudential purposes, as well as the use of conservative adjustments in minimum capital requirements, collateral valuations and loan-to-value ratios. Each of them would need to be assessed carefully so as to establish strengths and weaknesses. The issues involved are complex. And we are only beginning to recognise and study them, both conceptually and empirically.

Let me conclude by restating the main message of my remarks today. In the years ahead we will need to continue the search for a better balance between market and official discipline in the prudential framework. Achieving an appropriate balance is crucial to reap the long-term benefits of a liberalised financial system while minimising its potential costs. Strengthening further the reliance on market discipline can improve that balance. However, exactly how to do so calls for a keen recognition of the strengths and weaknesses of market discipline. To my mind, strengthening the macro-prudential orientation of the arrangements designed to secure financial stability holds part of the key to further progress.

I am aware that I have raised more questions than provided answers. This is inevitable at this stage. It is also highly desirable, though. I hope that I have convinced you that there are many challenging issues awaiting exploration. This is the nature of any scientific endeavour, and also the basis of all good policy making.

Let me also say, however, that the stakes are high. If we cannot do a better job of limiting financial instability in the future than we have done in the past, public support for a market-based financial system could well wane. Pressure for governmental intervention of ill-considered sorts would rise. And if that happened, both providers and users of financial services would surely end up losers.