



What Financial System for the Twenty-First Century?

Andrew Crockett

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Foreword

The first Per Jacobsson Foundation Lecture of 2011, “What Financial System for the Twenty-First Century?” was presented by Sir Andrew Crockett, who is currently Special Advisor to the Chairman of JPMorgan Chase. The lecture was held on June 26 in the auditorium at the headquarters of the Bank for International Settlements in Basel, Switzerland, in conjunction with the BIS’s Annual General Meetings. Guillermo Ortiz, Chairman of the Per Jacobsson Foundation, moderated the event.

The Per Jacobsson Foundation was established in 1964 to commemorate the work of Per Jacobsson (1894–1963) as a statesman in international monetary affairs. Per Jacobsson was the third Managing Director of the IMF (1956–63) and had earlier served as the Economic Adviser of the BIS (1931–56). Per Jacobsson Foundation lectures and contributions to symposia are expressions of personal views and intended to be substantial contributions to the field in which Per Jacobsson worked. They are distributed free of charge by the Foundation. Further information about the Foundation may be obtained from the Secretary of the Foundation or may be found on the Foundation’s website (www.perjacobsson.org).

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Opening Remarks

JAIME CARUANA: Good morning. I'm very happy to welcome you all to the Bank for International Settlements (BIS) on the occasion of the Per Jacobsson Lecture this year. And in particular, it's a real pleasure to welcome Andrew. Welcome back. You and Marjorie have very, very good friends in this institution.

And I would like to say that this institution is heavily indebted to your work. You led the transformation of this institution when you were the general manager from a Group of Ten (G-10) to a global institution. That was not very easy, and we are all indebted to you. I would say we are a highly leveraged institution in relation to Andrew Crockett. But it's good debt.

Andrew will be introduced by Guillermo, former chairman of the BIS. I just wanted to welcome you and to tell you a few practical arrangements.

You will see that there are some videotaping processes during this morning. The Per Jacobsson lecture is a semipublic event, and the lecture will be put on the BIS public website immediately following delivery. Also, copies of the text will be available as you leave the room. And afterwards, I understand that the Per Jacobsson Foundation publishes questions and answers (Q & A) without identifying the questioner.

The videotape will continue in the Q & A following the Per Jacobsson, but this will not be public. And please remain here, because after conversation it will be immediately a panel discussion that will be chaired by Jean-Claude Trichet.

I don't think I need to introduce Guillermo Ortiz. He is here today in his capacity of the Chairman of the Per Jacobsson Foundation. So, Guillermo, welcome back.

GUILLERMO ORTIZ: Good morning. It's a great pleasure to be back in Basel and to be able to welcome you to the 2011 Per Jacobsson Lecture.

As you all know, or most of you know, Per Jacobsson was the Chief Economist for the BIS for about 25 years. And then he became the Managing Director of the International Monetary Fund. And during his tenure, the Fund came to great prominence. So he is a man who devoted his life to international public service.

Now before proceeding with the presentation of today's lecture, I would like to recall that last year Tommaso Padoa-Schioppa gave the lecture here in this forum. As you all know, he passed away suddenly last December. And I remember, Andrew, when you introduced him last year you mentioned that whenever you had a conversation with Tommaso or a meeting with Tommaso, you came out of this conversation or meeting seeing things in a new light that you hadn't seen before. I remember your words.

His intellect, his insights, and his friendship made a deep mark on all of us who knew him well. So please let me ask the audience for a moment of silence in honor of Tommaso Padoa-Schioppa. [Moment of silence]

Thank you very much. It's now a great pleasure for me to present Andrew Crockett. It's always a cliché to say that Andrew needs no introduction, but this is particularly true in this forum.

As you know, he served as the Chairman of the Per Jacobsson Board of Trustees for seven years. And after relinquishing his duties last year, he accepted an invitation to give this lecture which we are all awaiting. And though I'm sure that you are all aware of Andrew's exceptional career, let me recall some of the positions he has occupied. Andrew Crockett was General Manager of the Bank for International Settlements for more than nine years. And as Jaime mentioned, this institution became truly international under Andrew's direction. More than 17 countries, including my own, joined during his tenure. And this tradition, I'm happy to say, was followed both by Malcolm and by Jaime Caruana.

He was chairman of the Financial Stability Forum, Executive Director of the Bank of England—and in that capacity he was a member of the Monetary Committee of the European Union—Alternate Governor of the International Monetary Fund for the United Kingdom, and Chairman of the Working Party 3 of the Organization for Economic Cooperation and Development (OECD). He was a high-ranking official of the International Monetary Fund and member of the Group of 30. And he is currently Special Advisor to the Chairman of JPMorgan Chase.

I have known Andrew for about 25 years. And Margie and I count Andrew and Marjorie as our very good friends. He is an outstanding economist with a vibrant intelligence and huge experience in the financial sector. And he's actually one of the most remarkable persons that I have ever come across.

So I believe that you are eager to listen to what he has to tell us. And the topic is, "What Financial System for the Twenty-First Century?" So without further ado, let me ask Andrew to come to the forum. [Applause]

What Financial System for the Twenty-First Century?

ANDREW CROCKETT

INTRODUCTION

Well, thank you, Guillermo, for that excessively generous introduction. I'm not sure that I can live up to all of the things that you said. In any event, it is a pleasure to be back here at the BIS, and a great honor to be asked to deliver the Per Jacobsson memorial lecture.

I, too, would like to begin by remembering the man who stood at this lectern a year ago, our common friend Tommaso Padoa-Schioppa. His wisdom touched all of us in this room. He was, by conviction, an internationalist; by temperament, an academic; and by profession, a policymaker. His lecture last year exhibited all these perspectives in a remarkable degree.

His assessment of the financial crisis painted on a broad canvas and included a penetrating analysis of the limitations of the post-Westphalian model of state sovereignty in an integrated world economy. On this philosophical basis, he then drew conclusions for the current global system of shared monetary and economic decision making.

Like Tommaso, I'll try in this lecture to go beyond the immediate debate on regulatory reform to consider some more general issues. My topic is the principles that should underpin the financial system for the medium- and longer-term future. This means asking what basic functions we expect an efficient and stable financial system to perform, and how such a system adds value to the real economy. It means dealing with the system's apparent tendency to instability in ways that strengthen, rather than weaken, its contribution to optimal resource allocation. And it means exploring the appropriate balance between market discipline, regulation, and public sector intervention. In the course of these remarks, I will try to expand the current debate in two directions: first, to encom-

pass the whole financial system, and not simply the banking sector; and second, to ask not just what we want the financial system to avoid (namely, periodic crises), but also what we want it to achieve (the best way of adding value to the real economy).

The financial crisis that began nearly four years ago has raised fundamental questions about how the financial industry is structured, managed, and regulated. Given the depth of the crisis, and the enormous economic and social costs of the ensuing recession, this comes as no surprise. In the public square, there is anger and resentment: anger, that the sector that is supposed to facilitate the efficient working of the rest of the economy should be subject to such spectacular flaws and impose such large costs, and resentment, that those who appear most directly responsible for the crisis should be let off so lightly. As a result, much of the response to the crisis has focused on preventing at all costs a repetition and responding to the public's desire that banks and bankers pay a price for their past failures.

But while anger and resentment may be useful spurs to action, they are much less helpful in shaping a balanced response to the crisis that both safeguards society against financial fragility and preserves the contribution that the financial sector makes to high-quality sustainable growth. For such a response, I believe we need not just an analysis of the weaknesses that led to the crisis and of the measures that would prevent a recurrence, but also an understanding of the contribution we expect from a well-functioning financial sector and the fundamental requirements that underlie it. Let me begin, therefore, by defining what I mean by the financial system.

THE NATURE OF THE FINANCIAL SYSTEM

The financial system is more than just the institutions that facilitate payments and extend credit. It can be thought of as encompassing all those functions that direct real resources to their ultimate uses. In this sense, it is the central nervous system of a market economy. The financial sector contains a number of separate, though interdependent, components, all of which are essential to its effective working. One is the set of *intermediaries* (such as banks and insurance companies) which act as principals in assuming liabilities and acquiring claims. A second is the *markets* in which claims are exchanged. These include those for equity and fixed-interest securities, but also exchanges or over-the-counter markets for foreign currencies, commodities, and derivative contracts. And a third is the

infrastructure necessary for the effective interaction of intermediaries and markets. Infrastructure includes, most obviously, securities exchanges and payment and settlement systems. But it also includes the mechanisms that provide contractual certainty and that generate and verify the information on which efficient financial intermediation depends. This would include, for example, credit ratings, accounting, auditing, and financial analysis, as well as the supervisory and regulatory framework.

The three components—intermediaries, markets, and infrastructure—are inextricably intertwined. Intermediaries need infrastructures to exchange claims securely, and they need markets in which to hedge the risks arising from their intermediation activities. Markets function efficiently only when strong institutions are available to provide liquidity and information providers support efficient price discovery. More generally, as I explore later, the various components of the financial system work together to improve the information available to guide the allocation of resources. High-quality information is the raw material for directing resources to their most efficient use, facilitating intertemporal contracts, and thus strengthening growth potential. Financial sector reform, to be of greatest service to users of financial services, should protect and enhance the capacity of the system to generate such information.

THE CONTRIBUTION OF THE FINANCIAL SECTOR

In the wake of the recent crisis, it is perhaps not surprising that many have focused on the capacity of the financial sector, and banks in particular, to impose negative externalities on the rest of the economy.¹ Such negative externalities encompass both the direct fiscal costs of supporting financial institutions at risk of failure and the indirect costs from the recessions that almost invariably accompany large-scale financial distress. If costly crises are seen as the financial sector's main impact on the rest of the economy, it follows that more or less any actions to limit risk taking by financial institutions can be justified.

In fact, of course, a well-functioning financial system plays an essential role in generating high levels of saving, promoting the efficient allocation of investment, and smoothing economic fluctuations stemming from nonfinancial causes. By facilitating informed risk taking, it is a key element in achieving optimal levels of productivity growth and rising living

¹ Andrew Haldane, "The \$100 Billion Question" (speech to the Institute of Regulation and Risk, North Asia [IRRNA], Hong Kong, March 30, 2010).

standards. The importance of this contribution can be seen in the divergence in economic performance between countries with open and those with repressed financial systems.² Such a comparison suggests that the contribution of finance to economic performance should be measured by the enhancement of total factor productivity to which the financial system gives rise. It is, however, extraordinarily difficult to quantify this and to disentangle the individual contributions made by different aspects of the financial system. Still, this does not prevent identification of some of the ways in which the effectiveness of the financial sector is likely to be related to economic performance.

The first, and least controversial, is in the provision of a payment system. No market economy can function without a payment system, and it has long been accepted that banks are the most efficient way of providing this. Some have tended to see this function of the banking system as uniquely important and the only one that needs to be protected by public policy intervention. This is the fundamental starting point of the “narrow banking” school, whose advocates argue that if the payment mechanism is fully protected, there is no special public interest in how the rest of the financial system is organized.

Insulating the payment system, however, does not by itself guarantee either the stability or the efficiency of the credit supply mechanism. Typically, it is interruptions in credit supply that transmit financial stress to the real economy. And it is inefficiencies in credit allocation that hold economies back from achieving optimal growth. Bubbles and their subsequent bursting are the most obvious manifestation of this.

But more than just being a channel for credit intermediation and making payments, the financial system adds value in at least three other substantive ways. *First*, by converting illiquid and uncertain claims into liabilities that better match the asset-holding preferences of savers, a financial system can both add to the liquidity of nonfinancial sectors and increase the overall level of saving within an economy. Maturity transformation is a key way in which the financial system adds value to the rest of the economy, but as we have seen in the recent crisis, the leverage with which it is typically associated can also be a major source of vulnerability. In designing a financial system for the twenty-first century, therefore, we should seek to preserve the benefits of maturity transformation for users of financial services, while at the same time making the system robust to

² Gerard Caprio and Patrick Honohan, *Finance for Growth: Policy Choices in a Volatile World* (Washington: World Bank, 2001).

an unexpected erosion of liquidity, caused, for example, by sudden loss of confidence.

Second, and perhaps most important, the financial system is the basic way in which an exchange economy deals with problems of asymmetric information. The extension of credit from ultimate lenders to ultimate borrowers is rife with asymmetric information. Before a loan is made, *adverse selection* results from the fact that a potential borrower has better information than a potential lender about the risks and returns from an investment. After a loan is made, *moral hazard* can result in the interests of the borrower and lender diverging. Taken together, these factors result in a reduction of intertemporal contracting, lower levels of investment, and the suboptimal allocation of resources.

The growth of a financial system is the social mechanism for overcoming problems of asymmetric information and thus permitting a higher level of utility-enhancing exchange. A bank or other intermediary interposes itself between ultimate borrowers and ultimate lenders who would otherwise be discouraged from contracting by asymmetric information. The financial intermediary does this by putting its own capital at risk. Its *incentive* to do so is the spread it makes between borrowing and lending rates. Its *ability* to do so comes from the specialized resources it can apply, as a “delegated monitor,”³ to assess credit risks, and to enforce restrictions on borrower behavior. A financial institution can survive and prosper if the value of the additional information it generates exceeds its cost, and if it is able to derive private value from this information.

The interposition of a financial intermediary is not the only way of transforming maturities or generating information on creditworthiness. Securities markets can perform a similar function. Just as with banks, however, the effectiveness of securities markets relies on the availability of high-quality information. Also as with banks, information will only become available if those that generate it are compensated for the costs of doing so. In securities markets, however, information provision can be impeded by “free-rider” problems, about which I will have more to say later. And although specialized information providers, such as the accounting profession and rating agencies, attest to valuations and creditworthiness, they can be subject to conflicts of interest, as we have seen. Moreover, excessive reliance on external information providers can nurture “herding” behavior. A central role therefore remains for the proprietary

³Douglas W. Diamond, “Financial Intermediation and Delegated Monitoring,” *Review of Economic Studies* 51, no. 3 (July 1984): 393–414.

activities of trading entities, whose individual views combine to reveal a fair market price. Having a multiplicity of strong institutions making continuous prices is an essential component of efficient capital markets.

A *third* way in which the financial system can promote high-quality growth is by providing a means of hedging against some of the uncertainties of investment. We know that physical loss insurance is a necessary backstop for virtually all real economic activity. Without such insurance, uncertainty would result in a reduction in productive investment and lower rates of economic growth. In addition, however, financial risks in high-value projects can be productively hedged through the use of derivative instruments. These include standardized products to cover interest and exchange rate risk, as well as the risk of commodity price fluctuations. They may also include customized structured products to cover more complex or idiosyncratic risk. It will be important that a reformed financial system does not place obstacles in the way of the appropriate use of instruments that reduce financial risk.

ENSURING PRUDENT FINANCIAL INTERMEDIATION

In recent decades, as financial markets became more sophisticated and “complete” (in the technical sense), it came to be believed that market forces could provide sufficiently powerful incentives for financial intermediation to be conducted both efficiently and prudently. It is worth examining why this was thought to be the case, before considering why the paradigm turned out to be flawed.

When financial institutions accept risk on their balance sheets, the interests of stakeholders, working through corporate governance mechanisms, ought to ensure that risks are undertaken consciously and managed prudently. Shareholders, as owners, should insist on high standards of loan underwriting, strong risk management and controls, and an adequate capital cushion to maintain franchise values through all phases of the financial cycle. Prudent risk management by managers of financial institutions would result and would prevent excessive leverage. In addition, leverage should be constrained by the self-interest of providers of funds. Lenders to financial institutions, whether depositors or holders of debt, should penalize intermediaries that run excessive risks and/or hold too-thin capital cushions.

In securities markets, the mechanisms through which information on financial value is provided should, in an ideal world, provide incentives for quality maintenance. Behind this is the assumption that the long-term

value of reputation exceeds any short-term advantage from exploiting information asymmetries. For example, loan originators that supply loans for purchase by third-party institutions will increase their franchise value by acquiring and maintaining a reputation for high-quality underwriting standards. Similarly, securitizers of asset-backed securities derive value from a reputation for the quality and transparency of the structures they create. Rating agencies, accounting firms, securities analysts, and others all have a long-term interest in gaining a reputation for providing information on which others can rely in making financial judgments.

Clearly, in the recent financial crisis, the financial system did not function in the way just outlined. To simplify somewhat, market mechanisms failed because of perverse incentives, asymmetric information, and conflicts of interest. This perspective can be instructive in designing a structural framework for a postcrisis world. Robust reforms will be those that deal with the sources of market failure, while unintended consequences are likely to flow from solutions that simply aim to thwart market outcomes perceived to be problematic.

A first weakness in the market model is the assumption that stakeholders in financial institutions (shareholders, lenders, managers) face incentives that consistently encourage prudent behavior. The most obvious departure from this assumption is the existence of formal or informal guarantees on the liabilities of financial institutions. These guarantees, introduced for the understandable reason of avoiding financial panic, considerably weaken the external constraints on leverage. If providers of funds believe they are protected from downside risks, it becomes much easier for managers of financial institutions to expand their balance sheet by taking on additional credit and liquidity risk.

Of course, financial institutions should still be constrained by the internal incentive to preserve their franchise value. However, several factors combine to make this internal constraint weaker in practice than it seems in theory. For example, limited liability means that the downside of a return distribution is curtailed, while leverage can augment the upside. Equity market pressures may push financial managers to exploit potential asymmetries in expected returns. Even if this were not the case, it is notoriously difficult to align the incentives of agents with those of principals, particularly in finance, where long time horizons are needed to judge the effectiveness of a risk-taking strategy, and where asymmetry of information between insiders and outsiders is acute. Finally, risk perceptions may be warped by “disaster myopia,” or a tendency to discount low-likelihood events that have not occurred for many decades.

Whatever the mix of underlying causes, however, it is clear that a number of financial institutions succumbed to the temptation to underestimate the risks involved in high leverage and/or rapid expansion of lending activities. Those that did not succumb in this way required fortitude to watch their market share decline over a prolonged period in which the riskier strategies of others gained acclaim on stock markets and among outside commentators.

It is also clear that the incentives to high-quality information provision were too weak to overcome conflicts of interest. In the United States, for example, the value attached to quality in mortgage origination seems to have been small relative to the benefits individual mortgage originators derived from high sales volume. As a result, the purchasers of asset-backed securities were misled, perhaps willingly so, about the prospective income streams underlying the securities they were acquiring. Earlier, in the tech bubble and the Enron episode, the judgments of auditors, analysts, and rating agencies were also undermined by pressure to generate business. It seems to be the case that, in good times, users of financial information become inclined to employ shortcuts, using easily available data such as credit ratings or recent historical experience, as a substitute for the more in-depth credit analysis that is needed for the careful management of a portfolio.

PROMOTING STABILITY AND MAINTAINING EFFICIENCY

I turn now to the principles that should underlie reforms to deal with the weaknesses exposed by the crisis, while preserving, and if possible enhancing, the unique contribution that finance can make to material well-being. These principles should apply not only to the current environment, but to the financial and economic landscape as it may evolve over time. In particular, they should be consistent with an increasingly integrated world economy, in which national borders play a smaller and smaller role in the organization of economic activity. They should also be consistent with a world in which reconciling the financing needs of governments with the availability of credit to the market economy is almost certain, unfortunately, to be a continuing challenge.

I will group my remarks under six headings: (i) the problem of “too big to fail”; (ii) capital and liquidity standards at financial institutions; (iii) systemic instability and procyclicality; (iv) improving efficiency of capital markets; (v) infrastructure; and (vi) the role of public sector intervention.

Too Big to Fail

The existence of institutions that are perceived as too big (or too important) to be allowed to fail can enhance the incentives for socially undesirable risk taking. As a result, economic distortions are created while such institutions are active, and a potential charge on taxpayers arises when they run into difficulties. Prudently managed and successful enterprises are penalized by comparison. It should not be difficult to agree on the principle that all institutions in a competitive market economy should face the threat of failure as a result of bad business judgment.⁴ Indeed it will not be possible to say that a financial system is fit for its twenty-first century purpose until the anomaly of “too big to fail” is removed.

To make the threat of failure credible, however, it must be possible for all financial institutions, no matter how large or complex, to be sold, merged, or wound down without creating unacceptable risk to the broader economy. This is not the case at the moment. Standard bankruptcy procedures are not well-suited for financial institutions. A financial institution cannot function in bankruptcy in the same way as a commercial enterprise. It cannot obtain temporary protection from its creditors, because access by creditors is its *raison d'être*. Moreover, large financial institutions play such a pivotal role in their respective economies that governments may be reluctant to accept the consequences of their failure.

There are, in my view, four key prerequisites of an acceptable regime that maintains market discipline while permitting the orderly winding down of a failing institution: (i) imposing losses on stakeholders that are predictable and consistent with the avoidance of moral hazard; (ii) avoiding significant damage to “innocent bystanders,” especially when this would provoke a loss of confidence in otherwise sound financial institutions; (iii) minimizing the ultimate costs borne by taxpayers; and (iv) sharing equitably across countries the residual burden of resolving troubled institutions that have international operations.

To meet these prerequisites, a specialized resolution regime for large financial institutions needs to be developed. What is important in this connection is not only that there is a regime for resolving institutions in difficulty, but that market participants believe it can be activated without unacceptable damage to the rest of the economy. There are by now a number of proposals for dealing with systemic distress which aim to meet

⁴ Mervyn A. King, “Banking from Bagehot to Basel, and Back Again” (Second Bagehot Lecture, Buttonwood Gathering, New York, October 25, 2010).

the prerequisites outlined above.⁵ In addition, many jurisdictions are requiring financial institutions to develop recovery and resolution plans (“living wills”) to facilitate dealing with stress, should it arise. This work gives reason for hope that, with focused effort, the anomaly of “too big to fail,” at least for domestically oriented institutions, can be dealt with.

Cross-border financial institutions pose more of a challenge, given divergences in national legal systems and bankruptcy regimes, and the responsibility of national regulators to protect first their domestic financial systems. But work is taking place under the auspices of the Financial Stability Board on how to deal with the issues that arise for institutions with major cross-border activities. None of this will be easy. But preliminary analysis⁶ suggests that, with political will, solutions are reachable which would enable an internationally active financial institution to be wound down in a manner consistent with the prerequisites I outlined above. This is a prize worth striving for.

Capital and Liquidity Standards

Capital and liquidity in many financial institutions were clearly inadequate in the run-up to the recent crisis. While the abolition of “too big to fail” will encourage banks to hold higher capital and liquidity cushions, it would be unrealistic to expect this factor alone to be sufficient to provide adequate protection against a systemic crisis. There is thus little dispute that regulatory intervention is needed to achieve desirable levels of system-wide capital and liquidity.

I will not attempt here to assess whether the requirements set out last year by the Basel Committee⁷ are the right ones. They certainly represent a major strengthening of preexisting standards. The combination of increased ratios, higher risk-weighting of assets, and higher quality of capital should make the overall banking system considerably more resilient than before the crisis. Indeed, the minimum level of equity capital required under Basel III is some five times that required under Basel I.

⁵ Dodd-Frank Wall Street Reform and Consumer Protection Act, Pub. L. No. 111-203 (2010), Title II; Thomas H. Jackson, Kenneth E. Scott, Kimberly Anne Summe, and John B. Taylor, “Resolution of Failed Financial Institutions: Orderly Liquidation Authority and a New Chapter 14” (Studies by the Resolution Project at Stanford University’s Hoover Institution Working Group on Economic Policy, April 25, 2011).

⁶ Paul Tucker, “Resolution of Large and Complex Financial Institutions: The Big Issue” (speech at the European Commission Conference on Crisis Management, March 19, 2010).

⁷ Basel Committee on Banking Supervision, “Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems” (December 2010).

Even so, some have called for going further.⁸ Their argument is twofold: (i) that the new Basel proposals may still not be enough to prevent banks from encountering difficulties if a crisis is large enough and (ii) that equity capital should not be regarded as an expensive source of funding for banks, and therefore raising capital requirements would not have a material adverse effect on the rest of the economy.⁹

The size of crisis we should expect the financial sector to be able to withstand is a matter of judgment that I will address a little later. With regard to the cost issue, the Modigliani-Miller theorem,¹⁰ which is well-accepted in the finance literature, states that funding costs should be invariant to liability structure. It is generally acknowledged that the Modigliani-Miller theorem does not hold precisely, because of both asymmetric information and tax considerations, but there is some dispute about how significant the departure is in practice. The Institute of International Finance (IIF) argues¹¹ that an increase in bank funding costs as a result of higher capital requirements could be significant. And securities analysts largely share the assessment that capital is a relatively costly source of funding.¹² Most academic studies, however,¹³ find that additional intermediation costs are likely to be of the order of 10–40 basis points or so. If these latter estimates are correct, and if they were the only costs, it would seem like a small price to pay for additional security.

⁸ For example, David Miles, Jing Yang, and Gilberto Marcheggiano, “Optimal Bank Capital” (External MPC Unit Discussion Paper no. 31, Bank of England, London, January 2011); and Morris Goldstein, “Integrating Reform of Financial Regulation with Reform of the International Monetary System” (Working Paper no. 11-5, Peterson Institute for International Economics, Washington, D.C., February 2011).

⁹ Anat R. Admati, Peter M. DeMarzo, Martin Hellwig, and Paul Pfleiderer, “Fallacies, Irrelevant Facts and Myths in the Discussion of Capital Regulation: Why Bank Equity Is Not Expensive” (Working Paper no. 2065, Stanford Graduate School of Business, Stanford, California, August 2010).

¹⁰ Franco Modigliani and Merton H. Miller, “The Cost of Capital, Corporation Finance, and the Theory of Investment,” *American Economic Review* 48, no. 3 (June 1958): 261–97.

¹¹ Institute of International Finance, “The Net Cumulative Economic Impact of Banking Sector Regulation: Some New Perspectives” (Washington, D.C., October 2010).

¹² UBS Equity Research, “SIFI Buffers” (Zurich, June 14, 2011); Oppenheimer Equity Research, “Tale of the Three SIFIs” (New York, June 13, 2011).

¹³ Admati and others, “Fallacies, Irrelevant Facts and Myths in the Discussion of Capital Regulation: Why Bank Equity Is Not Expensive”; Anil K. Kashyap, Jeremy C. Stein, and Samuel Hanson, “An Analysis of the Impact of ‘Substantially Heightened’ Capital Requirements on Large Financial Institutions” (University of Chicago Booth School of Business, May 2010); Bank for International Settlements, “Assessing the Macroeconomic Impact of the Transition to Stronger Capital and Liquidity Requirements—Final Report” (Macroeconomic Assessment Group, Basel, December 2010).

Still, we need to think about the issue from the viewpoint of the financial system as a whole, not just banks. We should be careful that greater safety in banking is not purchased at the cost of reduced efficiency or additional risks elsewhere in the system. Even a modest rise in the intermediation margin for banks can serve as a significant incentive to find credit channels not subject to such costs. (Remember, financial engineering is often driven by potential savings much smaller than 10–40 basis points.)

As intermediation is pushed into less-regulated channels (the so-called shadow banking system), risks may migrate to areas less amenable to monitoring by regulators. In addition, these alternative channels of finance, utilizing capital market mechanisms, may be more subject to free-rider problems. The diversion of intermediation into the shadow banking system may thus tend to deplete the pool of information generated by banks in making credit allocation decisions. Lastly, as we have recently been reminded, capital markets are themselves by no means immune to “runs.” In their own way these can be just as damaging as conventional bank runs.

None of this constitutes an argument against suitable capital regulation for banks. Rather, it argues for ensuring that interventions to limit leverage and risk taking in the banking sector are proportionate, are carefully weighed, and do not indirectly subsidize similar activities in other parts of the financial system.

More generally, essential though equity capital is in the prudent management of financial institutions, it would be a mistake to focus only on capital holding as a protection against potential distress. Other factors, particularly the quality of loan portfolios, seem to be a better predictor of financial strains. If capital is focused on as the main protection against threat of failure, attention may be diverted away from the equally important protections provided by strong loan-underwriting standards, loan book diversification, and robust hedging. These factors, which generally fall under Pillar II of the Basel rules, are harder to capture in a measure of risk-weighted assets. They may be even more important, however. They point to the need for *quantitative* capital standards, under Pillar I, to be accompanied by *qualitative* efforts to improve risk capture through continuous efforts to ensure that risk weightings appropriately reflect the underlying riskiness of an overall portfolio.

Similar observations apply to liquidity standards. Liquidity before the crisis was poorly managed by too many institutions. Thus, nobody doubts that minimum liquidity requirements can be helpful in supporting prudent balance sheet management and maintaining a level playing field. But one of the social functions of banks is to be a net liquidity provider to the rest of the economy. External regulatory constraints should be consistent

with this function. It involves more than observing quantitative ratios. Judgment is needed to take adequate account of the specific characteristics and vulnerability of particular portfolios. Moreover, capital and liquidity cannot be considered in isolation from each other. Earlier Basel exercises can be faulted for the implicit assumption that adequate capital would ensure access to funding. It would be just as much a mistake to assume that capital adequacy makes no contribution to the availability of liquidity.

Systemic Instability and Procyclicality

Systemic instability differs from the fragility of individual institutions in that it focuses on vulnerabilities stemming from interlinkages in the financial system.¹⁴ These interlinkages have undoubtedly grown as a result of the growth of transactions within the financial sector and the globalization of financial activity. The repercussions of subprime mortgage problems in the United States, for example, were felt in markets in Europe and elsewhere. A modern financial structure will have to accept increased interdependence while providing protection against the heightened vulnerability to the propagation of systemic stress.

Particular examples of systemic vulnerability can derive from either (i) common positions taken by a large number of institutions simultaneously (real estate exposure in the run-up to the present crisis would be an example) or (ii) the interconnectedness of financial institutions as counterparties. Both of these sources of vulnerability are, by their nature, less visible to an individual market participant than they are to a supervisor with the capacity to monitor the combined effect of exposures. To reduce the threat of systemic instability, ways will have to be found of more effectively identifying and influencing the buildup of aggregate risk positions in the financial system as a whole.

Common positions (or “crowded trades”) have been a source of financial system vulnerability since at least the time of the tulip and South Sea bubbles. The risks of such positions during periods of rising prices are masked by the increase in collateral values, the apparent liquidity of markets, and the perception that “this time is different.”¹⁵ Individual market participants

¹⁴ Bank for International Settlements, Committee on the Global Financial System, *Recent Innovations in International Banking (Cross Report)*, CGFS Papers no. 1 (Basel: Bank for International Settlements, 1986).

¹⁵ Carmen M. Reinhart and Kenneth Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton: Princeton University Press, 2009).

are aware of their own exposures, but do not have full information on the positions of others. Regulators and supervisors should be in a better position to judge the size of common exposures and the extent to which individual intermediaries are interconnected. A useful safeguard against excessive risk could be provided by making such knowledge publicly available (at an aggregate level to preserve the confidentiality of proprietary information). Once again, better information will be key to helping the financial system perform its functions efficiently and safely. In addition, when crowded trades reach a point at which a potential unwinding threatens to become disruptive, constraints, say in the form of additional capital requirements, may be useful to slow further speculative activity.

Procyclicality, a phenomenon initially investigated by researchers at the Bank for International Settlements (BIS),¹⁶ describes the apparent tendency of the financial sector to amplify the economic cycle by providing easier credit during booms and restricting credit availability during downturns. It is exacerbated by interlinkages in the financial system and is rooted in both psychological and objective economic factors. The tendency toward herd behavior can provoke cycles of “greed and fear.” More objectively, in periods of economic expansion, net worth and collateral values increase, creating both the room and the incentive to leverage new wealth with additional credit creation. The process goes into reverse during downturns, often with disastrous consequences. There is increasing recognition that financial policy should try to limit, or at least avoid intensifying, procyclicality. One way of doing this would be to make credit extension progressively harder as a credit-fueled boom proceeds. This could be achieved, for example, by increasing the cost of asset purchases on margin, or by requiring credit-extending institutions to hold a greater margin of capital against incremental lending (“countercyclical capital surcharges”). For such charges to be effective and nondistorting, however, care would have to be taken that they were general enough not to simply shift intermediation to other channels or overseas.

Strengthening Efficiency in Capital Markets

As noted earlier, financial intermediaries are only one element of an effectively functioning financial system and only one channel of credit

¹⁶ Claudio Borio, Craig Furfine, and Philip Lowe, “Procyclicality of the Financial System and Financial Stability: Issues and Policy Options,” in *Marrying the Macro- and Micro-prudential Dimensions of Financial Stability* (BIS Papers no. 1) (Basel: Bank for International Settlements, 2001), 1–57.

intermediation. It seems highly likely that capital markets will continue to play a large and a growing role in the credit supply process. This is wholly appropriate. Longer-term investment in capital formation requires long-term sources of funds, which are more suitably provided from long-term savings than through short-term deposits with banks.

For capital markets to operate with maximum efficiency, there needs to be a supply of information that enables investors to have confidence in securities' valuations, in both the primary and secondary markets. It is these valuations that ultimately guide the allocation of real resources. Information provision in securities markets can, however, suffer from free-rider problems. For example, research on securities valuations, once made available to one market participant, quickly becomes available to all. This means that the social value of the information generated by such research will typically exceed the private benefit. As a result, there may be a suboptimal level of information provision and inefficient price discovery. To deal with the free-rider problem it will be important for new financial arrangements to preserve the incentives for market participants to generate information on financial values and act upon it.

This, in turn, suggests a number of key prerequisites. Most importantly, there need to be opportunities for informed position taking by a diversity of market participants with the ability and incentive to generate information on securities values. Public opinion often reacts adversely to activities that are labeled "speculation." As economists know, however, the ability to back market judgment by buying when prices are thought to be unsustainably low, and selling when prices are unsustainably high, has positive consequences for market efficiency and stability. Short selling is particularly disparaged, but in practice is an essential component of efficient price discovery. A modern financial structure should naturally prevent abuses of market power, but should preserve a place for position taking.

Capital markets also need institutions, both to help attest to the value of the securities brought to market and to take trading positions based on proprietary research. These activities are central to enhancing information and improving the price discovery process. They contribute to stabilizing prices and improving the environment for saving and investment. But it is key that trading, and financial activity more generally, is not tainted by conflicts of interest. Conflicts of interest are of concern, both on moral grounds, because they undermine basic concepts of "fairness" and trust on which financial activity depends, and more generally because conflicts of interest have the capacity to distort the way in which financial

information becomes available.¹⁷ It is in the long-term interest of both the financial services sector, and the wider economy which it serves, to find ways of neutralizing potential conflicts of interest.

Conflicts of interest arise in any transaction in which one party has multiple objectives. They are far from unique to financial services, but are of particular concern in finance, given the difficulties of establishing with confidence the value of the instruments being exchanged. Financial decision makers will have a duty of care to clients and counterparties, an obligation to act in the best interest of their employer, and often, a personal stake in the outcome of a transaction.

Conflicts of interest in financial services have, over the years, spawned various techniques to alleviate them. The common thread linking these techniques has been the effort to increase the quantity and quality of information. Amongst the earliest were the emergence of independent auditors and the growth of rating agencies. These were intended to substitute independent judgments for those coming from conflicted parties. Regulatory agencies have also developed rules covering transparency and information sharing, designed to protect the users of financial services from the exploitation of conflicts of interest.

Enlightened financial firms realize that measures to protect users of financial services and to enhance transparency are ultimately helpful in strengthening confidence in financial intermediation and promoting greater use of financial services. A twenty-first-century financial system will need to seek ways in which regulatory oversight complements (and does not simply substitute for) the interest of the private sector in generating high-quality information. In this endeavor, transparency is generally likely to be more effective than rules that provide for how particular services can be provided and charged for.

Infrastructure

I said at the outset that infrastructure was one of the three components of the financial ecosystem. Indeed, financial infrastructure, like physical infrastructure in the real economy, is the element that links and facilitates the working of the rest of the system. It follows, therefore, that ensur-

¹⁷ Andrew Crockett, Trevor Harris, Frederic Mishkin, and Eugene N. White, *Conflicts of Interest in the Financial Services Industry: What Should We Do about Them?* (Geneva Reports on the World Economy, no. 5) (Geneva: International Center for Monetary and Banking Policy and London: Center for Economic Policy Research, 2004).

ing an efficient infrastructure is a sine qua non for a well-functioning financial system.

Perhaps the most obvious element of financial infrastructure is the mechanism for effecting payment and settlement of transactions. There is now considerable agreement that the use of central counterparties and real-time gross settlement of transactions have the capacity not only to greatly reduce exposures within the financial system, but to deal with the problem that market participants did not fully understand where their ultimate exposures lay. Still, it needs to be recognized that use of central clearing and settlement can also concentrate risk, something that makes the oversight of centralized counterparties particularly important. Also, a proliferation of central counterparties has the potential to increase settlement risk by comparison with fully netted bilateral exposures.¹⁸

But infrastructure needs to be construed more widely than just the smooth settlement of financial transactions. Just as important is the network of arrangements that enable contracts to be undertaken on the basis of legal certainty and high-quality information. Relevant in this connection are confidence in contractual obligations (including, in particular, confidence about what happens in the case of *non*fulfillment of a contract's original terms); the reliability of the information on which transactions are based; and the quality of regulation and supervision of the overall financial system.

An agenda to improve the financial system will need to address each of these issues. As I have already noted, much more needs to be done to develop a relevant legal framework to deal with financial institutions facing stress. Informational reliability is impaired by conflicts of interest, which are most obvious in the financing model of rating agencies, but are by no means confined to them. And financial regulation faces the problems of (i) reconciling national jurisdiction with the global reach of the financial industry and (ii) combining the need for discretion to address unpredictable events with the clarity the industry needs to function efficiently. The success with which these challenges are met will be an important determinant of how well the financial system of the future serves the needs of the wider economy.

¹⁸ Darrell Duffie and Haoxiang Zhu, "Does a Central Clearing Counterparty Reduce Counterparty Risk?" (Rock Center for Corporate Governance at Stanford University Working Paper no. 46 and Stanford University Graduate School of Business Research Paper no. 2022, Stanford, California, April 2011).

The Role of Public Sector Intervention

Lastly, in this list of principles for a modern financial system, I turn to what role the public sector should play in dealing with potential financial distress. Past rescues were motivated by fears of systemic disruption. However justified these may have seemed at the time, repeated interventions have generated justified concerns about moral hazard and a belief that the cumulative distortions that are created are both unfair and costly.

So does the avoidance of moral hazard mean that under no circumstances should governmental assistance be made available to the financial sector, and that financial institutions should self-insure against all potential eventualities? Such a view certainly reflects popular opinion following the financial crisis. And as I have argued, there is a compelling case for ending “too big to fail.” Still, for several reasons, it is worth pausing to consider whether a fully “hands-off” policy is optimal. *First*, liquidity provision during a crisis, with suitable safeguards, has been a part of central banking theory and practice since the time of Bagehot;¹⁹ *second*, liquidity support, which only the central bank can provide, may help to prevent the emergence of solvency problems, and more widespread value destruction; *third*, in the presence of multiple equilibria, some form of public intervention may be the only mechanism for solving a collective action problem;²⁰ and *fourth*, the resolution of a large institution would be an extraordinarily complex matter, which would benefit from temporary government involvement to preserve value. The issue, therefore, becomes one of degree. How far do we expect the financial system to be fully resilient to outside disturbances, and what shocks can appropriately be mitigated by official action?

This is not an issue for which technical expertise provides an unambiguous answer. Are there extreme events that are so far outside the capacity of financial institutions to control or predict that forcing them to plan for them would be unreasonable? Standing behind this question is the distinction, due to Knight,²¹ between risk, which can be estimated using the laws of probability, and uncertainty, which is by definition incapable of being estimated. Another question is, How far has macroeconomic management improved so that we can assume major dislocations

¹⁹ Walter Bagehot, *Lombard Street: A Description of the Money Market* (London: Henry King, 1873).

²⁰ Douglas W. Diamond and Philip H. Dybvig, “Bank Runs, Deposit Insurance and Liquidity,” *Journal of Political Economy* 91, no. 3 (June 1983): 401–19.

²¹ Frank H. Knight, *Risk, Uncertainty and Profit* (Boston: Houghton Mifflin, 1921).

such as the Great Depression are unlikely to be repeated? And should a generalized financial panic, which cannot be stemmed by any other means, be dealt with by central bank support, provided there is strong evidence that the underlying system is sound?

THE STRUCTURE OF THE FINANCIAL INDUSTRY

I turn, finally, to the issue of whether government should intervene directly in the way the financial industry is organized, and if so, what structures it should favor. Normally, in a market economy, industrial structure is the outcome of competitive forces. Government is rarely better than the market at deciding which structure best promotes efficiency and innovation. There may, however, be exceptions. The most obvious is when concentration in an industry threatens competition. For example, governments have frequently made clear their desire that there be a minimum number of retail banks within their jurisdictions, both to permit adequate competition, and to provide for redundancy in case any one institution should fail.²²

Many recent proposals to influence the structure of the financial industry have been motivated by a different objective, namely, the desire to reduce the risk of instability. There have also been suggestions²³ that certain financial activities lack social value (on what grounds is not clear) and implicitly, therefore, that their offer should be restricted. These concerns have motivated proposals to intervene directly in financial sector structure. In what follows, I will deal in turn with three dimensions of industrial structure that have received attention: the *scope*, *size*, and *geographic reach* of financial institutions.

The idea behind limiting the scope of activities a financial institution can undertake is deceptively simple. In order to preserve the integrity of certain “essential” functions, institutions providing such services should be prevented from undertaking presumptively more risky activities. Their integrity should be protected by high levels of capital, by restrictions on their investment activities, and if necessary by a government guarantee. All other institutions would be clearly identified as not protected by explicit or implicit guarantee and would be fully subject to market

²² Independent Commission on Banking, *Interim Report: Consultation on Reform Options* (London, April 2011).

²³ Turner, Lord Adair, *The Turner Review: A Regulatory Response to the Global Banking Crisis* (London: Financial Services Authority, March 2009).

disciplines. Within this general approach, the line between more essential and less essential functions can be drawn in different places. Some would protect only “narrow banks” and limit these institutions to investment in ultrasafe assets, such as short-term government securities.²⁴ Others would make the distinction between commercial banking and investment banking (the Glass-Steagall dividing line), while still others would draw the line at client-service versus proprietary activities (the “Volcker rule”).

In the pure version of narrow banking, customer deposits would be protected only in highly safe institutions, which would thus be obliged to invest in ultrasafe assets, such as cash and short-term government securities. The principle behind the proposal is understandable, but whether it would work in practice is open to question, for several reasons. First, in quiet times, depositors might be tempted to invest in unguaranteed institutions, to obtain the higher returns they were able to offer by virtue of their higher-yielding asset portfolios. Would governments be able to stand firm against public demands for ex post guarantees if a large number of voters found their deposits to be at risk? Even if the answer to this is yes, would it be socially optimal to give a financing advantage to those whose liabilities were eligible for purchase by narrow banks? Is it certain that these liabilities will always be risk free (think public sector debt in peripheral Europe)? Finally, would protecting the payment system in this way prevent the disruptions in credit supply that typically propagate financial distress?

To protect the credit supply process, other proposals make the split of activities between commercial and investment banking (the Glass-Steagall demarcation) with the goal of protecting the payment and credit supply functions of commercial banks. The thinking behind these proposals is that investment banking is more risky, so that in order to preserve the integrity of traditional commercial banking it is necessary to insulate it from investment banking by breaking up universal banks.

It is not clear from the historical experience, however, that universal banks are in fact more likely to fail or that investment banking activities are inherently more risky than lending to retail customers. (Interestingly, although the current debate emphasizes relative risk as a justification for reintroducing Glass-Steagall, the original motivation for the legislation, when it was introduced in the 1930s, was *not* to reduce risk, but to avoid conflicts of interest.) The perception of greater risk (and lower social

²⁴ John Kay, *Narrow Banking: The Reform of Banking Regulation* (London: Center for the Study of Financial Innovation, 2009).

value) is fostered by the use of pejorative terms such as “casino banking.” But the risk that has traditionally been most problematic for financial institutions is credit risk, and this is at the heart of commercial banking. More research is needed to establish whether the combination of services offered materially raises risk, and if so, what combination creates most vulnerability.

Pure proprietary trading would seem to be the activity that is furthest removed from client-focused services, so the one that it would be easiest to accept should be restricted. Even here, however, practical difficulties arise in that it is not easy to distinguish proprietary trading from that undertaken to serve clients or to hedge risk.

Next comes the question of *size*. As I noted a moment ago, there is a well-recognized case for limiting size when it is related to excessive concentration and potential restraints on competition. The argument from the standpoint of financial stability is that a financial institution’s contribution to systemic risk increases more than in proportion to its size.²⁵ The extent to which this is the case seems to depend on assumptions about the correlation of risk exposures among different institutions. Once again, more research could usefully explore the empirical validity and importance of these assumptions.

A supporting justification for restrictions on the size and range of activities of financial institutions is the claim that there are, in practice, few economies of scale and scope in banking. Therefore, there are few costs to administrative limitations on financial institutions’ size and structure. Academic research generally points to the absence of such economies,²⁶ though the literature is not monolithic.²⁷ The absence of scale economies seems hard to reconcile, a priori, with the cost structure of the industry. The growing use of technology to process information and manage risk has caused overheads to become a growing share of total costs, which suggests a clear potential for positive returns to scale. If these scale economies are not appearing at the aggregate level, is some other element (managerial overstretch?) at play?

²⁵ Nikola A. Tarashev, Claudio E. V. Borio, and Kostas Tsatsaronis, “The Systemic Importance of Financial Institutions,” *BIS Quarterly Review* (September 2009): 75–86.

²⁶ Goldstein, “Integrating Reform of Financial Regulation with Reform of the International Monetary System.”

²⁷ David C. Wheelock and Paul W. Wilson, “Do Large Banks Have Lower Costs? New Estimates of Returns to Scale for U.S. Banks” (Research Division Working Paper no. 2009-054E, Federal Reserve Bank of St. Louis, October 2009, revised May 2011); Markus Holzhäuser, “Long-Term Performance Effects of Bank Diversification” (Goethe University Working Paper, Frankfurt, Germany, October 2005).

Concerning economies of scope, there is similar discordance between the conclusions from available academic research and the beliefs of practitioners. Several arguments are advanced for expecting advantages from combining different financial functions in one company. From the perspective of the service provider, these include a reduction in overall earnings volatility, lower capital costs, and the ability to offer clients a wider range of financial products. From the client's perspective, an advantage of a universal bank could be the convenience of acquiring most financial services from a single provider. And from a social point of view, the broader the range of activities undertaken by a single service provider, the greater its ability to generate the breadth of information on credit-worthiness and investment opportunities on which high-quality resource allocation depends.

In assessing the validity of these views, it would again be useful to have more in-depth research on how significant scope economies are, or, if they cannot be detected, what factors exist that work to nullify them. In any event, provided there are no artificial incentives to become large and complex (such as implicit government support), market forces should be a sufficient constraint on growing size and complexity. Good small banks and good large banks would prosper, while poorly managed institutions, of whatever size, would tend to shrink or disappear. Careful consideration needs to be given to how far public policy should substitute for the market-driven process of "creative destruction."

Finally, in the realm of industrial structure, what requirements should be set for *cross-border* operations? It is sometimes argued that the difficulties of resolving a financial institution operating in multiple jurisdictions are so great that the only answer is to provide for separate legal entities in each legal jurisdiction. If this were to mean that a financial company's activities had to be confined to only one country, multinational companies would be forced to have different financial partners in each jurisdiction, something which current practice shows they prefer not to have to do. Moreover, the use by multinational companies of different financial partners in each jurisdiction could easily lead to a loss of information. There would thus be costs to set aside the benefits of greater ease of resolving troubled financial institutions.

This problem would be mitigated if a single financial group were permitted to have separate subsidiaries in different countries. Global clients would then be able to deal with the different subsidiaries of the same institution, and any inconvenience or loss of information would be minimized. But such separation might not fully insulate subsidiaries from

contagion. It would not be easy for a financial group to allow one of its subsidiaries to fail without a massive (and costly) loss of reputation.

A third approach would be to intensify cross-border supervisory cooperation. This would involve building on mechanisms such as supervisory colleges, and developing techniques for sharing information and harmonizing approaches to be used in stress situations. Such an approach would aim, in principle, to adapt oversight mechanisms to the reality of globalization, rather than constrain the structure of the financial industry to reflect the limitations of international cooperation. Applying such a principle brings us back once again to the “post-Westphalian” dilemma. The world is interdependent, but too much of the institutional setting for global economic management assumes state sovereignty remains a satisfactory organizing principle.

None of this means that the structure of the banking industry should not be a concern of regulators, only that simplistic notions of how changing structure can reduce risk need to be treated with caution.

CONCLUSION

Let me conclude by coming back to Tommaso Padoa-Schioppa. Among many striking passages in his lecture is the following. “Nothing excuses us, as responsible individuals, from the intellectual and moral duty of adopting a truly cosmopolitan perspective and from engaging in the thought experiment of devising the first-best response.” The same sentiment should guide the effort to devise a new and stronger financial system. It should be global, it should be robust, it should be an effective servant of the real market economy. Being safe from disruption is a start, but it is not enough.

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Questions and Answers

Following the formal presentation, Andrew Crockett took questions from the audience.

GUILLERMO ORTIZ: Well, thank you very much, Andrew, for this very illuminating presentation. And thank you, Caroline, for joining us today. As you know, Caroline is the President of the Per Jacobsson Foundation, and she is the Director of External Relations at the Fund. And she has come all the way from Washington, mostly for this event. So thank you very much.

Well, this was really a tour de force. Given the very comprehensive nature of your lecture, I'm sure that it's a lot of food for thought. You have practically touched on all the current issues. Not only did you explore the weaknesses that led to the crisis, but you also laid out, I think in a very balanced way, the thoughts that have been distilled with experience. And I must say that the presentation was, in my view, very, very balanced.

I don't want to take too much advantage of my role as the Chairman. But let me ask you one question before opening the floor for questions. And this is something that has to do with the "too big to fail" question and the cross-border issues which are, in my view, the most intractable of this whole panorama that you made.

And let me begin with a very precise question. There is, I think, an ongoing trend or project which is being also discussed in the Financial Stability Board of putting additional capital requirements on systemic and important financial institutions. And I guess this is already taking shape.

My question is, Do you think that this may in some form create a moral hazard? I mean, the minute you have a list of what are systemically important financial institutions, and you put additional capital surcharges—you are actually reinforcing the notion of "too big to fail." And you are probably giving them a funding advantage. Rating agencies are

probably going to treat them with more respect. And well, the question is whether this is not actually reinforcing this perception that you are trying to dispel. I mean, you have laid out a very sensible set of principles for a regime to unwind systemically important institutions, and these principles are very fine. But I think that I'm very skeptical that they actually could be put into practice.

But let me stop here and perhaps you would like to address this before opening the floor, Andrew.

ANDREW CROCKETT: Well, thank you, Guillermo. You wouldn't expect me sitting in the seat I presently occupy at JPMorgan to be in favor of SIFI [systemically important financial institution] surcharges. [Laughter] And any argument you can advance, I'll gratefully use.

I think there is, to be serious, a slight risk that if you designate a list of institutions you will create a presumption that they have got some additional protection. I presume the reason why the Financial Stability Board and the regulatory community more generally has done this is in order to have the double security, if you like, of, on the first hand, trying to reduce the impact of the failure of a large institution and make it more resolvable than in the past, but in the period before that becomes fully credible, to have the additional safeguard of the higher levels of capital that a large institution would hold. I think if you reflect on it, those two things—two approaches: more capital to reduce the likelihood, but also more effort to reduce the impact—are to some extent substitutes. If we could successfully reduce the systemic adverse consequences of the failure of a large institution, it would, I believe, therefore become less necessary to have a special capital regime.

And I think it is the case that most financial institutions—I certainly speak for my own institution—would not argue to have a special implicit government backing, nor would it want to have a special funding advantage beyond that which is derived from the effectiveness and the efficiency with which we run our own institution.

So I would hope in the evolution of regulation that as it becomes more confident in the ability to resolve financial institutions that get into difficulties, there would be an incentive to do so by perhaps providing that the additional capital surcharge would become less necessary and less onerous as the resolvability of institutions gets greater.

GUILLERMO ORTIZ: Thank you very much, Andrew. So let me open the floor for questions.

QUESTIONER: *Thank you, Andrew, first of all thank you for the talk. And I should say, also, thank you for all the help you have given us and many others at the Bank for International Settlements.*

I've got a question which focuses on the interplay that you're alluding to in all of this between financial stability and macroeconomic stability. And the implications that a well-functioning and -regulated financial system in the future will have for requirements for monetary policy adjustment, obviously an area of concern for a lot of us in this room.

Do you think that there are implications from the developments in the financial system for the setting of monetary policy, first of all directly through traditional official cash rate channels, and secondly through other channels that have implications for monetary conditions, asset markets, effects markets, etc.? And could you see this changing in the future with further financial market regulation or innovation?

ANDREW CROCKETT: It's an interesting question, and I'm not sure I've thought enough about it to be confident in the answer I would give. First of all, obviously, greater financial stability in and of itself is an advantage in setting monetary policy. You don't have to worry so much about the implications of a monetary policy action for the stability of the overall financial system.

However, one has to recognize that monetary policy operates through channels which rely on predictable responses that come out of the financial system. There are aspects to which I alluded in the talk that might give one some concern if it were the case, for example, that an increasing extent of credit mediation moved into channels outside the conventional banking system. It may be harder for monetary policy to predict its effects through the traditional channels in which monetary policy operates.

Then, I think monetary policy probably relies for its effectiveness on the degree to which markets are adequately integrated across maturities and across asset classifications, so that an additional monetary policy action, which typically takes place in the short-term overnight markets, transmits itself through the rest of the economy. So I think it's important that one preserves and doesn't try to block off channels that link different markets.

I'm not saying this is going to happen, but there is obviously, following a crisis, a temptation to say, "Where have problems arisen, let's stop it," without necessarily reflecting on how far that would impact on the ability to influence the overall macroeconomic situation.

QUESTIONER: *Thank you, Andrew, for giving us a dream project for the twenty-first century. You have mentioned about this thought experiment. A lot of experimentations are going on all around the world, really not all of them are really documented well. Particularly there is need for process documentation of what is going on.*

Many of the countries like, say, Bangladesh avoided financial crisis mainly because of a lot of indigenous kind of experimentations and also efforts they have taken. For that matter, I thought, BIS or others should put more emphasis on research—more of process kind of documentation, what is going on there.

Say, for example, Bangladesh has one of the finest regulations on microfinance. We have a formal microfinance regulatory authority. And we have avoided much of the pitfalls of the shadow banking on the microfinance, mainly because of strong regulation there. But this story, probably, is untold. It's not documented well.

Similarly, many of us are going into technology-based banking. Say, for example, Bangladesh and many other countries are going quite fast into bank-led mobile banking. So what are the dangers or what are the regulatory requirements for banking like that? Again, other technology-based banking also needs a lot of IT [information technology] auditing. And a lot of experimentation is going on there, we need that kind of oversight.

For that to happen, I think, we need strong research. And I think research in the central bank is not enough. So for that matter, maybe we need to intertwine with the good research in institutions or the universities, or even other central banks. And we are trying to have some cooperation between banks—say, for example, Bangladesh Bank taking advantage of the good knowledge of the RBI [Reserve Bank of India] or the Malaysian Central Bank. So, those kinds of cooperation are also in need.

And I thought we could focus on those areas as well. Thank you very much.

ANDREW CROCKETT: Well, I can only agree with the importance of doing research and sharing experiences. And I assume my former colleagues at the BIS have been listening carefully to what you had to say, and are maybe thinking how it could be incorporated, not only into their own work program, but I think one of the contributions the BIS can make as a forum for central banks to get together is to allow different kinds of experience. And since being from Bangladesh you have probably a deeper experience of microfinance than anywhere else, that would be an important example of where you and the other institutions that are interested in developing microfinance could share experiences.

But as you have indicated, it's by no means limited to that. And I know that the activities of the BIS—I'm sure Jaime would attest to this—are constantly examining ways in which the activities of a forum for sharing information and undertaking research among central banks can be productively employed.

QUESTIONER: *Thank you. I had a quick question. You mentioned that credit risk is usually at the root of big problems in the banking system. And perhaps it's not just credit risk, but more specifically, risk in housing and commercial property. And I wonder what your thinking is about the system of housing finance? Which, of course, in the United States in particular and in some other cases is almost a whole separate system and not at all a market-based system, or at least it has a very particular relationship with the market. And I wonder if one can sensibly think about reforming the financial system of regulation without also thinking how that which was at the root in some ways of the last financial crisis is examined.*

I had another quick question which is just about a financial activities tax. We're all central bankers here, but another way to think about limiting risk and also building up a pile not of capital for the banks, but of money for the taxpayers who ultimately bail out the financial system, has been suggested through a financial activities tax. And I wonder how you see that fitting in.

ANDREW CROCKETT: Well, housing is a specific example, and I couldn't in a couple of minutes do justice to it. But housing has often been a substantial basis of the financial difficulties. And it's rather obvious when you think about it why that should be the case. Because a loan to a residential or commercial property probably lasts 10 or up to 30 years, and it's financed on the basis of deposits that are withdrawable on demand. So there's a huge investment risk as well, an interest rate risk there.

Capital markets are one way in which you can hedge that risk. You can hedge it by buying interest rate swaps, which is one way of doing it, and retaining the credit risk on the balance sheet of the bank, or you can do it by actually packaging the credits and selling them off into the capital markets.

One of my points in the speech was the importance of having information. I think one of the shortcomings of the way in which the U.S. housing finance system worked was that there was inadequate information about the income streams underlying the securities that were packaged and sold.

And I would hope that one of the reforms would be not to abolish securitization necessarily, which I think performs a useful function, but to make sure that securitization has a better basis in information.

With regard to a financial activities tax, I have to say—I'm going to just make assertions rather than debate. I'm not a great fan of the Tobin tax, although I was actually a student of Tobin's at Yale many years ago. It seems to me that throwing sand in the wheels of—in the efficient working of—is always, or almost always, a second-best alternative rather than a first-best alternative.

If it's a question of building up a pile to protect the taxpayers, I think there are other ways of doing that. I mean, we do have deposit insurance. And in the United States, it's been made quite clear in the Dodd-Frank Act that if deposit insurance accumulated *ex ante* is not enough to save a financial institution, there will be an *ex post* levy that will be placed.

The disadvantage of an *ex ante* levy is that it does tend to reinforce the moral hazard point that Guillermo was making: Are you, therefore, identifying these institutions as being likely to be protected if you've got a fund that's sitting there that says, this is to bail out financial institutions in the event of difficulty? So, I do have some questions about that, too.

QUESTIONER: *Thank you, Andrew, for an extraordinary tour de force. I'm sure that all of us will reflect on it for some time.*

I would like to follow on the question of how the design of the financial stability framework is going to impact on the effectiveness of monetary macro policy and the like.

And I would like to put it on its head now by noting that because of macroeconomic considerations, we are finding now that in many countries for reasonably good reasons real interest rates are negative for an extended period of time. And I would like to ask you if you have reflected on how the design of the financial system of the twenty-first century can accommodate such a reality? And is this something that is creating some other difficulties maybe?

ANDREW CROCKETT: Well, negative real interest rates are not necessarily a surprise in a situation of very weak demand. And I don't think in and of themselves they create a difficulty.

What I'm going to say now may not quite respond to your question. But something that does seem likely to be the case is that the restrictions that for financial stability reasons will be placed on the banking system may at least at the margin tend to add to a phenomenon that we used to call "financial repression." You force banks or other financial institutions

to hold safe assets. Safe assets, by the way, usually encompass government securities. And we might ask ourselves whether those are truly safe assets in all foreseeable states of the world.

Even if they are, they give a funding favoritism to governments. And that is quite convenient in present circumstances because there is a huge debt overhang in many countries. I mean, almost all countries have government debt-to-GDP ratios that they feel are too high and they would like to work down. I might say I see a couple of dangers in this situation, apart from the obvious ones. One of the dangers is that it makes inflation look more attractive than it ought to look. And it makes financial repression look more attractive than it ought to look. And I think it will be a challenge to central bankers in the future to resist the tendencies that are going to emerge directly or indirectly to help governments deal with the funding problems through the way in which the more technical problem of making the financial system more safe is handled.

GUILLERMO ORTIZ: Thank you, Andrew. I have about three people on my list and I'm going to close it, because we're going to proceed to the panel and you will have a chance to ask further questions of Andrew.

QUESTIONER: *Thank you. And thanks, Andrew, for a very thoughtful discussion.*

I just want to follow up with the SIFI question, because you mentioned that the risk of raising the cost of capital is that you can move from the regulated banking system to a shadow banking system. Now as you create within the banking system the SIFI—more costly or with higher capital—and the non-SIFI, we can be also moving from non-SIFI to SIFI and—sorry, from SIFIs to less-regulated banks—and I imagine that these less-regulated banks could also become very, very vulnerable and with a lot of systemic implications.

So, my concern is, Why the separation beyond the moral hazard issues that were raised by Guillermo? It would also have implications of creating vulnerabilities in the less-regulated part of the banking system, and why we shouldn't just go to SIFI capital requirements for all the banking system. So, that's one concern that I have regarding your presentation.

And finally, with the other point you mentioned, you mentioned the importance of cross-border banking activities and international banks. And I fully agree, and there are many reasons. But I think also the systemic implications depend a lot on the structure of the banking activities across countries and why we shouldn't just move to a bank across countries to let them be just a subsidiary, a stand-alone corporation.

ANDREW CROCKETT: Well, these almost sound like setup questions so that I can say we don't like the SIFI surcharge. But obviously there is the consequence of moving financial activity, not only, as I said, from the banking system to the shadow banking system, but if you have discrimination within the banking system, from the big banks to the small banks. I mean, as was pointed out, you could also, in theory, have it go the other way, because people may say the large banks are implicitly better protected. Not something that we ask for, so it could go the other way.

I assume within the banking system, however, you say more regulated or less regulated. All of the banking system is subject to regulation. And therefore, the regulators, I presume, will be alert or ought to be alert to the consequences of shifts from large to small banks. And if the small banks become collectively systemically more important, then they would warrant closer oversight.

On the question of cross-border activities and why not simply subsidiaries, I mean, I understand there is a case to do that. One needs to be a little bit careful, because it would not be easy in a crisis for a bank to allow a subsidiary that had gotten into difficulty to fail. The reputational risk that links different subsidiaries of the same group is not negligible, so one has to take that into account.

And there are also costs because of the business model in which different subsidiaries share capital and liquidity. And those would be additional costs to subsidiarization.

But I do think that, as I said, the first-best solution is to have an international regime that effectively manages the globalization of the industry as it has developed. A second best, if that is truly not possible, is to allow banks to be globally active but with the protections that you're alluding to that would be applied in different countries.

GUILLERMO ORTIZ: Let me take the last two questions together.

QUESTIONER: *Thank you, Andrew, for your impressive lecture, and also for carrying forward Tommaso's torch. In this spirit, I would like to try to push you a little forward into the post-Westphalia world that Tommaso outlined.*

You know that Tommaso was focusing much of his analysis on the twin concept of rules and institutions. I think we are probably moving into sort of a more global framework for financial regulations. But we are still, I think, in the early stages in a sort of building institution that can manage and enforce those rules in a post-Westphalia concept. And I'm worried that when people

protest in the public square, as you said, governments tend to turn to a more Westphalia approach. And so I would like to ask your comments on this. Thank you.

QUESTIONER: *Thank you very much, Andrew, for a good paper. I'd like to say a few things, given what's happening in Europe today, and this is the question of moral hazard and perverse incentives.*

If you look at Greece and Portugal and Ireland and Spain and all these countries, the one industry that they have in common is the banking industry. And yet there's this seeming determination all over to make sure that the banks don't pay any part of the cost for the decisions that they've taken. Everything is being done to make sure that the banks don't pay a price. And I wonder if this does not encourage bad behavior in the future.

I'll give an example. In Nigeria, we bailed out the banks. But having bailed out the banks, for the next 10 years the banks are going to pay interest they can pay and fund for the cleanup. Why can't we think of doing something like that in Europe? I can understand saying the banks can't absorb the losses now, but why can't the banks pay in the future? Thank you.

ANDREW CROCKETT: Well, excellent questions to which I don't have excellent answers, I'm afraid. [Laughter] But I would agree with you that the default response of governments and regulators faced with crisis is to retreat to their clearest responsibility, which is to their national economies.

I think it's a matter of leadership, particularly at the political level, to educate countries to the fact that—I mean, Tommaso made wonderful references to various institutional arrangements last time—to make clear that supranational international arrangements are necessary in many spheres. I remember he referred to the navigation on the Rhine, which is perhaps one of the earliest sets of agreements between the countries bordering the Rhine.

And I think we have to realize that not only is financial activity global, but it's also productive to have a global financial institution. The perception now—at least I think in the public mind—is that banks are toxic and, therefore, anything that you can do to restrict their activities is probably a good thing. And we need to generate—at least if people agree with that—the concept of allowing banks to develop in a natural way and in a fashion that enhances the contribution in which they and the financial system more broadly can serve the needs of the real economy. If we can demonstrate that and demonstrate also that in order to do this safely and

efficiently, you need to have a system of international rules, that would be the way to go.

Now, we do have a lot of progress that has been made. When I began my career, nobody would have thought of the Basel Committee setting rules and standards. Charles here is the author of a forthcoming book which will teach us a lot about the origins of that. So I'm not totally pessimistic. But I'm afraid when you get to a bump in the road and there's a crisis, then you get a retreat into national preconceptions.

I don't think I should really attempt to say about Europe what the solution should be. I mean, it's a fascinating question and a very troublesome question. In a general sense, I can remember at the time when the Maastricht Treaty was being negotiated and when the statutes of the European Central Bank were being negotiated, the no-bailout provision—in other words, national borrowers would be on their own—was something that was considered important.

It's obviously the case that the way in which the union developed and the way in which the euro zone developed, they built up an assumption that crises were less likely and would be approached in different ways than turned out to be the case. So, in the Nigerian case after the bailout a much more-disciplined regime was imposed. Maybe it will be the case that once the crisis has been overcome, there will be a greater clarity of the role of market discipline, and the role of official support, something I talked about in a more general sense, will be applied.

But right now, I don't think it's helpful for me or anybody else to muddy the waters of the difficult problems that our colleagues in Europe are dealing with.

GUILLERMO ORTIZ: Thank you very much. Let me bring this session to a close by thanking Andrew once again, and asking the panel members to please come to the forum. [Applause]

Panel Discussion

Following the lecture and question-and-answer session, a panel discussion was held, featuring Charles Goodhart, former Chief Adviser at the Bank of England and external member of its Monetary Policy Committee and currently Professor Emeritus at the London School of Economics; Yaga Venugopal Reddy, former Governor of the Reserve Bank of India and former Chair of the BIS; and European Central Bank President Jean-Claude Trichet, who served as moderator for the discussion; along with the lecturer, Andrew Crockett, and the Foundation Chairman, Guillermo Ortiz.

JEAN-CLAUDE TRICHET: It's an immense privilege, Andrew, to listen to you and to this very rich lecture, I have to say. And it's a great privilege to have this panel to, I would say, discuss concepts that you have just elaborated. I have to say that I am always impressed, Andrew, by your depth of reflection, your creativity, and if I may, something which makes a French citizen extremely jealous. You have a clarity of exposition which is absolutely remarkable. And we follow you first, second, third, fourth. [Laughter] I have to say, I always admire this capacity to join, again, reflection, creativity, and clarity.

Now let me say, that listening to all that you said I was, myself, reflecting permanently, because you had touched so many very important issues. I have seen that you were touching uncertainty, Knightian uncertainty, uncertainty in terms of risk on top of the Knightian uncertainty.

I was thinking that we are in a world where uncertainty is also due to the fact that we do not understand too well a number of phenomena unfolding, including when we have this sequence of unexpected events that are characterizing a crisis. So that would be for academia to be called to enlighten the policymaker as much as possible on this phenomenon, including multiple equilibriums that you mentioned. And I have always heard you elaborating on multiple equilibriums in all our previous contact.

I was struck by your remark on systemic instability and procyclical-ity and all the uncertainties that are associated with systemic instability. All over the world, we have now new institutions that are devoted to analyzing systemic instability, systemic risk with the objective to prevent it. And I have to say, again, this is really, in short, a territory where we have to work a lot as, again, academia as well as policymakers.

And I would also say that when I was listening to what you said on public sector intervention, I was reflecting on this particular problematics of prevention. Whether we are in a Westphalia world or in a post-Westphalia world, we have something like a public sector, a taxpayer, whether it is a national taxpayer or perhaps a more complex set of national taxpayers. But in any case, decisions have to be taken; that supposes that there is in the decision-making process sufficient lucidity on what would happen if we would not prevent it.

And the counterfactual is always extremely difficult to present to the decision makers, which was true and is true on both sides of the Atlantic—how do you communicate without democracies? And with the taxpayers' decision sufficiently convincingly to mobilize decisions before the catastrophe, without waiting for, you know, this evidence that the situation calls precisely for such decisions?

So again, as you see, you triggered a lot of meditation in all of us. But let me say that we are here to discuss as profoundly as possible. We have the privilege of having yourself, Andrew, and Guillermo. But I will give the floor to Charles, first, if he wishes. Charles needs no presentation. But let me say that all of us here admire you, Charles, for your extraordinary contribution to academia and your truly global vision which is, I would say, remarkable. You have really not only the transatlantic, but the global, vision.

So, thank you so much. I appreciate always all that you say. You have the floor.

CHARLES GOODHART: Thank you very much, Jean-Claude.

It's been my great privilege to have Andrew as my friend and sometime colleague now for some 43 years. I first met Andrew when I went into the Bank of England in 1968, and he had already been there for a short time. But I was considerably older and had more academic training, so for a time I was actually Andrew's boss. It was a great experience, though very shortly thereafter his career leapfrogged mine. So it was a very temporary phase. But it was a very pleasant one, because Andrew showed then, as he has continued to show and as is very obvious from his lecture, his many

very great qualities: an acute but very clear mind, an appreciation of what is of central importance and what is not, a very balanced viewpoint, combined with great diplomacy, as you will have gathered from the way he answered the questions recently. [Laughter] Very diplomatic.

And as Jean-Claude was saying, the ability both to write and to present clearly, simply, and indeed beautifully. And I'm sure that his lecture will be appreciated, read carefully, and cited for years to come. And I could go on, but I won't because I've only got a short space of time and I want really to touch on three points and three points only.

And the first one is, to carry on really from where one of the questioners effectively tried to take you, which is, don't forget housing finance. It is a key element and it hasn't been properly treated yet by the authorities. There is a tendency for the conventional wisdom to think of banking, and intermediation more generally, as taking funds from households and lending them to corporates. And in fact, as Adair Turner has stated many times, that's actually now wrong. What banks and intermediaries generally do is take money from households and lend it to households, so that the housing and property markets are very much at the center of financial intermediation. And the housing and property markets have not been behaving well. The finances of housing and property markets have remained difficult.

In my own country, we have had three bubbles and busts: 1972/1976, 1989/1992, and recently, 2005/2008. And if it hadn't been for these bubbles and busts, conditions would have been vastly better. Indeed, if it hadn't been for the problems for housing around the world, the recent financial crisis would not have taken off nor would it have been so severe.

If we could reduce the virulence of the housing and property cycle, then the whole need for financial regulation would not be as acute as it, in fact, has turned out to be. And while all of you have been working so hard and with considerable success to repair the strength of the banking system and to improve regulatory matters and capitalization within the banking system, I think of things like the Troubled Assets Relief Program (TARP) and the stress tests in the United States. I think of the work being done in developing Basel III and the work that the Financial Stability Board (FSB) has been doing, that indeed we heard in the very first lecture this morning.

But nothing similar has actually been achieved on the housing front. The cycle of foreclosure, housing price declines, negative equity, foreclosure, and round and round, has not been stopped. It still continues.

We haven't done what we should have done, and we still very much need to do that.

There's been a whole discussion of CoCos [contingent convertible bonds] for banks. There should have been a similar discussion of CoCos for housing finance, debt-for-equity swaps in housing. Whereas the previous set of innovations in terms of securitization and subprime in housing turned out in the event to be remarkably procyclical. What we need to do—you need to do—is to think of innovations and regulations that will actually enhance and encourage countercyclical measures within housing and property markets. And that is an area where you have not yet really started to do what I think you should be doing.

Now, that brings me to my second particular area that I want to talk about, which is the need for applying countercyclical measures more generally. While the need for countercyclical measures has been accepted in principle, I continue to be very worried that in practice it will actually be applied tentatively and insufficiently.

The basic reason for that is that the asset price bubbles which countercyclical regulation should be there to mitigate are actually extraordinarily popular. When they're going on, they're really good fun and enjoyable. The politicians love them, the lenders love them, the borrowers love them, the commentators love them. And nobody actually knows for sure whether they're a bubble or they're unsustainable.

Under those circumstances, taking away the punch bowl just when the party is getting going—and the party is frequently, as I was saying, a housing and property party—is extraordinarily unpopular. It will lead the central bank governor who does it to face massive public attack and quite possibly a lot of political attack as well. It will be a very brave central banker who actually does that.

Now, that means that using these countercyclical measures is going to be very hard. And leaving it purely to the discretion of the central bank is likely, in my view, to mean that the default option is going to be inaction. And one of the arguments that I've been pushing and would want to continue to push is that leaving it to the discretion of the central bank needs to be supported by sets of presumptive indicators, possibly leverage growing faster than average and above its norm, and housing prices doing the same—those kind of presumptive indicators on which when they hit, the assumption should be that the central bank would take action or explain in public when it does not. In other words, change the whole incentive structure and the inducement for the regulator, so that the default option is not inaction but becomes actually action, because you're required to

take action or explain why not. And explaining why not and then facing a crisis would not be comfortable for a central bank governor who has just said, “We don’t need to take this action because it’s actually not a bubble and it’s sustainable.”

Now finally, Andrew’s use of the English language has always been absolutely one of his strongest suits. But I do worry about his use of the word “fail.” For example, in his comments on “too big to fail.” There are lots of failures among energy companies, among transport companies, for example. But no one, when an energy company or a transport company, say, an airline company, fails actually says that the railway tracks or the power station or the planes should be broken up and sold for scrap. It’s a silly idea. The provision of services goes on and continues. If necessary, the state takes over until a new private sector operator can be found.

Andrew’s analogy of finance as being the nervous system of the economy is apt. But if a key part of our nervous system malfunctions, it is usually suboptimal to shut down the nerves. What I am getting at is that Andrew’s three alternatives, which were sale, merger, or winding down, should not be a complete set. A much more common response to failure should be to take the failing financial institution into temporary public ownership. Kick out the old management, disenfranchise the shareholders, and perhaps impose a haircut on the creditor, though the takeover by the state under those circumstances should be early enough that no large loss is actually taken on.

Words carry a huge charge, as Andrew knows and I hope that you all know as well. And the negative connotation of the word “nationalization,” even if it might be temporary, was quite largely instrumental in mostly preventing the first-best response to bank failures from being undertaken in the last crisis. And I think you’ve got to try harder to overcome the self-inflicted wound of not having governments take over failing bank institutions and financial institutions in any similar future financial crisis. Thank you.

JEAN-CLAUDE TRICHET: Thank you. Thank you very much indeed, Charles. I will turn to Dr. Reddy. Dr. Reddy, we had the great privilege to have you with us from when you were Governor of the Central Bank of India. We have appreciated enormously your wisdom and your experience. And I have to say that there is a very close link between the two panelists, which is the London School of Economics. You were a visiting fellow in the London School of Economics. You were an honorary fellow

of the London School of Economics and Charles is a luminary of the London School of Economics.

I would like very much to give you the floor and listen very carefully to what you have to say. Please.

YAGA VENUGOPAL REDDY: Mr. Chairman, copanelists, distinguished central bankers and friends, I am grateful to you for your very kind, generous introduction. And I am thankful to the BIS for giving me this opportunity.

Some generalists asked me after I left the job what I missed. Did I miss anything about being a governor? I said the only thing I miss is my trip to BIS. [Laughter] So this has been a great source of joy as well as knowledge, away from the immediate pressures of work. And I'm glad to be among friends again.

I met Andrew about 15 years ago in Basel. And for me, it was a case of friendship at first sight. His wit and wisdom are legendary, and his capacity to be friendly is infinite. The greatest contribution he has made to the BIS, and I told him so last evening, is in transforming the BIS into a truly global institution.

His lecture today is, in my view, a landmark speech on the subject. It is one of the most comprehensive and quite concise.

For my part, I just wanted to ask some questions, 10 of them in less than 10 minutes. And I can afford the luxury of not trying to find the answers, because I have no official position.

Question No. 1: Is there an optimal level of financialization of an economy? Because we see in economies where the crisis originated, or where the economy was most affected, the financial sector has grown rather fast, much faster than the real economy. So people call it excessive financialization—and my friend Andrew Shank has been collecting a lot of data to prove that they had excessive financialization.

At the same time, common sense tells us and experience in developing countries tells us that lack of adequate and efficient financial intermediation can hinder economic growth. So therefore, there must be something in between which is optimal. Is there, and should we look for it for each country?

Question No. 2: Is there an optimal composition of the financial sector appropriate to each country? Now, again, we see that in order to enhance savings and generalize them for investments to enable growth, public policy is looking towards an appropriate financial sector. Then we know, for instance, Asia has been having significant growth, a fairly high

level of savings, a reasonable increase in productivity, and they have a particular composition of the financial sector in favor of traditional banking systems, not too much of financial products. And maybe Canada and Australia. So we have got different examples of different compositions of the financial sector and different levels of efficiency and stability.

So could we look at this empirically—and is there, therefore, something like an appropriate composition of the financial sector? Should we look for that?

Question No. 3: Are there intermediate regimes to the rigor of financial sector regulation rather than the corners? In fact, in the INET [Institute for New Economic Thinking] conference in Bretton Woods, Larry Summers was asked whether there has not been enough regulation on the financial sector in the United States. And I was present there. So, Larry Summers said that if you don't have a deregulated financial sector, then ask India—they had to repress the financial sector until 1990. And at that time, the rate of growth was only 3 percent. So the impression is that there are only two: repressed financial sector and open financial sector. Is that true? Are there only corner solutions? And we have seen this, we have gone through the experience in exchange rate management. So what are the intermediate solutions between repression and openness?

Question No. 4: Should we fundamentally redesign governance structures in public and private sectors? If you recall, in the public sector we were very keen that conflict of interest would be avoided. There should be monetary policy, single instruments, single objectives, etc., etc. And now what we realized in the crisis is that coordination has suffered and new institutions are being brought in for instituting coordination.

And what happened in the private sector? In the private sector, we allowed large financial conglomerates in the interest of scale, scope, economies of scale. And then the conflict of interest was supposed to be handled through firewalls. But the conflict of interest there has created a problem. And actually, the crisis is a case of failure of governance in both public and private sectors.

So, is it necessary, therefore, that we revisit the governance structures with a different assumption that coordination and conflict of interest apply differently to public and private sectors by virtue of their own overall mandate?

Question No. 5: Is diversity in financial regulation globally a source of stability in finance? Something like biodiversity. Imagine—counterfactual is always difficult—but imagine five or seven years ago that we had a single model of financial sector regulation. And we can guess what it

would have been. So, if there was a single model of financial regulation applicable to India, China, Canada, Australia, or whatever it is, was it possible that there was a greater risk? Are we sure that the human mind and human institutions are capable of devising a globally best solution? If we err, then the whole global economy may be in trouble. So, is there merit in diversity? And how do we introduce that?

Question No. 6: How far—and this was referred to in the discussion—how far should we go in applying a nonlevel playing field? The non-level playing field is being applied for systemically important financial institutions where there's gradations. Now why do we not do it down below? There are non-systemically important institutions, and those non-systemically important institutions also can be graded. And you have local institutions where you don't do anything except take care of the depositor protection. Logically, I think we cannot.

For example, in India, actually, we allow for a three-track approach, and we announced it—internationally active, nationwide, and local—and we have different regulatory regimes. There will be overlap, but still the differentiation was useful.

Question No. 7: What are the areas of special concern to the developing countries? I would offer three. One, the whole regulatory philosophy now is looking at intervention of the state or regulator to ensure stability. If intervention of the state is required to ensure stability because the financial markets are not self-correcting or most efficient, then is it not necessary that they should be designed for development also? Is it that the financial sector will act—markets will dramatically ensure growth, but only for stability you have to somehow intervene? So, I don't know, but I think that's a question we have to ask in terms of justification for intervention.

Second, in developing countries the cyclical and structural factors are very difficult to distinguish. And then you find very often that credit doesn't go to the culture, but credit goes to speculative real estate. And in a way, the markets are not that flexible and that integrated. And therefore, you really end up having credit allocation—de facto selected credit controls. Should we rule that out?

The third issue is the regulatory regimes for countering volatility and capital flows, particularly through financial intermediaries—volatility is different from the aggregate—the net—the gross and the net.

Question No. 8: Who should assume the burden of proof that financial innovation is not toxic? On whom is the burden of proof: on the person who is innovating, or the person who is allowing or not allowing?

But more important is that the toxic nature also depends on the user: who is offering, who is buying, and the environment in which it happens.

So in India our approach was that our institutions or markets are not that developed. And, therefore, if you are not able to explain to the regulator that it is good enough, then the regulator is uncomfortable and will not allow that. So I think the markets in our country reflect the capacity of the regulators. So that's one approach.

Question No. 9: Should regulators also seek to increase good financial innovations or those that could add social value? One of the questioners has made reference to that. Financial innovation need not be the monopoly of the private sector. Some responsibility might be taken to encourage innovation or to do some innovation by the central banks themselves, particularly in developing countries.

Question No. 10: Generally we seem to assume that there is a state failure, a market failure, and the state will intervene to avoid market failure. And you must allow the market to function for efficiency. But it's quite possible that the crisis was a result of failure of both the state and market together.

Now, if a central bank is independent—independent from whom? Independent of the state, as represented by the government. So, in a way—I think there was a reference to the issue of being a brave central banker. So a brave central banker is somebody who is prepared to take on both the state and the market together in fairness to the people.

Thank you very much. [Applause]

JEAN-CLAUDE TRICHET: Thank you very, very much indeed, governor. It was very, very stimulating.

You told me, I asked the question, not the response. I was suspecting at the end of the panel you would say, "I have all the responses. If you invite me to deliver the lecture, I will give it." [Laughter]

And one thing is sure. If you are a central banker, you have to be brave. That is absolutely sure, I have to say. In whatever circumstances.

Perhaps we could ask if you wish, Guillermo, could you say a word as a panelist now? To, you know, permit—to give one minute more to Andrew to respond to the 10 questions? [Laughter]

GUILLERMO ORTIZ: Let me make a couple of brief comments. One of them refers to Question No. 9—[Laughter]—that was asked by Governor Reddy and has to do with financial innovation and the role that it plays in emerging markets.

Obviously there's been a lot of discussion of financial innovation. And I think that Andrew started with a basic question. What are the basic functions of the financial sector? And we all know them. I'm not going to repeat them. But it's basically improving, I would say, the efficiency of the economy and enhancing the welfare of society.

So, innovations that go in this direction somehow have to be connected with the real sector of the economy. And I think that is a useful distinction between what is useful innovation and what is wasteful innovation. And, for example, fiat money and fractional banking and so on and so forth, they have been generally regarded as very useful innovations. Although you may get excesses even on those. If you bring too much fiat money, you get inflation, and the response is central banks and so on.

But the kind of innovation that is totally detached from the real sector of the economy and that loses sight of the principal functions of the financial sector is clearly a social waste. And I can think, for example, of CDOs [collateralized debt obligations]. These instruments that—by the way, they amounted to about \$5 billion in 1996 and to \$560 billion in 2006—10 years later, they were multiplied by 100. Now they have practically disappeared. I think it's a pretty clear example.

And the implication, I think, for regulation is, well, of course, you don't want to suppress innovation. But you also want to make sure that you don't get the kind of bad innovation that is causing problems. And when you observe growth of 100 times of an asset class, no matter what it is, I think it's a signal.

The second and final brief comment I would make has to do with the cross-border issue again. I think that Andrew mentioned that we were living in a globally integrated market with national jurisdictions and so on. And he asked a question about subsidiarization. I think Andrew's answer was a partial one in the sense that it was referring to the responsibilities of the home bank with respect to the subsidiaries.

I think the crisis has proven otherwise. During the crisis, it's actually the subsidiaries that have been in much better shape than the home banks. And this has clear implications for the regulation that is being worked on today at the Financial Stability Board.

I think the bias has been to give the power and the ultimate decision-making abilities to the home country—for example, in terms of the integration of the colleges, and so on. But I think that it is very important to respect national jurisdictions and to be very mindful that it is precisely because of the rules and regulations in national jurisdictions in emerging markets where the subsidiaries are located that there was no dislocation

in the emerging market world in the financial sector as a consequence of the global crisis.

JEAN-CLAUDE TRICHET: Thank you. Thank you very, very much, Guillermo, indeed.

Can I ask you to reflect on what you heard again, Andrew, which is the demonstration of the extraordinary lecture you provided us with?

ANDREW CROCKETT: Well, let me be brief and touch only on a few general issues, so as to leave time for questions and comments from the floor.

I think everybody who spoke just now on the panel in one way or another thought government would have a role either in nationalizing financial institutions or preventing destructive innovation or promoting desirable innovation. And governments are, of course, ultimately responsible for everything, so they certainly should have a role.

I just want to put a cautionary note. I'm reading a book called *Reckless Endangerment* which is an interesting description of housing finance—Charles referred to housing finance—in the United States. And the financial innovation that the U.S. government decided to promote was the growth of subprime lending. Now, that didn't work out too well. [Laughter]

I think we do have to be careful, because governments have got multiple objectives. And those, in some sense, if I might be cynical, boil down to: We need to win the next election. And there are ways of doing that that will run counter to sensible financial regulation and sensible financial organization.

And when it comes to governments deciding even on matters that seem reasonable, as Y. V. Reddy was saying on good innovation versus bad innovation, even there, I think it often is whether governments should deal with market failures in order to let the market work better or whether they should counteract markets that are producing results that they don't like.

I would say there are many, many cases in which when you look at outcomes, you can say the outcome is being distorted by a market failure because maybe governments protect certain institutions from failure. I alluded to one or two in my remarks. There are market failures and there are also government failures. Tommaso talked about this last year. And I think we do have to be careful in saying that where the government substitutes decision making for markets, it's not thwarting outcomes rather than facilitating outcomes. It's just a cautionary note.

Another reflection was, Charles suggested—and it’s probably true—that it’s very difficult for a central banker to run against the tide of popular opinion. When everybody’s getting rich, to tell them that we want to stop the party is not very popular. But as Jean-Claude said, I think the central bank and others, too—central bankers do have to be willing to be unpopular. And in a plug for the BIS as an organization, to counteract the blues of being unpopular at home, you can always come to the BIS and get sympathy from your peers. [Laughter]

JEAN-CLAUDE TRICHET: That is for sure. I have to say, I think like a lot of our colleagues, experience—that it was really demanding to be central banker. I have to say that we could exchange views here. And as you just said, including in your time, find a way to regain all the courage that was needed in the circumstances.

So, I think that we should open up the discussion to the audience.

QUESTIONER: *The New Yorker magazine recently had a cartoon where it had a picture of some senior investment bankers on Wall Street sitting around a board table saying, “These new financial regulations are going to fundamentally change the way that we get around them.” [Laughter] Do you think that there is a risk that over the next 10 years, financial innovation will be focused around response to regulation rather than what you might hope in terms of broader added value?*

JEAN-CLAUDE TRICHET: Thank you. I don’t know whether any of the panelists wants to comment?

ANDREW CROCKETT: I think the questioner raises a legitimate question. Now that I’m in a private financial institution, you can see—I mean, viewed from the point of view of the regulator, this is considered exploiting regulation. Viewed from the point of view of the investment bank, the question we’re asked is, Where can I find a safe harbor? In other words, what can I do that is protected by the law? When you have new regulations, of course, they incentivate you to find ways that are protected under the law. And those may not always be in the spirit of the initial regulation, and I think regulators have to be very careful.

This is not malicious intent on the part of the private sector. It’s a way of trying to find what the regulations are incentivating them to do. And you have to be very careful to make sure the regulations are thought

through to the point that they don't incentivate behavior that you don't really want to encourage.

JEAN-CLAUCE TRICHET: That's clear. But the issue of the unintended consequences, of course, is a very, very important issue.

But I was mentioning that as regards our own democracies looking at the situation and needing evidence that the situation is more or less grave. It is a little bit the same for most of the bankers, financial institutions. It's difficult to make the thought experiment to place yourself at the center of those who had to take the major decisions in the advanced economies and to realize that they were really doing something to prevent a Great Depression.

We had a Great Recession. We could have—and in my opinion, we were to have—a Great Depression that would have been much more dramatic. And I have to say, not only our democracies, but also the bankers—and particularly the bankers—that we are very wise and well-managed. I'm thinking not of any institution in particular, Andrew. [Laughter] But it's very difficult for them to realize that we were so close to a catastrophe. And that we avoided a catastrophe only because on both sides of the Atlantic in the advanced economies, we computed that 27 percent of the GDP, approximately, was put on the table as taxpayer risk to avoid precisely the depression.

Of course, very fortunately, this risk was not at all a transfer. Of course, money was made because we avoided the catastrophe. But nevertheless, it was a formidable mobilization of taxpayer risk. And the fact is that I don't think we could do that twice.

So, it is absolutely necessary to reinforce formidably the resilience of the financial system. And of course, what we are doing in the regulatory area is something which is fundamental, provided we reflect very carefully on the unintended consequences that you were just mentioning.

Other questions, other observations, or other comments?

QUESTIONER: *Thank you very much. I would very much like to extend my appreciation for the exceptional lecture and for the panel.*

My question is the following. We very frequently nowadays deal with issues of asset bubbles and preventing them, the need to deleverage. What is the real credit risk exposure? And is there enough capital adequacy always present?

How effective, really, is the loan-to-value as one of the measures which is very frequently also mentioned? And obviously, what is the real loss given default in the circumstances that we may face?

Now my question is, Is there room to regulate valuation of collateral globally? Thank you.

JEAN-CLAUDE TRICHET: Charles?

CHARLES GOODHART: Very good question. And we need to develop—or rather, you need to develop—more effective macroprudential tools, of which I think loan-to-value is one, but not the only one. And there is a need, obviously, to be careful about the collateral because the central bank is effectively taking on a risk and it's not the central bank. The risk is ultimately to the taxpayer.

A central bank can actually operate at negative capital, but sooner or later and sometime, the taxpayer has to pay it back. So there is a concern about ensuring that the assets of the commercial banks and the banks will provide you with collateral sufficiently good.

JEAN-CLAUDE TRICHET: Thank you very much, Charles. Guillermo?

GUILLERMO ORTIZ: Well, I think that Charles has already made the main point about the collateral, which is ultimately the obligation of taxpayers.

I'd like to comment, however, on the question of capital. It is not a matter of chance that the emerging markets did not suffer a domestic financial dislocation as one of the consequences of the crisis. I think one of the important points is that on average, Tier 1 capital in the emerging market world was more than double that of the developed countries. In Latin America, it was about 16 percent. So that shows you something in addition to the fact, of course, that they did not load up on toxic assets.

So, I think that despite my reservations toward having special regimes for systemically important financial institutions, despite the fact that I'm in the private sector now, until recently—I'm very much in favor of much tougher capital standards. And I think that this is something that you, the regulators, would have to revise carefully.

JEAN-CLAUDE TRICHET: Thank you very much indeed, Guillermo.

QUESTIONER: *I would like to enter the issue of the innovation by analogy to the car industry. There was a system in which there was a given quality of cars and engines, and associated with it there were roads and speed limits*

and enforcement rules, and everyone was living happily. And then suddenly, somebody—an engineer—invented a new engine that runs very, very quickly. And it passed all of the engineering tests. And you put it on the road, and then a lot of accidents took place. And the lesson was that before you give the certification to the engine based on the engineering tests, you should really adjust the width of the road, the speed limits, the penalty to violate those, the enforcement rules, and the like.

And the question that I have by analogy back to our business: As one introduces new innovations in the financial industry, what are the criteria that need to be implemented before we put the new cars on the road?

JEAN-CLAUDE TRICHET: Charles, you have the floor.

CHARLES GOODHART: I'd like to try and add into this discussion about innovation. And I think that the problem is that most of the innovations that we've seen in recent years—and I think of securitization, I think of CDS [credit-default swaps], and I think of ETFs, exchange traded funds, in their original form—as they were originally used were both beneficial and relatively harmless: they completed the market, and they were generally allowed diversification and so on and so on.

The problem in most cases came not with the original innovation, but with subsequent add-ons in the form of synthetic—and there's a recent paper by Ramaswamy of the BIS showing how the fact that you can have ETFs backed by synthetic assets has actually led to certain problems. And it was the fact that securitizations in part became securitized that you got CDOs squared, where nobody had thought in the first occasion.

The actual initial innovation is frequently harmless and good. It's sort of that as it gets developed, it gets used in different ways. And some of the ways in which it can be used then become bad. So, what is an innovation? If you had looked at any of those three that I mention—and they are the main ones or some of the main ones in recent years—the initial plan, I think, would have passed every single test you'd like to name. The problem becomes how it gets used afterwards. So the question that I think one has got to face is, When is an innovation an innovation?

And I would very strongly support Guillermo. I think that the crux—and this is where I think regulators have to be much more careful—is when something is growing really at an enormous rate. Then you really need to look very carefully at it. Somebody has found some kind of edge. There may be some kind of speculative tax advantage. And it's rate

of growth that you need to be concerned about as much as innovation. When it's growing too fast, there's probably something wrong with it.

JEAN-CLAUDE TRICHET: Thank you very much. Do you want to comment?

ANDREW CROCKETT: Just a couple of comments. One of the things that I think the growth of securitization and CDOs is actually an object lesson in unintended consequences of regulation. Because when you impose capital requirements, you obviously incentivate banks to look at ways in which they can reduce risk-weighted assets, which is by securitizing them and selling them. So that's not an argument against either securitization or regulation, but it's just an argument for care in designing it.

And secondly, I think it's probably a mistake to talk in general about innovation, whether it's good, whether it's bad, how much you should control it. You have to think about the context in which it's being done. If Apple invents a new application that grows by 100 percent in the first year, that's fine. If a drug is put on the market or CDO squares, then it's something different. And the difference, of course, is that we identify risks and dangers associated with drugs and probably risks and dangers of a slightly different character, but nevertheless serious ones, associated with financial products.

And, therefore, innovation is something that probably needs to be thought of from the standpoint of where are the risks and dangers that are associated with it? And there will be within the financial sector innovations that you don't really want to control. Think of Paul Volcker's famous ATMs. Those caught on, that's fine. But there are certain ones that are not adequately understood. And one needs to think whether the best solution is transparency, so that they are better understood and the good ones can prosper and the bad ones can fade out, or whether it's up to the regulators themselves to say, "No, we need to step in because the market is not going to work even with information to stop bad innovation."

JEAN-CLAUDE TRICHET: Guillermo, one word.

GUILLERMO ORTIZ: Perhaps the real test is what the regulator actually understands, you know? [Laughter] The product in question, that should be a test, you know?

JEAN-CLAUDE TRICHET: Well, to say that here I understand that you just went to the private sector. [Laughter]

All three last questions that we will take as a batch.

QUESTIONER: *Yes, thank you, Chairman. I enjoyed very much not only the presentations by Andrew but also the discussions by other panelists.*

My question is a very simple one. We all know that we economists are very good at explaining what happened in the past, even though we are not that good at predicting what will happen in the future. And we say that even though we live in a global economy, there is no global jurisdiction. The global economy is not well governed. So this is a question related to governance structure.

After the crisis broke out, names like G-20, BIS, BCBS, FSB, and all those names appear because they are known as the ones that govern not only the current, but also the future, global economy.

But we know that even in correcting for the mistakes that we might have made in the past, it took not only one but two or three years to correct for that. And so this is basically the way to deal with the crisis resolution, to a certain extent crisis prevention, but mostly crisis resolution. And we don't know what kind of crisis will come in the future.

Then I would like to know what is your view as to the governance structure? And do you think that we move as quickly as you expected us to do or should we move a little faster? And if we don't move that fast, what do you think are the problems we have as regards the governance structure? Thank you.

JEAN-CLAUDE TRICHET: Thank you very, very much indeed for these very pertinent questions. We have a question here.

QUESTIONER: *Thank you very much. My question would probably be to Andrew, but I would like to introduce it by going back to the excellent list by Dr. Reddy, point number 6, level playing field. Because it seems to me, what you are doing in India in having three types of banking licenses makes very good sense and might maybe be copied at the global level and, in particular, at the European level. Because I come from a country that believed in a level playing field. People thought that size and location didn't matter and a bank in Europe should be able to operate all over the place.*

Now, I would like to link this to, then, what Andrew said about scope, size, and geographic rates. Now, if—do you think that this might be the way forward so that we should break up the European passport system and not have European passports for all banks, just only banks that fulfill certain criteria,

and whether we could do the same at the global level? Because a level playing field for all banks at the global level will never work.

JEAN-CLAUDE TRICHET: Thank you very much indeed. We have a last question over there.

QUESTIONER: *Very briefly, as a last question, to link up to the question of transparency. I think an excellent point of Andrew's lecture was the fact that the financial system is designed to produce information. Somewhat paradoxically, it is also a great producer of opacity. So there is not naturally the right level of transparency. It's not enough to say transparency is going to solve the problem. It's not necessarily produced by the market. And I'd like to have your reflection on that. What is the role of regulators in producing the right amount of transparency, knowing also that in some financial circumstances there can be situations where there is too much transparency?*

JEAN-CLAUDE TRICHET: Thank you very much indeed. I think it goes without saying that you must have the last word, Andrew. But I ask the other panelists whether they have any comment? [Pause] It's not the case.

Andrew, you have the floor.

ANDREW CROCKETT: Okay. Well, I'm standing between us and lunch, so I'll try and be relatively brief.

On governance of the global economy: we can't predict where the future crisis will come from, but it seems to me that the governance structure is intended to be sufficiently broad. You have the G-20 leaders that meet underneath the G-20 leaders, the ministers and the governors, and the Financial Stability Board with its broad-ranging responsibility to identify potential vulnerabilities in the economy. And then the specific institutions like the BIS and the IMF that are more in the implementing mode.

Breaking up banks in Europe, the question about the level playing field—one of the phrases in Adair Turner's report struck me as a response to this. He said that we either need more Europe or less Europe. In other words, I think he was addressing what I've called, and what Tommaso said before me, the post-Westphalia dilemma. If you're going to have state sovereignty as absolute, then you need less international spread of activities. If you're going to accept globalization, you need more in the area of giving up domestic sovereignty and having international decision making.

And finally, the question of transparency versus opacity. This, I think, is something that's often a subject of misunderstanding for those outside the financial system. Sometimes you need opacity in order to produce more information. If I'm doing research and I'm obliged to make it available to everybody, then I'm not going to be incentivated to do the research because I can't benefit from it.

So it is necessary for institutions that undertake proprietary research to get their views into the market by their market activities, buying and selling, not by publicizing the research. Because otherwise, it won't take place. This isn't a full answer to the question, but I just want to make the point that there is an optimum degree of transparency and an optimum degree of opacity that results in the optimal amount of information becoming available in the market.

JEAN-CLAUDE TRICHET: Thank you so much for your response, Andrew. When you were responding, I was thinking of Paul Volcker saying with his inimitable English-American accent, "They are calling global governance, financial architecture! Architecture, architecture—I would call that interior decoration!" [Laughter]

Andrew, we have to thank you very, very much indeed. You were absolutely striking in your lecture and, I have to say, in your response to questions, in which again you demonstrated pertinence. As you said, Charles, clarity and energy. And we are very, very impressed indeed by the privilege we had today, Andrew.

So, thank you very, very, very much. [Applause]

ANDREW CROCKETT: Well, a lot of people said a lot of very nice things about me. It was almost like being present at my funeral. [Laughter] And I'm tempted to jump in and say, it's much more than could possibly be deserved. But I remember what Golda Meir said to one of her cabinet ministers who was being self-deprecating. She said, "You're not that good. Don't waste your breath being humble." [Laughter] [Applause]

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Swanda & Schindler Digital Photography/John Swanda

ANDREW CROCKETT

Sir Andrew Crockett is the Special Adviser to the Chairman, and a member of the Executive Committee, JPMorgan Chase & Co. Before joining JPMorgan Chase, Sir Andrew had been General Manager (CEO) of the Bank for International Settlements, serving two five-year terms (1993–2003). At the request of the G-7 Finance Ministers, he also served from 1999 to 2003 as the first Chairman of the Financial Stability Forum, now the Financial Stability Board. Earlier in his career, he held senior positions at the Bank of England and the International Monetary Fund.

Sir Andrew has served in the past as Chairman of Working Party 3 of the OECD, as the IMF's Alternate Governor for the United Kingdom, as a member of the Monetary Committee of the European Union, and as a Trustee of the International Accounting Standards Committee Foundation. He is currently a member emeritus of the Group of Thirty, a member of the International Advisory Council of the China Banking Regulatory Commission, Director of the International Centre for Leadership in Finance (Malaysia), and a trustee of the American University of Beirut.

Among honors received by Sir Andrew are Honorary LLD (University of Birmingham), European Banker of the Year (2000), and Knight Bachelor (United Kingdom, 2003). He is the author of several books on economic and financial subjects, as well as numerous articles in scholarly publications.

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