Part II

The Ways Financial Markets Work and the Implications for More Effective Supervision

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In the Interests of Safety

Martin Mayer

I would like to change the terms of these discussions, because I think we all use too many words that distort the reality they pretend to depict.

"Too Big to Fail"

Let me start with a minor example, the phrase "too big to fail," which in the United States has acquired a resonance that dominates discussions. It grows from some rather unfortunate testimony given by Todd Conover, then Comptroller of the Currency, in a presentation before a Congressional committee on the problems of what was then called Continental-Illinois, which had begun 1984 as the seventh largest bank in the United States. It was the largest lender to American corporate enterprise, had failed and been rescued through an extraordinary joint effort by the six even larger banks, the Federal Reserve System and the Federal Deposit Insurance Corporation (FDIC). This was in fact a very special situation, because more than half the bank's total funding – at least $18 billion – had been provided by foreigners, about a billion of it through the sale of commercial paper in the Caribbean by Continental's holding company. The notion that deposit insurance covered the purchasers of commercial paper issued outside the United States by a holding company that happened to own a bank was, in a word, ludicrous. In the 1960s, because the deposit insurance funds generated an annual surplus and the Johnson Administration was looking for a way to reduce the apparent deficits that grew out of the Vietnam War, the income statement of the FDIC had been put on the federal budget. Keeping Continental afloat was clearly going to cost the FDIC a lot of money (to begin with, the agency had paid $2 billion for a worthless subordinated note from the bank), and thus the deficit was going to look worse. To justify what had been done, then, Conover promulgated his own rule, which under the pressure of questioning from the committee was hammered into a statement that none of America's ten largest banks could be permitted to close its doors.

In 1991, Congress decisively repudiated the idea that any bank could be too big to fail, rescinded the previous power of the FDIC to make a finding of "essentiality" to permit the expenditure of funds on the rescue of an insolvent bank, and required the banking supervisors to get specific written approval from a two-thirds majority of the Federal Reserve Board and the

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Secretary of the Treasury before supporting a bank that no longer had positive capital. "Too big to fail" came to be seen as an expression of moral hazard, an invitation to the largest banks to take excessive risks.

Today, however, commentators should look at the Continental story against another background. Conover's remark was made in 1984, when the banking system was just beginning to emerge from the horror of a monetary policy that concentrated on aggregates and let the interest rates escalate freely. I am not saying that this horror could have been avoided, and I am sympathetic to the argument that we have been able to control inflation in the 1990s mostly because of the violence of the punishment meted out by Paul Volcker's Federal Reserve in the 1980s. But in 1984 there was nothing to see but rubble. These very high American interest rates had devastated the economies of Latin America, where both government and enterprise had borrowed heavily in dollars, and had warped the European cross-rates because European currencies came to be compared against each other according to their ability to resist the pull of American rates rather than by analysis of their comparative economic performance. Domestically, Volcker's rates reduced the value of banks' fixed-return assets while increasing the burden of their variable-cost liabilities. The savings institutions were dead; all the banks were seriously ill, not just Continental, though Continental, which had been increasing its loan portfolio at a dramatic pace, was clearly the worst.

Now, the deposit liabilities of the banking system are the currency of the country, and maintaining the value of the currency is a major function of government. Thus, whether or not there is formal deposit insurance, in troubled times governments are seized with the need to establish that the assets of the banks more than cover their liabilities. In Andrew Sheng's elegant formulation, the losses of a decapitalised banking system are a quasi-fiscal deficit.[1] Depriving the depositors in a bank of the value of their accounts at a time when other banks may not have sufficient assets to cover their liabilities tells the country that the government has failed to recognise its obligations to its own currency. If the losses cannot be loaded on foreigners, and the experience of the 1980s including, incidentally, the rescue of Continental, argues that this cannot be done, there are only two possible outcomes: either the government raises taxes (or drops its expenditures – this is called the IMF-as-bad-guy argument) or the citizenry pays the inflation tax. It should be noted that even the United States had to put the losses of the savings and loans crisis on budget, which is one of the reasons why the FDIC Improvement Act of 1991 was so strong.

[1] Sheng, Andrew, *Bank Restructuring: Lessons from the 1980s*, Washington, D.C., World Bank, 1996, p. 9.

What is deceptive about the situation is that in ordinary times banks can be permitted to fail with no significant spillover or contagion, and bank failures are not uncommon in any market economy. But in ordinary times big banks don't fail. Indeed, a decade before the Continental flap Walter Wriston of Citibank, the prophet of ordinary times, wrote with his then assistant George Vojta, later a guru at Banker's Trust, an article claiming that a really big bank didn't need any capital or any liquidity reserve, because it was unthinkable that the market would refuse to lend money to a big bank when a big bank asked to borrow. In bad times, as the Indonesian collapse demonstrated, any failure can start a run. The problem to be managed, then, is not that some banks are encouraged to be cowboys by the presence of a government guarantee – and that herding behaviour is virtually required in a competitive marketplace that punishes prudence and rewards what later looks like reckless risk-taking – but the fact that the banking system creates the money supply, and the assets that back the money supply are the loans of highly leveraged institutions that rely on maturity transformation as a source of profits. The problem to be managed, then, is the stability of the currency, not whether or not banks should be closed.

The fact is that without great external pressure no central bank will permit the closure of a bank of any size at all during a period of economic turmoil. I testified before Congress shortly after the passage of the 1991 FDIC Improvement Act, to say that the Fed had not the slightest intention of enforcing it. Banks can be kept on life support for a long time through bank examiners who can increase the apparent size of a bank's capital by being kind on the valuation of assets and government negotiators who can persuade other large banks to lend money to a failing institution. (Interestingly, it is now almost impossible to support a large bank from the discount window, because the news that a bank is in the window drives other funders away – which is particularly unfortunate, as Hyman Minsky pointed out a generation ago, because one of the most significant sources of information for a banking supervisor was the knowledge of a bank's portfolio which he got from the collateral available to the window. One mentions also that the theory of controlling bank activity through the control of liability creation – the great contribution of the Federal Reserve, through all the years when Europeans and others were controlling bank activity through their control of asset creation – rested initially on observation of the pressure on the discount window that was heightened or eased by open market operations.) After my testimony, I am informed, there was a little discussion as to whether the Fed should issue a statement that they did indeed permit the closure of troubled banks as the law required, but no statement came forth, perhaps so as not to dignify the testimony, and

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perhaps because I was right. In general, central banks are the source of moral hazard, because in time of crisis they will rescue both the righteous and the unrighteous. They simply cannot stand the uncertainty that would develop in the economy if people questioned the availability of their current account.

Banks Are Hedgehogs

David Ricardo was I think the first to note that it was accidental that the issuance of the currency and the lending function had been combined in the Bank of England. The Act of 1844 separated the Bank into two separate departments, but for lender of last resort purposes they were essentially conjoined – mostly, as Bagehot pointed out, because only the Bank of England could be asked to keep a sterile reserve large enough to cope with a sudden demand for cash. Doctrine was already in place to link the lending function to money issuance in the theory of real bills, but the real bills propositions, intuitively appealing, fall before the tripartite function of money – as a means of exchange, a unit of account and a store of value. Money can be created in a banking system, and credit can be substituted for money, not only to facilitate exchange, but also to purchase assets, which in turn can be used as collateral for the creation of additional credit. Thus the needs of trade will not govern the creation of money in a banking system, and there is no avoiding a monetary policy. It may be a policy of rules, it may be a policy of discretion, but it remains true as Bagehot said that money cannot manage itself, and for that purpose we still use banks. The great unanswered question of this remarkable decade is why the very large stimulus given by the Fed and others in 1990-91 to save the banks was channeled into asset inflation – especially paper assets, which do not depend so heavily as real estate assets do on the generation of credit – rather than into price inflation. It is not a new question. Benjamin Strong as Governor of the Federal Reserve Bank of New York and leader of the Federal Reserve System for the first fourteen years of its life was forever dealing with Congressmen and others who worried that too much of the credit being generated by the open market operations of the district Banks was escaping into "speculation." "If the Federal Reserve System is to be run solely with a view to regulating stock speculation instead of being devoted to the interests of the industry and commerce of the country," he wrote to a colleague as early as 1919, "then its policy will degenerate simply to regulating the affairs of gamblers."[2] Part of the reason for the New

[2] Chandler, Lester V., *Benjamin Strong, Central Banker*, Washington, D.C., Brookings Institution, p. 444.

Deal legislation was to control the use of credit in the markets, and the Federal Reserve among its other missions has one to regulate the degree of leverage in the stock market, with special controls on what is called "purpose credit." The current Fed, because such restrictions have been so definitively overtaken by technology, has done nothing to move its 50% margin requirement (though I would have thought something of the sort would be a rhetorical blow against irrational exuberance), but its predecessors into the 1960s moved margin requirements up and down as the volume of credit in the stock market expanded or contracted. Money, in Keynes' lovely formulation, is also "a link between the present and the future." And interest rates are the expression of that link. Unfortunately, they impact on the costs of current activities as well as the price of assets.

Now, partly because the leverage factors are so different, the information systems of banks and markets are largely disparate. Banks, to abuse Isaiah Berlin and Tolstoy yet again, are hedgehogs. They know the one big thing: they know their borrowers. They are not in a risk business; they are in an uncertainty business, and their efforts are to minimise uncertainty. Better judgement about aspects of uncertainty does indeed provide a source of profits from financial activity, while greater understanding of the true relationship of risk and reward does not. Judgement matters. Schumpeter said it almost ninety years ago: "[T]he compensation for greater risk is only apparently a greater return; it has to be multiplied by a probability coefficient whereby its real value is again reduced – and indeed by exactly the amount of the surplus. Anyone who simply consumes this surplus will atone for it in the course of events."[3]

The term we use for the banks' special function – rather deceptively – is "relationships," a word with emotional connotations. What "relationship" means in this context is that banks operate with their borrowers in a context of uncertainty reduction. The loan is to be paid back out of cash flow, no doubt, but we also have collateral. Indeed, until fairly recently, banks were reluctant to lend without collateral. Banks now claim that "risk management" has always been part of their expertise, but this is simply untrue; with few exceptions in few decades, banks have been risk-averse. The gag line was that banks lent money to people who didn't need it. Their stock in trade has been the information that permitted them to lend safely, which was indeed their obligation, because the preponderance of what they lent was money they themselves owed to some third party, who had bought into a blind pool and was never consulted about the banks' lending. Banks parted with their information reluctantly if at all: as an adjective "bank" is

[3] Schumpeter, Joseph, *The Theory of Economic Development*, translated by Redvers Opie, Cambridge, Mass., Harvard University Press, p. 33.

paired with "secrecy." For all the talk of transparency by central bankers, the Federal Reserve this year has a bill pending in Congress to increase the penalties on anyone who reveals information about the condition of a bank.

Perhaps the most astonishing and disturbing thing that happened this year in the world of banking and finance is the recommendation by the Bank for International Settlements, worrying about the edges of its risk-adjusted capital requirement rules, that banks should weight the risks on their loans by reference to Moody's and Standard & Poor's ratings – information available to anyone. We are being told that banks can be trusted to make their own weightings for market risk, where they are babes in the woods, but not for credit risk, which is and always has been their proper business. It's Ozymandias – there's a ruined statue in the desert, with a pediment boasting of a glorious past when banks called the tune and markets danced to it. "Look on my works, ye mighty, and despair..." The significance of the new BIS rule, of course, is that banks no longer wish to hold assets in portfolio: they want to securitise and sell them, and the salability of the paper, the relationship of its price to historic cost, will be greatly influenced by the published ratings.

In the old days, the central bank worked on the economy by influencing the behaviour of the banks; enterprise was dependent on banks, and responded to their response to the pressure from the central bank; and the market moved according to participants' perceptions of what would happen to the economy with the change of behaviour and attitude at the banks. The feedback mechanism was that the value of collateral, as George Soros noted in his recent book, is a function of the availability of credit. Now credit comes from all over, and what banks do doesn't matter all that much in the United States, and soon in Europe, too (indeed, part of the problem in the world is that banks still do matter enormously in the less developed countries and it is hard for the industrial countries to understand that, especially where there are touted "emerging markets"). Where information technology has taken hold, the central bank, still charged with keeping the currency stable and the economy growing, must work its magic *through* the markets.

A World of Dynamic Hedging

If banks are hedgehogs, markets are foxes that roam the world picking up snippets of fashion. Banks are stuck with their corporate customers; markets can sell out the stock in a twinkling. The conflict between the information systems, one deep but narrow, one shallow but broad, could not be more striking. Banks generate and keep information; markets forage for it,

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publicise it and consume it, spitting forth nothing but a one-dimensional price. Banks historically have been confident in their information, and set a course with it; markets are ready to turn on a dime. As markets rather than central banks set most of the interest rates that matter, and markets rather than examiners value their investment portfolios, securitisation is their target and the instability of their funding multiplies their risks, banks have become less assiduous in seeking information, less confident in the information they have, more willing to go with a flow they and their supervisors only partially understand. As my colleague Barry Bosworth once said, diversification devalues knowledge.

Today, banks *don't* in fact have that much information other people lack. Speaking before the Bretton Woods Committee a couple of weeks ago, Treasury Secretary Robert Rubin said that when the Korean banking system blew up he called the head of a big bank involved in Korea and asked for that bank's information about Korea so the government could make intelligent decisions – and was appalled to find that the bank knew no more than he knew. "Do we," asked E. Gerald Corrigan, former president of the Federal Reserve Bank of New York and chairman of the executive committee of Goldman Sachs, "really understand the long-term consequences of the technologically driven disintermediation of payment flows away from credit-sensitive financial institutions?"[4] To which the short answer is "No, we don't". And the long answer requires searching.

We return to leverage, which is attained essentially in three ways – by banks operating on fractional reserves and fractional capital; by the multiplication of repurchase agreements, and by derivatives. Leverage makes crisis; most financial crises start with real estate because that is the area where leverage is greatest. The development of opportunities for diversification and of hedging techniques has given the academic and regulatory world a feeling that greater leverage is now safe, but in a world of *dynamic hedging* diversification turns out to be a source of general instability rather than stability, because traders are instructed to seek the reduction of damage in one market by selling in another, presumably correlated market. Thus the Czech koruna comes under attack when the Thai baht falls.[5] "Contagion," Kodres and Pritsker write, "occurs through hedging."[6] David Folkerts-Landau of Deutsche Bank, formerly director of capital markets research for the IMF, writes: "The value-at-risk methodology automatical-

[4] Opening statement of E. Gerald Corrigan at the Symposium on Risk Reduction in Payments, Clearance and Settlement Systems, January 25th, 1996, New York; unpaginated.
[5] BIS 1998 report; detailed ref. TK.
[6] Kodres, Laura and Matthew Pritsker, "Derivatives and Global Capital Flows: Applications to Asia", In: *Journal of Economic Literature*, October 1998.

ly imposes a hedging and netting vision on asset management. What counts for market risk is the net position, not the gross position. If, for example, an investor buys ruble paper onshore and hedges it with an offshore dollar forward contract, its net position is in dollars, so it is taking relatively low dollar risk... Thus, state of the art risk management methodology – endorsed and imposed by industrial country regulators – is a primary source for the *contagion* effects of a crisis... [A]pparently bizarre operations that connect the otherwise disconnected securities markets are not the responses of panicked green screen traders arbitrarily driving economies from a good to a bad equilibrium. Rather, they work with relentless predictability and under the seal of approval of supervisors in the main financial centers."[7]

Worse: the levels of abstraction permit the confusion of what were once discreet categories. We find correlations between apples and oranges every day, and sell instruments that make the comparisons. To speak of current account and capital account today is to commit an anachronism: derivatives link the two beyond separation. On May 20th, 1999, Chairman Greenspan testified about his hope that recently developed instruments for the automatic rollover of short-term commitments would require lenders across borders to weigh and accept their risks – but in fact the technology operates in the opposite direction, through the creation of synthetic instruments to permit escape from what appear to supervisors (and national authorities in the borrowing countries) to be long-term investments. The call for developing countries to keep reserves equal to at least a year's interest payments in foreign currencies – borrowers should watch their leverage so lenders don't have to – will not protect currencies against troubles in the domestic banking system, or, indeed, against dynamic hedging.

Two Goals in Financial Policy

The dangers are multiplied because both repos and derivatives exist in an secretive underworld. In theory and occasionally in practice, both are infinitely replicable: there is no real world supply constraint. The instruments that are repoed now can be repoed again in a few seconds; and anybody can write, say, a nondeliverable forward on a ruble/dollar exchange. Nobody can possibly measure – let alone model – the risks that may be involved in a contract if an unknown number of identical or closely correlated contracts are being written simultaneously by others in the market.

[7] Folkerts-Landau, David and Peter M. Garber, "Capital Flows From Emerging Markets in a Closing Environment", In: *Global Emerging Markets*, Deutsche Bank Research, October 1998, p. 79.

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The partners in Long Term Capital Management (LTCM) professed themselves shocked and disadvantaged when it developed that many others had been following strategies similar to theirs. If it hadn't happened, it would be unimaginable that the banking regulators would permit highly leveraged institutions to write their own risk weightings for contracts that are in unknown supply in the market and thus have an unknowable volatility. As Brian Quinn observed at a Group of Thirty conference in Madrid during the 1994 Bank/Fund meetings, letting banks write the risk weightings for derivatives positions is like letting corporations write their own tax forms: it won't produce the results government is entitled to achieve. Indeed, it is incompetence for regulators to permit the growth of markets where open positions are not known to anybody, trader, chief executive officer or supervisor. To this day, we don't know the value of nondeliverable forward contracts written on the ruble – all we know is that much of the loss from last August's explosion has not yet been admitted by the participants.

Keynes in his *Treatise on Probability* quotes Aristotle's comment that "the probable is what usually happens." We are not in fact far beyond that in the application of probability to financial instruments. Most of what is being modelled as risk is really uncertainty, and it is breathtakingly dangerous to confuse the two. One of the benefits of wealth is redundancy. To give it away for the sake of the money that can be made with leverage – even if the losers day to day are foreigners in poor countries where there is no redundancy – is a folly for which our posterity will profoundly rebuke us.

Two goals should guide our policy today in financial matters. One is the separation of the money supply function from the lending function, along the lines of the narrow bank or 100% reserve system that Frank Knight and Henry Simon and Al Hart pioneered in the 1930s. Electronic entries, real time gross settlement arrangements and other uncertainty-reducers in the payments system make such a goal achievable as it never was before. With the threat to the money supply removed, the authorities can permit the collapse of lending entities, and can thus promote caution in their decisionmaking. Drexel is the existence theorem: it was the second largest clearer in the Eurobond market, and its failure was a source of anticipatory terror at Euroclear, but in fact it went under with only a handful of ripples.

The other goal should be a major readjustment of capital requirements and risk weightings to make it more profitable for banks and other players to do their derivatives business through exchange-traded instruments. The exchanges automatically deliver information about the extent of the open interest in a contract, keep their own confidential records of large trader positions and through variation margin compel recognition of volatility

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and the limits of safe leverage. Players as well as supervisors need such information, and the fact that they don't demand it merely means that they are exploiting their other information advantages.

Mayer's Laws of Derivatives remain valid. They are three:

One: When the whole is valued at a price less than the sum of the prices of its parts, some of the parts are overpriced.

Two: Segmenting value also segments liquidity.

Three: Risk-shifting instruments ultimately shift risks onto those less able to bear them, because them as got want to keep, and hedge, and them as aint got want to get, and speculate.[8]

The territory is crisscrossed with fault lines; in everyone's interest, we must have a financial architecture constructed to stand up in earthquakes.

[8] Mayer, Martin, *The Bankers: The Next Generation*, New York, Truman Talley Books/Plume (paperback), 1998, p. 323 and further.

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Comment on "In the Interests of Safety," by Martin Mayer

Age Bakker

Martin Mayer's paper is an extremely interesting contribution which gives a lot of food for thought. The historical flash-backs he mentions in his paper show that uncertainty and risk and earthquakes are here to stay, and so will financial crises. What we can and should do, however, is to make sure that we are better equipped to deal with them when they occur and to limit as much as possible their transmission to the real economy. For this, of course, we need a strong, resilient financial sector and better functioning markets. I think we all agree on this, but how to get there is open for debate.

You have mentioned so many points, Martin, that I will leave out the more technical points like the ones on dynamic hedging and leverage. I think Warren Mosler might be better equipped to deal with those. What I would like to do is to single out three catch-phrases which struck me and comment on them. After that I shall end with three issues for further discussion. The three catch-phrases were, firstly, what banks do doesn't matter all that much. Secondly, central banks are the source of moral hazard. And thirdly, some choices made in the new Basle Accord are astonishing and disturbing. These are all literal quotations. Maybe I should mention the context as well, since you nuanced them. Nevertheless, for the sake of argument it might be nice to look at them in this black-and-white way.

What Banks Do Does Not Matter All That Much

Your first proposition is that what banks do doesn't matter all that much. Your argument is that credit really comes from all over the place. I think a word of caution might be needed here. You say banks are the hedgehogs, markets are the foxes. I didn't know what a hedgehog was, but I just got Bill White's definition: "a small mammal with spines on the outside; when threatened it rolls up in a ball, which is not helpful when the threat is an approaching car." It seems that you have as a definition: not helpful when the threat is the approaching markets, which are in your view the foxes. Of course it is true that the character of the banks has changed a lot, but I would argue that nevertheless the standard intermediation function is still a very important one. One should not forget that banks continue to have a

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major share in financial market activities themselves. One could even say that if banks are perceived as hedgehogs, they have been able to disguise their foxy character. This may be more valid outside than inside the US, I agree. However, in the European context the financial institutions are all important, because we don't have a Glass-Steagall type separation of financial activities.

One of the lessons we have drawn from the LTCM crisis which you seem to quarrel a little bit with, is that it shows that the banks have believed the blue eyes of Nobel Prize winners. But in doing this they have not applied normal caution in giving credit. I would argue that it is completely valid to tell the banks that they ought to get enough information on these hedging institutions, just like they do on corporations they are lending to. So in that sense I would argue that to put pressure on the banks is all right.

As I said, I will not dwell on the leverage aspect. What I do want to mention, however, is that we should not forget that the positive aspect of leverage is that it provides more liquidity in the markets. And more liquidity in the markets might also mean less volatility. So there is a trade-off here, and hence one should be careful to not only look at the negative aspects of high leverage.

Central Banks Are the Source of Moral Hazard

Your second, also black-and-white, statement is that central banks are the source of moral hazard. This basically goes down to the question: should central banks at all be in the lender of last resort business? I think that was the point you were making when you were arguing that the money and the lending function should be separated. Of course, a central bank prefers not to be in the lender of last resort business, we would not quarrel about that. But the issue of lender of last resort carries a lot of taboos. One argument against the transparency of central banks is precisely on talking about that lender of last resort function. It should not take the shape of government guarantees, at least no explicit guarantees. I would nevertheless argue that central banks do have an interest in acting as a lender of last resort, if needed. Let me mention two or three arguments.

Firstly, monetary policy instruments are operating through financial markets, through the open markets, so you need a well-functioning payments system. You need a well-functioning banking system in order to be able to carry out your monetary policy. So you need to a certain extent a strong, stable financial system to be able to have a price stability oriented monetary policy.

The second argument is a bit more technical and differs from the US

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situation, where the discount window indeed is not used that much. In Europe we have just installed an instrument, which is called the Lombard facility, which in effect is a sort of lender of last resort monetary instrument. As long as banks have enough collateral, they are allowed to go to this window and there is no negative connotation of going to that window. The function of this facility is basically to make sure that the payment system functions well and that there are no liquidity shortages at the end of the day. However, as I said, central banks do not talk about this too much. There is always a moral hazard danger implied, as there is with insurance and with social security nets and with all these other safety nets which a society wants to have. But what is the alternative? The alternative is a dangerous one of chaos and distrust of financial institutions.

So there is a negative external effect of *not* having a lender of last resort, which may exceed the negative effects of moral hazard. Of course you are right that it is not always easy to distinguish a liquidity from a solvency problem, but the lender of last resort function, as far as central banks are concerned, is quite often viewed broader. It is not only the provision of liquidity, but it is also the acting as an honest broker. I think the LTCM crisis is a case in point.

Lender of last resort functions might also be well-organised by a non-central bank, but for practical reasons they are best performed by the central bank because it is able to generate the liquidity as quickly as possible.

The Basle Accord

Then, your criticism of the Basle Accord. Of course – and I think that we already touched upon this earlier – supervision moves with financial developments. There might be a problem here, because as Bill White said, supervision does not move as fast as the financial markets. Basically it is a follower. That is both good and bad. It is good, because it allows financial markets to be innovative, it allows financial engineering, it allows the development of new financial instruments which have a lot of benefits. It is bad, because it may be that supervision is moving too slowly or even acting in a perverse way, as we mentioned in the FONDAD conference of last year in Amsterdam. Stephany Griffith-Jones at that time made the point about the ill-based 20 percent capital requirement for the inter-bank loans. But supervision is moving.

You made two points, which I would like to comment on briefly. The first one is on the use of external ratings. Personally, I would agree with you that we need to think about that much more. My impression is that this is still open for debate – I'm not a supervisor by the way, so I can easily say this. My understanding, like that of Bill White, is that it has been

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extremely difficult to move ahead in this area. The best one could say is that it is now better than the club-like rules we had before, where only the member countries of the OECD had a good rating and consequently a zero risk weighting. That meant that Korea and Turkey were in the zero risk weighting category and Singapore in the higher risk category. At least that is better now, but personally I think it would be even better to have a system which, for instance, would follow the OECD export credit ratings. That is, however, politically extremely difficult to accomplish.

The second point you made on the Basle Accord refers to the use of both market risk models and credit risk models. I would not be opposed to the use of credit risk models, but they are much more difficult to develop than market risk models. One of the difficulties is that you do not have a marked-to-market system in the credit risk, you do not have information on default risks, etcetera. Nevertheless, I would agree here basically – and I don't think this is at all in contradiction with the Basle proposals – that the development of internal credit risk models should be supported by supervisors. What supervisors would do is basically the same as they do with the market risk models, that is to look whether they fulfil all the preconditions and the tests which you would also put to these market risk models. And I also agree on your point that they have not been all that well-adapted to that one-day big shock.

Three Issues for Discussion

These were some comments, which are close to the mind of a central banker. Let me finish by mentioning three issues for discussion, where I myself would still be open for debate. The first is whether the lender of last resort function by central banks, which is now only focusing on banks, should not be extended to non-banks. I think this is a basic issue and I would go along with you in giving much more importance to market developments. It is difficult to argue why a bank should get money from the lender of last resort on good collateral, whereas a non-bank should not, even if it would have the same good collateral. Of course there are a lot of obstacles here to be overcome. In some countries, for instance, central banks can only act as a lender of last resort to those institutions they supervise themselves. That is a legal obstacle. In some other countries – I think the United States is a case in point – the central bank would argue that the liquidity assistance to the non-banks might go through the banking system, so there would be no need to have the non-banks directly in your system. In some other countries, Canada is a case in point, there is already a lot of discussion whether or not banks and non-banks should be treated in the same way.

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A second issue for discussion is also on the lender of last resort. Basically there are two issues here. The first is: who acts as a lender of last resort for internationally operating banks. This is not at all clear for some of the cross-border conglomerates which are now growing. Let me mention just one example very close to the Netherlands. We have seen the formation of a Belgian-Dutch conglomerate, Fortis, where there is a memorandum of understanding between the supervisors, saying that there is a lead-supervisor for the distinct activities of this group. In the case of the banking side of Fortis, it is the Belgian supervisor who is the lead-supervisor and in the case of the insurance leg, the Dutch one is the lead-supervisor. This is all agreed on the basis of the relative importance of these activities in each country, which is already a complicated matter. But in that memorandum of understanding there is no mention whatsoever of the lender of last resort, and one could say, rightly so. Eventually when a problem arises, this may be easily resolved between Belgium and the Netherlands. But what about the international banks operating in Argentina, or in Central Europe? Who will then be acting as a lender of last resort? And how to solve the problem of those who would need another currency than the domestic currency?

There is yet another problem for the lender of last resort which has to do with the too-large-to-fail doctrine. Some of the banks are getting extremely large in comparison to their national size. Maybe the Netherlands again provides a good example. One could argue that a bank like ABN-AMRO has outgrown the size of the Netherlands. Nevertheless, that bank – I would not say it in public, but I might say it here – is too big to fail for the Dutch economy. One might also argue that the major Dutch insurance company is too big to fail for the Dutch economy, because the real effects would be disastrous. So I just put this question on the table here, about financial institutions growing so large in comparison to the size of their national economy.

A third and final issue for discussion is that with regard to supervision we are very much focusing on the lending side. A case might also be made for focusing more on the borrowing side. That is an issue we also discussed last year at the FONDAD conference in Amsterdam. Should one not develop standards or codes of good conduct for debt management? What constitutes a good level of debt, both for short-term and long-term debt, how should the asset-liability management of indebted countries be? I am not arguing here for the development of another new standard – we had a discussion on that just a few days ago. Nevertheless, there might be an argument in favour of trying to develop more bench-marking on the borrowing side. These are the three issues I would like to put on the floor for discussion.

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Comment on "In the Interests of Safety," by Martin Mayer

Warren Mosler

A couple of people at this conference were concerned that I was against free trade. That is not the case; I am absolutely in favour of free trade, maximum trade. The point that I wanted to make is that when you have a situation where countries have less than full employment and are competing for real capital, you are in a very different situation than when these countries are at full employment. Our textbooks and macro models assume full employment when they discuss the automatic benefits of free trade. They tell us that free trade at less than full employment requires the kind of regulations we are discussing. Nations with unemployed labour compete for capital by offering lower costs for international businesses – particularly the real costs of labour. As long as more than one nation is at less than full employment, free trade will create continuous downward pressure on real wages. If a nation is at full employment it is not affected by this phenomenon, as trade and foreign direct investment is driven by comparative advantage. Foreign direct investment must compete with domestic employers for labour, which means upward wage pressure. Presumably the new real investor pays the higher wage because he intends to produce more real output for the same labour input and therefore can afford to pay the higher wage. So, both wages and output rise.

I want to say something about LTCM, where many friends of mine are working. Martin, you talked about a bailout for LTCM. The principals personally lost 90 percent or more of their capital while the banks, because of the bailout, didn't lose anything. The banks made loans and the end result really vindicated their original credit analysis that had concluded these were safe loans. They got paid off and they made their 25 basispoints or whatever they were making on spreads, and went on to the next trade. Doesn't this make it problematic to criticise the lenders for taking too much risk as the very worst did happen and they lost nothing?

The next point is a little bit technical and refers to the world of central banks. I would not use the word 'lender of last resort', but rather 'broker of last resort', because whenever the central bank comes to the rescue of an insolvent bank, it is only clearing an imbalance. If, for example, Continental Bank needs two billion dollars it means the Fed is looking at its own books and the other banks have a two billion long position and

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they do not want to lend to Continental because they are worried about the credit risk. The result is that the central bank has a credit from one and a loan to the other, so the net cash is always zero.The central bank is acting as a broker of last resort when there is a jam-up, when the credit analysis of the other banks won't let them sell off their excess funds.

A few more technical points. Martin Mayer in his paper argues that there are only two possible outcomes: either the government raises taxes or the citizenry pays the inflation tax. I would like to add that the inflation tax is paid at the time the bad loans are made. That is when somebody gets the money to build those shopping centres in the desert and runs up the price of concrete and gasoline and everything else. Four years later, when the thing gets written off, you actually have a deflationary event when the assets get sold and the equity disappears from the books. In other words, the expansion phase has the upward bias on prices and the unwinding phase has a downward bias on prices.

'Too big to fail' is interesting as a moral hazard issue, but we have to remember that just because the institution itself continues does not necessarily mean the equity holders were not at risk. Generally, the stockholders are likely to lose all their money, the debt holders become equity holders, get something back possibly, new equity is raised, and life goes on. The idea that the institution continues does not necessarily mean that somebody did not take risk, and that somebody did not lose everything. Now, if we decide that a capital requirement of eight percent, for example, is not enough, that it is too much leverage and too attractive, then we can raise our capital requirements. That is when the moral hazard issue comes in: how much capital do we want to be on the line; how big is that subordinated piece? In other words, 'too big to fail' doesn't automatically mean there is a moral hazard issue, since the phrase refers only to the institution being too big to fail. If the stockholders can lose all of their equity, along with the holders of tier two capital, the fact that the institution continues is of no practical value to these owners.

Again, when we talk about stability of the currency, a failure is deflationary. So we are talking about preventing deflation. It is stability of the currency, but it is a deflationary situation in that case, as assets get sold during liquidations.

Addressing your question, 'Why do asset values go up?', the simple answer is: it is math. The present value of future cash flows, the discount rate, the whole thing. Obviously there is more to it, but that certainly plays an important part. If you look at the multiples in the Japanese market, they are still very high, even though the bubble has burst and interest rates are very low. Fifty times earnings does not look so bad when you are looking at a zero percent overnight rate. As long as you can still hedge that out, if I

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can use the word, by paying fixed in a ten year swap market at two percent, you can work in these discount rates, ten, twenty years in the future. Your returns on equity still can be looked at as a spread. If you look at all the Goldman Sachs valuation models, or whatever valuation models, they are all plugging in a discount rate. It is part of the answer, though it is certainly not the whole answer.

A very good point in Martin Mayer's paper is his quote from a letter by Benjamin Strong: "If the Federal Reserve System is to be run solely with a view to regulating stock speculation instead of being devoted to the interests of the industry and commerce of the country, then its policy will degenerate simply to regulating the affairs of gamblers". I would take out the word 'simply'. I think the human tendency to gamble is always underestimated; stockholders want risk. When I worked at Bache for a brief period of time, I experienced that when you show somebody something with no risk, they are not interested, while when you show somebody something they could lose all their money on, they immediately want to sign papers and they can't wait to get a piece of it. It is just something in human nature. And it is no different when you are running a bank or when you are investing your own money.

In other parts of the paper you talk about: credit risk, uncertainty, risk weighting, securitisations. What securitisations do is allow you to sell off maybe 97 or 98 percent of the asset you just formed, and keep maybe a 2 percent piece. Against that you will take a 100 percent risk weight on your capital. Well, that is fine, but if you kept the whole asset, you would have to take 8 percent risk weight. So in a sense maybe that piece of the securitisation with only a 2 or 3 percent retention should have a 150 percent risk weight. This is something for the bank regulators to look at, because of the math involved. Maybe what you are really looking at is equity, when you retain a piece of the securitisation. Perhaps that should be counted the same way you would count equity risk. These are things to be considered.

A very interesting point is the one about the rating agencies Moody's and Standard and Poor's taking over. I have nothing to add, except that I find it a very interesting situation.

Martin's paper goes on to the central bank and the economy. He argues that credit comes from all over and what banks do does not matter. Let me just react to 'credit comes from all over'. I could not agree more with that. When we talk about money supply control, I think control nowadays is a little bit of a misnomer. Instead of control let's call it influence, where the interest rate is used to influence the money supply. Loans create deposits system-wide. If you have reserve requirements, then the deposits at some point in the future automatically create an overdraft condition. It is then up to the central bank to decide how to price that overdraft and that is

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where the interest rate comes from, to use these terms stylistically. There is no getting around it once the loan is made and the deposit is created, the deed is done and the money is there, and the overdraft appears. The central bank's last option is how to price this shortage of clearing balances. It is interesting that if you stop credit at the banking level, you will technically stop the creation of money supply, because money supply is defined as bank deposits, but other things pop up such as commercial paper. Even in Russia they now have something called arrears. And what is arrears other than commercial paper, however less organised and less liquid? When you go into a restaurant and they serve you food, there is a debt right there; there is credit creation, because you have not paid for the food yet. If you go to any frontier town, everybody owes the company store; everything is done on credit, it is very difficult for the central bank to control that kind of thing, it just pops up spontaneously.

Another very good quote is: "diversification devalues knowledge". Martin is absolutely right. You don't need a whole credit department, you just diversify, which is a lot cheaper. Of course bank information then becomes the same as everyone else's.

A very good point is the one about pension funds. We call pension funds real money funds as opposed to the leverage funds. The leverage funds are just about everybody, but the small group of pension funds is of course the real money accounts.

We talked about dynamic hedging having destabilising effects in other markets. Dynamic hedging is destabilising in any market, it doesn't have to be in another market, it can be in the same market. And that comes back to the natural tendency for people to gamble. I will get back to that in a second.

Russia, NDFs – non-deliverable forwards – , dynamic hedging: from my point of view NDFs are counterparty risk more than they are dynamic hedging risk. I was manager of a fund for people who wanted their money in Russian GKOs, which is what they call their T-bills. We bought GKOs, we had NDFs against them. The fund is now in liquidation. Interesting enough, I always thought that if the fund went in liquidation, it would be because the GKOs defaulted and these people would have lost their money. However, the hedge technically worked very well; the NDFs went up in value as fast as the GKOs went down and there should have perhaps been a loss of ten or fifteen percent. Subsequently Russia made good on their GKOs by creating rubles for them and with the hedges that would have been adequate so there would have been the anticipated profit. However, some of the NDF counterparties refused to pay on a timely basis. Now, we are not talking about Russian banks, we are talking about Deutsche Bank, Crédit Lyonnais, ING, Société Générale – $310 million in

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receivables. They just did not pay while they had no good reason for not paying. They are now negotiating with the liquidators, they are slowly paying what they owed. Had they paid on time, the fund would have survived and these people would have gotten their 8, 10, 12 percent return or whatever they were supposed to get. It was not one of those high-flying speculating funds. They lost their money because of the counterparty risk of four of the world's top banks that were not paying on a timely basis on a NDF contract. I have been in this business since 1973 and I never expected it to end this way and it is not over of course. I have never seen anything like this.

We can complain about correlations where the people correlate the Czech with the Thai market or what not, but there are mutual funds out there that advertise that they trade, based on astrology and sunspots and whatever. So, correlating those two markets does not sound so bad compared to trading based on when the moon goes into some formation. (I am not saying that that does not work either, some of these mutual funds have very good track records.) Individuals are not risk averse when it comes to putting up one percent of their portfolio in some kind of risk fund and one percent of the whole world turns into a lot of money.

Let me comment on Martin's point that one of the benefits of wealth is redundancy. He states that to give it away for the sake of the money that can be made with leverage is a folly, for which our posterity will finally rebuke us. Well, certainly we are not going to get rebuked for giving away financial wealth. Nobody really remembers who lost what in the railroads. They know that we have a railroad, that we have buildings, that we have infrastructure, we have an educational system, the real things are what our posterity sees, the rest of it becomes interesting history, perhaps. But our posterity is not going to have less nominal wealth because we made a mistake.

Martin states that two goals should guide our policy today in financial matters. One is the segregation of the money supply function from the lending function. We can segregate it, but I don't know what that does for us. It would certainly make the bank system less volatile, but all the other forms of credit would then be pushed to the other credit institutions, whatever they are. This might be a benefit, I haven't given that enough thought to comment on, but it is simply a shifting of responsibilities from one sector to another.

Martin argues that the other goal should be a major readjustment of the capital requirements and risk ratings, to do their derivatives business through exchange-traded instruments. I could not agree more with that. In fact, we developed a swap contract, which is the largest market out there, the interest rate swap contract. It was picked up by the LIFFE, the London

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International Financial Futures Exchange, except for the fact that they made a small change in it, to render it useless, or nearly useless. They changed it from what would look like a normal swap to one that expires every three months and you have to put a new one on, so that nobody could replace their ten year swap with a ten year future that was ongoing for ten years. The reason they did this, they told us, is because their members objected to it; they were concerned it would take away all the business from the cash market and that is where they were making their money.

So I am in favour of Martin's idea that moving to financial futures contracts from over the counter trading will increase much needed transparency and provide useful information. But it is going to have to come from the top down, because there are vested interests to overcome. For example, none of the large US government bond dealers wanted bond futures; they said they would not trade them. But once the contract opened the next day they were all trading it. And later, nobody wanted marked-to-market swaps. We were the first to do marked-to-market swaps in 1986. J.P. Morgan would not do marked-to-market swaps, because they were the best capitalised bank at the time and they and a couple of others got all the swap business. And then a few years later, after marked-to-market was introduced by the lesser firms and J.P. Morgan was at a competitive disadvantage by not offering it, they became the very best at marked-to-market. First those with high market share naturally try to avoid such change, but once it is in, they come in. The same thing goes for exchange-traded derivatives. The traders with vested interests in the current inefficient, more dangerous system, will object right to the end and once the new contracts are introduced these same people will be the biggest and best at it. That is the way the system is set up, those are the incentives. It is not a value or a moral judgement against the participants, it is just the reality of the world in 1999.

About Mayer's three Laws of Derivatives: I am going to give two exceptions. Maybe that doesn't prove a lot, I don't know. His first law is: when the whole is valued at a price less than the sum of the prices of its parts, some of the parts are overpriced. We had a security that had in it Treasury bills, IOs – which is an interest only strip – and a non-economic residual. Now, these were all in a package and they could not separate it. How do you value this security? People who buy Treasury bills did not want it; they pay a premium so they can use Treasury bills at the Fed or at the border trade for margins, so they don't want the rest of this and therefore had no bid for it. The people who bought non-economic residuals did not want any income, they just wanted tax ramification, so they would not touch it. And the people who bought IOs, of course all they wanted was the IO, they didn't want to combine it with the other two parts. So the bid for the

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package was significantly below the price of all three. Well, this thing was illiquid until we went through several law firms to figure out a way to take it apart, to cut through the three pieces. Then each piece had the liquidity inherent in each piece and we were able to sell the Treasury bills in the bill market, the non-economic residual in the tax market and the IOs to the hedgers who hedge with IOs.

My next point relates to Martin's third law. What we are talking about is giving speculators easier ways to speculate. More casinos, easier access, taxis to the casinos, government lotteries, advertising lotteries. I agree that that is what we are doing and we have to rethink whether that is really what we want to do.

Dynamic hedging? Yes, but dynamic hedging is a big mystery. Jan Kregel informed me that most of Keynes' *Treatise of Money* deals with this problem. When the markets are going up, traders might buy a stock at 100. They like it at a 100 and if it goes to 80 they don't like it anymore because it is going down. So they want to sell it. If it goes to 70 now they really want to sell. On the other hand if it goes up to a 110, 120, they want to buy more; they want to buy it because it is going up, they want to sell it because it is going down. Now normal investing present value models would tell us if something becomes cheaper you want to buy more, but it does not work that way in the real world. Because people think that when something goes down, it has the chance of going down more, and often it does. The idea of selling it and buying it back cheaper is very enticing. It allows you to overperform the next guy and maybe it is a case of what is good for the individual does not work collectively, because the whole market cannot sell a stock. It can only change hands from one person to another, just like there is no such thing as a currency outflow. Dollar deposits stay at Citibank or J.P. Morgan, the name just changes and the exchange rate changes, but pesos don't go anywhere and dollars don't go anywhere. So the market cannot sell a stock, it is going to hold it at the end of the day, be it at a lower price. What do you do about something like this?

First we have to recognise that it is the case and Martin points out that it is definitely the case. It is definitely a problem that requires a lot of attention and it does not get very much attention. Keynes' response was, as Jan Kregel told me, that you have to create conditions where people feel comfortable holding the thing, where they think that there is value in holding it and that it might go up. Second, we have to decide whether we want to do anything about this kind of volatility in certain markets. If the answer is yes, then you come up with certain remedies, such as having the government as market maker, where of course you don't try, for example, to buy your own currency, we know that that doesn't work, but you buy the counterparty's currency. So when the yen got up 1.45, it was the US buying the

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yen, not the Japanese doing it. When it got down to 1.20 it were the Japanese buying the dollars and this is the way interest rates go from exogenous to endogenous. It is just timed intervention, giving markets some reason to look at their positions. Equity markets are faced with this all the time. The commodity markets have circuit brakers and cooling off periods and position limits and daily limit moves and all kinds of things to try and temper this natural human tendency to sell when it is going down and buy when it is going up.

I want to illuminate the leverage problem with a story about the five dollar bill waiting on the sidewalk. What happens is that somebody comes in and says, "I give you five dollars, free, thirty days from now". You say, "OK, I'll take it". Half an hour later someone walks in and says, "I've got a ten dollar bill for you thirty days from now". Now, you've got a problem. With the first guy, now you have a five dollar loss in your first position on a marked-to-market basis. And that guy is knocking on your door and he wants a five dollar margin call, because the market is now ten dollars free money. And if the twenty dollar guy comes in to offer you twenty dollars, you are now out of business and you have to shut down. You now have a fifteen dollar margin call and you don't have adequate capital to accept the five dollars a month from now. And this is not an exaggeration, that is exactly much of the story with LTCM. This is how it works and these are exactly the dangers of many types of leverage.

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Floor Discussion of "The Ways Financial Markets Work and the Implications for More Effective Supervision"

Reasons for Regulation in Source Countries

György Szapáry began the discussion by quoting two statements from Martin Mayer which, in his view, apply perfectly to recipient or, as Szapáry called them, "catching-up" economies: 'Diversification turns out to be a source of general instability, rather than stability' and 'Risk-shifting instruments ultimately shift risk onto those less able to bear them'. He then took issue with the notion that globalisation fosters efficient resource allocation and insures that capital goes where the productivity of capital is the highest. "That is only true in theory. In practice it does not work that way because there is a mismatch between the desire for higher return and the desire for liquidity. The highest return is on FDI, usually about 30 percent per year, but it is not liquid. Investors would rather sacrifice the high return to acquire something more liquid, so they are turning to portfolio investment, particularly fixed-rate investment. Thus, they risk investing in these catching-up economies with high interest rates. In itself, this is not bad for the catching-up economies because there is room for the inflow of this kind of capital. The problem arises when you get a much larger inflow of capital than you can actually use.

Let me give you an example which shows how the diversification and globalisation of investment is at the root of this problem. In the past when an average investor, let's say a doctor or a lawyer in the United States, walked into an investment bank to discuss portfolio investment, he would be advised to invest about 40 percent in fixed income and about 60 percent in stocks. But nowadays the bank will also suggest: 'Why don't you invest 5 percent in hedge funds? It is very risky of course, but the yields are substantial.' They usually convince the investor, and he agrees to invest 5 percent in derivatives and so forth. It is only 5 percent, which is very safe, or it appears relatively safe. But those 5 percents add up to all these millions of dollars moving around in those catching-up economies where they can create havoc.

Some time ago I was talking to fund managers who came to Hungary and one of them said that Hungary is not that interesting anymore because

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real interest rates are not that high. 'But you know what is interesting?', he said, 'Macedonia'. And this is a true story. These hedge fund managers really think very short-term. They boast of moving capital from one country to another, making them great hedge fund managers. But this is hot money moving around the world, and recipient countries have to learn to deal with it. In Hungary, we have now learned some of the tricks. For instance, we used the excess inflow of capital to build up reserves as a cushion for when the capital flows out. But I think one also has to deal with it more effectively in the source countries."

Stephany Griffith-Jones agreed with György Szapáry and explained why. "György's final point is very important. The wave of money that surges into these recipient countries is so large, in proportion to the size of their economies and their financial markets, that they need help from the source countries. It is not really fair to say, 'you just have to cope with these surges', because it is extremely difficult. Even those countries that have done all the things the textbooks tell them to do cannot be totally successful because of the scale of these flows in proportion to the size of their markets.

György is right for another reason and that is that if these things then go wrong, there will be bailouts and investors know this. In spite of all the denials, there have been a lot of bailouts and these bailouts have indirectly benefited the investors much more than the recipient countries. So there are good reasons for some kind of regulation which is accepted fully at the national level and should be accepted at the international level as well."

Bill White agreed that excessive capital inflows can be disruptive for recipient countries. "From the regulatory perspective, the banks themselves are generally not doing anything silly. The amount of money they are putting into the markets of the recipient economies is peanuts, it is nothing. And if they want to do that without any significant threat to the health of the institution, the first question one must ask is: 'Why shouldn't they be allowed to do it?'. The market failure is precisely what György says: If you add up all the small sums of money, it is devastating for these individual recipient countries, and I really have no answer to that. Maybe it would be possible to control on the lender side, but when you consider how far we have retreated from controls over domestic lending, I am sceptical. It is all market-based now, and it is all being liberalised. We can hardly say, 'For foreign loans, for some macro-related externality reason, we are going to prevent you from lending'. I am more inclined to say to the recipient, 'You have seen the damage these inflows can do, maybe you'd better use more capital controls and the like'. Sometimes disruptions are substantially more costly than the welfare effects of imposing some capital controls."

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Griffith-Jones insisted, however, that industrial countries have good reasons to reconsider the regulation of capital flows to emerging markets by mutual funds or banks. "Recently, I had a conversation with a commissioner of the US Securities Exchange Commission. He was very sympathetic; he was talking about Mexico and unemployed Mexicans and so on. But then he said, 'Why should we regulate mutual funds that invest in Mexico? We think that investment in technology shares is crazy and the price of shares is high and unrealistic, but we don't regulate it in the US, so why should we do it for Mexico?' The answer is: 'Because the damage done to Mexico or to Indonesia in terms of the number of poor people who are suffering, is much greater'. If people lose money in the United States, it is a pity but it isn't going to be a tragedy. These economies are much more fragile. They are still in the transition phase, so the markets are not deep enough, the capital flows are more volatile, and the damage done to the real economy is more extensive.

During the Indonesian crisis, some of the figures revealed that poverty had increased from 20 million to 80 million. Those figures are being revised now, but we cannot deny that there was a huge increase in poverty. And why is that? Because there are so many people near the poverty line in Indonesia. Even if it did not go from 20 million to 80 million, but from 20 to 30 or 40, it is still a lot of additional poor people. The welfare costs are highly problematic and while it may be rational in the OECD countries to stand back from regulation, it is not rational from the point of view of the recipient countries."

Szapáry also disagreed with White's reluctance to regulate in the source countries. "Bill, maybe it is 'peanuts' for these banks and maybe one should tackle it using capital controls in recipient countries. But let me give you an example. I was at a conference organised by the Deutsche Bank about a year ago. During one of the panels, someone from the Deutsche Bank asked me, 'What did Hungary do to deal with the Russian crisis?' I threw the question back at him and said, 'What did you do to avoid the loss of 1.2 billion Deutsche mark that the Deutsche Bank had on GKOs by their own admission?' I said that I was absolutely flabbergasted that – by their own admission – they bought GKOs at the end of July or the beginning of August 1998. I told him that in March 1998, Hungary strongly tightened the exposure of its banks to Russia because we saw this coming. But they must have seen it coming too. Still, the appetite for yield pushed them in and they thought they would be faster getting out than anybody else.

As a US Deputy Treasury Secretary once said, 'A billion dollars here, a billion dollars there and we are beginning to talk serious money'. When you say it is too small, I am reminded of what Jacob Frenkel said: most crises are

started by saying 'it is too small to bother with'. I think one should try to do something from the source countries, but I'm not sure what."

Changes in the Incentive System for Traders

John Williamson suggested that excessive capital flows might be regulated in the source countries by changing the remuneration system for traders. "I find the remark in Martin Mayer's paper, that traders get paid to do business and penalised if they don't do enough business, rather terrifying. I've been thinking of this problem in the more general context of the herding behaviour of investors as being a big part of the problem. I asked myself, what sort of solution might there be in terms of changing the remuneration patterns of the people who are doing the business? Let me try this one out on you and see whether it reverberates. One solution might be that when the income of fund managers rises beyond say one or two hundred thousand dollars a year, that all of their incentive payments ought to be paid say five years in arrears. Moreover, it ought to be based on a judgement of how they traded – in sensible, long-term trades or simply by beating the index for the last three months. We need to focus their attention on the long-term, underlying fundamentals and offer them a direct personal incentive to break this type of herd behaviour that is so damaging.

And if you think that this makes sense, how do you persuade managers to behave this way? If they are working in a regulated, supervised institution, then it ought not be too difficult. And if they are working in a bank, then banks which implement remuneration practices of this type would be required to have a capital adequacy ratio of only 8 percent; while the ones that don't would be required to have 10 or 12 percent. That might be a fairly effective incentive for the bank to reform its remuneration practices. I haven't yet thought of what the equivalent would be in an institution other than a bank, but maybe I can get a little bit of help from this audience."

Zdeněk Drábek agreed with John Williamson and viewed his suggestion as an issue for regulators. "John has articulated in specific terms what I had on my mind when I asked my first question in the previous session, which was: 'Are there incentives in the financial sector system which drive the financial institutions, traders in particular, to take these excessive risks? Is there still, after our unfortunate experiences, a lack of control mechanisms within the institutions to stop these kinds of practices?' Apparently, the rewards for the traders are so enormous, that they are prepared to take these kinds of risks. The question is whether there is a way to deal with these situations. I am not sure that John's proposal is going to be embraced

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by banks, but I think that it could be an issue for regulators."

Stephany Griffith-Jones agreed that some kind of regulation is needed. "We have been saying these things for quite a long time. It has come to the point of implementing them. John's idea is clever, yet if we tell the financial institutions to change the remuneration system and we do not impose it through some kind of regulation, then it just won't happen. The competitive pressures to attract these star traders are too great. They are the individuals provoking the largest disasters, but they are also the people who are most in demand. If they aren't offered these packages, they leave."

Bill White explained why changes in the remuneration pattern would have to be applied universally. He also stressed that the actual problem has to be clear before the changes are implemented. "This was very fashionable about two or three years ago. We were all worried about volatility and short-termism and said that traders should be remunerated differently. One of the big brokerage firms, Salomon, tried to do it and they lost two-thirds of their traders in no-time. So, you really must have some kind of regulation which is universally applied. But if you do that, you'd better first be clear about what problem you are trying to solve. Is it short-termism and volatility, or is it misalignment problems and excessive capital inflows? These are quite different things."

Martin Mayer pointed out additional difficulties with the current remuneration practice. "So long as the supervisor in a bank gets his bonus from the trader's profits, it is going to be very difficult to control the situation. If the trader is making 20 million dollars and his supervisor is making 750 thousand, the power relationships in a society such as the United States are very difficult to sustain. This is particularly valid if the chairman of the board becomes worried that this very profitable trader might go elsewhere. My son, who is a lawyer, said that the profession of law began to go to hell when lawyers decided that they should make as much money as their clients. And to some extent this is also true in banks and larger companies – and baseball teams."

Jack Boorman said that one should not only look at the incentives on the side of the investors, but also at the perverse incentives on the side of the recipient countries. "I think that we need to go back to the actions of the countries that got into difficulties. If the debt manager in an emerging market country can shave a few points and save what looks like the cost of borrowing by accepting a put in a medium-term instrument, by going short instead of going long and so forth, he gets patted on the back by the finance minister. He does not get penalised for the risks he is bringing into the debt profile structure of the country, which accumulate over time. In many instances, nobody is keeping track of what the accumulation of these risks really is.

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Similarly, we can point to some very specific factors in each country that got into difficulty where something was done tragically wrong. In Korea, for example, it was how the capital markets were opened. They discouraged long-term capital flows and they encouraged short-term flows through the banking system. This was a fundamental mistake in terms of the accumulation of risk that is placed into the country's debt profile. In Thailand, while the BIBF was indeed constructed for the reasons mentioned by Jan Kregel earlier, it was also quite clear to the foreign banks that they would get tax advantages. With a wink and a nod, they were told that they would be treated favourably if they wanted to come into Bangkok as resident operators, as long as they did business through the BIBF. This was at the same moment that Thailand was already getting about 8 percent of GDP in FDI and medium- and long-term capital inflows, thus aggravating the situation."

Although György Szapáry agreed with Jack Boorman that one has to look at the countries that got into difficulties, he stressed that capital flows can also create problems for countries that are not crisis countries. "When you have excessive capital inflows, because you are doing things right, you have to sterilise the inflow at a cost to the budget and to the taxpayer. This creates problems and tensions in the financial institutions. Then, you have to consider capital controls. Based on Hungary's experience, I believe that you have to have temporary short-term capital controls in such a period."

Ariel Buira agreed with György Szapáry that crises can also occur in countries that did things right. He presented an outline of options for those countries. "Often countries have made mistakes, but even when they don't, expectations can change virtually overnight because of a confidence crisis. In a system where this type of crises can occur, you have to have some mechanism to protect yourself. These mechanisms consist of the following: you have either some kind of regulation of capital flows or you have compensatory financing facilities or contingency financing facilities. On top of this you probably have to have some kind of regulation that allows debtors to suspend payments, to establish some kind of rescheduling or bankruptcy type procedure to protect them from the immediate outflow of capital. While you also want to eliminate the protection of investors or the moral hazard, the parameters are essentially the mechanisms I just mentioned. You have to decide which combination of these you want. This combination will depend largely on the resources you have available and that, in turn, depends on the Group of Seven, the Group of Five, the Group of One, or whatever. It is as simple as that. I am encouraged by the move toward accepting the possibility of rescheduling, and perhaps the possibility of controls, and some degree of financial support for countries under attack. I am sure we have to go further on all of these."

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Following up on the issue of contingency financing, Barry Herman suggested that emerging economies could be compensated for the volatility and devastating effects of excessive capital flows. "In the 1970s, when there was discussion about volatility, it was more about volatility of commodity prices. There were basically two approaches. The first was to try to reduce the volatility through commodity agreements. The second was to compensate for the volatility through compensatory financing by, for instance, the IMF. Now the focus is on financial volatility. There is some discussion about how you might stabilise the flows, but there is no clear consensus on whether you can do it and whether you want to do it. Even more so, there has been no discussion here about compensating for the volatility in the flows. In a sense, Argentina and Mexico have done something of this sort by arranging credit lines with the private sector. The IMF also has the Contingency Credit Line which is another way of approaching the problem."

Regulation by Rewriting Corporate Charters of Financial Institutions

Jan Kregel suggested that governments can also change the remuneration patterns of financial institutions or influence the behaviour of these institutions by rewriting corporate charters. "One of the issues that we might examine is the corporate structure in financial institutions. We talk about 'governance' and put 'corporate' in front of it, when in fact most non-bank financial institutions were not incorporated until recently. Most of these institutions fought incorporation on the grounds that it was not good for governance. Partnerships were looked upon as being more likely to encourage individual responsibility. The movement towards incorporation, which came much later in Europe than it did in the United States, created an environment in which governance structures were weakened rather than strengthened. People who were providing the capital got engaged in what we now call the 'Wall Street walk', which means that you exercise your influence over the company not by governing the company but by selling shares and influencing the share price. This reduces the shareholders' direct control. At the same time, it also reduces the managers' direct responsibility because under the corporate structure, they are protected from what they do in the name of the corporation and hence from any personal responsibility.

This is slightly different for banks. Originally in the United States, the equity owners of the bank were subject to 'double indemnity': they were subject to 200 percent capital contributions rather than 100 percent. This meant that if the bank got into trouble, the shareholders were called upon for another 100 percent of their existing equity share in the bank. Now,

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governments could require banks to have a certain governance structure. They could write a regulation into a corporate charter of a financial institution on remuneration, for example. Germany requires banks to present a *prima facie* case that the bankers who are running the banks have banking experience. There is a great deal of leeway in rewriting the corporate structures. Unfortunately, in the United States, and in most other cases, we have gone through experiences of free chartering and we presume that we should not be writing corporate charters. But, if there is one place that governments have control, it is in writing these charters. A large proportion of global capital flows would be shut down easily and rapidly by simply rewriting the incorporation charters to financial institutions."

Regulation of Pension Funds

Stephany Griffith-Jones added another practical idea to the discussion of regulating capital flows in the source countries, particularly capital flows from pension funds. "A lot of this money that is moving around in very short-term operations is actually *our* money, in the sense that it is pension fund money. Depending on the maturity structure of the ages, it may be ten or twenty-year money, but the World Bank estimates that about half of pension fund money is managed through mutual funds or other fund managers on a short-term basis, with one or three-month benchmarks. One interesting point is that pension fund savings are rightly encouraged by governments through a tax relief when we save. But perhaps tax advantages could be tapered in a slightly different way, according to how long the investment is for. The UK already has some provision, as does France, I believe. So an additional mechanism for curbing volatility in the source countries might be some kind of tapering so the tax advantage would be greater if the pension fund money is invested more long-term."

Market-Based Lending Versus Relationship-Based Lending

Bill White elaborated on an important point in Martin Mayer's paper. "Martin points out that the financial world is increasingly driven by market-based transactional deals rather than traditional relationship-lending by banks. Relatively speaking, markets have become more important credit providers. The question then becomes, 'so what?'."

Martin Mayer responded that the transition is dangerous, and Bill White replied, "The transition is always dangerous. People don't really know what they are doing in a changing environment. But I am not sure whether a 'steady state' – where people are more accustomed to market transactions – would be a more or a less dangerous place."

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Ariel Buira thought that a world with more market-based lending would be a much more dangerous place. "As Martin Mayer says, markets are ready to turn on a dime. The element of instability is very high."

Martin Mayer added that one of the reasons why markets are highly instable is that market information tends to be very shallow. Barry Herman pointed out that the decreasing role of banks is relevant for the issue of who has access to credit, because banks lend to some people that the markets won't lend to.

On the distinction between bank-based and market-based lending, Bill White observed that banks and investment dealers are moving more towards securitised operations. "Both in the United States and in Europe, there is much less money deposited in banks than the banks feel they could on-lend in the form of assets. In the United States, they securitise everything to lower the level of assets down to the level of liabilities. In Europe, they actively use the bond markets to borrow the money to raise the liabilities up to the level of assets they would like to have.

In the United States, they take the asset of the books, but the bank actually keeps most of the credit exposure – and they are not being charged for it under the Capital Accord. This is something that needs to be examined more carefully. The continued exposure of American banks is far greater than you would think and many times the supervisors judgementally adjust the capital ratios in order to deal with it."

Jack Boorman advised caution with both relationship-banking as well as securitised operations. "There is too much happy reminiscing about relationship-banking. Indonesia is a good example of what relationship-banking can do to you. It is not all positive by any means, if the relation happens to be your son rather than an arms-length credit relationship. At the same time though, if banks move toward more securitised operations, they need to learn to do a different kind of risk assessment than they did with a relationship borrower."

Differences in Capital Flows in Developed as Opposed to Developing Countries

Zdeněk Drábek questioned the difference between capital flows in developed countries as opposed to developing countries. "When we talk about crises, we are talking about emerging markets. Why aren't we referring to Holland or the United States? I asked John Williamson and he said, 'Well, the Americans are already having a crisis, but they don't know it yet'. It might be worthwhile to go over the taxonomy of the issues that are supposed to make the difference between these two situations?"

Ariel Buira responded that expectations play a large role. "It is a number of

things combined: their economies are much smaller, their financial markets are not as deep and large, and the expectations are different as well. If, for instance, Greece were not a member of the European Union – and if investors did not expect it to join the EMU and have access to various support facilities – I suspect it would have suffered as much as many of the countries in Latin America or Asia. The structural characteristics of its economy are quite similar to those countries, but the expectations were different."

György Szapáry underscored the point that expectations and risk assessments by investors are different for emerging economies. He distinguished two types of risk from the point of view of the source country, which require different types of regulation and supervision. "The first risk is present with foreign currency denominated bonds issued by the emerging economy. In this case, the risk is basically whether the country is going to pay it back. The other risk is the foreign exchange risk, for example when you buy GKOs or domestic currency denominated bonds. There is a higher real interest rate because you are also accepting an exchange risk. These two types of risk require two types of regulation and supervision.

The first type of risk – whether the country is paying back or not – is somewhat easier to handle since you can devise various guidelines. There are the Basle guidelines, but Hungary actually disagrees with these. As an OECD member Hungary currently has a zero rating, but we would lose that status with the Basle guidelines. Under the Basle guidelines, the rating agencies would have the capacity and the responsibility to determine the risks. Accordingly, Hungary would have a fifty rating because we are investment risk by triple B. So this would push up our spreads by fifty basis points. But, these rating agencies have not proven themselves to be very reliable because they did not foresee the recent crises. It is easy to downrate Korea after the fact, but they should have known it beforehand so that people would not have invested there. Rating agencies are not deep and thorough enough in their country analysis. They put too much weight on the current account and the debt-to-GDP ratio and the risks related to these, and too little weight on structural progress and the track record of paying back the debt."

While John Williamson also expressed discomfort with private risk-rating agencies, he thought there was some inconsistency with Szapáry's complaint about the higher real interest rate that emerging economies have to pay and his earlier remark that Hungary was getting too much capital inflow. Szapáry explained that his concern was with the extra risk premium. "We already pay a premium because the market gives us a higher risk. But, if the risk rating becomes higher because of these Basle guidelines, then we pay an additional premium."

Liberalisation of Capital Controls

Ariel Buira critiqued the hasty liberalisation of capital controls. "When Mexico joined the OECD, it removed the one major remaining restriction on short-term capital movements, thereby allowing foreign investors to hold Treasury bills. If this restriction had remained in place, the story would have been a different one. The OECD countries have removed all restrictions, but they have taken 30 or 40 years to do it. They maintained restrictions until the late 1980s. There are documents by the central banks of European countries and by the US Federal Reserve which explain the positive role played by these restrictions. I think we have a combination of ideology and commercial interest which pushed certain governments to push the Fund to press countries to liberalise quickly."

György Szapáry endorsed Buira's view by relating the experience of the Hungarian central bank. "Bankers lobbied the government to make them tell us to liberalise short-term capital flows and allow the foreign purchase of Treasury bills. We resisted it, but the interesting part is the following. Foreigners cannot buy government securities with less than one year maturity, but they circumvented this restriction by doing repos. They bought one year plus whatever, and they immediately made a repurchase agreement with the bank for one week, one month, three months, or whatever they wanted. So we had all that money coming in. We called in the banks and said, 'This is not against the letter of the law, but it is against the spirit'. The governor and I explained at length to the banks all of the problems that it had created for us. We said, 'Please do not do this, and if you do we will punish you'. Then we waited for about a month to do a surprise supervision. We caught a few banks and brokerage firms and punished them. We denied domestic banks access to our facilities, and we admonished the CEOs of foreign banks – it had some effect."

Ariel Buira then explained the strategy of the Mexican central bank which made it impossible for foreign banks to buy government securities. "The strategy was to prohibit foreign banks from opening a peso account in domestic banks. Without a peso account in a domestic bank, it was difficult for them to operate. Liberalisation essentially meant the removal of this restriction, because that was the bottleneck for foreign banks. It wasn't that they could not buy government securities, but if they could not hold the pesos, they did not know how to buy the securities."

Absorptive Capacity

Ricardo Ffrench-Davis turned the discussion to the issue of absorptive capacity. "György's remark that flows need to be consistent with the

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capacity to absorb them is very relevant. There is growing evidence that flows from capital surges go to consumption or non-productive investment rather than productive investment. This appears to have happened in Chile and Argentina in the 1970s, in Mexico and Argentina in the early 1990s, and in Korea between 1993 and 1996. Capital inflows increased much faster than productive investment in all of these countries. So instead of the textbook process of investment flowing from capital-abundant to capital-scarce countries in order to *complement* domestic savings, the flows *substituted* domestic savings.

If there is a trend of capital surges, it is primarily short-run money rather than productive investment. This is because the long-term investor needs more time to adjust to the quantity of capital. He needs time to define the investment product, to choose the technology, to make the investment and to get the output. That is a long process. If we are dealing with short-term money that flows in a very liquid form, it tends to reach consumers more quickly, because they can respond faster. For example, you can increase the margins for credit cards in ten minutes through mechanical computation methods. Another example is that real estate can respond faster than long-term investment in agriculture, mining or technological innovation.

All these things tell us that if we want accountability, if we want to reach higher productive investment, then we must improve the performance of the various capital inflows. Evidence suggests that the composition of flows has substantial influence on the effect. One reason for this is the agent in the flow. The agent of FDI is different from the agent who is moving money in the short run. The first is more connected to the investment process, while the other hopes that what he does connects to the investment process through the price of the stock market, through the interest rate, etcetera. He indirectly encourages investment by affecting these variables. But that is a long-term process. Ideally, each of the agents should aim at providing a stable supply of funds."

Ariel Buira stressed the importance of recipient countries limiting inflows to amounts which are reasonably consistent with their absorptive capacity. "I raised this issue in Mexico in 1993 when there was a blind faith in the markets. Anybody who raised questions like this was assumed to be crazy and just did not understand economics. Markets know best, so why ask these questions?

There has been a lot of ideology behind all of this. I think the ideology was encouraged by some of the international financial institutions and the industrial country governments because it suited their interests. Now it seems that there is a certain amount of revisionism going on. I am not sure where we come out and what the bottom line will be, but at least we are moving toward a more pragmatic approach, and that is for the best."