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Regulation and Supervision in
Financial Markets
Lessons Learned From the Crisis?

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Let me start by thanking the organizers for giving me the opportunity to talk here today. Before I go right into the topic of my talk, I should note that I used this opportunity to summarize my thoughts in a short paper. Those who are interested can download this from the webpage of the “Policy Platform” at the Frankfurt House of Finance.

When agreeing to give a talk, I was not yet sure about the framework in which this would take place – precisely, whether I should focus more on the regulatory aspects or, instead, on aspects of risk management. Checking the program last week, I noted that my own talk was embedded into a day’s program of talks and discussions about regulation and supervision. I am happy to contribute to this.

Much of the subsequent discussion will draw on a policy report that I have co-authored as a member of the advisory council of the Department of Economics and Industry of the German Federal Government.

Plan of the Talk

The ongoing financial crisis keeps practitioners, particularly those working in financial institutions, as well as regulators busy with fire-fighting and emergency operations. Academics, in turn, are busy writing up-to-date reports on the crisis and are under pressure to propose “quick-fixes” or “cure-alls”, in particular with respect to “hot topics” such as systemic risk and moral hazard. Instead, I would like to devote my thirty minutes to offer a more basic rethinking of the objectives of regulation and supervision and its tools.

Throughout the talk, I will also draw analogies from regulation and supervision to the risk management of financial institutions. There should be a two-way learning process.

Why Regulate?

It goes without saying that any regulation must have a clear objective. But I fail to identify such an objective or even a lucid discussion about one or more such objectives when it comes to regulate financial institutions.

In a market economy, any regulation that restricts or prescribes activities requires an explicit justification. With respect to banks, I would like to distinguish between government intervention that serves to protect investors, intervention that serves to protect and uphold the functioning of markets, and intervention that—more broadly speaking—serves to protect the functioning of the financial system as a whole.

Protecting investors, in particular small depositors, was traditionally the main objective of regulation and supervision in banking. Intervention can then be justified given their lack of expertise and sophistication, as well as lack of coordination, which could induce harmful runs, given the nature of demandable deposit contracts. Clearly, none of this applies to the holders of bonds and other subordinated claims, in particular when these are institutional investors. From this perspective, one of the great sins in the handling of the ongoing crisis has been to protect, in many instances, the holders of such subordinated claims.

This time markets, such as the interbank market or the “repo” market, have been at the epicenter of the crisis. The functioning of a market is endangered when participants start having serious doubts about the quality of the traded claims. Such a consideration justifies rules against insider trading. Markets also stop working well when participants have doubts about the quality of counterparties, say their creditworthiness. Regulation can play a critical role in creating a legal framework that makes such risks small or at least predicable and, in case of an incident or even crisis, allows for a swift and efficient resolution. Even among legal experts, it seems, there is much uncertainty of how practices such as netting in swap deals are upheld under current bankruptcy rules. Ten years after the failing of LTCM there should have been enough time to generate internationally accepted rules.

Coming finally to the third objective of regulation, namely that of protecting the functioning of the financial system as a whole, the talk must be about the buzz word of “systemic risk”. Commonly, this concept comprised two different forms of contagion. The insolvency of one

institution could lead to a chain effect as it requires other, interlinked institutions to write off some of their claims. The more interconnected banks are, the further will such a contagion spread.

Some call this the “dark side” of diversifying risk across the financial system. However, it is unclear to me whether the purpose of many of these linkages across financial institutions is really to diversify and spread risk. Instead, many contracts with provisions for credit insurance or guarantees may have been signed rather for the purpose of moving risk to pockets of the financial system where regulatory oversight was lowest or least professional and where capital requirements were lax. Hence, once a more coherent and more efficient system of regulation is in place, I wonder to what extent interconnectedness will still be such a source of systemic risk and contagion. Put differently, many of today’s problems may have to do less with the malfunctioning of the market system and its capability to allocate risk, but they may have more to do with the way regulation or, more generally, government intervention works at present.

In addition, there could also be some sort of “informational contagion” between financial institutions. When financial institutions are known or at least expected to be exposed to similar markets and similar risks, problems at one bank may depress share prices and limit the possibility of refinancing for other banks.

The current crisis has brought to the front the importance of a third form of such contagion. When a bank is forced to sell off securities to meet regulatory requirements or demands from claimholders, this could depress prices and, in turn, force other institutions to deleverage themselves. The strength of this third mechanism clearly depends on accounting rules and how they interact with regulatory requirements. In fact, as I will discuss shortly in more detail, the risk of contagion through this channel has probably been amplified through Basel II.

The objective of protecting the functioning of the financial system is different from the more traditional objective of protecting individual, small investors. In particular, the systemic—or also “macroprudential”—perspective aims at externalities: that is, the externalities that the decisions of individual institutions, such as their funding decisions and their exposure to particular risks, may have on other institutions and, thereby, on the functioning of markets and the whole financial system.

Presently, there is the danger that the concepts of “systemic risk” and of “macroprudential regulation” are abused in at least three ways. First, during the crisis they served as an often insufficiently specified justification to protect the wealth of equityholders and subordinate debtholders and the positions of managers at banks that were at the risk of becoming insolvent. Second, invoking the concept of “systemic risk” can serve to exculpate supervisors and regulators, who claim that this is something “new” and “unforeseen” or something for which they had no mandate. Third, in the aftermath of the crisis, the concept of “systemic risk” will serve as a catch-all justification for new regulation.

How financial institutions choose to be connected, how fragile they choose their financial structure to be, and what risks they are exposed to are, however, all endogenous variables. We should ask the following question first: How much unresolved “systemic risk” will there still be in the financial system when these decisions are made by institutions where managers and shareholders alike are fully liable for their actions and operate under a simple set of rules?

This brings me right to a discussion of the set of rules and tools that would be most appropriate to achieve any of the discussed objectives of regulation and supervision. Given the time constraint that I have, I will focus on capital adequacy requirements. This makes it necessary to briefly reflect on the implications of Basel II.

The Way to Basel II

Basel I was an attempt to achieve international harmonization on the basis of the “home country principle” so as to bring to a halt a downward spiral in competitive deregulation. In analogy to the simple capital rule of 8% for standard commercial loans, as enshrined in Basel I, in 1993 a “standard approach” was proposed also for market risk. This met with fierce opposition from the industry. Ultimately, the new rules now allow banks to use, instead, their own risk models and rely heavily on market mechanisms.

When I joined the London School of Economics in 2001, the Financial Markets Group submitted a comment to the Basel Committee, where the heavy reliance on credit ratings was equally criticized as the inherent procyclicality of the new rules. As it was put there in 2001, if “the purpose of financial regulation is to reduce the likelihood of systemic crisis, these proposals will actually tend to negate, not promote this useful purpose.” There have been equally strong warnings by other leading academics long before this crisis.^

Risks

What I am, however, more concerned with in my present talk is the fact that these rules may have allowed, in particular, large international banks to expand activities on the back of an ever smaller slice of equity, sometimes as little as 2% of the total balance sheet.

I am also concerned with the practice to rely too much on banks' own risk modeling and risk management, just as I am concerned with relying on rating agencies' verdicts. Regulation and supervision has the objective to limit systemic risk and to ensure that the risks inherent in the financial sector will not turn into a liability for tax payers. How is this compatible with relying on the market's and on banks' own view of risks? Does this sufficiently incorporate the repercussion that individual exposures have on the viability of the financial system? The answer is not.

Further, if a key objective is to limit systemic risk, then this concerns precisely those risk factors to which most if not all financial institutions presently turn a blind eye. It is these risks where correlations will pop up unexpectedly and against which provisions are likely to be insufficient.

It is likely that, with hindsight, the risk models of most market participants have insufficiently taken into account risks originating from correlations between credit risk and counterparty risk. For instance, if a crisis hits, then counterparties that sold insurance are themselves likely to be in a precarious financial situation. Were liquidity and roll-over risks adequately considered? Did stress tests adequately consider that prices for securities would take an extreme hit and that markets would freeze completely as key players were forced into fire sales and cut down their exposure? In the end, the crisis itself was the main determinant of unexpectedly high correlations.

It cannot be the role and objective of a rating agency to take the point of view of a regulator. Its objective is to take the point of view of the holder of the respective security. It is not even clear to me to what extent a single rating should incorporate the various dimensions of risk, such as credit default risk and market risk. For instance, prices may suddenly plunge not because default risk is perceived to be higher but simply because there is less cash in the market. The same holds for the risk models of banks. For instance, whether counterparties are exposed to similar risks or how the whole financial sector is exposed should only affect risk

management to the extent that this represents a danger for the particular institution. The regulator's view must be different.

To repeat, my argument at this point is very simple. The observed shortcomings in risk modeling and risk management are not technical shortcomings. The extent to which a bank's own risk management must, in its own interest, consider systemic events is clearly much smaller than the extent to which these must play a role for regulators. Also, what should spark a systemic crisis are particularly unforeseen contingencies. By definition, these should escape the risk models and stress tests of even sophisticated players.

What is the Purpose of Capital Requirements?

My concerns with the present system of capital regulation are, however, more profound. A lot of the present discussion about incremental changes to regulation proceeds without a reflection of what is the purpose of regulatory capital in the first place. What could be its purpose?

Capital could act simply as a buffer against unexpected losses. This is a first purpose. But capital also reduces the incentives of shareholders and of managers as shareholders' agents to take on excessive risks when they gamble with the money of creditors and tax payers. Further, forcing banks to hold a sufficient buffer of capital generates also a time buffer, giving supervisors sufficient time to exert influence before insolvency occurs.

Note that these different objectives call for different rules. For instance, if time is the main concern, then regulatory capital should be calibrated based on the liquidity of assets. This is not the case when regulatory capital simply acts as a buffer against losses. Further, note that there is a paradox if, on the one hand, capital is supposed to serve as a buffer but when, on the other hand, banks then choose to operate close to the minimum requirements. Then, instead of buffering shocks, capital requirements amplify shocks in the system. To avoid breaching the rules, banks are then forced to shed assets and deleverage quickly, with all the repercussions that this has on the financial system as a whole.

It is important to stress this once more: Regulatory capital can serve different purposes. When this is not acknowledged, then the chosen rules may become counterproductive. For instance, they may amplify shocks or hasten the process by which banks are driven into insolvency.

How much faith should we put in a new regulatory regime that only patches up existing capital regulation? Take the complicated proposals to incorporate systemic risk charges. This builds on the illusion that we only need to further fine-tune risk models. Such rules may once again only artificially blow up the complexity in the financial system as participants engage in transactions less to mitigate risk but more so to seek regulatory capital relief.

The present crisis has shown that problems even in small parts of the financial system can have profound repercussions through the discussed systemic effects. A main objective of future regulation should thus be to reduce the risk of such systemic effects. To the extent that any risk-adjusted fine-tuning of capital requirements must remain backward looking, it may simply be incompatible with this objective. Instead, a significant increase of regulatory capital would serve the purpose.

More Capital?

Clearly, higher capital would significantly reduce the problem of procyclicality, as the deleveraging multiplier was significantly reduced. Solvency problems would also be less acute. In the present crisis, the problem was not only that of a lack of “free capital”, i.e. of surplus capital above what was required by regulation. More simply, banks were at risk of becoming insolvent as capital cushions quickly eroded. This had serious repercussions on banks’ ability to refinance. Hoarding of liquidity and mistrust in the solvency of other institutions lead to a freeze of previously highly liquid markets. Further, when there is much more capital in the system, this gives supervisors time for an orderly resolution of a crisis.

Arguably, a substantial increase in bank capital is only feasible step-by-step after the crisis. However, I do not see why this should hamper growth in the real economy. Even some academics claim that credit will become excessively expensive as banks’ costs of financing will then significantly increase. Indeed, equity seems more expensive than debt as those providing equity require a higher rate of return. But this does not make equity a truly more expensive source of funding.

Take a given level of risk and abstract from taxation. Also abstract from issuance costs. Raising more debt or, likewise, issuing any other senior claim simply shifts more of the risk to the holders of equity, for which they rightly demand a higher expected rate of return. This is the essence of the famous Modigliani-Miller theorem. Another immediate implication of this is the following. Advertising a 20% target for the return to equity is meaningless when this is

achieved simply through higher leverage and thus goes hand-in-hand with more risk for equity holders; that is, unless debtholders benefit more than equityholders from any explicit or implicit guarantee.

Why are some activities better financed through debt and why are other better financed with a higher equity share? Or, why and when is it worthwhile to rely more on short-term financing? In particular when we ask about the social, economy-wide implications of higher capital requirements, these questions need to be addressed first. And they need to be answered in a consistent and convincing way.

Apart from this, I would also doubt that, in retrospect, some of the activities that were funded backed by an ever smaller slice of equity served the domestic real economy. Investing in subprime mortgages on another continent are a prime example for this.

That being said, higher capital requirements may in some countries lead indeed, over the long term, to more fundamental changes in the financing of economic activities. In countries like Germany, there seems to be some reluctance or at least inertia of households to hold risky claims, such as equity. This requires banks to act as a risk absorbing buffer—a function that they clearly can only play in the long run when their margins are sufficiently high. But in the wholesale business margins have gone down significantly. Hence, it could well be that the introduction of higher capital requirements induce or hasten profound changes in the financial architecture. But this may not be detrimental.

Though capital in the regulated sector was low, this has not prevented the growth of the unregulated “shadow-banking” system. Even when higher capital requirements would shift some operations, such as proprietary trading, even further into the “shadow”, this need not be an unwanted consequence of regulation. What is important, however, is to take precautions that a failure in the “shadow system” has no significant repercussions on the regulated system, including the functioning of markets.

Risk Management

What I have said about regulation should also have some bearing on the risk management of financial institutions. Should systems be calibrated under the presumption that, based on historic time series, a comprehensive evaluation of future events can be made? How can feedback mechanisms and systemic events be taken into account? What data, e.g., on the exposure of other market participants, is needed for this? To what extent can economic

models of equilibrium behavior help organize statistical analysis? How should market values and ratings be used, in particular in light of the fact that they may only incorporate some risks, such as default, but not others, such as illiquidity. Further, how should economic capital be priced? How should such a price mechanism possibly work together with explicit limits of exposure. How should an assessment interact with the exposure on the funding side, e.g., when funding relies heavily on paper with short maturity or repos?

These are all questions that are highly similar to those faced by regulators at the moment. This suggests much scope for a fruitful dialogue. And a macroprudential regulator may be well advised to play back to the market information about the market's aggregate exposure. This would allow participants to obtain a better picture of possible imbalances, against which they may want to obtain insurance, most notably by scaling back activities.

Discretion

So far I was mostly concerned with rules and how they should be changed. But discretion is an equally important element of regulation and supervision, in particular in a highly innovative and fast-paced environment such as finance.

The second pillar of Basel II provides ample scope for authorities to adjust their procedure to incorporate learnings from the crisis. It allows to incorporate, also as a testing ground, new elements such as limits on total liabilities. And it already requires authorities to obtain a comprehensive picture of the stability of financial institutions. Most importantly, in my view the presence of the second pillar of Basel II ensures that now and in the future, supervisors can not exculpate themselves by pointing to a literal adherence of pillar I requirements.

In Germany, the guarantees that some institutions gave to special purpose vehicles seem to have far exceeded their capital. Even by international standards, this exposure was exceptional. It is questionable to what extent this and other activities that the crisis has brought to the open were compatible with the professionalism of bank management that pillar II demands and that supervisors have to ensure to be in place.

Again, some analogies to risk management in financial institutions could be drawn. What was and what is the role of a bank's risk officer and what authority does he command? The value added of a good risk management system can be that those at the front-end of the business can take more risk.

Governance

Banks' internal governance has failed on numerous accounts. Bonus payments were made based on short-term revenues, though banks were still exposed to longer-term losses. An insurance company takes care not to pay all commissions to agents up-front, but to pay a good portion as trail or contingent commissions. This puts agents at risk when a client cancels a contract prematurely or turns out to be a worse-than-expected prospect. These are practices that are much used in other businesses. We have to explore what can be learnt for banking and finance.

The internal compensation scheme should play a key role in an holistic approach to risk management. Likewise, supervisors may find some value in questioning a bank's compensation culture.

That being said, the design of compensation schemes for top managers as well as for the rank and file falls squarely in the area of private responsibility and private contracting. Though there are exceptions, in a market economy government intervention is there to put in place the rules of the game rather than to interfere with the game, most notably the price mechanism. And salaries, as well as bonus payments or commissions, are after all prices for labor. In short: There must be a good reason when one deems it necessary to interfere with private contracting and the price mechanism.

If shareholders are given appropriate incentives, say through high capital requirements and the knowledge that they will not be bailed out, then it is in their own best interest to provide adequate incentives to directors. This should then feed down in a well-functioning organization.

Clearly, a prerequisite for this is that corporate governance works. It is an irony of the current debate, at least in some countries, that while bank managers are distrusted by the public and by politicians, those who could discipline them, namely shareholders and institutional investors, are often equally scorned. Once again there is a deep inconsistency at work.

Misc. Proposals

Many other proposals are on the table and are discussed both in academic journals and in the financial press. With many of these proposals, the devil is often in the detail, such as with the proposal to, at least in the US, resurrect the Glass-Steagal Act.

Another proposal is to introduce so-called “Co-Cos” or other contingent capital claims that would have debt-like features in “normal times” but would convert to form an additional equity buffer in “stress times”. There are again many question marks with this proposal. When should conversion take place? Would the trigger be induced by market signals, in which case there is a risk of a self-fulfilling prophecy, or would it be induced by the supervisor? Would conversion condition on an institution-specific variable or would it be linked to systemic indicators, instead? Who should hold these claims so as to make sure that there is not again a commitment problem. In this crisis, it was deemed more appropriate to bail out even institutional debtholder, and not only small depositors. Would not holders of these “CoCos” be equally bailed out the next time round?

More fundamentally, why should such contingent claims be a socially preferable form of funding, compared to straight equity? Some of the proponents of this view point out that debt, in particular short-term debt, provides more adequate incentives for bank officials. Precisely, they argue that as long as banks’ funding structure remains fragile, this keeps managers on their toes.

I am not at all sure that the current crisis, let alone other evidence, supports such an optimistic, incentive-based view of why financial institutions have levered up and turned to short-term financing. The proponents of this view would presumably rally against full deposit insurance, as this clearly makes depositors completely indifferent to a bank’s riskiness. However, evidence suggests that deposit insurance does not induce moral hazard. But it reduces the risk of socially inefficient bank runs.

Let me put this differently: I do not fully see the case for resorting to the discussed contingent claims, instead of requiring higher capital ratios.

Concluding Remarks

If my talk reads like an uncompromising plea for much higher capital ratios, then this impression is somewhat mistaken. I think that this has some merits, but only if we first come to the conclusion that too little instead of too much regulation and too few instead of too many restrictions were mainly responsible for the crisis. But such a conclusion would ignore the role of ill-fated government intervention, such as in the US subprime market, or the role of banks that were influenced more by politicians than by markets. Further, there is quite a bit of disagreement among both academics and among central bank officials to what extent

monetary policy has contributed and continues to contribute to excessive risk taking and imbalances. Had short-term interest rates been kept too low for too long?

However, once we come to the conclusion that even when we abstract from these distortions, the financial system remains inherently instable, then capital regulation remains the most important tool.

As I noted, however, the current debate would have, in my view, a lot to benefit from clarifying what are the objectives. I argued that one such objective could be to create a time buffer so that, combined with an efficient and powerful resolution regime, supervisors can sort out troubled institutions, before contagion spreads. Then, as I noted, the calibration of capital requirements should be different compared to, say, the case where the purpose of capital is to reduce risk-taking incentives. Also, while systemic repercussions can be ignored when capital serves mainly to limit incentives to take risk, the opposite is the case when capital serves precisely as a buffer to avoid such contagion. As I argued, the current system does not serve such a purpose well.

Systemic risk is at the center of the current debate to reshape capital regulation. Instead of devising clever ways how to calculate systemic surcharges, I proposed to go one step back. Fine-tuning the present system may be precisely the wrong lesson to be learnt from the crisis. It is understandable that there is a great reluctance to question some of the key principles of Basel II. But it must be understood that the market's assessment of risk, just as ratings or banks' internal risk assessments, have two key shortcomings.

First, there are not meant to do the job that a supervisor must do. Long before the current crisis, it has been understood that systemic risk, working through the different channels that I have identified, must be a key concern for regulators and supervisors. Instead, it is not the remit of markets and their agents to place such a weight on this. A second shortcoming is that it is precisely those risks to which the market turns a blind eye that have the seed to be come systemic.

I have also pointed out that some of what supervisors should learn from the crisis applies equally to risk managers. In fact, there should be much scope for a fruitful dialogue and, beyond this, for an exchange of data and information that allows both market participants and macroprudential regulators to become aware of imbalances in time. I would also imagine that there is more scope than previously for economics, instead of what I would call engineering,

in risk management. Incentive problems, externalities, and feedback effects working in equilibrium are all the bread and butter business of economists. These concepts may prove to be hard to incorporate in workable risk management tools, but the present crisis surely requires us to face these challenges.

Thank you.