Levy Economics Institute of Bard College

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CONFERENCE PROCEEDINGS

HYMAN P. MINSKY CONFERENCE ON FINANCIAL INSTABILITY

Debt, Deficits, and Unstable Markets

Berlin, Germany | November 26–27, 2012

Organized by the Levy Economics Institute and ECLA of Bard with support from the Ford Foundation, The German Marshall Fund of the United States, and Deutsche Bank AG

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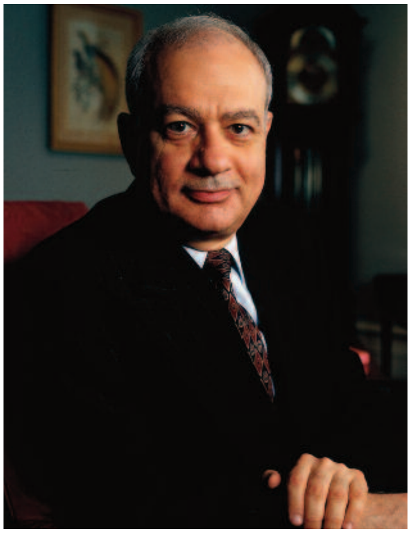
Contents

These proceedings consist of edited transcripts of the speakers' remarks and summaries of session participants' presentations.

Foreword



I am delighted to welcome you to the "Hyman P. Minsky Conference on Financial Instability: Debt Deficits, and Unstable Markets," co-organized by the Levy Economics Institute and ECLA of Bard with support from the Ford Foundation, The German Marshall Fund of the United States, and Deutsche Bank AG.

This conference is one of the public outreach activities of the joint Ford–Levy Institute project Financial Instability and the Reregulation of Financial Institutions and Markets, which draws on Minsky's extensive work on the structure of financial systems to determine the root causes of the recent financial crisis, and whether the new regulatory structures, once in place, will prevent a systemic crisis from happening again. Among other key topics, the conference will address the challenge to global growth posed by the eurozone debt crisis; the impact of the credit crunch on economic and financial markets; the larger implications of government deficits and debt crises for US, European, and Asian economic policy; and central bank independence and financial reform.

I trust you will enjoy the presentations that follow. As always, your comments and suggestions are welcome.

Dimitri B. Papadimitriou
President, Levy Economics Institute, and Managing Director, ECLA of Bard

Program

Monday, November 26

8:45–9:15 a.m.

WELCOME AND INTRODUCTION

Leonardo Burlamaqui, *Ford Foundation*

Dimitri B. Papadimitriou, *Levy Institute*

9:15–9:45 a.m.

SPEAKER

Philip D. Murphy, *US Ambassador, Federal Republic of Germany*

"Going Forward: Overcoming Challenges, Seizing Opportunities"

9:45–10:30 a.m.

SPEAKER

Vítor Constâncio, *European Central Bank*

"Completing and Repairing the Economic and Monetary Union"

10:45 a.m. – 12:45 p.m.

SESSION 1

Public Debt, Private Debt, and Financial Instability in the Eurozone

Moderator: Jack Ewing, International Herald Tribune

Robert J. Barbera, *Mount Lucas Management LP*

Klaus Günter Deutsch, *Deutsche Bank AG*

Andrew Smithers, *Smithers & Co.*

2:00–3:00 p.m.

SPEAKER

Steffen Kampeter, *German Federal Ministry of Finance*

"The Eurozone Crisis and the Continuing Threat of a Renewed Global Economic Crisis"

3:00–4:00 p.m.

SPEAKER

Jan Kregel, *Levy Institute* and *Tallinn University of Technology*

"Minsky and Thinking Beyond Dodd-Frank"

4:00–5:30 p.m.

SESSION 2

Minsky's Financial Instability

Moderator: C. J. Polychroniou, *Levy Institute*

Dimitrios Tsomocos, *University of Oxford*

Alexandros Vardoulakis, *European Central Bank* and *Banque de France*

5:45–7:15 p.m. **SESSION 3**

Prospects and Policies for the Eurozone Crisis

Moderator: Brian Blackstone, The Wall Street Journal

Eckhard Hein, *Berlin School of Economics and Law*

George Stathakis, *Greek Parliament (SYRIZA)* and *University of Crete*

Jörg Bibow, *Levy Institute* and *Skidmore College*

7:30 p.m. **SPEAKER**

Peter Praet, *European Central Bank*

"Monetary Policy and Deleveraging"

Tuesday, November 27

9:00–10:00 a.m. **SPEAKER**

Richard Fisher, *Federal Reserve Bank of Dallas*

"Placing Financial Instability in Context"

10:00–11:00 a.m. **SESSION 4**

Financial Reform Proposals

Moderator: Jan Kregel, *Levy Institute* and *Tallinn University of Technology*

Christine M. Cumming, *Federal Reserve Bank of New York*

Michael Greenberger, *The University of Maryland*

11:15 a.m. – 12:30 p.m. **SESSION 5**

Financial Instability in Asia

Moderator: Taun Toay, *Levy Institute*

Frank Veneroso, *Veneroso Associates, LLC*

Michael Pettis, *Peking University* and *Carnegie Endowment for International Peace*

12:30–2:30 p.m. **SPEAKER**

Dennis Lockhart, *Federal Reserve Bank of Atlanta*

"Thoughts on Two Other Potential Sources of Financial Instability: The Payments System and Public Pensions"

2:30–4:00 p.m. **SESSION 6**

Financial Reform and Financial Instability

Moderator: Dimitri B. Papadimitriou, *Levy Institute*

L. Randall Wray, *Levy Institute* and *University of Missouri–Kansas City*

Éric Tymoigne, *Levy Institute* and *Lewis and Clark College*

Welcome and Introduction

LEONARDO BURLAMAQUI

Program Officer, Ford Foundation

DIMITRI B. PAPADIMITRIOU

President, Levy Economics Institute

LEONARDO BURLAMAQUI: Good morning. Welcome to the Minsky Berlin conference.

I'm Leonardo Burlamaqui, a program officer at the Ford Foundation, New York, and I lead an initiative on reforming global financial governance. It's a great pleasure to be here among so many distinguished guests, speakers, panelists, moderators, and, I'm sure, also a very engaged audience.

This Berlin-based conference is, of course, immensely timely and pertinent. It's the end of 2012, and we're still far from a recovery from the 2008 financial crisis, as we all know. Some would even say we're actually far from weathering the storm. Furthermore, the debate has largely shifted from financial reform to economic recovery, and especially here in Europe. on how to save the euro.

From a policy perspective, one could say that a key point here refers to identifying where recovery and financial reform really conflict with each other, and where they can help each other. Hopefully, this conference will help address this question, among others. And not by accident, this is a key theme for Hyman Minsky and for the Ford Foundation's initiative. In fact, a common theme for Ford's and Minsky's approach is the firm, solid conviction on the key role of sound public financial governance, not only for the achievement of financial stability, but also as a condition for fostering development along with poverty alleviation and social justice.

We have argued for some time that financial markets need the oversight of public and democratic institutions to ensure transparency, accountability, and effectiveness. Yet even now, a small group of nations, institutions, and corporations have been setting the rules. Again, even now at the end of 2012, they're trying as best they can to retreat from serious supervision regulation. The result is that we still have a global financial system that is still very unstable and unresponsive to the inequities of economic globalization.

So the goal of the reforming global financial governance initiative at Ford is precisely to help to reverse that. The initiative supports efforts to reform key global and domestic institutions, to make them more transparent, accountable, and effective in delivering financial stability, development, and poverty alleviation—precisely that. We want to bring, or help to bring, new voices to the global public dialogue and build alliances with academic partners, advocacy groups, global organizations, national governments, policymakers, and regulators to ensure that these institutions advance the public good. In that sense, this conference, which we're proud to help organize along with ECLA of Bard College here in Berlin, the German Marshall Fund, the American Embassy, and Deutsche Bank. This conference is one step, an important step I think, toward spurring the creative thinking that is badly needed in order to approach these issues from a multitude of angles.

Among those angles, let me suggest to you that the Keynes–Minsky approach bears special relevance as we face today's economic challenges. And I'm confident that much will be said in that regard in the next couple of days.

So let me just very quickly raise three points about their vision, that of Keynes and Minsky, a vision and analysis that seem to be especially useful for the discussions to follow.

The first is just to remind all of us of the Wall Street paradigm—coming from Minsky, right?—which is his refusal to accept the distinction between a financial economy and the real economy; his insistence that in modern capitalism all corporations are first and foremost financial entities handling debt and cash flows, no matter what they actually physically produce; and the implication that, if those institutions lean more toward speculation than toward supporting investment and productivity, enhancing innovation, that is a question of policy and institutional design. It's a problem of incentives, supervision, and, again, public relations.

The second point: destabilizing stability. Again, it's Minsky's hypothesis that economic stability itself creates the conditions under which instability develops, as well as the role of financial markets in magnifying those conditions. The implication in the absence of effective public regulation and oversight: self-destabilization, not self-regulation, should be the norm. I believe if we look to past history, and we skip the Bretton Woods interregnum, that's pretty much what we get: instability instead of stability. And when we got stability, it was because the system was properly regulated and had proper oversight.

Finally, the last point: the misguided belief in austerity as a way out of the crisis. Again, history also offers plenty of lessons in that regard. Just recall Keynes, who wrote his famous "Economic Consequences of the Peace" in 1919, warning precisely against that approach. And Germany, one of its main protagonists, was courageously defended by Keynes against what I'll call the "austerity follies" coming from the lords of finance of the UK, United States, and France. Let me suggest that the main arguments in that book, which is old and at the same time very, very to the point for some of the problems we have today, still deserve attention now, and especially here in Europe.

From our perspective, these three points have profound implications for understanding the crisis and for properly managing recovery and reorienting financial reform.

So let's begin the debates and the conversation on these issues, and hopefully also on how to recast economics, or economic theory if you will, from the fake-basis discipline that it became a long time ago; or in another sense, the religion that economic theory has become, where beliefs in axioms like "self-regulating markets," "perfectly rational expectations," etc., are sufficient to guide both private decisions and public policy; and let's try to discuss how to reshape economics and economic theory as a moral science, as

Keynes suggested once, whose foundations [are] empirically grounded [in] knowledge of how agents decide, markets work, and institutions evolve.

To properly introduce the conference, let me turn the podium over to Dimitri Papadimitriou, president of the Levy Institute, and wish all of us a very good conference. Thank you very much.

Dimitri B. Papadimitriou: I want to welcome you to this Hyman Minsky Conference, jointly sponsored by the Levy Economics Institute of Bard College in New York and ECLA of Bard here in Berlin.

I also want to publicly thank the Ford Foundation and especially Program Officer Leonardo Burlamaqui, not only for making available the financial resources to organize this conference, but also for his incisive guidance to the Institute project on Financial Instability and the Reregulation of Financial Institutions and Markets.

Many thanks are also due to the German Marshall Fund of the United States for their invaluable assistance, and to Deutsche Bank for hosting the conference in this attractive meeting room.

The conference is an outcome of the Institute's research program on Monetary Policy and Financial Structure, headed by longtime Senior Scholar Jan Kregel. Jan inherited this research endeavor from the late Hyman Minsky, a maverick economist who initiated it when he joined the Institute in 1990, and whose prescient contributions to economics have finally been recognized, not only in the United States and Europe, but also all over the world.

I do not know how much you know of the Levy Economics Institute, located on the other side of the Atlantic, or of ECLA of Bard, a Liberal Arts University in Berlin.

I hope you will allow me to say a few words of propaganda for both institutions.

The Levy Institute was established in 1986 as a unit of Bard College. It is an independent, nonprofit, nonpartisan public policy research organization that encourages a diversity of opinion in the examination of economic issues profoundly affecting the United States and the rest of the world. We are concerned with financial instability, the capital development of the economy, unemployment, the purchasing power of workers, the distribution of income, wealth and well-being, and gender equality. Our main purpose is to generate viable, effective public policy responses to pressing economic problems. We disseminate information, facilitate interactions (such as this conference) among academics, business leaders and policymakers, and we do public outreach.

ECLA of Bard, a Liberal Arts University in Berlin, is a small university approved by the Berlin Senate, and our plans are to grow larger by adding more undergraduate programs, and graduate degree programs as well. ECLA has been in existence for about 10 years, and a year ago it became a unit of Bard College. It seems that ECLA has been a secret in the wider Berlin community. We are, however, hard at work to change this and make it known not only in Berlin, but also throughout Germany and elsewhere.

Words of propaganda are usually accompanied with printed material, and we invite you to take a look at the various brochures we have at the registration table. There you will find Institute papers relevant to the topics of this conference. And, there are members of the administration of ECLA, including Thomas Rommel, the rector and provost, who can answer questions about the university's programs, admission policies, and provide other information.

As it was indicated, this conference is one of the public outreach activities of the joint Ford–Levy Institute project undertaken to investigate the root causes of the last financial crisis, drawing from Minsky's extensive work on the structure of financial systems. Its focus is the assessment of the various financial reform initiatives, such as the Dodd-Frank Act in the United States, and other reform attempts in the European Union, Great Britain, and Latin America. The project seeks to determine whether the new regulatory structures, once they are put in place, will prevent a debt deflation and a systemic crisis from happening again. The guiding question is to what extent financial reform legislation and proposals will be capable of identifying and responding to what Minsky showed to be an inherent generation of financial instability.

From the point of view of Minsky's analysis, a process of increasing financial instability comes about when the ability of debtors in the private sector and the public sector—especially those lacking currency sovereignty—to generate private profit or fiscal surplus is continuously worsened. In Minsky's terms, these debtors' profiles then transition from hedge to speculative to Ponzi, or Madoff, finance. . . .

The theme of this conference is "Debt, Deficits, and Unstable Markets." We are at present confronted with a stock of private sector debt that remains high despite the ongoing deleveraging process from the borrowing frenzy—a frenzy of high mortgages for what many assumed to be infinitely increasing housing markets in the United States, Spain, Ireland, Portugal, and even the Netherlands that started almost a decade ago and collapsed in 2007–08.

On the public finance side, many countries are running high deficits and increasing debts. The eurozone sovereign debt crisis is of special note, starting in 2009 with the inability of Greece to roll over maturing public debt.

High deficits and debts, together with bad policy, have created unstable markets. The ineffective and disastrous austerity policy responses miscalculating fiscal multipliers have made matters worse, delivering unprecedented high unemployment rates, deep recessions, and increasing levels of inequality, poverty, despair, and, ironically, even higher debt.

Euphoric periods with accommodative monetary and/or fiscal policy stances help increase both the government's and the private sector's borrowing and debt, linked to the deterioration in the balance of payments. Indeed, there is a macroeconomic identity that connects the internal (public and private sectors) and external (current account) balances, and, although this identity is not a theory, it informs policy.

Using this macro identity, the trajectory of any economy can be predicted. For instance, in late 2006, Levy Institute reports by the late Wynne Godley and others warned of the United States' forthcoming recession. In 2007, the prediction came to pass.

On this side of the Atlantic, the introduction of the euro was based on member countries' convergence of domestic inflation, represented by an inflation target, a government deficit, and debt-to-GDP ratios, paying no attention to the widely different domestic economic and monetary conditions across countries. Even though convergence of the monetary variables was achieved, it came with increasing divergence of real economic performance; for example, in productivity, labor costs, and real rates of return across member countries. This divergence surfaced as intraregional trade imbalances financed by increasing cross-border lending within the eurozone.

Furthermore, because of inflation and interest rate convergence, financial institutions did not recognize risk differentials across member-states. The relative risks of individual countries issuing sovereign debt, which should have been dependent on the real economy of each country, vanished.

Ultimately, this meant that the ability to repay debt became more and more dependent on the ability to borrow to meet interest and principal payments. Minsky, had he been alive, would have called it a Ponzi scheme. As lenders came to recognize the inability of the borrower to service (validate) debts, they withdrew support, and financial instability became a financial (sovereign debt) crisis. Many scholars from the Levy Institute had suggested policy changes then, as they are also suggesting now, dealing with the United States and the eurozone.

Our recent research finds that in the United States, for example, despite the modest improvements in the employment rate, the present rate of job creation is still insufficient to recoup the employment lost since the recession began, or to provide enough jobs for the average monthly number of new entrants into the labor force. At the current pace, it would take more than 120 months to reach full employment. Hence, achieving a big improvement in the labor market will require much higher growth rates than those the economy is presently experiencing, and this can only come from increasing private and/or public sector demand.

Alternative options for achieving higher growth rates that differ from those assumed by the executive and legislative branches of government are available. The plausible options are: either resuming private sector borrowing in amounts that are large enough that they will most likely result in another Minsky crisis and a significant risk to the country's still shaky financial system; or, more realistically, instituting a public spending plan that includes the renovation of the country's tax structure.

The scenario to be avoided is, naturally, the "fiscal cliff" scenario, which would throw the United States and the global economy into a new and deeper crisis. I won't go into the details of these policy options, but I ask you to visit the Levy Institute's website for more information if you are interested.

As Minsky pointed out, in a modern, complex economy, investment depends on financing conditions in accord with the current expectations, held by representatives of the business and banking communities, of future cash flows. The economy is defined by expectations of cash flows and realizations by the business community, which use private capital assets and need to fulfill contractual payment commitments.

Both capital and financing structures are dependent on the past, the present, and the future. Expectations and the consequent behavior are dependent on the economic model used; for instance, a model that assumes that economies like the United States and Europe are normally successful will produce different behaviors compared to a model that assumes that what happened during the Great Depression and the 2007–09 Great Recession were normal, albeit rare, events that could happen again if the circumstances were repeated.

Uncertainty in the minds of agents makes it difficult as to which of the two models is relevant in forming expectations, especially if many years have gone by since the last financial crisis associated with a significant economic correction. Memories are erased quickly, and evolutionary changes, whether legislated, administered, or both, transform an economy's institutional structure. The past becomes less of a guide to the behavior of markets and agents, especially in a world where a "big bank" (the central bank) intervenes to contain financial crises.

Minsky recognized the need for a financial structure that would always be in concert with the evolutionary nature of financial innovation. In 1989, he wrote that the trajectory an economy follows through time depends upon the interactions between endogenous dynamics that will not necessarily determine a satisfactory path for the economy; nor will the constraints and interventions that make up the structure of regulation produce satisfactory, or even tolerable, outcomes.

Over the longer run, the satisfactory performance of a capitalist economy depends upon the aptness of the structure of regulation. Profit-seeking agents learn how a regulatory structure operates, and since regulation means that some perceived profit opportunities are not open to exploitation, there are incentives for agents to change their behavior in order to evade or avoid the imposed constraints. This implies that, over time, the consequences of a structure and the organization of intervention change. Interventions that start out being constructive can be transformed into sources of instability and inefficiency.

The debacle of securitization of mortgage-backed securities, together with the slicing and dicing of securities and the overlayering of derivative instruments, demonstrates that a structure of regulation and intervention that is initially successful can become perverse.

The experience with mortgage-backed securities, off-balance-sheet special-purpose vehicles, credit default swaps, and the humongous size of shadow banking (reported recently to be on the order of $67 trillion) is certainly not an argument for a laissez-faire approach, but rather an argument that intervention cannot be frozen in time. It must adapt to evolutionary changes in institutions and usages. Successful capitalism requires both a structure of regulation and a sophisticated awareness of the way profit-seeking activities drive the evolution of business and behavior.

Washington's response to the financial and economic crisis placed the government's full faith and credit on the line, became the subject of strong legislative debate, and changed the mood and makeup of Congress. We saw that, as financial and economic uncertainties became more evident, the policy agenda turned toward the creation of a financial structure that (theoretically) would be less subject to the excesses of speculation while promoting the capital development of the economy. But it is doubtful that the Dodd-Frank Wall Street Reform and Consumer Protection Act will ensure control over speculation or ensure the support of enterprise.

So what do we do to establish a more stable financial system? Minsky had developed a set of ideas—a blueprint, if you will—to reconstitute the financial structure. The Ford Foundation – Levy Institute project concentrates on these very Minskyan ideas and has resulted in a series of papers drawing from Minsky's published and unpublished works. . . . We invite your close scrutiny of them and welcome your comments.

Thank you very much for coming, and enjoy the conference.

Speakers

PHILIP D. MURPHY

US Ambassador, Federal Republic of Germany

Going Forward: Overcoming Challenges, Seizing Opportunities

Good morning, all. Congratulations to all of you on bringing together such an important group of experts on one of the most important topics on the global agenda, which is, namely, financial stability.

Tomorrow you'll be hearing from Richard Fisher and Dennis Lockhart from the Federal Reserve banks of, respectively, Dallas and Atlanta, whom I'm going to enjoy seeing for dinner tonight; so I'll be careful to respect the independence of the central bank regarding monetary policy.

As you can imagine, however, I've been involved in many discussions over the past several months about the election and, over the past several weeks, about the results of the election. Observing and talking so much about this election and the electoral process from afar over the past several months brought home to me what we probably all know: that American election campaigns can be loud and noisy and messy. I might also add, expensive. The focus is often more on what has gone wrong rather than on what has gone right. This has done nothing [in Europe] to dispel the notion that the United States, at least through the eyes of many—in particular in the press—is one of the sick patients in the global economy.

I believe quite strongly, however, that it is a mistake extrapolating America's current . . . position and that trajectory forward from here, and trying to predict what comes next. We have to keep in mind that we are leaving behind just over a decade that, I am convinced, historians 50 or 100 years from now will look back [on] as being truly unique in our history. We had 9/11, the two longest and most expensive wars in the history of our country (one of which we're still in the process of transitioning from), and the biggest implosion, economically and from a financial market perspective, since the 1930s. So my strong advice to all, including to myself as I think about where we're headed, is, don't plot the curve from this point.

I'm very optimistic about the future of the United States from a cultural, political, and economic perspective. I mention cultural: diversity, for example, has always been one of our greatest strengths. When people, particularly young people, ask me in Germany, "What's the greatest strength in America, the core strength?" I always point to diversity. I believe that the discussion that takes place around the dramatic demographic changes of the coming decades will lead to a positive social-political change in our country and to enormous innovation.

The baby-boom generation, my generation, [represents] a relative but not an absolute demographic shift in America. Our population, while it is aging, continues to grow, and we still have been able to maintain a healthy balance of young people and retirees. Politically, I believe the Democrats, Republicans, and

Independents across the United States know that it is essential that they work together to find some common ground, to make some of the tough compromises to build consensus when it comes to doing the people's business. I think everybody gets that.

Foreign policy is the primary window for German and other foreign audiences into a US administration. The commitment and engagement that characterize President Obama's foreign policy has brought results, and it will continue to do so. History shows that engagement works much better than isolation or going it alone. I don't know that the president has ever said this, but I think when people ask me about his foreign policy, I think of it in the following terms: even when you could do it on your own, it's much better to tackle a problem with others, for the simple reason you get buy-in, and you get a more permanent, better solution. That was a theme, by the way, of the president's trip, by example, to Asia last week.

Another major characteristic of President Obama's foreign policy has been economic statecraft. The United States is moving economics to the center of its foreign policy agenda around the world. The post–World War II generation that gave us decades of growth, prosperity, and development—they are the example we should be following, in those footsteps, thinking bigger, working harder to create the arrangements that will give us yet another 100 years of security and prosperity.

I mentioned economic statecraft as being at the center of our foreign policy. I want to give a quick shout-out to a couple of colleagues: John Rogers, raise your hand. Is he here? Russ Singer, in the back, raise your hand. These guys will be around here longer than I will be today, and they forgot more about that topic than I will ever know; so please look them up.

The economy was also the major issue on the minds of voters in the election three weeks ago. Exit polls suggested that the economy was topic number one—not surprising; 59 percent of Americans said that. Topic number two, by the way, was health care; 18 percent of the voters said that. Topic number three was the budget deficit and debt levels; that was 17 percent of the voters. . . . I think all three of those issues are, broadly speaking, about the economy and economic security.

In terms of the economy, I believe, despite what some report, there's more good news than bad. I think we're on the cusp of a strengthening of the recovery, and that the latent potential for upside growth remains very strong. I'll quote the US Department of Treasury from a recent release of theirs: "Private sector activity continues to expand, and the housing market is beginning to improve. Private forecasters expect moderate growth through the remainder of the year"—that's this year—"with activity gradually strengthening over the course of 2013."

Closer to home, I ask German executives all the time, as do my colleagues, "How's business?" and you hear consistently that their US business is strong and the order book is steady—somewhat in contrast to their experience right now elsewhere in the world. Emerging from the Great Recession, the US government's policies helped to protect the economy during a time of high uncertainty, and the crisis-recovery programs were by any measure successful. The weakest parts of the US financial system, the firms that took the most risk essentially, no longer exist or they've been significantly restructured. The Troubled Asset Recovery Program, or TARP, helped stabilize the economy. It's now winding down, but TARP's bank programs have already earned a significant profit for taxpayers. The Treasury Department has so far recovered $267 billion from TARP's bank programs through repayments, dividends, interest, and other income; and the initial investment made in October 2008, by the way, in another administration, was $245 billion.

After the banks' recapitalizations conducted under TARP, a realistic, transparent, and thorough bank stress test was essential to restoring confidence in the banking sector. The so-called Supervisory Capital Assessment Program, affectionately referred to as SCAP, was a stress test conducted on the nation's 19 largest bank holding companies in early 2009 to determine the health of each institution. SCAP found that nine of the 19 banks examined had capital buffers that were sufficient, and the remaining 10 firms collectively needed to add $75 billion to their capital buffers to reach the target. Nine of those 10 banks were able to fulfill their additional capital needs through the market. Following the release of the stress test results, banks were able to raise hundreds of billions of dollars in private capital. The use of the stress test to establish transparency regarding the health of the banking sector was a huge boost to investor confidence and a key turning point for the economy. I can't stress that—no pun intended—strongly enough. As painful as that process was, . . . getting through that and getting it behind us was a very cathartic experience for our banking sector.

Another example: the temporary support provided to the auto industry was a significant factor in its recovery. American car companies are now adding jobs, generating profits, and reinvesting in their facilities. Since June 2009, for example, GM and Chrysler have announced investments totaling over $8 billion in their US facilities, either creating or saving nearly 20,000 jobs. In 2010, GM, Chrysler, and Ford saw their market share increase from 41 percent to over 44 percent in the domestic market. That's the first time that Detroit has gained market share, by the way, since 1995. Chrysler has repaid every dime that it drew under the Obama administration.

Notwithstanding these milestones, there is still some unfinished business to attend to; for example, in the areas of consumer protection and ethics, further consolidation within the banking industry, and other issues that are part of a broader debate on the role of the finance industry in the real economy—in specific, I would say this debate or analysis of how much of our banking sector profits come from intrabank activity, versus activity between the banking sector and the so-called real economy.

The biggest and most immediate piece of unfinished business is the so-called fiscal cliff. With the election behind us, both Republicans and Democrats are showing flexibility on reaching an agreement to avoid the automatic tax increases and spending cuts that define the fiscal cliff. I'm encouraged by that. The obstacle to a deal before the election was not the absence of realistic economic plans; the obstacle was, in fact, a lack of political will. The political will is now there, and there are many outlines of reasonable plans to solve the problem and put the US on a fiscally sustainable path. At the same time, it doesn't have the adverse impact of impairing economic growth.

There is hope that the Republican leadership will accept a Senate-passed bill that would allow tax rates to rise on top earners. Democrats hope their bill, which would now need to pass the House, will serve as a so-called down payment this year in a deal that would include agreement on a mechanism to enact tax and entitlement reforms next year. The bill the Senate passed freezes rates for households earning under $250,000, and it patches up the alternative minimum tax, or the AMT.

Many signs point to an economy that is improving, despite uncertainty about the standoff in Washington; but there is no doubt that even more potential could be unleashed and will be unleashed if lawmakers are able to sort out the nation's fiscal policy and businesses move forward on hiring and investing. As Federal Reserve Board Chairman Ben Bernanke said last week, "Cooperation and creativity to deliver fiscal clarity, in particular, a plan for resolving the nation's longer-term budgetary issues without harming the recovery could help make the new year a very good one for the American economy."

There's a lot of unused capability, not just in terms of unemployed and underemployed workers, but also in terms of potential products, new investments, and new technologies that are on hold or not being implemented to a full extent because people are still waiting to see how things evolve politically.

In addition to our well-known, well-earned entrepreneurial we-can-do-it-all spirit, there are new game changers afoot in the United States. The domestic economy is in the midst of a little bit of a minirevolution. Again, I think it's on the cusp of strong growth, assuming we can get through this fiscal cliff reality. One aspect that you no doubt will be speaking about, which was highlighted a couple of weeks ago by the International Energy Agency's *World Energy Outlook*, was the prediction that the United States will be energy self-sufficient by the year 2035. This is a dramatic reversal of the trend seen in almost all other energy-importing countries. By the way, it's a dramatic reversal in what we've seen in our own economy, even in the short three-plus years that I've been in Berlin. This, too, is spurring economic growth and jobs, and cheaper energy prices are providing a competitive edge to the US economy.

First of all, US oil consumption will fall as fuel efficiency standards continue to rise. But recent announcements regarding new ideas and developments and new technology in America's gas and oil resources point to a very different and much more positive energy future than could have been imagined even a half-decade ago. President Obama has directed the federal government to safely develop shale gas in a way that will create up to 600,000 additional jobs by the end of the decade, according to independent experts. He also called for new rules requiring companies to disclose the chemicals they use when accessing and removing shale gas on public lands to make sure public health is protected. Over the long term, the Obama administration is committed to a policy that builds on progress to transition from oil toward cleaner alternatives in energy efficiency. President Obama's plan involves implementing a clean energy standard, targeted tax incentives for clean energy, and investing in new vehicle technology.

There are also opportunities when it comes to trade. Commenting recently on the national export initiative, the acting US commerce secretary, Rebecca Blank, said that, although more work clearly needs to be done, we're making meaningful progress toward the president's goal of doubling our exports by the end of 2014. A comprehensive US-EU trade agreement, if achievable, would also increase exports, growth, and the number of jobs supported by trade on both sides of the Atlantic. We've spoken for years about such an agreement. Why hasn't it happened, even though it would be in our mutual interests?

I'll give you one perspective: in order for a treaty or agreement to be ratified by the United States, it requires US Senate approval. You probably saw lots of maps, political maps, over the past few weeks before and after our election, whether they were in red or blue; and you should ask yourself, how many of those states that you looked at had strong and significant agricultural interests? The answer: lots. A treaty that does not address the agricultural interests in our country would not be approved. So we have to look for some common ground on agriculture in particular, including on biotechnology. In a negotiation, the EU and the United States will have to address some of these differences that have defied solutions for many years. One thing is certain: Congress and key US stakeholders will not support the loss of negotiations unless they're confident the EU will be prepared to make regulatory decisions based on science. The US-EU High Level Working Group on Jobs and Growth is still considering whether to recommend the launch of comprehensive trade negotiations. By the way, there's a terrific piece questioning rhetorically whether or not we'll have a US-EU trade agreement in today's *Herald Tribune*, which I strongly suggest for your reading.

In other words, here too there is enormous potential for growth. As you might have noticed, I am more of a glass-half-full person. I firmly believe that, all told, the economy—our economy—is far from healed, but it is fairly steady. Despite a major storm and uncertainty associated with the looming cliff this year, the years to come, I believe, will be very good ones for the American economy.

Thank you. I wish you a great conference. I'm happy to take, if we have a couple of minutes, any questions you all might have.

VÍTOR CONSTÂNCIO

Vice President, European Central Bank

Completing and Repairing the Economic and Monetary Union (EMU)

It is a great pleasure to be here today to participate at this event organized by the Levy Institute. It is fair to say that, intellectually, the Levy Institute has had a "good crisis." Building on the post-Keynesian analysis of Minsky's financial instability hypothesis and Wynne Godley s theory of sectoral balances and stock-flow consistent models, the work of the Institute s resident scholars predicted and explained many of the challenges we are facing today.

This serves as a reminder of the importance for policymakers to keep an open mind in continuously refining our economic thinking. It is today clear to us that conventional macroeconomic models were ill equipped to capture the key role of financial markets.

Our theoretical foundations proved to be misplaced when tested in reality. The way forward, therefore, has to involve taking the lessons from this empirical test: using the knowledge we have gained so far to better understand the necessary conditions for economic and monetary union to function. What this implies for the euro area will be the subject of my address today.

Shortcomings in the EMU's Architecture

The EMU was designed with a centralized monetary policy but decentralized fiscal, economic, and financial stability policies. Its construction rested on three convictions: first, the synchronization of business cycles in the euro area; second, a sufficiently flexible and competitive internal market; and third, the existence of sufficient "shock absorbers" to deal with country-specific developments.

Where did these convictions of the EMU designers come from?

Well, the general expectation was that the first two would be supported by the common currency itself. The euro would boost trade and financial market integration within the European Union (EU) by eliminating exchange rate risk and lowering cross-border transaction costs. This deeper market integration would lead to greater synchronization of business cycles, thus making the stance of a single monetary policy appropriate for all member-states.

At the same time, the existence of the euro would strengthen the single market and create greater flexibility, in turn making it easier and faster to rebalance after economic shocks. In this sense, while the euro was ostensibly devised to maximize the benefits of the single market, those same benefits would create the conditions to sustain the single currency.

The third conviction—that the "shock-absorber" function can be fully achieved by national fiscal policies—was founded on the belief in sound fiscal positions that would allow the automatic stabilizers to play out in full during downturns. As an additional safeguard for disciplining fiscal policies, a fiscal brake was included in the Treaty to prevent member-states running excessive deficits.

Aside from a single currency and a fiscal brake, the EMU's institutional architecture was minimalist: governance of economic and financial policies remained firmly a national competence.

What lay behind these expectations? Of course, political considerations were a dominant factor, insofar as governments had incentives to limit the centralization of fiscal, economic, and financial policies. But to an extent, it also reflected the economic thinking that prevailed at that time.

The rational expectations, perfect foresight paradigm was—and to a large extent still is—dominant. Many of its followers are, of course, aware of its limitations but hope to successfully expand the theory to encompass new aspects of reality. Standard models feature unboundedly rational agents and complete knowledge of all variables probability distributions in all possible future states of the world. They do not foresee significant credit cycles or irrational asset price bubbles. Moreover, information is fully symmetric and complete state-contingent contracts can be written and enforced.

Default—a situation in which debtors cannot repay due debt in some states of the world—was also ruled out. The optimal lending contracts in such an environment do not even resemble a debt contract. Agents use so-called "Arrow-Debreu" securities. The setup allows a different payback for every future eventuality, so that borrowers are always able to meet due repayments.

The normative Ramsey model of 1928, devised for a central social planner to decide about the optimal intertemporal path of saving and investment, was, surprisingly, put at the center of macroeconomics, with the assumption that it could serve as a good descriptive model of the way a capitalist market economy really works. Considered a general equilibrium model of representative agents, the model initially had no money. Money was later inserted back in via the un-Keynesian assumption of rigid prices and wages but finance remained completely excluded, as if it didn t matter to explain real economy fluctuations.

The crisis has put into question these standard models as good and useful representations of how the economy works. Several researchers, followers of the paradigm, are now working hard to incorporate as many financial frictions as possible into their models. However, other academics belonging to the core paradigm have been raising more fundamental doubts. For instance, Ricardo Caballero wrote: "Rational expectations is a central ingredient of the current core; however, this assumption becomes increasingly untenable as we continue to add the realism of the periphery into the core."[1]

Willem Buiter questioned the paradigm more acidly: "Most mainstream macroeconomic theoretical innovations since the 1970s (the New Classical rational expectations revolution . . . and the New Keynesian theorizing . . .) have turned out to be self-referential, inward-looking distractions at best. Research tended to be motivated by the internal logic, intellectual sunk capital and aesthetic puzzles of established research programmes rather than by a powerful desire to understand how the economy works."[2]

Much earlier, Minsky had already stated the same type of acid test: "for an economic theory to be relevant, what happens in the world must be a possible event in the theory."[3]

Under the ideal imagined conditions of prevailing thinking before the crisis, the market mechanism operates smoothly, and since financial frictions are disregarded, financial intermediaries were generally absent from macro models, and without leveraged financial intermediaries, financial instability is not an issue. It is true that some frictions linked to the credit channel had been included in macro models, basically [those] related to the "financial accelerator" developed by Ben Bernanke, Mark Gertler, and Simon Gilchrist.[4]

This is, however, only a mechanism that could aggravate an ongoing crisis, but was not strong enough to trigger one. Recently, Adrian, Colla, and Shin examined which frictions should, at a minimum, be included to be relevant. They concluded from the evidence of the crisis that at least five stylized facts should be reflected in macrofinancial models: coexistence of bank and bond finance, substitution from bank to bond financing, increasing credit spreads, stickiness of equity prices, and endogenous procyclicality of bank leverage.[5]

In the pre-EMU economic modeling world, therefore, there was no need to counter financial imbalances and financial instability as the financial sector did not play a crucial role from a macroeconomic perspective. Similarly, under the assumption of self-equilibrating markets, there was no need to monitor macroeconomic imbalances and disequilibria on the labor, product, or financial markets. With an assumed stable private sector, apart from exogenous shocks, the only sources of instability acknowledged were governments and their fiscal profligacy. This supported the decision to elevate only governance of fiscal policies to the European level.

With the benefit of hindsight, it is obvious that this architecture was unstable. Like the neglected buildup of financial imbalances and high indebtedness that led to the crisis, the initial design of the European Monetary Union was a victim of the economic thinking then dominant. A few lessons have to be drawn now.

Lesson number one: the greater integration of euro-area financial markets implied that our economies became more prone to contagion. Financial integration ran ahead and European-level financial supervision was nonexisting. The financial trilemma of Dirk Schoenmaker,[6] which states that financial integration, financial stability, and national supervision are not compatible, was disregarded, and the consequences were significant in terms of the enormous capital inflows channeled by the banks of core countries to banks in the periphery, significantly contributing to the subsequent macroeconomic imbalances. Initially, no one thought about banking union.

Lesson number two: the financial and economic shock of the crisis vastly outran the shock absorption capacity at the national level. Nothing was foreseen to deal with liquidity crises that could emerge from contagion and multiple equilibria generated by market perceptions. Only later were the European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM) created to address crisis management.

Lesson number three: the existing rules on the fiscal front were insufficient in precrisis times, and even more so in crisis times, when crisis management was key. Initially, no one talked about fiscal union to introduce more discipline and help with shock absorption.

Lesson number four: the development of macro and external imbalances was significantly driven by private sector indebtness, proving that the fiscal brake was not enough to guarantee macro stability and excessive heterogeneity among member-states. This provided the rationale for the recent creation of a formal Macroeconomic Imbalance Procedure to monitor and promote timely policy measures to avoid the building up of macroeconomic instability in member-states.

The deep integration of financial markets led to very large imbalances within the euro area. This was in part because fiscal rules were implemented weakly, not applied rigorously, and subsequently watered down. Some countries therefore ran persistent deficits in good times or maintained high levels of debt. But the greater imbalances in fact emerged in the *private sector*. Looking at the data for the EMU's first decade, imbalances in the private sector far exceeded those in the public sector.

Between 1999 and 2007, the ratio of public debt to GDP in the EMU declined, on average, by 5.6 percentage points. But in the same period, the ratio of private sector debt to GDP increased by 26.8 percentage points. For the same period, in the stressed countries, the cumulative increase in the private debt–to-GDP ratio versus the public debt one amounted, respectively, to 49 and 24 percent for Portugal, 75 and minus 35 percent for Spain, 101 and minus 10 percent for Ireland, [and] 217 and 4 percent for Greece.

Private debt levels were able to increase so significantly because the integration of national markets allowed for higher borrowing from abroad and increased leverage. For instance, from 2001 to 2006 MFI [monetary financial institution] holdings of cross-border securities issued by non-MFIs increased by almost 44 percent. And as we now know, these flows were not perfectly optimized by rational private agents, [leading to] real estate bubbles in some countries, widening current account deficits, and generalized losses in competitiveness. The minimalist institutional construction of the euro area lacked the tools to discourage these developments.

When these bubbles burst, the shock-absorption capacity of the EMU was lower than anticipated. Indeed, financial integration acted as a shock amplifier. Cross-border capital flows rapidly reversed and created contagion. This was in part because private agents realized that there were no mechanisms to ensure the continued solvency of banks and governments in situations of financial distress. Financial assistance at the European level, such that it existed, was reserved only for non–euro area countries. Moreover, there were no federal institutions—like the FDIC in the United States—to remove the burden of repairing the financial system from individual member-states.

The official bodies that could—and perhaps should—have intervened to prevent these developments were national supervisors. Yet they lacked the perspective to do so and also the instruments to contain private capital flows that were considered to result from optimizing self-equilibrating markets. Only macroprudential measures made possible by a consensus at the European level could have dealt with the situation. In other words, there was a mismatch between the degree of integration and the scope of governance.

In retrospect, the euro area was not prepared to deal with the buildup of systemic risks. This was in large part because it had not equipped itself with the institutions commensurate with a highly financially integrated monetary union. This shortcoming has clearly contributed to the situation we face today. Unwinding its consequences is the key challenge the euro area faces. So let me now discuss how we can address that challenge.

Fixing the EMU for the Long Term

Unwinding the Euro Area's Imbalances

What is the way out of this situation for the euro area?

First and foremost, the imbalances that accumulated in certain euro-area countries have to be remedied by those countries themselves. Under present rules, other member-states can only provide some interim financial assistance, and have indeed done so via the EFSF/ESM. The indispensable national consolidation effort by the more indebted countries is the implication of a system where fiscal, economic, and financial policies are basically decentralized. But despite a difficult start, a significant rebalancing is now happening within the euro area.

Across the euro area, strong budgetary consolidation is taking place. The International Monetary Fund (IMF) forecasts that the euro area's primary budgetary position will be almost in balance this year. This is quite an achievement in an international context: Japan, for example, will have a 9 percent of GDP primary deficit this year; the United States, 6.5 percent; and the UK, more than 5 percent. And the euro area is not only performing well on average: each individual member country will have this year a primary budget deficit lower than those three countries.

Important improvements are also taking place in competitiveness. Member-states have now started to undertake structural reforms to facilitate intra–euro area adjustment. There have been determined efforts to address product and labor market rigidities, reform tax and pension systems, and increase the efficiency of judicial systems. And some positive effects are already visible in the data.[7]

For example, the three countries under full EU-IMF programs have seen unit labor costs improve by around 10 percent since 2008, relative to the euro-area average. This has translated into current account deficits that are on average around 8 percentage points of GDP lower than they were then. At the same time, exports of goods and services in volume since 2009 increased by 22 percent for Spain, 15 percent for Ireland, 22 percent for Portugal, [and] 19 percent for Italy—this, against an average of 21 percent for the euro area.[8]

While there are clear cyclical drivers behind these developments, there are also signs of structural improvements. Moreover, drivers of the previously unsustainable domestic demand in some countries, like the housing market, now seem to provide structurally lower contributions to growth, thereby facilitating the way toward a more sustainable growth model.

It is no secret that this necessary process of adjustment, and the reallocation of resources it implies between sectors, is having a negative effect on economic activity. Economic growth is subdued in the euro area, and is expected to remain so for the rest of this year. There is also considerable heterogeneity between euro-area countries.

In these circumstances, monetary policy, in maintaining price stability on a medium-term perspective, [also contributes to a reduction in] the output gap, as the literature on flexible inflation targeting has shown. . . .[9] With risks to inflation well contained, the ECB has lowered its policy interest rate to the historic low level of 0.75 percent and provided banks with access to unlimited liquidity at this price. However, before September this year, the transmission of our policy rate to the real economy was seriously disrupted across countries.

For instance, when the ECB cut interest rates by 125 basis points between November 2002 and August 2003, lending rates to nonfinancial corporations across euro-area countries responded homogeneously. By contrast, following the 75 basis point cuts implemented between October 2011 and July 2012, the range of bank lending rates across the euro area widened significantly. Indeed, in some countries interest rates for nonfinancial corporations actually increased.

In an economy like the euro area, where more than two-thirds of firms' financing comes from banks, a disruption in monetary policy transmission has material effects for investment and employment. But this effect is particularly exaggerated when countries are simultaneously undertaking large fiscal and structural adjustment. Indeed, it was the countries with the *greatest* adjustment needs that were being *most* cut off from monetary policy support. They were at risk of entering a vicious circle of rising interest rates, falling growth, and deteriorating public finances.

It was against this background that the ECB introduced its program of Outright Monetary Transactions, or OMTs. It aims to address disruption in monetary policy transmission by tackling one of its root causes: unfounded fears about a breakup of the euro area. By providing a fully effective backstop against disaster scenarios, it sends a clear message to investors that their fears are baseless. This should restore confidence and help normalize the pass-through of interest rates. Indeed, the mere announcement of the program's approval by the ECB Governing Council led to substantial declines in yields and spreads of stressed countries, whose net private capital outflows [have] also decreased significantly since July.

However, countries can only qualify for OMTs if they implement an ESM adjustment program with strong conditionality. This ensures that they continue to improve their economic fundamentals while the ECB is active. In this way, we aim to set the right incentives for governments and create a framework where the positive effects of our actions are sustainable.

Taken together, these measures will help unwind the euro area's imbalances and stabilize the financial situation over the near term. Member-states are correcting the excesses of the last decade in terms of weak public finances, unsustainable credit growth, and competitiveness losses. The ECB is taking measures to ensure the proper transmission of its monetary policy and maintain price stability, which buys time for this adjustment to continue.

Completing the Euro Area's Institutional Architecture

To stabilize EMU over the long term, however, requires a more fundamental reform of the institutional architecture. The minimalist approach pursued at Maastricht was found to be inadequate in the context of highly integrated financial markets. In recognition of this, the presidents of the European Council, [European] Commission, Eurogroup, and ECB have been asked to lay out a roadmap to complete EMU over the next decade. They presented their interim report to the European Council in July and will present a final version in December.

This report does not aim to identify what features we would ideally like for the euro area, but rather what features *it cannot do without.* [The banks] having been thoroughly stress-tested over the last three years, we now have a much clearer idea of what rules and institutions are essential for monetary union to function effectively. In the view of the four presidents, a stable EMU needs to be built on four pillars: financial union, fiscal union, economic union, and political union. Let me explain each in turn.

Financial Union

The first and most urgent pillar is financial union or, as it is more commonly known, banking union. Bearing in mind what we have learned about the importance of financial markets in a highly integrated monetary union, taking measures to ensure a stable and well-ordered financial system in the euro area has to be our first priority.

What does this imply in practical terms?

First of all, a single supervisory mechanism for banks. As I outlined above, a single financial market combined with national supervision is not sustainable. Before the crisis, it led to a lack of oversight of cross-border activity. Since then, it has facilitated a retrenchment of bank lending behind national borders. A single system of supervision can reduce these risks by allowing for an aggregated view of the euro-area financial market; by providing a safeguard against regulatory capture; and by ensuring that national interests are not put ahead of the European interest.

With this in mind, the Commission has presented a proposal for the establishment of a Single Supervisory Mechanism [SSM], entrusting the ECB with specific supervisory tasks. This is a welcome development, and the ECB is ready to assume these tasks. However, it is essential for the credibility of supervision, and for the ECB's reputation, that the legal framework allow us to implement these tasks in an effective and rigorous way. Another necessary principle, as I have argued elsewhere,[10] implies that "there should be a clear organizational separation between monetary policy and supervision. This can be realized at all organizational layers, from the analytical and informational level to the decision-making level." The Commission's proposal includes the creation of a Supervisory Board in the ECB [comprising] the Heads of Supervision of the participant countries and that the Board [would] be the vital component of the . . . SSM. This [could] also open the door to the participation of countries that are not members of the euro, as they could have equal [representation on] the Supervisory Board.

But supervision is only one leg of a genuine financial union. It also requires an effective tool to deal with bank failures without triggering financial instability, without long squabbles about burden sharing, and without dragging sovereigns into a deadly embrace with their domestic banks. In the view of the four presidents, this requires elevating resolution responsibilities to European level, and putting them in the hands of an independent European Resolution Authority (ERA). There are three main reasons for this.

First, an ERA would ensure more effective decision making when cross-border banks run into difficulties. Centralizing decision making would bypass many of the current obstacles to effective resolution, such as the need for cooperation and coordination between multiple authorities. This would in turn lead to quicker decisions and reduce resolution costs, as early action would help to maintain the economic value of the bank in question.

Second, an ERA would be more effective in minimizing the cost for taxpayers of bank failures. A bank may be "too expensive," "too complex," or even "too well connected" to resolve at the national level, making bailout the preferred strategy. An ERA, on the other hand, would have the financial, legal, and administrative capability as well as the necessary independence to carry out effective resolution. By imposing burden sharing on shareholders and creditors and by financing residual costs through a European Resolution Fund financed ex ante by all the banks, the ERA could ensure that the private sector bore the primary burden of bank resolution costs. European resolution, similar to what the FDIC does in the United States, is not about the bailout of banks by state recapitalization efforts, but the use of wide bail-in powers to resolve banks with little use of taxpayer money.

Third, an ERA is a necessary complement to the Single Supervisory Mechanism. A system where supervision is European but resolution is national creates frictions. The single supervisor may assess that a bank needs to be resolved, but the relevant member-state may be unable to bear the resolution costs or unwilling to resolve a favored national firm. Hence, the country would likely turn the tables on the ECB, and push for generous liquidity support or supervisory forbearance.

From the ECB's perspective, an effective financial union is a key complement to the single monetary policy. To the extent that it restores the flow of savings between euro-area countries, it will support the normalization of monetary policy transmission and allow us to exit our exceptional measures. But, more fundamentally, without integrated capital markets and a well-functioning banking sector, there cannot be a single monetary policy—and this means we cannot fulfil our mandate.

Fiscal Union

The second pillar, fiscal union, is necessary to ensure that fiscal policies are fully commensurate with the requirements of the common currency. The crisis provided prima facie evidence of the sizable negative spillovers associated with fiscal crises within a monetary union. Moreover, it showed the importance of sound fiscal policies for allowing governments to perform their essential functions: countries with weak budgets lose their ability to perform cyclical stabilization during a crisis.

Measures that guarantee solid fiscal policies are therefore a public good—both for individual member-states and for the whole euro area. For domestic citizens, they ensure that the automatic stabilizers will be able to play out in full during a downturn and smooth the economic cycle. For citizens elsewhere in the euro area, they provide protection against contagion emanating from budgetary decisions over which they have no democratic control.

The recent reforms to strengthen the euro-area fiscal framework—the so-called six-pack and the fiscal compact—are welcome and go in the right direction. But they remain within the logic of the Maastricht Treaty, where responsibility for fiscal policies is exclusively in national hands. This creates an inherent credibility problem, as, for fiscal frameworks to be fully credible, they have to *enforceable*. This is impossible without a further and deeper sharing of budgetary sovereignty.

This could be achieved by giving European institutions greater competence to effectively compel euro-area member-states—in a graduated manner if and when the situation deteriorates—to take the necessary fiscal policy decisions.

This would correspond to a further sharing of national sovereignty. But for both weaker and stronger countries, it is in fact an opportunity to regain substantive sovereignty as opposed to formal sovereignty. For the weaker countries, measures that put the soundness of their fiscal policies beyond doubt [would] allow them to be fully sovereign, in the sense that they [could] use fiscal policy in its vital economic stabilization role and take free decisions about taxes or types of expenditure without fear of excessive discipline from financial markets.

For the latter, sharing sovereignty at the European level [would] allow them to effectively protect their domestic economies from spillovers from the rest of the euro area. Moreover, they [would] no longer be placed into situations where they [were] de facto forced into taking decisions to avert imminent catastrophe.

The sharing of sovereignty is also the precondition for any risk-sharing mechanisms at the euro-area level. The recent report by the four presidents mentioned the gradual development of a fiscal capacity for the EMU—that is, a common budget for the euro area distinct from the EU budget. It identified two possible functions of such fiscal capacity: first, facilitating the adjustment to country-specific shocks; and, second, providing financial incentives for structural reforms.

Reflections on this are at a very early stage and the pros and cons need to be carefully weighed, but it is a very important component of a fiscal union. There is a long debate, going back to the Werner Report in 1971 or to the preparation of the Maastricht Treaty, on the degree of fiscal integration that is necessary to sustain a monetary union. In my view the key question on taking detailed decisions remains that of efficiency, [it] being necessary to assess whether there are economic benefits in excess of costs in moving some expenditure to the euro-area level.

Economic Union

The third pillar, economic union, is necessary to ensure the conditions for prosperity within a monetary union and thereby prevent countries from becoming a burden on others. Without the possibility for exchange rate adjustment, countries have to remain sufficiently flexible to adjust through other channels, as underlined by the theory of optimal currency areas. This is particularly important in the euro area—as opposed to, say, the United States—because fiscal transfers go only through the EU budget to compensate regions that lose competitiveness and become permanently depressed.

The bedrock of economic union is completing the single market to allow for higher factor mobility. To a certain extent, the failure of markets to self-equilibrate before the crisis was because markets were incomplete. For instance, the single market in services remains unfinished, despite the fact that the areas covered by the Services Directive account for more than 45 percent of EU GDP. There are also significant remaining barriers to labor mobility; for example, linked to the portability of pensions and national insurance contributions.

However, it is clear that competitiveness is a more complex issue than solely factor mobility. It depends on national traditions and economic structures. What role can the center therefore play in ensuring competitiveness? For some fundamental issues linked to adjustment within monetary union—like flexibility of wage formation—we [can] envisage best practices established through guidelines for all countries set at the euro-area level. But there are also dangers in overharmonization. We are seeing currently that system competition can play an important role in stimulating structural reform.

A more nuanced way forward may be to strengthen the framework for encouraging country-specific reforms. The four presidents' report has suggested that member-states could enter into bilateral reform contracts with the Commission, whereby they would make legally binding commitments to implement structural and institutional reforms. In return, they would receive funding to facilitate the transition process and finance transition costs—perhaps, for worker reallocation programs. This could be one function of a fiscal capacity.

There is still a lot of thinking to be done in this area. And we have to get the balance right. The most efficient way to ensure adjustment is to let market forces operate in the many protected sectors that still exist in the euro area. But we also know from the first decade of the EMU that markets do not always self-regulate and that interventions from the center to ensure competitiveness may be needed. The key challenge is to articulate the appropriate role for the European level, the state, and the market in the euro area.

Political Union

The fourth pillar, political union, is needed to ensure that the other pillars have sufficient democratic legitimacy. I will not dwell long on this issue, as it is fundamentally a matter for the member-states and European citizens. Suffice it to say that the crisis has shown the limits of applying a national mindset in a deeply integrated monetary union. Citizens are affected by what happens across borders and their political arrangements need to reflect this. In this sense, political union is not about moving forward but about *catching up* with the depth of economic and financial integration that already exists.

What is at stake refers basically to democratic accountability and legitimacy. An important element of legitimacy has been provided in the past, in the European Union and other democracies, by what Fritz Scharpf called *output legitimacy* (or government *for* the people);[11] that is, by the effectiveness of the system in ensuring the continuous improvement of the citizens quality of life. All advanced democratic countries, and consequently the European Union, will face challenges on this front stemming from the prolonged period of slow economic growth that has now just started. This is the consequence of two types of processes: first, the adjustment to the form of balance-sheet recession that the crisis represented and the workings of mechanisms of the associated debt deflation; second, by the structural problems created by ageing populations, globalization, energy and environmental risks, and decreasing returns of technological progress recently underlined by Robert Gordon.[12] To strengthen output legitimacy, the euro area has to improve the effectiveness of its decision-making institutions to overcome the present situation of crisis. The decisions and reforms I have highlighted in this talk have precisely that objective. The transfer of some functions to the European level is necessary, as I [have] argued here. We should not hide, however, the difficulty in explaining these reforms to the European public opinion [in order] to get their support in the present environment.

This means that it gains accrued importance the attention that will have to be given to the other form of political legitimacy, referred [to] by Scharpf [as] the *input legitimacy* (government *by* the people)—that is, increasing citizens' participation in European decisions. In some ways, this may appear as contradictory, with the search for effectiveness linked with the first form of legitimacy that now requires stronger central deciding bodies. To understand the great difficulty in addressing this issue, we have only to think about the analogy we could establish with the political trilemma of the world economy recently enunciated by Dani Rodrik: "we cannot simultaneously pursue democracy, national determination, and economic globalization."[13] I will not enter into such complications. I will recall, however, that in this context we should never forget that Europe is not a nation or a state. Political life and legitimacy continues to occur mostly at the level of nation-states. This implies that to foster legitimacy we have to act on the two levels, the European and the national, by giving, for instance, the European Parliament a stronger euro-area dimension and engaging national parliaments more in euro-area discussions. I wanted to highlight the importance of these issues, but, as I said, I will not dwell upon them further.

Conclusion

Let me then conclude.

The euro area was designed in the 1990s, and we should not be too critical of the fact that its architecture was influenced by the prevailing economic theory. However, we now have more than a decade of practical experience of sharing a single currency in Europe.

It is unacceptable if we do not learn the lessons of that experience.

The most important lesson is that, to maximize its benefits, the single currency needs strong common institutions. Strong institutions to supervise and stabilize the single financial market. Strong institutions to guide fiscal policies and preserve budgetary sovereignty. Strong institutions to guarantee competitiveness and encourage sustainable growth. And strong institutions to engage citizens more closely in the European project.

In this effort, the European and national dimensions of legitimacy must be balanced. Nevertheless, we must also recall that nations are a construct of man, not a natural reality, meaning that our consciousness and our knowledge are socially constituted. A form of civic community among strangers was somehow created to shape several European nation-states only as late as the 19th century. That explains why we belong to two societies, our own and the European one, as the essential cultural background for our universal-aspiring values. In this sense, Europe is a memory, a key to understanding our own past. However, the EU, and even more so the EA [euro area], are political projects, and what we want now is to pursue the project of completing and deepening the integration of European nations in a unique community of destiny that is neither a nation nor a state. It is a powerful vision of preserving and defending national identities and interests in a globalized and very challenging world. If we would fail, as Helmut

Schmidt said, "for us, European citizens, that decadence would be a tragedy, meaning the loss of our self-determination."[14]

We can only hope that our past and community of culture will help us to be successful in our endeavor. Thank you for your attention.

Notes

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STEFFEN KAMPETER

Parliamentary State Secretary, German Federal Ministry of Finance

The Eurozone Crisis and the Continuing Threat of a Renewed Global Economic Crisis

If you talk these days on European affairs, crisis seems to dominate the debate. Four or five years ago, nobody actually was interested—they were just bored by European affairs—but you see that the times, they are changing. Some see only the crisis aspect in the European debate, and some actually see the chances of deepening European integration. . . . It may not surprise you that I belong to the latter group, so I'll try to explain to you some of the short-term activities we are doing at the moment—our mission just left for Brussels for the Greek discussion—and [our work] on the structural medium- and long-term reforms.

We are working on, let's say, three political battlegrounds at the moment: Battleground number one is the sovereign debt crisis; battleground number two is enhancing competitiveness in all areas of the eurozone; and battleground number three is the linkage between financial sector and public finances. Much has been achieved, some things are under way, and some things actually can be done better.

So let's talk about what we're doing at the moment on these three different battlegrounds. . . .

Number one: the Stability and Growth Pact has been strengthened. Actually, this is something . . . we actually should be proud of, because we introduced a balanced budget rule, and there is now much larger focus on debt reduction, not only in the debate, but in practice. For the members of the euro area that do not comply, an automatic sanction system is in place, and further reforms are under way that aim at better aligning and coordinating budgetary cycles in member-states. Some may not only rely on these measures. You may be right, and therefore actually we made an additional political decision, called the [European] Fiscal Compact, which is not only focused on the 17 members of the eurozone but on the 25 members of the European Union; and those two who didn't sign it actually are at least so-called fiscally conservative. Their reasons not to apply have nothing to do with the aim of the Fiscal Compact, which means a balanced budget, a very good basis for growth.

Number two: we completely changed and, to my eyes, improved our coordination framework related to economic and financial policies. The founding fathers of the European common currency said there are two pillars it should be based on. One pillar is an independent central bank, . . . and the other is an integrated framework for fiscal and economic policies. That hasn't been achieved yet, but to describe it in political action, with the two-pack, the six-pack, and other implementation of intergovernmental affairs, we now are looking in a completely different way at coordinating fiscal policies, especially in a more preventive way. The old paradigm was, if you have up to a three-percentage-point deficit or a debt-to-GDP ratio below 60 percent, everything is stable. The Spain example has shown that this does not deliver perfect answers. You have to look deeper and more intensely at the long-term and medium-term perspectives of the economy; for example, how broad the productivity gains are, how flexible the labor market is, what the internal imbalances in the currency union are. All of these are now in a completely integrated coordination framework that takes up the work step by step but it will probably have to prevent and correct macroeconomic imbalances in a way that is sufficient not only to the European Union but to the external debate as well.

Number three: given that it will take time until these structural reforms bear fruit, stabilization mechanisms are necessary. You still need a fire brigade alongside these structural reforms, and our fire brigade is something different from the fire brigade you know. The European stabilization mechanism functions as a fire brigade, but in addition to the [provision of] firemen when the house is burning, we are asking for conditionality for solidarity, which is very important. . . . Conditionality is key for solidarity, because what we feel most, to translate a German idiom, is, we are throwing good money after bad money. So if you just show solidarity without structural economic changes in the countries you show solidarity, you may calm down the fire for a certain period, but you will not address the sources that may reignite the fire. So the ESM [European Stability Mechanism] works under strict conditionality, which means that the program we are today discussing for Greece has been applied to Portugal with success; we are applying a banking sector program in Spain; we have a very successful and impressive program running in Ireland; and there are other success stories of reorganizing the economy without the help of the European Stability Mechanism—for example, in the Baltic states—that are not in the focus of the public debate but should be taken into consideration if you are working in that field.

Number four: we have to break the link between national banking sectors and public finances. There has been much debate on the too-big-to-fail problem all over the world since Lehmann. The old thinking was, the bigger, the better the bank is. Now we have a completely different perspective on that, and therefore we're just starting—the last heads-of-state summit has approved the mission that we need a European banking union.

A European banking union consists of two parts. Part number one has something to do with the euro-wide supervisory system for banks, which will probably be organized at the ECB [European Central Bank]. The first step will be to focus supervisory activities on the big banks, and probably in a second step, . . . the national supervisors will all directly make their assessments to this field.

What are the advantages of this common supervisory system? First of all, . . . if you have an international, European look at national banks, you will more seriously see and make the problems more transparent. The first argument is, it's against the muddling [that can occur] through the national supervision of the banking system.

My second argument in favor of common supervision on the European level is that, if you have the same standards everywhere in Europe, you probably will improve competition in the system.

And my third argument is, only by European supervision can you properly address systemic risks in the financial system. Sometimes the debate is very local and sees only the bank; but the linkages between the financial actors and contributors have been improved, and now we are much more aware that systemic risks are the source of evil, probably more so than we would have seen five or 10 years ago. My impression, and [relevant to] our political purpose quite clearly, is that this system is more resilient against crises in general.

The second [part] of the banking union is a framework for bank resolution. That means that we have to close banks that do not have a business model, that are not running properly. . . . We have in

Germany a resolution scheme that was probably established at the beginning of last year. We haven't practiced this, but in general we think we need a structure for closing down banks without ruining the whole economy. This can be perfectly combined with the supervisory system for banks at the ECB. It has not been completely designed yet. We will have first proposals on the table, and especially on this field and on . . . the supervision field, the devil is in the details. So there's much work to do, but in general I would say, as long as we establish something for future crises, we have to clearly make a cut between the old cases and the future challenges. The resolution scheme is misunderstood by some participants of the debate as a type of additional transfer mechanism. As long as we go on that path, there will be no German support for that; but if you see it as a chance to solve the linkages between the financial system and public debate, and make a good contribution to the too-big-to-fail problem or dilemma, this banking union will be a big improvement. And I say that quite clearly to the American participants in the debate. It probably is an efficient and effective answer to the challenges some of the US officials have confronted us [about] over the last years.

If I follow the debate over the last months, there seems to be some momentum. Some people say, oh, this hasn't improved anything. Actually, this is, at least to my judgment, a misinterpretation of the facts. So I would like to focus on that. The fiscal deficit in the euro area has declined from the peak in 2009 by 2.2 percentage points for the euro area as a whole. The European Commission expects a deficit of 3.3 in 2012, and below 3 in 2013. The fiscal situation in the euro area, compared to other areas of the world—for example, to the United States or to Japan—is extremely solid, and this should be taken into consideration if you look at the picture.

Current account deficits of the program countries are shrinking. This is something that is completely neglected in the public debate; that rebalancing, which is following on the IMF meeting [on these issues over] the last 10 to 15 years, is internally now taking place within the euro area. This is good news.

And, thirdly, the competitiveness indicators have improved. Unit labor costs have been reduced from 2008 to 2011 by 6 percent in Ireland and by 5 percent in Greece.

And, finally, we are seeing the first successful attempts, for example, by Ireland and Portugal, to borrow from the financial markets.

There are some observers in the German debate who think that these and other facts are completely neglected by the Anglo-Saxon analysis. Actually, I would say, if you want to make a complete picture, you have to take this positive news into consideration.

Let me make some points on a debate that is more or less political: it's the growth-versus-consolidation debate, which we have in Europe and which we have in the United States. There is a clear understanding in the German government that consolidation is a source of growth and stabilization. The alternative, for example, in Greece is not to make more debt, because Greece has no access to the markets, so at least technically we cannot make more deficit spending; but we see that the consolidation process is a necessary pain for regaining growth in the short-, medium-, and long-term perspectives. And if you look, for example, at the scientific debate opened by an IMF statement a year or two ago that says we don't need consolidation for growth, there is an ongoing shift in the debate. For example, the contributions by [members of the Advisory Science Council of Ireland and others] are making clear that, from their empirical research, in the deficit situation we have today, we don't see a positive multiplier. We even see a negative multiplier if you invest more in debt, and therefore we actually see that our consolidation strategy is not in contradiction with the necessity of growth.

And it's not just consolidation; or, to use the political word, austerity. Our strategy in all program countries—and not only in program countries, but in all European countries—[is] combined with supply-side reform. If you look at the quarterly report on . . . Portugal, Greece, and Ireland, you will see that only a minor part has something to do with hardcore austerity policy, or deficit reduction. The major part has to do with what I would call supply-side reform, reform of the labor market, privatization, effective governance with, for example, a tax consideration. So if you were to say we're just focusing on fiscal consolidation, you should look on the supply-side reforms that accompany all program-country policies.

A word on the United States and Japan. If I travel to the United States, . . . the American [view] seems to be that everything is fine in the United States—besides the fiscal cliff, and this will be solved—and Europe has some troubles. I would agree on the fact that we're going through some troubles, but I always answer my American partners that we are concerned about the deficit development in the United States and the long-term sustainability of the fiscal path, and we are clearly waiting [for] (and I'm expecting this to happen soon) an answer to the fiscal cliff in a way that does not harm global economic development. There are good signs from the new American administration; we see very positive signs from Congress. I will make quite clear that, beside the fact that we understand the concern of the transatlantic perspective on Europe, I think you should respect that the fiscal cliff is nothing to be taken out of consideration [in terms of] concerns here in Europe.

Similar necessary reforms seem to apply in Japan. If you look at the IMF statement on this area, you see some reform necessities. And if you ask me about global perspective, I think I'm not the one to finally judge on Japanese and American politics; but I would just say the renewal of a global economic crisis cannot just be solved in Europe; it has to be solved by common actions.

Finally, I would say something about the debate in Europe about renationalization versus deepening the integration. To my understanding, the monopoly of rule of the national state in Europe, which dominated the 19th and 20th centuries, is no longer generally to be taken. There are fields of politics that cannot be solved with national answers. There's general acceptance that, for example, air pollution or climate change cannot be answered with national or local [responses]. Sometimes you have to think globally and act locally, but in general the solution of these problems is extremely related to a further deepening of integrated policies or cooperation—not just on the European [level], but on the global level. And if I look at the global financial market, at globalized economies in general, and I look over the last three years, it is my understanding that we only [succeeded in having] a proper approach toward the crisis because we cooperated. *We cooperated*. If you look at the Pittsburgh G20 summit, which was the first step toward a new framework for the financial order, I would [contrast that with] the . . . 1920s and '30s, where we didn't have that type of cooperation. And this means, politically speaking, that in a growing number of political fields we have to transfer our closed interpretation or our national sovereignty in this way to international institutions; to be more precise, [to] financial and fiscal policies to the European Union. Otherwise, we cannot have a proper answer to the challenges—the financial crisis, the banking crisis, and the sovereign debt crisis—frightening the German economy. Renationalization is not a proper answer to this interconnected political problem.

Let me close by trying to summarize my 20 minutes in five points—this seems to be the American way:

Steps have been taken.

Progress can be seen.

Risks are still there.

Deepening of the European integration has a stabilizing effect.

Renationalization is a danger, but not a solution.

Thank you very much.

JAN KREGEL

Senior Scholar, Levy Economics Institute, and Professor, Tallinn University of Technology

Minsky and Thinking Beyond Dodd-Frank

What I'd like to do now is to use Hyman Minsky to go beyond the "Minsky moment." Most of you, I think, are familiar with Andy Warhol's statement that everybody manages to get their 15 minutes of fame; and, more or less, Minsky got his 15 minutes of fame as the crisis grew and grew. And once the crisis was more or less resolved, Minsky finished his 15 minutes: he disappeared.

This is, from our point of view, unfortunate, because, as someone said, the Levy Institute had a very good crisis. After the crisis, if Minsky disappears, we have a problem. And basically, as I say, this is unfortunate, not only because of the interest in the Institute's work, but it's also unfortunate because it gives a misrepresentation of Minsky's actual contribution to economics. . . .

The "Minsky moment" picked up Hy's use of an Italian, Charles Ponzi, who had set up what was basically a pyramid scheme. Now, identifying a pyramid scheme as an economic theory is not a really great contribution to economics. If we were to reduce Hy's contribution to having identified and specified pyramid schemes it really, again, would not be worth much more than the 15 minutes of fame that we in fact had.

In actual fact, most of Hy's work, starting in the 1960s while he was an adviser to the Federal Reserve, was in financial regulation; so that the first unfortunate consequence of the so-called 15 minutes of fame and Hy's disappearance from discussions is that, when we started talking about financial reregulation in the system, we sort of forgot that Minsky probably was even more important in discussing reregulation than he was in trying to explain or identify the causes of the crisis.

One of the things that I would like to do is to show how Hy's approach to the financial system can be used in analyzing what we would call some current problems and to give some idea of the kind of work that we are currently doing at the Institute in building on Hy's basic approach, which I think is a general approach and, as Minsky himself insisted, it's an approach that has to be used in the context of an ever-changing and ever-evolving financial system. So that's one of the things that we're going to try to be looking at.

There are three points that I'm going to try to make in the time that's available.

First is the current discussion over the scarcity of so-called high-quality or low-risk collateral and the threat that this has on the performance or the efficiency of the financial system.

The second is the current trend for innovation in payments and lending, including electronic and mobile phone transfers and lending. In this particular context, Schumpeter has already been mentioned—we've heard the words *creative destruction*. The discussion of these sorts of innovations does provide a possible answer to the problems of too-big-to-fail. As most people remember, there have been cases of very large institutions that have been regulated out of existence. We had the case of ITT; we had the case of AT&T. Government regulations tried to eliminate these very large institutions. IBM was a very large institution that the Justice Department in the United States tried to regulate out of existence, but technical innovation did that job much more efficiently. Part of the discussion on innovation in payments and lending systems will deal with the possibility that the banks that are too big to fail may in fact disappear because they are not keeping up sufficiently with the innovations in payments and lending.

Finally, the third (and this will be the shortest) is the discussion of the transmission mechanism for monetary policy—the way we look at Fed policies or interest rate policies and quantitative easing as exceptional policies, when in fact there is a good likelihood that these things may become more or less permanent policies if we take into account the changes that are taking place or that have already taken place in the financial system.

If we start with our collateral scarcity, analysts at Credit Suisse came up with a paper, which was widely circulated and had a great deal of attention, in which they argued that the current financial system in the aftermath of the crisis was basically a collateralized system. What do I mean by this? Basically, that if you are going to have a loan, if you're going to do anything, you want collateral as support, or as what we would normally call security, for that operation. The fact that there was a shortage of high-quality collateral meant that the basic lending system would be in difficulty.

Now, they talk about the efficiency advantages of a collateral-based financial system that include adaptability and reduced need for costly—and I will emphasize *costly*—relationship-based lending. Basically, they look at this as a positive factor, failing, I think, to appreciate the costs that were involved in the absence of relationships that were present in the subprime crisis. But then they go on to say, "But the system tends to be procyclical and foster overoptimistic expectations about future returns, leading to asset price bubbles," so that collateral scarcity is the way they see of trying to offset this procyclical tendency.

If we look at the current system and ask the question, "Well, who, exactly, needs this collateral?"—and we know that these actions are all collateralized lending—[the answer is,] basically, lending and deposit markets. So when we're talking about the lack of collateral, we're saying that the repo market is one that would be efficient and less important in the system. Second, exchange-traded derivatives markets all require collateral for margin accounts. Indeed, part of the difficulty in the over-the-counter derivatives markets was often the lack of collateral or the lack of margining. If we look at commodity index funds, almost all commodity index funds are fully collateralized, so they require collateral in order to function. And, obviously, money market mutual funds require risk-free short-term liquid assets—or virtually risk-free short-term liquid assets.

If we look at all of these things that need collateral and we ask what parts of the financial system are these, these are basically what people tend to call the *shadow banking system*. Basically, what the people at Credit Suisse are telling us is that, if we have collateral scarcity, then the problem is that the shadow banking system might break down. Now, my impression was that, more or less, the banking system breaking down was one of the causes of the crisis, and it might be a good idea if we do not try and reconstitute it. . . .

The next question is, what produces this collateral scarcity—why did we run out of collateral? The first basic point we have to ask is, where does collateral come from in the system? What is collateral? In normal, traditional banking, collateral was actual physical goods and services in the warehouse—stuff people had actually produced. In the current system, that is not collateral. Collateral is the liability of somebody else.

Where does this come from? Minsky gives us a very clear answer of the way good collateral used to be generated in the system before we went to the current collateral-based system. Minsky tells us that banking is not money lending. To lend, a money lender must have money. The fundamental banking activity is accepting; that is, guaranteeing that some party is creditworthy. A bank, by accepting a debt instrument, agrees to make specified payments if the debtor will not or cannot. A bank loan is equivalent to a bank's buying a note that it has accepted. Bankers, if they do their jobs properly, through costly relationship banking, in fact create good collateral, and the good collateral comes from the bankers' guarantee, or from the bankers' *pledge*.

There's a scarcity of good collateral in the system if the banks are no longer doing the kind of due diligence credit assessment that is required to guarantee the illiquid liabilities of borrowers, so that, if we look at the absence of good collateral in the system, where did [this absence originate]? It basically came from the fact that the business model of financial institutions shifted from good old relationship banking—what we used to call "originate and hold"; that is, accepting and holding these pledges on the bank's bank sheets—[to] what we call "originate and distribute" and what I've called here basically "pump and dump," which is what the system was in fact doing.

If we look at the problems of the collateral-based system, the problems are basically the system of the shadow banking system. Quantitative easing hurts this system because it drains so-called "good" collateral from the system. . . . The reason for this is that the only good collateral that is left is government securities, because none of the private securities are considered good collateral any longer because the banks are no longer providing the due diligence and the creditworthiness assessment that is required.

Now we look at the idea that collateral provides liquidity for the system, and this is part of the Credit Suisse analysis. The idea is, if you have a collateralized system, it does provide liquidity. There's no collateral that is inherently liquid unless someone will lend means of payment against it. So we have the question, where do those means of payment come from? Again, they come from the banks being willing to accept collateral and the banks discounting those accepted assets with the central bank, so that there is no inherent liquidity aspect involved in any piece of collateral. It comes from the organization of the financial system, and it comes from the way that banks are integrated with the lender-of-last-resort function, which we've already heard about.

Minsky himself already dealt, in *Stabilizing an Unstable Economy* (1986), with the implications of a collateral-based system. This is far before the system was developed. Basically, he says, if you look at cases such as collateralized security or land-loans, the income the pledged asset generally earns while it is held is not enough to meet the interest on the loan. Such loans impart a Ponzi flavor to the financial structure. A cash-flow orientation by bankers—that is, doing the due diligence—is conducive to sustaining a robust financial structure. An emphasis by bankers on the collateral value and the expected values of assets is conducive to the emergence of a fragile financial structure. So Minsky already told us in the . . . 1980s that this collateralized-based system was inherently fragile and inherently had tendencies toward Ponzi financing schemes. . . .

How do we solve the scarcity of good collateral? We solve the scarcity of good collateral by restoring bank due diligence and acceptance-based lending—[by going] back to that old costly system. As I mentioned, we emphasize costly because you have to look at the balance between the costs of doing the due diligence against the cost of bailing out the collateralized system every time it collapses. Randy Wray has produced an estimate of the cost of that system. How many trillion was it? Twenty-nine trillion dollars. So we're putting the costs of $29 trillion against the increased costs of banks actually doing what they're supposed to be doing.

The major source of good collateral is the banks' doing their job. The second major source is government deficit spending, which allows the banks to collect on the guarantees that they give, so that scarcity of good collateral only threatens the shadow banking system. And perhaps the shortage of collateral should threaten the shadow banking system, because maybe we really don't need it any longer.

If we go now to the second point: bank creation of good collateral depends on the payment system. What does this mean? We've already talked about the fact that banks operate by accepting the illiquid liabilities of their business clients. Basically, a business decides that it's trying to finance production, and the business wants to buy inputs. It wants to pay its labor force. The business does not have the means of payment to do so, so it takes its liability, its promise to pay, to the bank, and the bank says, "I will accept this, and I will give you in exchange a means of payment." A means of payment is what? It's a deposit account. The bank creates the deposit account, which allows the firm to enter the payment system.

This is the lending, or the liquidity creation, part of the banking system, and it is the part that is required in order to allow the capitalist system to function—in order to allow production to, in fact, take place. But in order for the banks to [perform] this function, their deposits have to serve as the basic means of payment; that is, the payment system has to be structured around bank liabilities. If the banks do not have that possibility, then the banks do not have the possibility of creating liquidity, and they do not have the possibility of generating income by providing this acceptance function. If you look at a number of the papers that we've published on the Institute website, one of the basic causes that we have given to the crisis is the failure of banks to be able to generate a sufficient income flow from these acceptance activities, or these guarantee activities.

So if we look—and this is again the argument that liquidity creation depends on the banks provision of the payments system—if we look at what is happening today, we see a proliferation of alternative means of payment and alternative means of providing lending. If you look at nonbank payment systems, we have PayPal, Google Wallet, Square, and an infinite number of others. If you search, these are probably the most famous. Nonbank lending: we have P-to-P loans, crowd funding—the current JOBS bill in the United States has brought forward these nonregulated market types of activities.

If we look at the new payments system, PayPal effectively provides what? It provides a substitute to what banks normally do in terms of providing payment services. Google Wallet does the same thing. For the moment, most of these systems are linked directly or indirectly to some sort of bank payment system; but if we look at the strategies of, for example, mobile telephone companies, you can see that your mobile telephone will eventually replace your computer, and it may also eventually replace your bank. Square and Starbucks: Square has come up with a system in which you can put a little square thing on the top of your mobile phone and, since presumably everybody goes to Starbucks, Starbucks becomes the major payments mechanism: you can simply go into Starbucks, say your name, and automatically pay for your whatever-it-is—a triple double latte with cream on the top.

As I said, all of these things tend to be linked, currently, with payments mechanisms. It's interesting that, although there have been a number of congressional committee investigations into these alternative payments systems, almost all of them simply look at it as provision of services to the nonbank, rather than as a threat to the banks' participation in the payments system and the income that banks earn from providing that payment service, and the benefit that the banks might provide by doing diligence in funding basic lending operations. Just as one example: Chase has set up an independent unit called Payment Tech, and basically if you walk into Chase Bank and say, I would like to set up my own private payments system, Chase will give you the plumbing that will allow you to do that; and Chase is not the only bank that does that.

Now, let's turn to the lending side. We know about B-to-B, business to business; this is P-to-P—person-to-person lending. Do you want to borrow? These ladies formed a group and decided that they would borrow money in order to become—well, I don't know what we're going to call them. It was a small investment group; in fact, none of them were operating in the same area or in the same sector, but they managed to borrow $3,200. So far, it has not been repaid, but it was lent completely outside of the formal financial system. This is one aspect, a strange aspect, of what we call micro-credit lending, which is in general more organized; but it is an example of the way lending can take place directly outside of the financial system. We won't go through the idea of the group, but if you look down at the bottom *[points to slide]*, the members of the group all have alternative businesses. So the idea, this is somehow some idea of diversification in terms of the lending package. Terracita is a butcher, Ignacia is a fruit seller, Julia is a fruit seller, Montserrat sells shoes, and Januet is a clothes seller.

This is not only something that occurs in micro-credit. Germany has a similar P-to-P system, and, again, we won't go through the details. All of them are generally the same. The UK has something that is called the Funding Circle. The cofounder of Funding Circle said, "This deal represents the next step in the growth of the Funding Circle and will help us create a lasting alternative to banks for small business loans." Well, it used to be that banks were the basic source of small business loans until they got out of the business, and now the market is providing an alternative. The United States has something that is called Lending Club. Lending Club does a very similar thing. As a lender, you simply put in your money and you can either choose your borrower or you can set up a portfolio of borrowers. This was probably not taken very seriously, except that when John Mack decided to leave Morgan Stanley, where did he end up as chairman of the board? At the US Lending Club, which tends to indicate that this is something that at least some financial analysts and financial experts are in fact taking seriously.

You can look *[points to slide]*: here is the state of selected P-to-P lending companies, and these are the new loans in millions of dollars that they've made. The flags show you that there are a number of these throughout the country. Currently, there's also one that operates extensively in Africa—again, primarily through mobile phone systems.

The United States, the JOBS Act, crowd funding—crowd funding does what? Our Business Startup Act provides a tax exemption for individuals to invest up to $10,000, . . . , basically completely outside of the US regulatory system and outside of the US financial system. Who needs banks? . . . There is a group, Crowd Sourcing, that supports crowd-funding websites and don't let access to capital hold you back—let the crowd fund *you*. Basically, if you want to start up your own business, you don't go to the bank anymore, you simply go to crowd funding, put yourself up on the web, and watch the money roll in. Who needs shadow banks? Innovation is leading to these nonregulated payment systems.

So if we look at the evolution of these sorts of systems, at this stage they are not fully fledged independent systems, but they do have the ability to [become] so. If we think about the way that Merrill Lynch developed its money market management accounts, it noticed that, if you had an account with Merrill Lynch and you sold a stock, the money stayed with Merrill Lynch, and it suddenly came up with the bright idea, well, if you keep your money with us at Merrill Lynch, we can arrange a way in which you can write a check on the proceeds of your stock sales—and all of a sudden, Merrill Lynch, which was technically not a bank or regulated as a bank, was providing a payments mechanism.

Now, interestingly enough, PayPal has instituted a similar process in which, if you sell something at PayPal, PayPal requires you to leave your funds in PayPal's associated bank for a fixed period, and eventually will allow you to use those funds in order to make payments.

So we are just at the edge of the possibility of these systems displacing the traditional regulated banking system. If we look at these sorts of systems, and you think of the idea of the payment system, the payment system we now have is one in which bank deposit accounts regulated by the Federal Reserve and intermediated through the interbank clearing system provide the means of payment, or the mechanism of payment. One of the basic difficulties of this system that we know about is the potential for bank runs or deposit drains. Basically, the lender-of-last-resort function of the Federal Reserve is there in order to meet that particular difficulty.

But if we think of this problem of deposit drain, any of you who have taken Money and Banking 101, you would remember that this occurs because you have individual banks in the system. If you have one single bank in the system, then there is no possibility of a bank run, so that, if you're thinking of a payment system, clearly the most efficient payment system from this point of view is a payment system in which you have a single bank. Or you can think of it in the sense of a clearinghouse, in which a clearinghouse takes care of all the interpersonal or interbusiness payments.

If that is the most efficient system, and currently there is a process by which innovation is taking place in these payment systems, there is always the possibility that one of these alternative systems will eventually end up as the monopoly system. Now, I don't know, if we look at the iPhone market, for a while it looked as if everyone in the world would have an iPhone, and . . . if Apple had decided to set up a payment system that ran through the iPhone, we might find ourselves with a system in which Apple in fact controls the payment system in at least the United States, within a closed system.

So the question that all of this innovation raises is, how do we go about regulating these alternative payments mechanisms that are being set up, and should we be concerned that, as the technology expands, innovation may lead us to a technology in which a single payment system or a single bank system may in fact be the one that is most efficient?

Now, while we were working on this, the last Minsky conference in New York included a dinner speech by Henry Kaufman. I was pleased and surprised—not many other people were pleased and surprised—by the conclusions of Henry Kaufman's presentation, and that was that in the future the entire deposit function will be handled by some giant cloud computer facility. Well, that's possible—iCloud is the thing we use for our iPhones. But, Kaufman went on, this will be controlled and guaranteed by the government; that is, at some stage the government will step in and say it is the prerogative, and in fact a necessary function, of government to take control of the payment system.

What are the implications of this? First, that checks will disappear. Second, that bank branches will disappear—why do I need them when I have my phone? And third, that financial advisors will disappear. As I said, most of the people who attended the conference were in some way connected to the financial system, and they were not too pleased to discover that they would be creatively destructed—or, excuse me, creatively unemployed.

The financial future will be one in which credit is socialized and our major financial institutions become financial public utilities. How does this follow? Again, Kaufman comes from the idea that if you control the payment system, then you potentially control the credit function or the liquidity function in the economy. So, if you socialize, or if the payment system is controlled by the government, then the credit creation function will also have to be provided by what are financial public utilities.

Many people have always argued that financial institutions—in particular, banks—are basically public-private partnerships that we allow banks to operate as if they were purely private; so that this would simply be a step toward recognizing that the financial system is not only a private institution, but it is also part of the provision of a public service, or at least the payments mechanism is a provision of a public service. Kaufman then went on, "Or will the public sector allow private institutions to capture control of liquidity creation again?" That is, will we allow PayPal, or will we allow Google or one of these alternative financial systems, to take over this particular service?

So this is the second area in which Minsky allows us to make this analysis by noting this very close connection between liquidity creation in the system and the functioning of the payment system. Should it be done by the private sector? Should it be done by the public sector?

Finally, the third point, the threats to the implementation of monetary policy: this is a point that is not new. Martin Mayer, in a book on the Fed that was published probably 10, 15 years ago, noted that the change from a financial system in which banks accepted liabilities from their clients and held them on their balance sheets, from one in which they originated these assets—and note, I don't say accept; they simply originated—and then sold them into the private capital markets, created a difficult problem for the transmission of monetary policy, because monetary policy, as Bob Barbera mentioned and most people know, depends on your ability to have an influence on banks' balance sheets and the public's balance sheets through their risk preferences.

Basically, what you're trying to do is to shift assets. If the Federal Reserve's major client, which is the banking system, no longer holds the assets that create the liquidity that supports economic activity, then the transmission mechanism basically breaks down. That is, if you do not any longer have an instrument that controls the assets on the bank's balance sheets, if the assets are no longer there, then you have a difficulty. This is basically what securitization did. It moved those assets off the banks' balance sheets into securities markets. The conclusion is that policy can only work by influencing capital markets, which means doing what? It means effectively influencing, not the banks' balance sheets, but the operators in capital markets. This means affecting interest rate expectations, or expectations of changes in asset prices, so that the kinds of policies such as QE and the announcements of policy intentions will probably become a permanent part of policy. Because if you are trying to influence, for example, what the gentlemen at PIMCO are deciding to do in terms of holding or not holding government securities, it is extremely important to indicate to them what policies are going to be over interest rates, not only in the short-term, but also in the long-term. It's also important to indicate that the Federal Reserve will be operating in policy not only on the short end of the yield curve, but also into the longer maturities. So that if monetary policy is going to have an influence on capital markets and the ability of capital markets to fund economic activity, the basic information and the basic policy tools will then be the attempt to influence the expectations of those individuals who are buying those assets in capital markets.

The next thing is, as we've already mentioned, the emergence of nonbank payment systems and the emergence of P-to-P loan systems. If these systems are no longer regulated, and if the Federal Reserve has no instruments to control them, it in fact says that you have a means of financing economic activity that is no longer under the control of monetary policy. And to the extent that these systems become larger and larger, the impact of the Fed's policies will again be decreasing, and this again indicates the importance of the financial innovations that take place in the system and the way these financial innovations will tend to provide increased financial fragility in the system, as Minsky indicated, and the need for regulators and for monetary policy to take into account the way these changes have an impact on how the system responds to different policy measures and different policy tools. As Minsky pointed out, the same economic policy applied in the 1930s or in the 1980s would have had completely different responses, basically because the structure of the financial system was different. And, as I mentioned, this emphasizes the importance of analyzing the changes in the financial structure and attempting to adjust, or attempting to adapt, the kinds of regulations and the kinds of policies that you're using in trying to control them.

I'm not advocating—in particular, as we have current legal problems in terms of what you can find out from someone's cell phone or can't find out from someone's cell phone, because it obviously eventually will control all of your bank information—that the Federal Reserve should take over the role of the FCC or whatever else it is. But certainly these are the kinds of questions that one should have in mind in looking at the evolution and the impact of financial innovation and in the way we regulate and the way we look at the fragility of the financial system.

Thank you.

PETER PRAET

Chief Economist and Executive Board Member, European Central Bank

Monetary Policy and Deleveraging

It is a great pleasure to join you on the occasion of the Levy Economics Institute's Hyman P. Minsky Conference.[1] The financial crisis erupted five years ago, when the leverage cycle that had accompanied the "great moderation" abruptly reversed. Since then, the euro area and large parts of the global economy have been swept by several waves of financial shocks. And each wave has unleashed strong deleveraging forces throughout the affected economies.

Deleveraging often reflects a necessary adjustment process. And it does not necessarily warrant policy intervention. At the same time, it bears the risk of becoming abrupt and disorderly, thus threatening price stability by dislodging the provision of credit and the transmission of monetary policy signals to the real economy. In the worst case, it may lead to a full-blown financial meltdown via self-sustained adverse feedback loops of the kind envisioned by Hyman P. Minsky.

Central banks have a role in ensuring that the economy does not move towards divergent dynamics that would be inconsistent with price stability. To this end, they have a range of policy tools at their command which may be used to control deleveraging pressures.

But, of course, strong accommodative central bank intervention may create moral hazard, thus discouraging needed adjustment efforts and possibly leading to the accumulation of new imbalances.

In my remarks today, I will discuss how the ECB navigated through the crisis in view of the complex "balancing act" between disruptive deleveraging processes and moral hazard. I will argue that forceful action was needed to fend off acute downward pressures on price stability. In illustrating this point, I will often come back to the concept of the transmission mechanism, which is fundamental to a central bank's ability to maintain price stability.

I will also focus on the specificity of the approach adopted by the ECB during the crisis in order to maintain price stability. And I will relate it to the challenges faced by a single monetary policy in the multicountry context of the euro area. This may have implications for the process of deleveraging in the economy.

To contain moral hazard concerns, the ECB has consistently conveyed to market participants and the general public that it responds symmetrically to upside and downside pressures on price stability. Moreover, it adopted additional safeguards against moral hazard, such as the explicit conditionality attached to our recently announced Outright Monetary Transactions.

At the same time, we have used and will continue to use our influence to ensure that the overall institutional architecture of Economic and Monetary Union (EMU) becomes incentive-compatible, also beyond monetary policy.

Monetary Policy during the Global Financial Crisis

Let me elaborate on the ECB's response in the different phases of the crisis, starting with the global phase before the crisis became combined with a sovereign debt crisis in some euro-area countries.

The first phase of the financial crisis—with Lehman Brothers' failure being the watershed—can be described as a bank run on a global scale. In contrast to a classic run, it centered on wholesale deposits rather than retail deposits. But the dynamics were the same in that they essentially reflected an evaporation of confidence in banks.

The spark that ignited this crisis was a bout of general uncertainty about the health of financial-intermediary balance sheets in the context of huge losses made by some obviously systemic banks. As financial intermediaries no longer trusted each other, they shortened the maturity of their exposures, charged higher premia or withdrew from the market altogether.

The fuel that fed the flames of the crisis, in a context in which previously much vaunted hedges had become meaningless, was a large maturity mismatch and high leverage in the financial sector. This translated perceived vulnerability into actual vulnerability.

Finally, the wind that fanned the flames came from the feedback loop associated with fire sales.

Despite its dramatic effects, devising a response to this first phase of the crisis might, at first, seem like a case study in a standard monetary economics curriculum. Bagehot's analysis of the UK banking panic of 1866 delivered the insight that the central bank has to lend freely against good collateral at a high rate. Also, Friedman and Schwartz's analysis of the Great Depression suggested that the central bank has to accommodate liquidity preference shocks.

However, although these insights may provide inspiration, they do not provide an off-the-shelf recipe. Bagehot did not have in mind a monetary regime of fiat money and had a clear view of which banks were sound and which were not. Friedman and Schwartz argued that the Federal Reserve should have stabilized M2, which collapsed in the early 1930s, but only stated this as a general rule without a detailed prescription. As a result, it remained unclear how to implement it, starting from a situation in which the soundness of banks was uncertain and the usual monetary instruments were different.[2] There was also no consensus in the economic literature on how to think about the monetary policy stance when markets are suddenly unable to perform in the manner which most theorists prefer to assume: would it be just the overnight market rate—normally controlled by the central bank—or a broader concept encompassing the whole "risk-free" yield curve, or perhaps even including other rates and asset prices?

The ECB's response to the crisis was to deepen the policy it adopted in "good" times in order to also address "bad" times. In simple terms, this policy required us to continue to decide the appropriate level for the short-term interest rate, while ensuring that the transmission mechanism works as effectively as possible. The transmission mechanism is the long chain of reactions that lead from a policy-rate change to its final impact on the real economy and inflation via the effects on the whole array of interest rates, asset prices, and monetary and financial indicators more generally.

In normal times, the ECB decides on the appropriate level of the short-term interest rate and provides the necessary liquidity to make such a rate prevail in the overnight market. A forecast of the necessary amount of liquidity is based on the need for liquidity by banks at the aggregate level. And the money market fulfills the task of distributing the liquidity across individual banks in an efficient manner as the banks themselves provide intermediation.

In normal times, the change in the overnight rate is then transmitted to the whole array of interest rates via arbitrage and somewhat predictable relationships, both along the intertemporal dimension and the intratemporal dimension. Trust in the stability of such relationships led most of the academic literature prior to the crisis to focus on the policy rate (or equivalently on the overnight market rate) as a summary indicator of financial and monetary conditions—although this trust often was not shared outside the academic literature.

Incidentally, I note that the idea that what matters for the transmission mechanism is the whole array of interest rates and asset prices as well as balance sheets, and not just any specific short-term interest rate has been a crucial theme in monetarist thinking. And monetarists argued that monetary aggregates provide a handy summary indicator of the changes in the various yields and asset prices.[3]

From the beginning of the financial crisis, the first element of the transmission mechanism—the money market—ceased to function properly. Liquidity premia soared and arbitrage transactions became thin.

With the collapse of Lehman Brothers, financial tensions affected almost all asset classes, leading to a pronounced liquidity preference shock. As a result of the ensuing self-sustained deleveraging process, interest rates and asset prices can lose contact with or change their relationship to the central bank policy instruments.

In such circumstances, a central bank needs to regain control of the transmission mechanism, meaning that it must steer financial and monetary conditions in a way that is consistent with its price stability mandate.

The ECB responded to these challenges by cutting its policy rate—the main refinancing operation (MRO) rate—and by switching to a fixed-rate full allotment regime. Under such a regime, the central bank stands ready to satisfy fully the demand for liquidity—against collateral—at the prevailing policy rate. In the absence of a functioning interbank market, that demand for liquidity is in excess of the banks' liquidity needs under normal conditions.

Note that this regime can be maintained at any policy rate level, due to the presence of a corridor in the ECB's operational framework. It simply implies that excess liquidity pushes the overnight rate down toward the rate paid on the deposit facility. It also implies that the corridor can provide for a way to detach the decision to provide liquidity from the decision to set the interest rate.

Let me illustrate this point with an example. If market interest rates and bank lending rates move in a manner inconsistent with a change in the policy rate, the central bank's ability to influence the real economy and inflation may be impaired. The central bank can try to correct this. Traditional wisdom is based on making an even larger change in the policy rate so that the impact on financial and monetary conditions is of the originally desired size. But another solution is to anchor other rates directly to the central bank policy intentions by the provision of liquidity.

The fixed-rate full allotment regime can achieve this outcome because, in effect, it squeezes out the premium at short maturity via the intermediation role taken up by the central bank. This assumes, however, that the counterparties of the central bank are still fundamentally sound.

A similar logic can also be applied to longer maturities. The central bank can provide liquidity at longer maturity at the average policy rate that will prevail in the future over this maturity. This can be done at any level of policy rate. The existence of the deposit facility provides a floor to the overnight rate. And the central bank can extend its influence over term credit by lengthening the maturity of its lending operations.

One notable application of this logic was the 12-month refinancing operation enacted in December 2009. In this operation, the ECB stood ready to satisfy fully the demand for liquidity at one-year maturity. The interest rate charged on this liquidity was the average MRO rate that would prevail over the life of the operation.

This type of measure is distinct from attempts to flatten the "risk-free" yield curve via forward guidance that is often discussed in the literature. The reason is that it is aimed at squeezing out the premium faced by banks over and above the current and expected policy rate.

Let me recall that, in the euro area, about three-quarters of corporate finance comes from banks. Hence, anchoring banks' funding conditions to the desired level can help ensure that lending rates faced by households and firms continue to reflect policy intentions. This was indeed the case during the first phase of the crisis, with lending rates declining in tandem with policy rates according to standard regularities.[4]

Central banks' willingness to accommodate the increased demand for liquidity may, however, be ineffective in preventing a destructive deleveraging process, unless two additional elements are addressed.

First, there is a need to remove the stigma associated with accessing central bank liquidity. The ECB did so by providing liquidity at an attractive price via monetary policy operations in which a broad number of counterparties have access.

Second, deleveraging forces and fire sales have a direct impact on the value of collateral. To address this situation, the ECB broadened its collateral rules, thereby also enabling banks to take full advantage of central bank liquidity. At the same time, the ECB tightened its own risk-control measures to mitigate the risk it absorbed.

Monetary Policy in the Period of the Sovereign Debt Crisis

As we all know, the crisis did not remain restricted to the banking sector. In fact, from 2010 onward, several euro-area countries have experienced a severe sovereign debt crisis.

The driving forces of this evolution varied across countries. Some countries had already built up weak fiscal positions before the crisis, which emerged as a major vulnerability in the downturn. Others were overburdened by the fiscal costs of domestic banking crises. But irrespective of its origins, in all cases an adverse feedback loop between bank and government balance sheets emerged, which then spilled over national borders.

This adverse sovereign-bank nexus was nurtured by the large holdings of sovereign debt on bank balance sheets. When market scrutiny of public finances and investors' risk aversion suddenly increased, sovereign yields started rising. The implied, actual or potential, losses for overly exposed banks raised the specter of additional public support. As a consequence, the credit standings of sovereigns and banks have moved in tandem and both have found it increasingly difficult to maintain market access.

In several jurisdictions, the access of the banking sector to funding markets was heavily impaired. There was a real threat of a second wave of disruptive deleveraging. And as banks had already shed parts of their external and other noncore assets in the first wave, less room was left for banks to protect domestic credit.

The propensity for banks to pass on the ECB's monetary policy signals to the real economy fell markedly. In other words, there were renewed risks that the monetary policy transmission channel could become severely impaired. But this time the ECB faced a new challenge: the dislocation had taken on a distinctly national dimension. Financial market fragmentation along national borders had become the new reality.

The ECB's response to this second phase of the crisis has been guided by the same principle as in the first phase: decide on the appropriate level of the policy rate to maintain price stability and preserve, to the extent possible, the proper working of the transmission mechanism. Moreover, the experience we accumulated during the first phase helped us in designing measures aimed at providing abundant liquidity, while avoiding stigma effects.

The ECB conducted two three-year lending operations indexed to the MRO (in December 2011 and February 2012). The operations were aimed at alleviating adverse funding conditions for banks by allowing them to satisfy their additional liquidity needs. The net liquidity injection amounted to around €520 billion—taking into account the shifting of liquidity out of other operations. One key result was that the longer-term refinancing operations (LTROs) provided banks with a more certain medium-term funding situation, in line with the longer maturity of the operations.

The months following these operations saw a broad stabilization of financial conditions. Money and credit figures indicated that an abrupt and disorderly adjustment in the balance sheets of credit institutions had been avoided. Funding conditions for banks generally improved, and increased issuance activity and a reopening of some segments of funding markets could be observed.

However, the root problems of the sovereign debt crisis were only partly addressed by member-states. Hence, tensions in sovereign debt markets did not take long to resurface.

These tensions took a form that was specific to the institutional features of the euro area: markets started questioning the irreversibility of the common currency, thus pricing in redenomination risk in sovereign bond yields of vulnerable countries. The ensuing disruptive dynamics risked undermining one of the key motivations for introducing the euro, namely to provide a lasting safeguard against currency crises, such as the one experienced in Europe in the years 1992–93.

The main symptom of these problems was a pronounced movement towards financial market fragmentation. For example, the cuts we made in the MRO rate over the period had very heterogeneous effects on funding conditions in different countries. In some countries, retail lending rates declined, but in others they hardly moved or even increased. As a consequence, the singleness of monetary policy in the euro area was no longer guaranteed. And the countries in greatest need of a further expansionary impulse were the ones that were impacted least by cuts in the policy rates. This drags down their domestic economies and further weakens their fiscal positions.

To mitigate the dynamics of such self-sustaining fragmentation, the ECB decided to adopt outright monetary transactions (OMTs). OMTs provide for interventions in government bond markets, with no ex ante limits, for countries that are subject to effective conditionality of a program under the European Stability Mechanism (ESM).

The aim of OMTs is to directly address excessive risk premia in government bond markets that reflect in particular unwarranted perceptions of redenomination risk and are a key source of impairment in monetary policy transmission.

By imposing conditionality, OMTs aim to strike a balance between counteracting adverse tail risk and preserving incentives. Specifically, OMT conditionality ensures that countries commit themselves to a path of ambitious fiscal consolidation and structural reform, thereby preserving fiscal sustainability. This has two functions: first, it mitigates the balance-sheet risk associated with outright purchases; second, it preserves the monetary policy rationale for OMTs. If countries were to reduce their adjustment efforts in response to ECB intervention, the beneficial effects of OMTs on the monetary policy transmission would be undermined by weaker fiscal and macroeconomic fundamentals. Therefore, conditionality is an inherent feature of OMTs.

Specific Challenges Facing the Single Monetary Policy for the Euro Area

The twin banking and sovereign debt crises, with heterogeneous manifestations across the single currency area, have put a premium on deleveraging—or at least a curb on leveraging—both in the banking sector and government sector. This contrasts with the greater emphasis on household sector deleveraging as driver of the US "balance sheet recession" in the wake of the financial crisis, to take the words of Koo.[5] It also contrasts with the greater emphasis on corporate sector deleveraging in the Japanese case over the past two decades.

In part reflecting these circumstances, the ECB's approach during the crisis has also been different to that of other major central banks. The ECB's main focus has been on collateralized lending, whereas the focus of other major central banks has been on large-scale asset purchases. This has had, in turn, implications for the pace and size of deleveraging in the euro-area economy.[6]

In this respect, the ECB's approach can be seen as more indirect than the approach based on large-scale asset purchases. Both approaches, by supporting the capacity of the monetary and financial sector at large to acquire assets, can support asset prices and lending, which is conducive to a smooth deleveraging process in the economy.

Asset purchases directly create scarcity in the instrument being purchased. This exerts an upward pressure on prices, and, through portfolio rebalancing effects, may also affect the prices of other assets. However, direct asset purchases involve a difficult choice for the central bank: it must take a decision on which assets to buy, necessarily interfering with relative asset prices and income distribution.

Collateralized lending involves such decision only at the level of the definition of the collateral and its eligibility conditions. This can also influence the prices of collateral, but the role of selecting which assets to buy or sell is essentially "outsourced" to the banking system; that is, to many private agents. Hence, collateralized lending leaves the price discovery process and the allocation of savings to market mechanisms.

The specificity of the ECB's approach must be seen against the background of the bank-based financing structure of the euro-area economy that I mentioned earlier—in contrast to the more market-based financing in the United States, for instance. It must also be seen against the specific institutional environment in which the ECB operates—characterized by a multicountry context.

Some commentators suggest that governments should always take on leverage when there is excessive deleveraging in the private sector. But this option rapidly reaches its limits in the presence of debt sustainability concerns. And it has done so more quickly in the euro area than in other economies where the institutional framework is different.

In a context of macroeconomic imbalances across the euro-area countries and financial market fragmentation, the Eurosystem balance sheet has expanded in size, with an increased concentration of liquidity provision to banking systems in countries under strain.

The asymmetric distribution of the ECB's action across the euro area has attracted attention, also from a political viewpoint. What is insufficiently reflected in this debate is that this asymmetry is endogenous and is a result of the single monetary policy.

This asymmetric action across the euro area is also reflected in increased Target2 balances on the balance sheets of Eurosystem central banks. Such an endogenous shift in composition has acted as an internal adjustment mechanism, whereby the fallout of funding pressures in the banking system has been directed into the Eurosystem and away from the real economy.[7] This has buffered the adjustment of the real economy and kept trade and financial flows flowing across euro-area countries, thereby preventing disorderly deleveraging. It has provided time for governments individually and collectively to address the adjustment needs and undertake the appropriate reforms. But this time needs to be used effectively.

The ECB's nonstandard measures have been ensuring that solvent banks are not liquidity constrained so that they continue lending to the real economy without a disorderly deleveraging process. However, there are limits to what monetary policy can and should credibly do: monetary authorities cannot be expected to solve problems which lie well outside their current official remit.

The Delicate Balancing Act

More generally, a central bank should be aware that it is constantly required to exercise a delicate balancing act. On one hand, it may need to provide backstops to remove tail risks that could otherwise result in severe downward pressure on price stability. On the other hand, by mitigating a crisis that largely reflects shortcomings in other policy areas and excesses in the financial sector, the central bank may alter incentives for different actors to correct imbalances.

If domestic policymakers and other economic actors delay necessary reforms because they can count on the central bank to provide support whenever market conditions deteriorate, monetary policy may become insufficiently effective, as well as biased towards the short term. In the words of Hervé Hannoun, the deputy general manager of the Bank for International Settlements, a central bank has to constantly guard not only against the risk of "fiscal dominance" but also "financial dominance."

I would like to give one example. A central bank can commit itself to engaging in extraordinary monetary policy interventions and to swiftly reversing them as conditions improve. But would this commitment be sufficient to align the incentives of all the actors involved? In the economic jargon, is this promise "time consistent"? Or will other economic agents expect the policymaker to deviate from its stated intention and adjust their actions accordingly?

Economic literature stresses two elements that add credibility to such commitments: strong institutional frameworks setting out clearly defined objectives; and the adoption of "rule-type behavior" that consistently and predictably determines the response of policymakers to specific circumstances. These elements allow a policymaker to steer the expectations of other actors in line with its long-term intentions, thereby mitigating the time inconsistency problem.

As regards monetary policy, the institutional framework set up for the EMU—central bank independence and price stability objective being the key elements—has proved to be strong and effective.

The crisis has shown, in my view, that the "rule-type behavior" has to be provided by a symmetric reaction of central banks to financial forces. In particular, a strong reaction to financial distress in the downturn has to be matched by a strong reaction to financial imbalances during the building-up phase.

What is the best way to do this? I believe that a more symmetric reaction to financial forces can be best ensured by according a prominent role to the analysis of money and credit developments in monetary policy decisions, especially if this is complemented by appropriate macroprudential measures.

But it should be recognized that monetary policy is only one element of the overall institutional framework.

The current sovereign crisis is largely the outcome of severe shortcomings in the institutional architecture of the EMU, which was not capable of fostering prudent fiscal, structural, and financial policies. But policymakers have reacted to these shortcomings and have set in motion ambitious reforms to strengthen economic governance in Europe.

Earlier today, my colleague Vítor Constâncio discussed the rationale of this reform agenda in great detail. I will therefore not elaborate on this. But I would like to echo his assessment. The repair of the institutional architecture of the EMU will contribute to addressing the underlying causes of the crisis, thereby also supporting the smooth functioning of the EMU in the future.

Conclusions

Let me conclude.

The crisis brought about several waves of financial turmoil that threatened to spiral out of control. In line with its price stability mandate, the ECB intervened in each of these episodes so as to tackle the specific threats to the monetary policy transmission that arose with each incarnation of the crisis.

The policy actions of the ECB, and of all other major central banks, have been able to repeatedly ward off self-sustaining feedback loops characterized by disorderly deleveraging.

The challenge ahead for central banks consists, in my view, of combining such a backstop role during a crisis with a credible commitment to adopting symmetric behavior in the run-up phase of financial imbalances.

Notes

1. I would like to thank Philippine Cour-Thimann, Federic Holm-Hadulla, and Roberto Motto for their contributions to the preparation of this speech.
2. For a discussion, see Christiano, L., Motto, R., and Rostagno, M. (2003), "The Great Depression and the Friedman-Schwartz Hypothesis," *Journal of Money, Credit, and Banking*, Vol. 35, No. 6, pp. 1119–97.
3. See, Friedman, M., and Schwartz, A. J. (1982), *Monetary Trends in the United States and the United Kingdom: Their Relation to Income, Prices, and Interest Rates*, University of Chicago Press, Chicago, pp. 1867–1975; and Meltzer, A. H. (1999), "Commentary: Monetary Policy at Zero Inflation," in *New Challenges for Monetary Policy: a Symposium Sponsored by the Federal Reserve Bank of Kansas City*, Federal Reserve Bank of Kansas City.
4. Giannone, D., Lenza, M., Pill, H., and Reichlin, L., "Non-standard Monetary Policy Measures and Monetary Developments," Working Paper Series, No 1290, ECB, January 2011.
5. Koo, R., "The World in Balance Sheet Recession: Causes, Cure, and Politics," *Real-World Economics Review*, No. 58, December 2011, pp. 19–37.
6. See Cour-Thimann, P., and Winkler, B. (2012), "The ECB's Non-standard Monetary Policy Measures: The Role of Institutional Factors and Financial Structure," *Oxford Review of Economic Policy*, forthcoming in December.
7. See, for instance, Cour-Thimann, P. (2012), "Target Balances and the Crisis in the Euro Area," forthcoming.

RICHARD FISHER

President and CEO, Federal Reserve Bank of Dallas

Placing Financial Instability in Context

Thank you very much. It's a privilege to speak again at a Minsky conference. . . .

When I last spoke at a Minsky conference in 2010, in April of that year, I addressed Minsky moments and Minsky's wonderful theory of Ponzi schemes, and the need to clearly define a resolution regime that my colleague, Chris Cumming from the New York Fed, is going to discuss today, and laid out some of the theses that Andy Haldane of the Bank of England and I have about treating too-big-to-fail. I'm not going to speak about any of that today.

Especially being in Berlin, I think it's important to put things in a context, and I will try to provide a bridge to what will be discussed later today, as you said, to the other side of the pond. But I'm going to dwell on Germany, because being in Germany in November is especially significant for a central banker. I was reminded of this in a note I received from Art Cashin, who's a well-known analyst, just before I came on this trip that this is the 90th anniversary of one of the great teaching moments in central bank history. Because it was in 1922 that the German central bank and the Finance Ministry took a very decisive step to jumpstart a stagnant economy here in Germany in a move that ended up in one of the most catastrophic events in economic history.

At the beginning of 1922, facing an economy where production was still struggling in the aftermath of World War I, and under the heavy thumb of reparations, the central bank had begun an aggressive accommodative policy. It brought little response. Economic stagnation continued, and more accommodation followed. No reaction. And then, as recently summarized in a sobering note from my friend Art Cashin, seemingly in the blink of an eye, prices suddenly exploded, but business activity did not. Desperate to stoke the engine of commerce, on October 11, 1922, a decision was made that would condemn Germany to penury and to political perdition, and that was, the mark was significantly devalued.

The consequence of hyper-accommodation? Hyper-devaluation led to hyper-inflation. I'm going to give you an example. I'll put it in terms of dollars just to illustrate an order of magnitude, rather than marks and pfennigs, which can be a little bit complicated. Just to illustrate the change that occurred: at the end of 1921, a loaf of bread cost $1.35. By the middle of 1922, after the central bank had begun aggressive accommodation, the price of a loaf of bread was $3.50. At the start of 1923, with hyper-accommodation and after hyper-devaluation, that same loaf of bread cost $700; five months later, $1,200. By September of 1923, on the one-year anniversary of the devaluation, that loaf of bread cost $2 million. On the one-year anniversary of the devaluation decision, at the end of that month, that loaf cost $670 million.

To put things in perspective, the total currency in circulation in Germany a hundred years ago, or 10 years before that fateful decision, was 6 billion marks. By the end of 1923, a kilo of butter cost 1,000 times that.

I'm not saying or inferring in any way, shape, or form that this outcome is likely to ensue either in the United States or in Europe under the current hyper-accommodative policies of our central banks. The circumstances that Germany was under in the aftermath of World War I were unique. But in some ways there are some similarities. For example: entering the war, the kaiser and the finance ministry, assuming victory, felt that they could finance the war machine and the expansion of deficit spending by gains to be made later on, by collecting their own reparations and the spoils of war.

Even after the war was over, in rebuilding and recovering, deficit spending was financed by willing domestic and foreign lenders who were buyers of German government bonds, and they believed that the government could return to run future budget surpluses to offset contemporary deficits. And here is a haunting memory: when things began to disintegrate in 1922 and 1923, and the consequences of massive monetary accommodation and devaluation were on full display, nobody dared take away the punch bowl.

As Art Cashin wrote in this little note to me on the anniversary of the October 11 decision, the central bank and Treasury feared that shutting off, as he called it, "the monetary heroin" would lead to riots and civil war. And so, realizing they were doing something destructive, even aware of this at the central bank and at the Ministry of Finance, they kept on doing it for fear that stopping it would be even more destructive.

In modern parlance, the cost-benefit analysis done by the central bank and the government of Germany in the 1920s sided with the view that the benefit of continued accommodation was greater than the cost. Among those costs was that those who played by the rules and stored their money away and were thrifty swiftly found that the value of their savings was worthless, and pensions, which my colleague Dennis Lockhart will address at lunch, became broken promises. Small wonder that what was once a prosperous middle class in Germany took to the streets, paving the way for the economic and political disaster that ensued.

How's that for context for a discussion of debts, deficit, and unstable markets?

Now I want you to understand me very clearly: I do not believe that this will happen either in the United States or in Europe. I do not believe that inflation need be the inevitable consequence of the Federal Reserve's expanding its balance sheet to upwards of $3 trillion and beyond.

Here's what I do believe, especially after recounting this history and, over the last two days, for maybe the 30th or 40th time, wandering the back streets of Berlin and trying to remember the pitfalls of bad monetary and government policy and the dangers that they pose to the people of a great economy:

First—and again, Dennis Lockhart, whom you'll hear from at lunch today, and Christine Cumming, the first vice president of the Federal Reserve Bank in New York, our brilliant CEO of the New York Fed, are going to speak in their sessions that follow—I would say that, for the three of us and our colleagues, particularly the 19 that sit at the table of the Federal Open Market Committee, the 12 presidents and the seven governors, this lesson from the Germans in the 1920s makes us realize that we have a great, sobering responsibility. For, in the case of Dennis and I, with our 17 other colleagues, we are the trustees of an awesome power—that is, the tool of monetary policy—and we are entrusted with using it wisely. We endeavor to do so. The 19 of us have embarked on a path of dramatic monetary accommodation. We're going to need to soon decide and signal to the market when what William McChesney Martin called "the punch bowl"—or as my friend Art Cashin referred to it, as I mentioned earlier, in the harshest of terms, "monetary heroin"—will be withdrawn.

In previous speeches I've used the term "Buzz Lightyear monetary policy" in reference to the mantra of "Infinity, and beyond!" that was uttered by that lovable character in the movie *Toy Story.* There is no infinity in monetary policy. We know that from the German experience I just recited. We realize that we have done much by saying at the Federal Reserve that we have a long-term inflationary target of 2 percent. And, as we always do at every Open Market Committee, we make it clear that our actions will be dependent on inflationary expectations remaining anchored or constrained.

But while we have much more sophisticated instruments for judging the impulse of price and stability in modern terms, both in forward markets and in the kind of surveys that we do, we must be ever mindful that they can shift on a proverbial dime and run away from us quickly and suddenly, as they did in Germany in the 1920s. To my mind, it serves no useful purpose to simply say or infer that the Federal Reserve is the central bank of the most critical reserve currency of the world. It is nowhere near the limits of quantitative expansion. And so I think we are at a point, or fast approaching a point, where we need to define what those limits are.

There are different ways to do so. We might, for example, announce an employment target, just as we have announced a long-term inflation target. This may be more difficult than it sounds, given that monetary policy is not as controlling a variable in employment as it is for price stability. Still, this is an option that, if you read the minutes of our last meeting, you will see we are discussing and debating, and that it is one worth debating.

Or we might pursue a different course, which is directly announcing, and doing it soon—perhaps at this next meeting, which would be my preference, but that's a group decision—announcing a limit to how much we're willing to acquire in Treasuries and mortgage-backed securities; say, up to a limit of *x*, or to a point where our balance sheet reaches *y.* That's the first point that I would make.

Second point: as central bankers, we must prod and goad and use every device appropriate for a central bank to encourage the fiscal authorities of the United States to deal with the horrific budget situation that they have thrust upon the nation and the unfunded liabilities with which they are burying our children and grandchildren. Presently, as in the early 20th century in Germany, domestic and foreign investors have been willing to finance our deficits and buy our nation's debt. But under current practices, it strains credulity that the 21st century's greatest economic and military power, the United States, will, as Germany assumed under entirely different circumstances, continue for long to believe that the government will right our contemporary deficits with future budgetary balances that secure the investment of those that have entrusted their money to our securities.

We are at a historic moment on this front in the United States, and we are faced, as everybody knows, with falling off, or confronting, the so-called "fiscal cliff." Our fiscal authorities must do several things at once. First, they must come up with a treatment of our fiscal pathology that encourages continued economic recovery rather than pushes back into recession. Second, they must do so in a way that convincingly assures the markets that a long-term credible cure has been found. This is an essential point that we don't hear enough about. Our greatest problem in the United States is unemployment and the underemployment of our workforce. Employment is the key to prosperity, and jobs in the US economy are best and most productively created by private businesses. Now, faced with uncertainty about what their taxes will be, and how much and in what shape spending patterns of the government will manifest themselves either directly or indirectly, businesses are in a defensive crouch, waiting to learn the rules that will govern and impact the return on investment in expanding employment and capital plant.

If what comes out of Capitol Hill is but a temporary fix, the most likely scenario is, that fix may well have an impact on the macroeconomy by forestalling a crushing blow to GDP from drastic cutbacks in spending growth and tax burdens. But if it—that is, a temporary fix—occurs, it will not likely provide the clarity needed for a return on investment calculations that determine payroll and plan expansions, as these are multiyear calculations made by businesses that put people to work. Thus, a temporary fix will likely simply push out the envelope of uncertainty currently paralyzing the kind of corporate decision-making we would like to see, resulting in more robust employment of our underutilized workforce.

Third, it's important that whatever we do on the fiscal side be accompanied with a rebooting of our regulatory regime in order to encourage, rather than discourage, job creation. I've said many, many times that the central bank of the United States, the Federal Reserve, has done its utmost to provide the liquidity and low-cost lending needed for corporations to rebalance their balance sheets. I'm not going to dwell on this. I think that one can credibly argue that the tax and regulatory regime of the United States government is, for all intents and purposes, stuck in a pre–Cold War, preglobalized time warp. It's a product of layer upon layer of special favors extracted by special-interest groups over decades, and it needs to be purged and recrafted so as to incent American business to take advantage of the low cost and abundant liquidity we at the central bank have provided, and to invest that money in job creation at home, rather than seeking better returns on investment abroad.

The world we live in, the post–Cold War, globalized, cyberized world—forgive me, it's a product of American victory. Unlike the German High Command after World War I, we won the war—we won the Cold War. And a version, or a knockoff version, of our ideology is now accepted—not imposed but accepted—in the world at large. I would argue that America's steadfastness transformed the world away from a world of mutually assured destruction to one of mutually assured competition, and now our government must craft fiscal policy and regulatory policy so that we can enjoy the fruits of that victory, not be victimized by it by seeing jobs and investment go elsewhere. I think it's very important to note that this is a far preferred remedy to the woes that we have in America and the alternative path of protectionism. We cannot withdraw from the world we created; we must fully engage in it. I would thus put a US-Europe free-trade agreement at the top of the list of things to do for our president and our Congress once they have convincingly addressed the fiscal cliff.

Here, I want to take a little lesson again from German history. It is again imperative that we withstand demands for protectionism. I'm including disguised protectionism in the form of nontariff barriers, or American restrictions on capital flows, or occasionally lashing out emotionally against the Chinese and others.

What made the Great Depression great was Smoot-Hawley [the 1930 tariff act], with which everyone in this audience is familiar, and on which the chairman of the Federal Reserve is a noted expert. And yet you may be less familiar with the long depression that began when a flowering of new lending institutions that issued mortgages for municipal and residential construction in the capitals of Vienna and Berlin and Paris turned a cropper and became a financial panic in 1873. If you study that debacle, you will quickly determine what transformed a severe global depression—or, excuse me, a severe global downturn—into a great and longer depression than that which we remember in our own lifetimes, one that lasted 23 years. It was action taken by the Iron Chancellor, Otto von Bismarck. In 1870, he decided to abandon Germany's free-trade policy. His actions were followed in quick succession by France, and then by Benjamin Harrison, who won the US presidential election of 1888 by running on a protectionist platform. So I think it's very,

very important that our government, in addition to getting their act together on fiscal policy, resist with every fiber in their body the temptation to follow a protectionist course. And I don't think they will.

Now, it may seem odd to you that a central banker would spend the majority of his time addressing fiscal policy issues. In part, that's because I firmly believe that we at the central bank have done what we have been called on to do; that is, we dealt with the crisis of 2008–09. I like to remind people that we did something rare in government: (a) we did what we said we would do, extremely rare in the United States government; (b) when the programs were done, the special facilities we created under exigent circumstances, we closed them all down—even more rare in the United States government; and (c) extremely rare in the United States government, we made profits for the American taxpayer, and we've embarked upon a policy that we believe is the best way to stoke the engine of job creating in America. But now we need the fiscal side to kick in and do its job.

Some might argue that the Fed should keep its head down for fear that in speaking to the performance of fiscal policymakers we might in turn invite further political intervention in monetary affairs. Here again, in conclusion, I turn to the German experience. In his remarkable book *Lords of Finance,* Liaquat Ahamed recalls a deliberation that took place when Bismarck founded the German [Reichsbank] in 1871. According to Ahamed, Bismarck's closest confident, a man whose name was Gerson Bleichröder, warned the Iron Chancellor—and this is a precious quote—"there will be occasions when political consideration will have to override purely economic judgments, and at such time too independent a central bank will be a nuisance."

Well, we know from my imperfect summary just now of events in Germany in the 1920s what ensues when political considerations override economic judgment. And I would conclude by simply saying—and my colleagues know this is certainly the case with me—I'd rather be a nuisance than be an accomplice to fiscal impropriety and political expediency.

With that, have a nice day. Thank you.

DENNIS LOCKHART

President and CEO, Federal Reserve Bank of Atlanta

Thoughts on Two Other Potential Sources of Financial Instability: The Payments System and Public Pensions

Introduction

I'm delighted to be here in Berlin among so many distinguished central bankers, academics, and policy experts to offer some views on the sources and implications of financial instability.

It strikes me as wholly appropriate to give most of our attention in this conference to the debt crisis in the eurozone, public sector deficits in many advanced economies, the state of repair of banking systems, and the financial markets that link these areas together. These are the areas in which we would expect to see the severe disruption that would evidence financial instability.

In the United States, as a consequence of requirements in the Dodd-Frank Act, the Financial Stability Oversight Council, or FSOC, has geared up to monitor potential sources of financial instability. In support of Chairman Bernanke's participation in the FSOC, efforts are under way in the Federal Reserve System to monitor and more deeply understand a variety of possible sources of trouble and to evaluate how serious a threat they represent. These efforts have put focus on some of the sectors and activities you would expect—for instance, the shadow banking system.

I expect you will agree that at a global level, the span of vigilance needs to be extremely broad. The events of 2007 and 2008 brought many surprises. Markets that some thought too small to cause much trouble ultimately posed systemic-scale problems. The pathways of contagion and the speed of development of second-, third-, and fourth-order effects surprised most of us.

So my point is our radar should scan widely—beyond the most obvious sources of risk.

Today I would like to share some observations on two instability risk areas that are not so front of mind—the payments system and public pensions. I'm going to look at these from very much an American perspective and let the Europeans and others here draw from my remarks whatever is useful and applicable in your own affairs. My interest in these two areas of concern derives from work we're doing at the Federal Reserve Bank of Atlanta to gauge the evolution of risk to the payments system and the systemic risk associated with municipal finance and fiscal problems at the state and local levels of government.

Before I get into these two topics, I must state the usual disclaimer. All the views I will express are my personal views. My colleagues on the Federal Open Market Committee and in the Federal Reserve System may not agree.

Working Definition of Financial Instability

Let me start by laying out a working definition of financial instability. To my mind, an event or development that brings financial instability is one that interrupts crucial financial intermediation services, affects markets and institutions, and threatens the real economy. If the period of instability is severe and long-lasting, it may cause a serious amount of wealth destruction. Such a working concept of financial instability serves as a test of the validity of payments system risk and public pension solvency as potential sources of instability.

Payments System Risks

I'll touch on payments system risk first. The payments system in the United States processes about $4.5 trillion of transactions daily. The system is fragmented in a variety of ways. First, to the extent that banks still enjoy a significant franchise in payments services, the banking system is quite fragmented. We have more than 7,000 banks operating in the United States. Also, in recent years we've seen tremendous growth in the nonbank sector of payments services providers. Nonbank providers participate in markets for remittances, prepaid cards, transaction processing, and online payments. And, as you well know, payments are moving to mobile devices, and there are a number of nonbank entrepreneurial ventures in this space.

It's important to point out that there is no single, comprehensive supervisor overseeing the payments arena. Bank supervision and regulation is divided among a collection of federal entities, and the nonbank providers are lightly regulated by comparison.

The fragmented nature of the payments industry and its rapid evolution are creating many points of vulnerability. Fraud is one such vulnerability. Certainly the public is quite aware of credit and debit card fraud and identity theft involving account takeovers. This activity erodes trust in the financial system, but I don't see these problems as imperiling financial stability at a systemic level.

A real financial stability concern, however, is the potential for malicious disruptions to the payments system in the form of broadly targeted cyberattacks. Just in the last few months, the United States has experienced an escalating incidence of distributed denial of service attacks aimed at our largest banks. The attacks came simultaneously or in rapid succession. They appear to have been executed by sophisticated, well-organized hacking groups who flood bank web servers with junk data, allowing the hackers to target certain web applications and disrupt online services. Nearly all the perpetrators are external to the targeted organizations, and they appear to be operating from all over the globe. Their motives are not always clear. Some are in it for money, while others are in it for what you might call ideological or political reasons.

Unlike other cybercrime activity, which aims to steal customer data for the purpose of unauthorized transactions, distributed denial of service attacks do not necessarily result in stolen data. Rather, the intent appears to be to disable essential systems of financial institutions and cause them financial loss and reputational damage. The intent may be mischief on a grand scale, but also retaliation for matters not directly associated with the financial sector.

Banks have been defending themselves against cyberattacks for a while, but the recent attacks involved unprecedented volumes of traffic—up to 20 times more than in previous attacks. Banks and other participants in the payments system will need to reevaluate defense strategies. The increasing incidence and heightened magnitude of attacks suggests to me the need to update our thinking. What was previously classified as an unlikely but very damaging event affecting one or a few institutions should now probably be thought of as a persistent threat with potential systemic implications.

I'm drawing your attention to this area of risk because of recent events and because of the obvious reliance of our societies on electronic networks and commerce. But I feel the need to be measured about the potential for severe financial instability from this source. In my judgment, cyberattacks on payments systems are not likely to have as deep or long lasting an impact on financial system stability as fiscal crises or bank runs, for example. Nonetheless, there is real justification for a call to action. The deputy undersecretary for cyber security at the US Department of Homeland Security recently suggested that "companies in the same industry could pool infrastructure resources to help each other mitigate the effects of cyberattacks and work together on security issues."

Even broad adoption of preventive measures may not thwart all attacks. Collaborative efforts should be oriented to building industry resilience. Resilience measures would be similar to those put in place in the banking industry to maintain operations in a natural disaster—multiple backup sites and redundant computer systems, for example.

Public Pension Funding

Now I'd like to turn to another possible source of financial instability in the United States: public pensions. At a systemic level, this area of concern is more likely to be manifested as a gradually accreting threat to growth than a single event shock.

The traditional public pension model we find in US states and municipalities is a defined-benefit model that, to be deemed solvent, relies on expected returns on a portfolio of investments to fund future benefits. Altogether, these pension funds provide retirement benefits for approximately 23 million current and retired public employees and control roughly $3 trillion in invested assets.

Public pensions are evaluated on the basis of each plan's funding ratio. A pension's funding ratio is defined as the current market value of the invested portfolio as a percentage of the present value of promised future benefits.

Losses on investment portfolios during the financial crisis lowered the aggregate funding ratio from 88 percent in 2007 to 75 percent in 2011. Several large state plans—those in Illinois and Connecticut, for example—currently have funding ratios below 60 percent.

But these calculations may underestimate the true magnitude of the problem. A funding ratio of 75 percent equates to an assumption of an 8 percent average annual return on the portfolio of investments. It's fair to ask whether this is a realistic assumption given current forecasts of the economic and financial environment. Arguably not.

Using this optimistic 8 percent return assumption, public state and municipal pension funds have an $800 billion funding gap to fill. Using a lower, more realistic return assumption (such as the longer-term rate on US Treasuries) implies a $3 trillion to $4 trillion funding gap. You might call this "the other debt problem" in the United States.

What are the options available to deal with these funding gaps?

One option is to delay action or apply low-pain palliatives and, at some later date, force what amounts to a confrontation between taxpayers and pension fund beneficiaries. To the extent that taxpayers believe this will be the chosen path and the likely outcome, there may be emigration from the worst states and cities—only hastening the day of reckoning.

If inclined to deal with a funding gap now, fund sponsors have three strategies they can employ: increase contributions, decrease promised future benefits, or take more investment risk in an attempt to outgrow the problem.

Many states and municipalities have begun to pursue reforms that include all of these strategies in combination. Examples include increasing the required contribution of current employees and expanding allowable investments to include alternative assets such as hedge funds and private equity. Several plan sponsors have also attempted to lower benefits that will be paid to future beneficiaries by lowering cost-of-living adjustments. However, decreasing even future benefits may be subject to legal challenge in the United States. A majority of states have laws that treat pension benefits as part of a labor contract between the state and employees with, in some cases, even constitutional protections.

The underfunding of public pension plans is an implicit form of state and municipal debt with no direct market discipline. Hyman Minsky warned of the dangers of the buildup of private debt, but certainly under some conditions, government debt poses similar risks to economic growth.

As a financial stability consideration, the problem of pension underfunding is not likely to be the source of any immediate shock or trigger a broader systemic crisis. However, the situation needs to be monitored, as public finance does contribute to financial and economic stability more broadly. The public pension funding problem, as it grows, has the potential to sap the resilience we wish for to withstand a future spell of financial instability.

Closing Thoughts

I will close on a lighter note, but make a serious point. Many of you will remember the scene at the end of the film *Casablanca*. Rick Blaine (Humphrey Bogart) has just shot Major Strasser, and a sympathetic Captain Louis Renault (played by Claude Rains) says, "Round up the usual suspects." Just as the world was surprised when the subprime mortgage-backed securities market in the United States triggered a deep financial crisis that affected the whole world, we may be surprised at the source, or sources in combination, of the next episode of financial instability. A modest suggestion: as central banks and other authorities systematically scan for potential sources of financial instability, let's keep an eye on the usual suspects, of course, and on the unusual suspects as well.

Sessions

SESSION 1

Public Debt, Private Debt, and Financial Instability in the Eurozone

Andrew Smithers, Robert J. Barbera, Jack Ewing, Klaus Günter Deutsch

MODERATOR:

JACK EWING
International Herald Tribune

ROBERT J. BARBERA
Mount Lucas Management LP

KLAUS GÜNTER DEUTSCH
Deutsche Bank AG

ANDREW SMITHERS
Smithers & Co.

BARBERA began this session by contrasting the policy response in the eurozone, with its combination of fiscal austerity and (until recently, he qualified) "willful indifference" on the part of the European Central Bank (ECB), with the response in the United States. He argued that while mistakes were made, the US response, with its initial fiscal stimulus and a central bank that stepped up as lender of last resort, was more effective. The European policy reaction was understandable, Barbera allowed, given its grounding in 20 years of flawed economic theory and a set of policy lessons, derived from postwar German success under Bundesbank management, that were ill suited to the circumstances. What is less understandable, in Barbera's estimation, is why policymakers would "triple-down" on these evidently flawed policies three years into the eurozone crisis.

Barbera commented that the US response conformed, more or less, to Hyman Minsky's description of how "big government" and a "big bank" can stave off a depression. "Big government" stood by its system of deposit insurance, recapitalized banks, supported aggregate demand through automatic stabilizers, and supplemented it with fiscal stimulus, while the "big bank" flooded the markets with liquidity, facilitated government borrowing, and expanded its operations to deal with risky borrowers.

Barbera noted that over the 1980–2012 period, this "big bank / big government" crisis response blueprint transcended partisan lines in the United States. He pointed out that in the case of both the savings-and-loan crisis and the most recent financial crisis, large bailouts were initiated by Republican presidents (both named Bush, incidentally). Despite a celebration of free market rhetoric, banking crises have not been permitted to generate debt deflations. Part of the reason for this consensus, Barbera suggested, is that the "morbid fascination" the United States has with the experience of the Great Depression strengthens policymakers' resolve to never let such a depression happen again.

The euro project was created with very different lessons in mind; in particular, with an eye to the 1970s Great Inflation and without a comprehensive sense of how central banks are supposed to operate—hence, no eurozone-wide deposit insurance, no dual mandate, and no explicit lender-of-last-resort mandate. Combine this with the fact that there is no federal borrowing capability, said Barbera, and eurozone institutions were set up in such a way as to prevent a Minskyan big government / big bank response in the event of a financial crisis.

Moreover, postwar German economic success imparted lessons to eurozone policymakers that no longer fit the circumstances. From roughly 1950 to 2000, the Bundesbank succeeded by acting as if Germany were a small open economy, keeping unit labor costs low and generating a trade surplus. However, this model of low inflation and strong export-led growth cannot be replicated by the eurozone as a whole.

Memories of the 1970s Great Inflation kept central bankers focused on wages and prices when in reality the key dynamic to watch was in financial markets, in the serial buildup of asset bubbles. Since the mid-1980s, inflation has become a mere "sideshow," as Barbera put it, and central banks have been hindered by a model that told them to focus exclusively on excesses in wages and prices. Moreover, Barbera pointed out that because John Maynard Keynes's ideas about sticky wages and prices have proven to be particularly true around the zero bound, a central bank like the ECB, with its single mandate, will not see any deflation and will therefore conclude that monetary policy is about right—despite, for example, a 25 percent unemployment rate in Spain.

Barbera noted that although Italy and the United Kingdom have comparable fiscal situations, Italy borrows at much higher rates. The reason for the divergent rates is that in the case of the United Kingdom the only risk is inflation, whereas in the case of Italy there is an additional risk of default, since Italy cannot rely on a central bank with lender-of-last-resort responsibilities. If Italy were borrowing at rates similar to those of the UK, the former would not be in trouble. The problem, said Barbera, has been created by the absence of a backstop for Italy's borrowing.

Despite the evidence that the approach is not working, Barbera noted that there are still calls for fiscal austerity and assertions of the importance of central bank independence. What we are looking at here, he explained, are cases of cognitive dissonance. Those who start off from the belief that the German model of low inflation, low wage increases, and a current account surplus has been successful and must be maintained will not be willing to consider the limitations of this model at the eurozone level, all evidence suggesting that the approach is not apt will go unheeded.

DEUTSCH shifted the focus off of central banks and insisted that the resolution of the eurozone crisis will have to come from policies set at the level of the European Monetary Union (EMU), not short-term fixes from the ECB. He presented his explanation of the German approach to the crisis.

As the number one economy in the European Union (EU), Deutsch said, Germany has acknowledged a responsibility to look after euro-area economic performance as a whole. Germany has emerged, according to Deutsch, as the one stabilizer that Charles Kindelberger argued it was necessary to have in a financial crisis. Deutsch considered the argument that the EMU is a system of fixed exchange rates that cannot work, and that it ought to be abandoned like the gold standard was in the 1930s. He rejected the comparison, noting differences between the situation in the 1930s and the current EMU.

When countries joined the EMU in the late 1990s, the prevailing assumption was that economic convergence would develop over time. However, financial markets behaved differently from what was expected. Both sovereign and private debt were mispriced, and due to the absence of appropriate policy levers, said Deutsch, real estate and credit market bubbles emerged and were allowed to continue uncontrolled over a prolonged period of time, ending with a sudden stop.

Deutsch focused on a number of areas in which problems needed to be solved. First, a liquidity crisis created an urgent need to provide official schemes of liquidity in order to prevent an all-out panic. Instead of simply going to the International Monetary Fund (IMF), Deutsch noted, there was a desire to create a European approach, which resulted in a total of roughly 1.5 to 2 trillion euros being made available to fund current account adjustment. Second, some countries' fiscal policies stepped outside the boundaries of the rules set for the EMU, and the fiscal compact was created in response. Although Deutsch said it was not clear that the compact would work, given that financial markets have not been effective at disciplining politically motivated national fiscal behavior, he expressed a hope that fiscal policy would be more "in line with macroeconomic fundamentals," as he put it, 10 years down the line. Third, real economic indicators have not converged much, he said, between the periphery and the core. Fourth, Deutsch argued that something ought to be done in the way of structural reforms to create better product and service markets and improve the quality of human capital. The German approach, said Deutsch, has been to stress that while the provision of liquidity creates a cushion, in the longer term real efforts to improve productivity and economic performance more generally are needed.

The way forward for the euro area, said Deutsch, lies with a higher level of political integration. This might include establishing a financial markets union and a centralized supervisor. Deposit insurance and the creation of a European resolution authority, which would allow a supervisory body to close banks with the aid of small amounts of capital from a fund prefinanced by the financial industry, could also be a part of a federal design for an EMU banking union that Germany could accept.

On the question of economic union, Deutsch cautioned, the matter is not as clear. There is a great deal of disagreement as to how much centralization or decentralization there ought to be in this area.

According to **SMITHERS**, poor economic theory and practice led to the recent financial crisis, a successful application of Keynesian and Minskyan theory helped prevent the crisis from turning into another Great Depression, and now, poor theory and practice are inhibiting a recovery.

The most serious flaws in economic theory, said Smithers, flow from bad epistemology. Economics may be a science, he allowed, but it is a science that is often pursued unscientifically. The efficient market hypothesis (EMH) played a role in dismissing concerns about financial markets in the run-up to the crisis. The EMH is testable in its "random walk" form, but when tested, this related hypothesis proved not to be robust. If the "random walk" hypothesis were true, there would be no change in the predictability of the volatility of markets looking forward, but as Smithers demonstrated, this does not hold up. Instead of throwing away the EMH and building different models, however, proponents stuck to the EMH and claimed that a revised testable version could be produced—this has yet to be accomplished, he noted. As the EMH is not currently a testable hypothesis, Smithers observed, it lies outside the boundaries of science as demarcated by Karl Popper.

While financial crises are caused by excessive debt, their triggers—falls in asset prices—are fundamentally unpredictable. Given these dynamics, if we want to avoid financial crises, Smithers suggested, we ought to have policies to control excessive debt, rather than policies designed to prevent asset price collapses. But we ought to also avoid deliberately driving up asset prices, and, unfortunately, driving up prices is what quantitative easing (QE) does. In the absence of perfect markets, he pointed out, the asset purchases that make up QE will not be matched by sellers, leading to a rise in asset prices.

Smithers argued that the postwar era, in which some countries can free-ride off of US willingness to use Keynesian policy whenever there is a downturn in the world economy, is over. The problem now is that the Keynesian countries—the United States, UK, and Japan—are much smaller in relation to the rest of the world economy, such that their "firepower" is diminished. At the same time, Smithers explained, neither Germany nor China is stepping into the role. Germany is pursuing austerity and imposing it as the standard model for the EU, while China has taken a different approach, pursuing a version of mercantilist policy focused on exports and intervention in foreign exchange markets.

Smithers then turned to the large savings surplus in the business sector. The problem, he argued, is that this surplus is structural, not cyclical. This surplus is not being driven by concerns about the future or "animal spirits," but by a change in incentives, driven by a rapidly falling share of salaries as a component of management's remuneration and a rising share of compensation in the form of bonuses and options. Companies are keeping investment low and engaging instead in buybacks because it pays to do so; they are being paid, in other words, not to invest. Smithers outlined a pair of "common myths" along these lines: that companies are holding back the economy by deleveraging, and that company balance sheets are in good shape. Neither is true, he pointed out. The misimpression that corporate balance sheets are healthy comes simply from not taking inflation into account. Pointing to the Federal Reserve's flow-of-funds accounts, Smithers noted that corporate balance sheets are very highly leveraged by historical standards.

Smithers also pointed out that profit margins are at historically high levels, even though there is a large output gap. He cautioned that one ought to be skeptical of profit reports, noting that corporate profits, as published, have become much more volatile since 2002. Smithers argued that this too can be explained by a change in incentives; in this case, he explained, when you have an option contract, volatility pays. Moving from mark-to-cost to mark-to-market has created flexibility in terms of reporting profits.

The savings surplus is a product of the bonus culture and cannot be cured by running large budget deficits, he concluded. Fiscal deficits under these circumstances are an analgesic, as he put it, not a cure. Instead, we need to reduce the business sector's savings surplus.

SESSION 2

Minsky's Financial Instability

Alexandros Vardoulakis, Dimitrios Tsomocos, C. J. Polychroniou

MODERATOR:

C. J. POLYCHRONIOU
Levy Institute

DIMITRIOS TSOMOCOS
University of Oxford

ALEXANDROS VARDOULAKIS
European Central Bank and Banque de France

In this session, **TSOMOCOS** presented a model of Hyman Minsky's financial instability hypothesis (FIH), formalized within mainstream neoclassical economics.

Tsomocos began by summarizing the literature on mainstream approaches to analyzing financial crises. He then outlined five main externalities associated with crises that are present in the everyday modern financial system: (1) the coordination failure that results in bank runs; (2) "fire sales" initiated when a drop in the price of collateral triggers a sale of the underlying asset, leading to default, further drops in collateral, and further fire sales; (3) pessimistic expectations due to the opacity of portfolios, which leads to a drop in financial asset prices and a resulting financial crisis; (4) Minsky's FIH, which connects investor optimism with procyclical behavior; and, finally, (5) network externalities, which are related to interbank exposures leading to contagion and default chain reactions.

Turning to the FIH, Tsomocos cited Minsky's description as follows: "over periods of prolonged prosperity and optimism about future prospects, financial institutions invest in riskier assets, which can make the economic system more vulnerable in the case that default materializes." In this conceptualization, Tsomocos noted, expectation formation varies across economic cycles, which in turn gives rise to leverage cycles and default. He stressed that he does not associate Minsky's FIH with irrationality.

The key question coming out of this analysis of the FIH is whether the solution to the "Minsky problem," as Tsomocos put it, resides in controlling and regulating leverage. Other questions include: what are the sources of excessive leverage, how do portfolio choice and risk taking vary over the leverage cycle, and can we predict the leverage cycle?

In laying out the framework of the model, one of the key features Tsomocos emphasized was that agents in the model have rational expectations. Since these rational agents have incomplete information, they observe past realizations of good and bad outcomes and modify their expectations accordingly (they are "Bayesian updaters"). Second, default is included as an endogenous variable in the model. An essential reality of financial crises, said Tsomocos, is that default is compatible with the orderly functioning of the economy. After a long run of good news, investors' expectations rise and financial institutions find it more profitable to shift to riskier assets promising higher returns; they become overleveraged. Creditors, because their expectations also improve, are willing to provide funds. When bad news appears, default rates are higher than they otherwise would be, resulting in a more severe case of financial instability.

Since overly optimistic expectations produce externalities within the financial system in this model of Minsky's FIH, the question becomes, what sort of leverage requirement can limit these externalities? Tsomocos pointed out that a classic leverage requirement, a maximum ratio of borrowing over the total investment in projects, has perverse consequences in his model. This leverage requirement delivers a result that is the opposite of that which is intended: it increases loss given default. The reason for this perverse result, explained Tsomocos, is that although aggregate borrowing will go down, banks with optimistic expectations will divert their own funds away from safer investments and put them into riskier ones.

Given those dynamics, Tsomocos recommended an alternative regulatory intervention. Instead of classic aggregate leverage requirements, this alternative would involve restricting relative portfolio holdings, constraining the difference between riskier and safer holdings per unit of leverage. He concluded that such a regulatory approach, given the dynamics in the Minskyan model, is more likely to reduce the risk of default.

VARDOULAKIS presented a paper he coauthored that uses an econometric model to test some of the predictions of leverage cycle theories, and investigated the question of how to identify variables that can act as leading indicators for future credit conditions. He explained that the latter objective involves trying to see whether credit standards depend on the behavior of financial institutions; more specifically, on the risk-taking and leverage behavior in the financial system. Vardoulakis also sought to compare quantity-based measures, derived from the balances of financial institutions, and price-based measures, such as the TED spread or VIX index, in terms of their ability to act as leading indicators of lending standards. He presented some empirical evidence suggesting that price-based measures are not capable of capturing the leverage cycle.

The other objective of the paper, as Vardoulakis noted, is to test some of the predictions of leverage cycle theories. These theories predict an "asymmetric response" in the risk-taking behavior of financial institutions, depending on the state of the economy. In good times, financial institutions become optimistic, leverage up, and invest in riskier projects. When a negative shock hits, they start deleveraging, and deflation dynamics develop; and in bad times, an increase in leverage and risk taking signals a recovery and an improvement of credit conditions.

Vardoulakis specified the appropriate econometric model for testing these predictions and explained which data series were chosen to serve as proxies for credit conditions, risk-taking behavior, and financial leverage. He noted that the paper focuses on the US financial system, due to greater availability of data. As a proxy for credit conditions, the net tightening index from the Federal Reserve Senior Loan Officer Opinion Survey was chosen. As a proxy for risk-taking behavior and leverage, Vardoulakis used data from the New York Federal Reserve's flow-of-funds accounts to create a quantity-based measure. On the basis of the assumption that the investment banking sector is riskier than the commercial banking sector, a quantity-based measure of risk-taking behavior was formed by dividing the total liabilities of investment banks, or broker-dealers, by the liabilities of the commercial banking sector. However, because it is not just risk taking that can affect the economy, Vardoulakis and his coauthors combined this proxy of risk taking with a measure of leverage in the financial sector as a whole.

Vardoulakis argued that the combination of risk taking and leverage should affect future credit conditions, that risk-taking behavior should be less dangerous for the financial system when combined with lower leverage, and that an improvement in credit conditions during a recovery should stem from an increase in leverage and the willingness to take risk.

The paper covers a period that contained three crisis events: the 1997 Long-Term Capital Management crisis, the bursting of the dot-com bubble, and the Great Recession. When tested, the model ended up showing the predicted asymmetric response: when risk taking and leverage increase during a good financial regime, the probability rises that the good times will soon end; in a bad regime, when deleveraging is to be expected, increases in risk taking and leverage signal the likelihood of a recovery. Vardoulakis noted that neither leverage nor the selected risk-taking proxy on its own provides adequate predictions of credit conditions; combined, however, they act as statistically significant leading indicators of the credit cycle. That said, Vardoulakis cautioned, they have limitations as predictive tools; for example, they will not tell you that credit will tighten in three months. Instead, he explained, they are best used as monitoring tools that signal, on average, the probability of switching from one financial regime to another. By contrast, Vardoulakis observed, while price-based measures such as stock prices, credit default swap spreads, and so on, capture stress in the economy, they are not forward-looking within the specifications of the model; they fail to act as leading indicators of credit conditions.

SESSION 3

Prospects and Policies for the Eurozone Crisis

Jörg Bibow, George Stathakis, Eckhard Hein, Brian Blackstone

MODERATOR:

BRIAN BLACKSTONE

The Wall Street Journal

ECKHARD HEIN

Berlin School of Economics and Law

GEORGE STATHAKIS

Greek Parliament (SYRIZA) and University of Crete

JÖRG BIBOW

Levy Institute and Skidmore College

HEIN framed the crisis in the eurozone as a crisis of finance-dominated capitalism (FDC). FDC, Hein explained, refers to a period of capitalism that began in the early 1980s in the United States and the UK and subsequently spread to other countries. He associated FDC with three developments: the deregulation of national and international markets in goods, labor, and finance; rising inequality and a falling labor share of income; and growing current account imbalances.

Why, Hein asked, is a general crisis of FDC that started in 2007 threatening the eurozone in particular? He suggested a pair of explanations linked to institutional deficiencies in the eurozone setup. First, because there is no explicit guarantee of member-states' public debt by the ECB, member-states do not issue debt in their own currency. Second, the eurozone setup has no institutional mechanism for fiscal transfers. There is no effective way to prevent the buildup of macroeconomic imbalances within the euro area.

Hein elaborated further on some of the main features of FDC. He pointed to data showing a fall in the labor income share since the 1990s (and suggested the trend goes back even earlier, to the 1980s). He noted that there has been an increase in inequality in pretax household income, and that this increase holds true not only for countries in the euro area, but also for almost all OECD countries for which we have data. Against this background of rising inequality, euro-area current account imbalances started to build up after the introduction of the euro in 1999 and have continued since.

Hein laid out a three-category typology of eurozone countries (excluding Luxembourg). First, there are countries that have experienced debt-led consumption booms. In these countries, a shortfall in aggregate demand caused by the upward redistribution of income was compensated for by rising household indebtedness. Hein noted that the housing price boom helped play a part in this dynamic. He identified the second group as "export-led mercantilist" countries. In this case, countries compensated for the inequality-led shortfall in aggregate demand through net exports. He included Germany, Austria, Finland, Belgium, and the Netherlands in this group. Finally, Hein grouped France, Italy, and Portugal into a "domestic demand-led" category. For these countries, and the EU 12 as a whole, aggregate demand is driven neither by net exports nor by debt-financed consumption.

In the mainstream interpretation, the eurozone crisis is a crisis of government deficits and debt. However, Hein pointed out that a simple accounting identity demonstrates that for some eurozone countries, particularly Ireland and Spain, the crisis was a *cause* rather than an effect of rising public sector deficits.

Hein observed that since the crisis erupted, the combination of financial rescue measures, austerity policies, and structural reforms have not fundamentally addressed the two previously identified institutional flaws in the eurozone design (absence of ECB backing for government debt, and lack of a mechanism for fiscal transfers) and have left Greece, Ireland, Portugal, Spain, and Italy below precrisis GDP levels. Moreover, while current account imbalances have been somewhat reduced, they persist. Government debt-to-GDP ratios have not significantly improved, Hein noted, and interest rate spreads remain.

The prevailing policy strategies have not succeeded, and we ought to abandon them, said Hein. Since this is a crisis of FDC, we ought to address the central problems of FDC through more effective financial regulation and policies to address income inequality and current account imbalances. In the eurozone, Hein added, we also need to address the institutional deficiencies that are allowing an FDC crisis to threaten the euro project. He called for the ECB to guarantee member-state public debt and to reform its monetary policy strategy so as to take distribution, employment, and growth into account. He advocated replacing the Stability and Growth Pact (SGP) with a coordinated fiscal policy along functional finance lines, and called for abandoning a labor market strategy that tries to improve competitiveness through nominal wage cuts. In order to address the euro-area imbalances, he called for more expansionary fiscal policy in current account surplus countries and the reverse in current account deficit countries; a higher euro area–wide inflation target, he suggested, would help stave off deflation for the latter.

STATHAKIS discussed the roots of the Greek problem, why the policies making up the "Greek program" implemented over the last two-and-a-half years have failed, and what ought to be done instead.

Stathakis noted that elevated Greek public debt levels are not a recent phenomenon. Greek debt has been around 120 percent of GDP since 1993, due to the expansion of the Greek state after the dictatorship. Until 1974, Greek public expenditures were around 25 percent of GDP. In the late 1970s and the 1980s, both conservative and socialist political parties established a European welfare state in Greece, raising public expenditure levels. At the same time, while expenditures were rising, taxes were rising as well, but with one important caveat, Stathakis argued: compared to the rest of Europe, as he put it, "rich people do not pay taxes in Greece." As a result, he said, the Greek budget has had a shortfall of 4–5 percent of GDP each and every year, which is roughly where the public deficit has been since 1979.

Stathakis also pointed out that Greece underwent a neoliberal transformation in the 1990s and early 2000s. Under the government of Konstantinos Simitis, the Greek economy was adjusted according to neoliberal demands, which involved liberalization of the movement of foreign exchange and the privatization of the banks and a wide range of state assets. Greece now has a highly privatized economy and a very flexible labor market, he remarked.

After the crisis broke out, the IMF provided a rescue program with three requirements: (1) a fiscal adjustment of 20 percent of GDP within three years, in order to reach a fiscal surplus of 5 percent of GDP; (2) a privatization scheme on the order of 50 billion euros (which, Stathakis noted, has since been downgraded to 10 billion euros); and (3) improved competitiveness through cuts in salaries and wages.

The program, Stathakis argued, has been a complete failure. Since 2009, the economy has continued to contract year after year, resulting in what he described as the deepest peacetime recession aside from the 1929 crash. Unemployment has reached 25 percent, and although the balance of payments has improved slightly, said Stathakis, this is only because nobody imports anything and nobody buys anything anymore.

Stathakis commented that a reduction in large public debt levels can be effectively managed in three ways: default, growth, and inflation. Unfortunately, he observed, Greece is pursuing a program that prevents either growth or inflation. The only solution that remains, he concluded, is default. Stathakis estimated that there would have to be a haircut on Greek public debt of at least 40–50 percent.

On fiscal adjustment, Stathakis suggested an alternative approach in which public expenditure would be cut by 3 percent of GDP (from 45 percent to 42 percent) and revenues would be augmented, through tax increases, by 3 percent of GDP (from 39 percent to 42 percent) over the next three years. This more modest fiscal adjustment, Stathakis suggested, would not have such huge recessionary effects. The idea of getting a surplus of 5 percent of GDP for the next 15 years cannot work, he insisted. Finally, there needs to be a development agenda that is sensitive to Greek economic reality. The Greek economy has run a trade deficit since its foundation in 1830 and will always run a trade deficit, said Stathakis. It is an economy that produces little and relies a great deal on tourism (10 percent of GDP)—and it is unlikely this will change, he commented.

The major challenge, Stathakis concluded, is that the solution to the public debt problem needs to be a European solution. The problem cannot be solved through Greek means alone.

BIBOW began his presentation with a simple message: unless decisive policy changes are implemented, the euro is destined for a breakup. Whether it was the imbalances that were building up inside the euro area or the exposure of the European banking system to the subprime mortgage mess in the United States, eurozone policymakers, Bibow remarked, were totally unaware of what was going on. When problems emerged, the misdiagnosis converged on fiscal profligacy and policymakers reached for austerity policies, driven by the myth that austerity stimulates growth. These austerity measures, Bibow argued, along with the strengthening of the SGP and addition of the Fiscal Compact, move us in entirely the wrong direction and will assure the breakup of the eurozone.

Pointing to the fact that Euroland is in recession, and to a decline in domestic demand at a rate of roughly 2 percent per year, Bibow remarked that Europe is freeloading on the rest of the world. Since the rest of the global economy is not particularly strong, European austerity is "sucking the air out of the global recovery," as Bibow put it.

He outlined some of the major flaws in the Maastricht regime. First, a very large integrated market was created, but without demand management and without a lender of last resort. Second, national policies were not properly coordinated to avoid competitive imbalances. Keeping inflation low worked for Germany in the past because, under fixed exchange rate regimes, this meant a gain in competitiveness and a boost in exports. However, it worked on condition that everyone else behaved differently. The trouble with the Maastricht regime is that it aims to make every country behave the same, which, Bibow pointed out, actually undermines the German model.

Bibow observed that one of the primary concerns driving the creation of the eurozone was to prevent beggar-thy-neighbor exchange rate devaluations. The problem however, is that competitiveness depends not just on exchange rates, but also on countries' unit labor cost trends relative to their trading partners'. In a monetary union, said Bibow, we have to abide by the "golden rule" of making sure that national unit labor costs are aligned with the common inflation target; in this case, the ECB's 2 percent target. If there are divergences in unit labor cost trends, current account imbalances will build up, leading to debt buildups. Germany, as Bibow demonstrated, reneged on this golden rule of monetary union by keeping its unit labor costs much lower than the ECB target. This led to intra-area imbalances in the euro area as Germany become "supercompetitive" relative to the rest of the eurozone and built up large current account surpluses, while countries like Spain ran large current account deficits. Ultimately, as Bibow explained, these imbalances "blew up" and halted private capital flows.

Bibow argued that proper crisis resolution in the eurozone requires three elements: rebalancing, dealing with debt overhangs, and making the EMU a viable regime. Bibow emphasized that the one essential, but missing, precondition for successful crisis resolution is GDP growth. Rebalancing and reducing indebtedness are made much more difficult—perhaps impossible, he suggested—when GDP is shrinking. Bibow explained that what we are actually seeing on the rebalancing front is "asymmetric rebalancing," with Germany forcing the rest of the eurozone to converge to a path of zero nominal unit labor cost growth—in other words, to regain competitiveness through debt deflation.

For the eurozone as a whole, the main challenge is that if the public sector tries to run a balanced budget, this will only work if either the private sector becomes a net saver, which it is not, or the rest of the world tolerates eurozone current account surpluses. Counting on the rest of the world to stimulate eurozone exports is problematic, because Euroland is simply too big.

The only country that can teach the eurozone anything is the United States, Bibow concluded. He suggested a number of reforms along these lines; first and foremost, the creation of an entity equivalent to the US Treasury, with a right to tax and the ability to run a persistent budget deficit from the center. Only this new spending from a European treasury, based on issuing euro debt securities, will allow member-states to balance their budgets.

SESSION 4

Financial Reform Proposals

Michael Greenberger, Christine M. Cumming, Jan Kregel

MODERATOR:

JAN KREGEL

Levy Institute and Tallinn University of Technology

CHRISTINE M. CUMMING

Federal Reserve Bank of New York

MICHAEL GREENBERGER

The University of Maryland

CUMMING dealt with recovery and resolution planning, focusing her presentation on efforts that are being made to improve approaches to managing the failure of a large financial institution.

There is, she observed, widespread agreement on the need to solve the problem of too-big-to-fail (TBTF). Cumming noted that the prospect of failure creates incentives for good management, while the belief that there is no possibility of failure creates poor incentives within organizations.

There are three obstacles that have stood in the way of the regulatory community triggering the failure of a financial institution, according to Cumming. The first obstacle has to do with powers. Since it is in the nature of a financial institution that its value decays rapidly, bankruptcy proceedings have their limits as resolution mechanisms because they can be too slow. Cumming identified the second obstacle as fear of contagion. This refers to the possibility that problems in one institution could readily spread to others, due to exposure to the failing institution or to the possibility that multiple institutions have similar risk profiles and similar dependency on short-term funding markets. Finally, she noted that financial institutions commonly operate within multiple jurisdictions, creating coordination problems in the event of a failure.

Cumming turned to the Financial Stability Board's (FSB) "Key Attributes," published in 2011, which laid out standards, principles, and best practices for all jurisdictions to follow when handling the failure of a large financial institution. The "Key Attributes" did two things, according to Cumming. First, it described the essential elements of an insolvency regime for financial institutions. These elements include having the ability to act quickly and decisively, create bridge institutions that can keep a failing institution alive for a short period of time, and transfer the assets and liabilities of a failing institution to other companies.

The second part of the FSB's "Key Attributes," and the part that Cumming noted she had been involved with, deals with the creation of crisis management groups (CMGs). CMGs are a collection of the key regulatory and resolution authorities for a particular globally systemically important financial institution. Their purpose is to oversee the recovery plans and help draw up the resolution plans for these companies. Cumming laid out how the process works for the CMGs.

One of the crucial parts of recovery planning is developing meaningful stress tests, she explained. The prevailing view regarding how to come up with these stress tests is that one ought to avoid tying the test to some particular event based on past history, which is, Cumming said, how some stress tests had previously been developed. Instead, the point is to consider what would need to be done in more general severe economic or financial scenarios. Commenting on a paper recently published by the FSB that shared the experiences of CMGs in reviewing these stress tests, Cumming noted that the message was that the stress tests have not been stressful enough. She also cited the need for firms to develop new business plans as a key element of recovery.

Turning to resolution planning, Cumming said that one of the great hopes is to improve the powers of resolution authorities such that a failure could be coordinated across jurisdictions. She pointed to an idea put forward by the Federal Deposit Insurance Corporation (FDIC) called the "single point of entry" for resolution. The idea, she explained, is to take the holding company into insolvency, put it into a bridge institution, and leave the major subsidiaries as "going concerns" until they can be sold. This single-point-of-entry approach, Cumming pointed out, would have been helpful in the case of Lehman Brothers.

Cumming closed by citing a number of difficult issues on the horizon, chief among which relates to the structure of companies. Given the complexity of many financial institutions, the question is how they can be organized so as to facilitate breaking them up or resolving them more effectively, should the need arise. Cumming also tied this issue to the question of business plans. The structure of a company, she said, is supposed to reflect its business strategy and allow it to be managed effectively. She commented that there has not been enough emphasis on having a business structure that makes the firm easier to manage, and related this to a question that is often raised in cases of financial institution distress; namely, how well management understands what is going on within the firm.

GREENBERGER took on the question of the extraterritorial reach of the Dodd-Frank Act as it relates to derivatives regulation. He discussed a proposed interpretive guidance issued by the Commodity Futures Trading Commission (CFTC) regarding the extent of this reach. He argued that the CFTC conceded too much and that, where US interests are at stake, Dodd-Frank should have an extraterritorial reach that goes beyond that proposed by the CFTC in its guidance.

Greenberger stepped back and looked at the role of derivatives in the 2007–09 financial crisis. A key culprit, among many culprits, Greenberger said, was the use of derivatives as a vehicle for betting on whether subprime mortgages would be paid or not. He argued that if it had not been for the proliferation and layering of these bets, the subprime failure may have been better contained.

He noted that the derivatives market was nontransparent, bilateral, and entirely unregulated, with no capital or collateral requirements, and that Dodd-Frank aimed to reverse some of this. When selling these instruments in large volumes, Dodd-Frank would require that capital reserves be held and that the transaction be collateralized and cleared, and therefore priced. Moreover, Greenberger noted, the Volcker rule in Dodd-Frank places restrictions on proprietary trading, and the lesser-known Lincoln rule prevents US bank holding companies from being an intermediary of certain derivatives transactions.

Greenberger highlighted JPMorgan Chase's "London Whale" trading losses as pertinent to his topic, since it was an incident that occurred in the bank's London branch. The question is whether these trades would have fallen under the territorial reach of Dodd-Frank's derivatives regulations—whether a branch of JPMorgan Chase is subject to Dodd-Frank if it is not in the sovereign United States. Citing the language of the statute (section 722), Greenberger suggested that a branch of a US holding company would qualify, and that the London Whale trades would therefore have had to have been transparent, capitalized, and collateralized as required by Dodd-Frank. He noted that section 722 also gives the CFTC jurisdiction if it is determined that a financial institution is using a foreign affiliate to evade Dodd-Frank. Greenberger explained that this statute was intended to be very broad. He pointed to a Supreme Court ruling that had restricted the reach of a Securities and Exchange Commission rule, with the Court stating that unless Congress explicitly intends extraterritorial reach, there is none. Congress clearly had this ruling in mind, Greenberger argued, and explicitly wrote section 722 so as to extend the reach of Dodd-Frank.

The CFTC's proposed guidance stated that, first, there would be a one-year stay of Dodd-Frank for all US persons in foreign subsidiaries of US bank holding companies and US subsidiaries of foreign banks. Second, the CFTC said, the foreign country would be allowed to regulate if they could demonstrate "substitutive compliance"—which is to say, if their regulatory scheme were similar to the United States'. The problem, Greenberger pointed out, is that the UK, for example, has said that it will not have its regulatory scheme in place until 2019 (and the EU doesn't have a definite date). As a result, there would not be substitutive compliance in most of these countries when the one-year stay runs out.

Greenberger observed that in the case of AIG, the US taxpayer ended up bailing out an institution for something that happened in a financial products subsidiary in the UK. Greenberger also pointed out that a Bloomberg News Freedom of Information Act request revealed that the Federal Reserve had given assistance to many foreign banks. In other words, US taxpayers were not only responsible for the failure of US bank holding companies, but also for keeping foreign financial institutions propped up in the interests of avoiding a depression in the world economy. Dodd-Frank, he said, is intended to protect the US taxpayer from going back to such a system, and this is why extraterritorial reach is necessary. Putting the stay in place as recommended by the CFTC's interpretive guidance, Greenberger concluded, would put US taxpayers at risk during that period.

SESSION 5

Financial Instability in Asia

Michael Pettis, Taun Toay, Frank Veneroso

MODERATOR:

TAUN TOAY

Levy Institute

FRANK VENEROSO

Veneroso Associates, LLC

MICHAEL PETTIS

Peking University and Carnegie Endowment for International Peace

VENEROSO argued that China has reached a turning point in its development and he attempted, with the aid of a Minskyan framework, to illuminate why that turning point is leading to an explosion of indebtedness.

Veneroso cited four noteworthy features of China's economic situation. It has the highest GDP growth for a large economy, the highest ratio of fixed investment to GDP on a sustained basis, the highest total factor productivity, and, over the last three-and-a-half years, he said, the biggest-ever increase in nonfinancial debt as a percentage of GDP. China has had this incredible growth, Veneroso said, because it has followed some 50-year-old lessons of development economics: raise capital per worker, modernize capital per worker, and thereby raise per capita income.

China now has a capital stock that is quite deep relative to its economy, he observed, but it has a very low capital stock per worker. Although some insist that the upward trajectory will simply continue, Veneroso argued that something has gone wrong. Migration from the rural to the industrial sector had a lot to do with Chinese growth, but much of the rural labor force has already migrated. There is a limit to this surplus labor, he said, and it is being depleted. Meanwhile, alongside residential and industrial overinvestment, Veneroso observed that China's nonfinancial debt–to-GDP ratio increased by 60 percentage points in three years. This is unprecedented, he said, and noted that the increase has not been in household or government debt, but rather corporate debt. If surplus labor is depleted and labor force growth collapses, the trend rate of growth will collapse; continuing to build the capital stock will eventually just expand unused capacity. At that point, said Veneroso, profitability collapses and borrowing needs to increase further in order to keep the investment ratio high.

Veneroso pointed to some of Minsky's theoretical insights that can help us understand these dynamics. First, Minsky's financial instability hypothesis, as applied to a single cycle, tells us that when the memory of recessions fades into the past, beliefs adapt in such a way that the cash flows from a boom are expected to prevail; this leads, said Veneroso, to more investment and more investment with debt. The second Minskyan insight, according to Veneroso, is that when we reach a turning point and liquidation begins, the process can get out of hand. At this point, "big government" and the "big central bank" intervene to stabilize income and bail out institutions. Each intervention, however, changes the psychology of economic actors, who expect continued intervention in the future and increase risk-taking behavior in response. In other words, Veneroso summarized, the moral hazard created in this process allows overinvestment and overindebtedness to grow even further than it would in a "purely capitalist economy," as he put it.

Applying this framework to Asia should work, remarked Veneroso, because of the high levels of indebtedness and fixed investment. He argued that almost all of the so-called "Minsky crises" have had nothing to do with the financing of the capital development of the business sector, which is what Minsky was talking about in his financial instability hypothesis. Instead, these crises have mostly been about household indebtednesss and the speculative finance of traded assets. In Asia, however, it has been a matter of business investment and business borrowing, and the reason, Veneroso suggested, is that the Asian economies are guided economies. Eventually, the buildup in debt and the overinvestment will become too great relative to the collapse in the trend rate of growth, leading to a Minsky crisis. This is what happened in Japan and the emerging Asian "Tiger" economies, argued Veneroso, but we may not see the same thing in China, he concluded, because it is a command economy.

According to **PETTIS**, since the argument for the unsustainability of China's growth model has become far more widely accepted, the common question now with respect to China is how it can rebalance its economy. The mechanisms that created rapid growth in China also created the imbalances, said Pettis. Along these lines, he noted three particularly important ones. First, the undervalued exchange is essentially a consumption tax on imports that reduces the real value of household income, with the major beneficiaries being the tradable goods sector. Second, low wage growth relative to productivity growth functions as a tax on workers' wages and a subsidy for employers. Finally, the third "tax"—and, Pettis noted, the most important of the three—is the financial repression tax. Interest rates in China are extremely low, and this is effectively a tax on net savers and a subsidy to net borrowers, including state-owned enterprises, manufacturers, infrastructure investors, and real estate developers. This financial repression tax, he stressed, is the key to understanding the Chinese economy.

Monetary growth in China is very rapid. Pettis pointed out that China accounted for 40–50 percent of total global monetary expansion over the last three to four years. But this introduces a puzzle. Normally, rapid money creation is associated with asset price inflation, potential overinvestment, and consumer price inflation. In China, however, you see the expected impact in asset prices and investment, but not in consumer prices. The solution to this puzzle, Pettis argued, lies in the dynamics of financial repression.

He explained that repression creates a bifurcation of monetary growth that amounts to a transfer of wealth from the depositor to the borrower. There is a different level of monetary growth for net savers (the household sector) than there is for net borrowers. Pettis outlined some of the logical consequences of this model, with the first being a strange relationship between interest rates and savings and consumption. Normally, raising rates would mean that consumption rates decline and savings rates increase. But with the bifurcation in monetary expansion, raising interest rates reduces the effects of financial repression: it reduces the transfer from net savers to net borrowers.

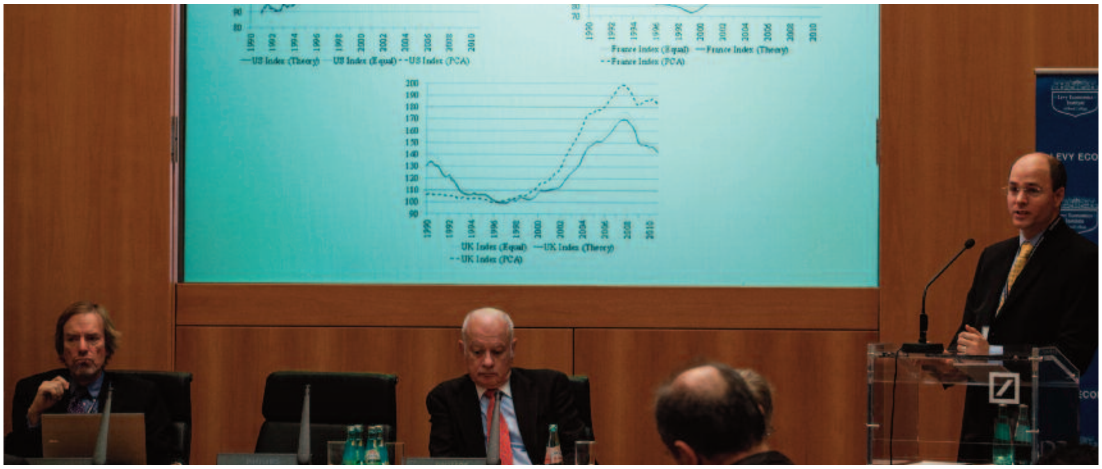
Under these circumstances, raising interest rates in China means that the savings rate should decline and the consumption rate should rise (and he noted that there has been some empirical confirmation of this positive correlation between interest rates and consumption). Pettis also pointed out that if his model is correct, then the central bank does not have to raise rates to combat a rise in inflation. The reason is that rising inflation actually lowers monetary growth on the net savings side and raises monetary growth on the net borrowing side; in other words, he explained, it increases the financial repression tax. As inflation goes up in China, consumption should go down and production should go up, which would ultimately put downward pressure on inflation. This is part of the reason why, Pettis said, inflation never seems to get out of hand in China.

By subsidizing the production side of the economy and penalizing consumption, financial repression forces up the domestic savings rate. This implies, said Pettis, that one of the things that must be done to rebalance China's economy is to reduce the financial repression tax. He noted that this had begun to happen in 2012, with real interest rates effectively rising; as a consequence, he said, we have finally started to see some rebalancing in the Chinese economy. However, if China rebalances it could have even lower growth rates (not exceeding 3 percent, according to Pettis) over the next decade than the pessimists are expecting.

Another implication of financial repression is that, while consumer price inflation is self-correcting (as long as people leave their money in the banking system, Pettis qualified), monetary expansion will accelerate asset price inflation even more than normal. We see this, said Pettis, in the dramatic expansion of debt in China. If China does not change its growth model, he remarked, it is only four or five years away from a debt crisis.

SESSION 6

Financial Reform and Financial Instability



L. Randall Wray, Dimitri B. Papadimitriou, Éric Tymoigne

MODERATOR:

DIMITRI B. PAPADIMITRIOU

Levy Institute

ÉRIC TYMOIGNE

Levy Institute and Lewis and Clark College

L. RANDALL WRAY

Levy Institute and University of Missouri–Kansas City

TYMOIGNE shared the results of his work on developing a measure of financial instability and macroprudential risk using a Minskyan framework. Financial fragility, in this framework, means a high risk of a debt deflation, and he stressed that this does not simply refer to the risk of an initial disturbance such as a default, but also to the risk that a disturbance will be amplified. Financial fragility can increase because of a change in underwriting standards, such as the move away from income-based lending to collateral-based lending. This is what we saw in the housing market, Tymoigne explained, when there was a move toward loans for which repayment would come, not from the borrower's income, but from a rise in home prices. The goal of his project is to measure financial fragility when default rates and foreclosures are low, profitability is high, net worth is rising, and economic growth is strong.

Tymoigne laid out Minsky's typology of "hedge," "speculative," and "Ponzi" finance. In hedge finance, there is an expectation that the borrower's income will be sufficient to cover debt service—in other words, that debt service will be met without the borrower needing to refinance or sell assets. In speculative finance, the borrower's income is sufficient to service the interest component but not the principal component of the debt. Some position-making operation—refinancing or selling assets—is necessary to cover the principal payment. Hence, Tymoigne explained, although the net cash flow generated by position-making operations will be positive in speculative finance (whereas it is expected to be zero in hedge finance), it will be constant or declining relative to liabilities. In Ponzi finance, the borrower's income is not sufficient to pay either principal or interest. There are two forms of Ponzi finance, Tymoigne noted: one in which there is a period of time during the life of the loan in which the borrower can pay neither principal nor interest, and another in which the borrower can *never* pay the principal or interest—essentially, collateral-based lending. In Ponzi finance there is a growing need for position making. As the ratio of Ponzi finance grows, the financial structure becomes more fragile and the risk of debt deflation increases.

Fraud can add to financial fragility, said Tymoigne. It can occur in all three stages, and makes it more difficult to measure financial fragility because it undermines the reliability of available data. Tymoigne also emphasized that these stages do not measure the existence of bubbles. The main difference between the three stages relates to the expected reliance on position-making operations and the type of underwriting (income-based or collateral-based) involved in lending. The empirical implications of this theoretical framework are that, as the economy moves from hedge into Ponzi finance, the debt burden should rise (i.e., the ratio of debt service to income should go up), defensive refinancing and/or asset-based lending should rise, asset prices should rise, and the amount of liquid assets relative to liabilities should decline.

Placing this approach to financial fragility in the context of the housing crisis, Tymoigne demonstrated that, prior to the crisis, the proportion of exotic mortgages in both the prime and nonprime sector (e.g., interest-only mortgages) grew. By 2006, 50 percent of the loans originated in the United States were "low-doc" or "no-doc" mortgages. There was, in other words, a general decline in underwriting in mortgage lending. And this was all happening, Tymoigne pointed out, at a time (i.e., before 2006) when default rates were actually declining.

Tymoigne then laid out the list of variables that were weighted and combined to create his financial fragility indexes for residential housing (three indexes for each country, using three different weighting structures) and discussed the challenges in putting the data together for the United States, the UK, and France. For all three countries, the indexes showed rising financial fragility beginning in 2000 and more dramatic increases starting in the mid-2000s (2004 for the United States).

According to **WRAY**, we need a financial system that can be regulated and supervised effectively, and financial institutions that can be resolved in case of a crisis. Right now, he said, we have neither. The kind of financial system that Minsky envisioned, Wray argued, could deliver both.

Turning to an account of the causes of the 2007–09 global financial crisis (GFC), Wray observed that none of the more recent financial crises have conformed to the financial instability hypothesis Minsky developed in the 1960s, since these recent crises had little to do with investment finance. However, Wray pointed out that, starting in the early 1980s, Minsky changed the way he looked at financial crises. The GFC, Wray argued, was actually a crisis of "money manager capitalism"—a concept Minsky developed, as part of his "stages" approach in the 1980s and '90s, to identify the new phase of capitalism he thought we had entered. The main features of money manager capitalism include: a rising share of profits going to the financial sector; shadow banks capturing a larger and larger share of assets; a layering of debt on debt; and, finally, positions in assets being financed by very short-term borrowing. Overall, there is a rise of managed money (in which category Minsky included pensions) and a decline in commercial banking.

Wray examined the question of whether the GFC was a liquidity crisis or a solvency crisis. The answer matters, he noted, since each crisis demands a different response. We know what to do in a liquidity crisis, said Wray: following Walter Bagehot, we ought to lend without limit against good collateral, and at a penalty rate. Wray suggested that the crisis can best be characterized as primarily a solvency crisis that then created liquidity problems. Through the creation of special facilities, the Federal Reserve eventually gave us an approximation of Bagehot's policy prescription; namely, the Fed lent without limit but without necessarily doing so against good collateral or at a penalty rate. And, Wray noted, the fact that this lending continued for as long as it did indicates that this was not just a liquidity crisis.

He referenced a project under his direction in which the loans and asset purchases of the Fed's special facilities were tallied up according to several measures (including a cumulative measure that amounted to $29 trillion). This project is ultimately focused on questions of democracy, oversight, and accountability with regard to the Federal Reserve, he explained. The crisis response was largely conducted "behind closed doors" by the Fed and the Treasury, Wray observed. By contrast, the bailout of the auto industry was submitted to public debate and approved by Congress.

Wray then turned to a project Minsky began in the 1990s on the question of how to reconstitute the financial system. The overriding view is that finance needs to be reformed so that it supports the capital development of the economy. Wray outlined five main things Minsky said a financial system should provide in order to promote a successful form of capitalism: (1) a safe and sound payments system; (2) short-term loans to households and firms (and possibly to state and local governments); (3) a safe and sound system of housing finance; (4) a range of financial services, including insurance, brokerage, and retirement savings services; and (5) long-term funding of positions in expensive capital assets. Wray noted that, in Minsky's view, there is no reason why we need private financial institutions to provide all of these services, and no reason why all five functions need to be provided by a single institution.

According to Minsky, a safe and sound payments system requires access to the central bank and 100 percent government backing of deposits. If payments services are provided by private banks, these banks are "playing with house money," as Wray put it, and in reality that makes them public-private partnerships that require close supervision and regulation.

For short-term lending, Minsky thought that small banks are better for financing small loans. Small businesses need access to bank finance, while big firms do not necessarily depend on such access for financing, but big banks are not interested in lending to small firms. In order to create incentives for good underwriting, banks need to hold loans to maturity, and we need to move toward relationship banking. In the Minskyan perspective, said Wray, finance is not a scarce resource—good borrowers are.

For housing finance, if there is a social commitment to high levels of homeownership, underwriting becomes less important. Wray shared his view that, for the United States, mutuals were the best form of providing housing finance; that adding intermediaries in the case of housing finance or student loans distracts from the public purpose; and that the stability of long-term mortgages requires that the central bank keep interest rates low.

Regarding the range of financial services, Wray remarked that the only synergy we get when we combine many services in the same "financial megastore" is fraud. One alternative, he suggested, is Minsky's idea of a community development bank in which a small institution (no branching allowed) would provide a range of financial services to the local community.

On the role of pension funds in long-term funding of investment, Wray noted that we have too much money chasing too few good investments. The financial part of the economy, said Wray, is too big relative to the productive part of the economy. Finance needs to be not only redirected so as to serve the productive part of the economy, as Minsky thought, but also downsized. Wray explained Minsky's observation that capital development can be "ill done" in a Smithian way (the wrong investments) and in a Keynesian way (too little investment), and that for both reasons the socialization of investment in some form is unavoidable.

Participants

ROBERT J. BARBERA is chief economist at Mount Lucas Management LP. He has spent the last 30 years as a Wall Street economist, earning a wide institutional following. He is a frequent guest on CNBC and is regularly quoted in *The New York Times* and *The Wall Street Journal*. In 2009, Barbera authored *The Cost of Capitalism: Market Mayhem and Stabilizing Our Economic Future*, which identifies the root causes of the Great Recession of 2008, points out key policy prescriptions for economic recovery, and offers commentary about the shape of capitalism in the decades to come. The *Times* labeled *The Cost of Capitalis*m one of the top six books of 2009 on the issues of finance and crises; it also received favorable reviews in *The Economist* and the Asia Times. Barbera currently is a fellow in the economics department of Johns Hopkins University, where he has been teaching applied macroeconomics for the last eight years. Early in his career, he served as a staff economist for Senator Paul Tsongas and as an economist for the Congressional Budget Office. He also lectured at MIT. From 1982 through 1987, Barbera was chief economist at E. F. Hutton, and in 1988 was appointed chief economist and director of economic research at Lehman Brothers. He left that post in mid-1994, and through mid-1996 was co-chairman of Capital Investment International, a New York–based research boutique. Barbera earned both his BA and his Ph.D. from Johns Hopkins.

Research Associate **JÖRG BIBOW** is a professor of economics at Skidmore College. His research focuses on central banking and financial systems and the effects of monetary policy on economic performance, especially the monetary policies of the Bundesbank and the European Central Bank. This work builds on his earlier research on the monetary thought of John Maynard Keynes. Bibow has lectured on central banking and European integration at the University of Cambridge, University of Hamburg, and Franklin College Switzerland, and was a visiting scholar at the Levy Institute. He received a bachelor's degree with honors in economics from the University of the Witwatersrand, a diplom-volkswirt from the University of Hamburg, and MA and Ph.D. degrees in economics from the University of Cambridge.

BRIAN BLACKSTONE is a reporter for *The Wall Street Journal* and covers the European Central Bank and European economy. Since September 2009, he has closely followed the European debt crisis. Prior to 2009, he covered the Federal Reserve during the Lehman crisis. Before joining the Journal and Dow Jones Newswires, Blackstone served as a consultant to the US Coalition of Service Industries, and also worked as an analyst for the Competitiveness Policy Council. In 2012, he shared an Overseas Press Club award as part of the reporting team for the "European Disunion" series. Blackstone holds a bachelor of arts in economics and French from Washington University in St. Louis.

LEONARDO BURLAMAQUI is a program officer at the Ford Foundation in New York City. The overall goal of his work is to strengthen global financial governance in order to achieve a fairer and more democratic version of globalization, through support for projects on financial governance reform and new regulatory and enforcement mechanisms designed to restructure the financial system toward a more transparent, accountable, and effective system of governance that helps to alleviate poverty and expand social justice worldwide. He previously held academic appointments as professor of economics and business and research director of the law and economics program at Candido Mendes University, and associate professor of political economy at the State University of Rio de Janeiro (on leave), as well as stints at the World Intellectual Property Organization, the World Institute for Development Economics Research (Helsinki), the Institute for Developing Economies (Tokyo), and the Centre for Development and the Environment, University of Oslo. He has served as a member of the board of the International J. A. Schumpeter Society (2002–06) and is currently on the board of The Other Canon Foundation and a contributing editor to the *Post Keynesian Economics Forum.*

Burlamaqui has written and published on innovation and competition, development economics, intellectual property, institutions and economic change, and the political economy of knowledge and finance. He is co-author, with M. da Conceição Tavares and E. Torres, of *Organized Capitalism in Japan* (IPEA/CEPAL, 1995); and co-editor, with A. C. Castro and H.-J. Chang, of *Institutions and the Role of State* (Edward Elgar, 2000). His publications include "Banking and the Financing of Development: A Schumpeterian and Minskyan Perspective" (with J. Kregel), in G. Dymski and S. de Paula, eds., *Re-imagining Growth: Toward a Renewal of the Idea of Development* (Zed Books, 2005); "The Rise and Halt of Economic Development in Brazil, 1945–2004: Industrial Catching–up, Institutional Innovation, and Financial Fragility," in H.-J. Chang, ed., *Institutional Change and Economic Development* (United Nations University Press, 2007); "Innovation, Competition Policies and Intellectual Property—An Evolutionary Perspective and its Policy Implications," in N. Netanel, ed., *The Development Agenda: Global Intellectual Property and Developing Countries* (Oxford University Press, 2009); and "Knowledge Governance: An Analytical Perspective," in L. Burlamaqui, A. C. Castro, and R. Kattel, eds., *Knowledge Governance—Reasserting the Public Interest* (Anthem Press, 2012). Forthcoming publications include "From Intellectual Property to Knowledge Governance" (with M. Cimoli), in J. Stiglitz et al., eds., *Intellectual Property Rights: Legal and Economic Challenges for Development* (Oxford University Press, 2013). Burlamaqui holds a Ph.D. in economics from the Federal University at Rio de Janeiro.

VÍTOR MANUEL RIBEIRO CONSTÂNCIO was appointed vice president of the European Central Bank in June 2010. He was governor of the Banco de Portugal from 1985 to 1986, and again from 2000 to May 2010. He graduated with a degree in economics from the Universidade Técnica de Lisboa. Constâncio is a former executive director of the Banco Português de Investimento (1995–2000) and nonexecutive director of the Electricidade de Portugal, the Portuguese national power utility (1998–2000). From 1989 until June 2010, he was visiting senior professor of economics at the Instituto Superior de Economia e Gestão, culminating a long academic career.

CHRISTINE M. CUMMING is first vice president of the Federal Reserve Bank of New York, the second-ranking officer in the bank, and serves as its chief operating officer as well as an alternate voting member of the Federal Open Market Committee. Prior to being named to her new position, Cumming was executive vice president and director of research, with responsibility for the bank's Research and Statistics Group. She assumed these responsibilities in September 1999. From March 1994 until September 1999, she was senior vice president responsible for the bank analysis and advisory and technical services functions in the Bank Supervision Group. Cumming joined the bank's staff in September 1979 as an economist in the International Research Department, and spent several years leading units in Research that covered the industrial countries and the international financial markets. Later, while part of the bank's International Capital Markets staff, she worked on topics such as the liquidity of banks and securities firms, the international competitiveness of US financial institutions, and the implications of financial innovation. In January 1992, she was appointed vice president and assigned to Domestic Bank Examinations in Bank Supervision. A major focus of Cumming's work in Supervision involved capital markets issues. While in Supervision, she was also active in the work of the Basel Committee, including participating in the development of the market-risk amendment to the Basel Accord and co-chairing the Risk Management Group for two and a half years. She also chaired task forces on supervisory matters for the Joint Forum, made up of banking, securities, and insurance regulators. Cumming holds both a BS and a Ph.D. in economics from the University of Minnesota.

KLAUS GÜNTER DEUTSCH has been director of Deutsche Bank Research, Deutsche Bank AG, since 2000. He also covered government and regulatory affairs in Germany for DB from 2000 to 2011, and in 1999–2000 served on the foreign economic policy, money, and banking desk at the Federal Chancellor's Office. Deutsch's main research areas are German economic policy; European integration; international trade and monetary policy; US economic policy; and climate change policy, in particular, emissions trading. In addition to dozens of research reports, he is the author of *The Politics of Freer Trade in Europe: The Common Commercial Policy of the European Union, 1985–1997* (LIT-Verlag and St. Martin's Press, 1999) and *Weltmarktintegration und wohlfahrtsstaatliche Politik: Die Bundesrepublik Deutschland auf den Weltwirtschaftsgipfeltreffen* (LIT-Verlag, 1992), and co-editor of *Mehr Wachstum für Deutschland* (with N. Walter; Campus, 2004) and *The World Trade Organization Millennium Round: Freer Trade in the Twenty-First Century* (with B. Speyer; Routledge, 2001). He has served as co-chair of the capital markets working group at Trans-Atlantic Business Dialogue and as a member of the German Federation of Industries' and Association of German Banks' working groups on the United States, as well as the German Council on Foreign Relations' study groups on global economic cooperation and on globalization. He is a senior fellow of the American Institute for Contemporary German Studies in Washington, D.C., and a member of the Europäische Bewegung Deutschland. Deutsch received his education in political science and economics from the Free University of Berlin (diplomas in 1990 and 1992; doctorate in 1995) and spent a year as a Fulbright exchange student at George Washington University in 1988–89.

JACK EWING is the European economics correspondent for the *International Herald Tribune*, the international edition of the *New York Times*. Ewing has worked as a business journalist based in Frankfurt since 1995, initially for Bloomberg News and then for more than a decade at *BusinessWeek* magazine, where he was European regional editor. He joined the *Tribune* in 2010. Earlier in his career, Ewing worked at the *Santa Fe Reporter* in New Mexico as a sportswriter and at the *Hartford Courant*, where his beats included courts and Connecticut state politics. He holds a bachelor's degree from Hampshire College and a master's degree in history from Trinity College in Hartford.

RICHARD W. FISHER assumed the office of president and CEO of the Federal Reserve Bank of Dallas on April 4, 2005. In this role, Fisher serves as a member of the Federal Open Market Committee, the Federal Reserve's principal monetary policymaking group. Fisher is former vice chairman of Kissinger McLarty Associates, a strategic advisory firm chaired by former Secretary of State Henry Kissinger. Fisher began his career in 1975 at the private bank of Brown Brothers Harriman & Co., where he specialized in fixed-income and foreign exchange markets. He became assistant to the secretary of the Treasury during the Carter administration, working on issues related to the dollar crisis of 1978–79. He then returned to Brown Brothers to found their Texas operations in Dallas. In 1987, Fisher created Fisher Capital Management and a separate funds-management firm, Fisher Ewing Partners. Fisher Ewing's sole fund, Value Partners, earned a compound rate of return of 24 percent per annum during his period as managing partner. He sold his controlling interests in both firms when he rejoined the government in 1997. From 1997 to 2001, Fisher was deputy US trade representative with the rank of ambassador. He oversaw the implementation of NAFTA and various agreements with Vietnam, Korea, Japan, Chile and Singapore, and was a senior member of the team that negotiated the bilateral accords for China's and Taiwan's accession to the World Trade Organization.

Throughout his career, Fisher has served on numerous for-profit and not-for-profit boards. He has also maintained his academic interests, teaching graduate courses and serving on several university boards. Fisher is a member of Harvard University's Board of Overseers, one of the university's two governing boards. He was a Weatherhead Fellow at Harvard in 2001, is an honorary fellow of Hertford College at Oxford University, and is a fellow of the American Academy of Arts and Sciences. A first-generation American, Fisher is equally fluent in Spanish and English, having spent his formative years in Mexico. He attended the US Naval Academy (1967–69), graduated with honors from Harvard University in economics (1971), read Latin American politics at Oxford (1972–73), and received an MBA from Stanford University (1975). In October 2006, Fisher received the Service to Democracy Award and Dwight D. Eisenhower Medal for Public Service from the American Assembly. In April 2009, he was inducted into the Dallas Business Hall of Fame.

Since July 2001, **MICHAEL GREENBERGER** has been a professor at the University of Maryland School of Law, where he teaches a course titled Futures, Options, and Derivatives. He serves as technical adviser to the Commission of Experts of the President of the UN General Assembly on Reforms of the International Monetary and Financial System. He is a recent member of the International Energy Forum's (IEF) Independent Expert Group, which provided recommendations for reducing energy price volatility to the IEF's 12th Ministerial Meeting in March 2010. Greenberger was a partner for more than 20 years in the Washington, D.C., law firm of Shea & Gardner, where he served as lead litigation counsel before courts of law nationwide, including the US Supreme Court. In 1997, he left private practice to become director of the Division of Trading and Markets at the Commodity Futures Trading Commission (CFTC), where he served under CFTC Chairperson Brooksley Born. He also served on the steering committee of the President's Working Group on Financial Markets, and as a member of the International Organization of Securities Commissions' Hedge Fund Task Force. Greenberger has frequently been asked to testify before congressional committees on issues pertaining to dysfunctions within US financial markets caused by complex and unregulated financial derivatives. He has also appeared both in the media and at academic gatherings to discuss this subject. Greenberger is a Phi Beta Kappa graduate of Lafayette College and the University of Pennsylvania Law School.

ECKHARD HEIN is a professor of economics at the Berlin School of Economics and Law and a member of the Institute for International Political Economy (IPE) Berlin. He studied economics at the University of Bremen and the New School for Social Research, New York, and completed his doctorate at the Free University Berlin. He was a senior lecturer at Carl von Ossietzky University Oldenburg, where he obtained his postdoctoral degree (Habilitation), a senior researcher at the Macroeconomic Policy Institute (IMK) at the Hans Böckler Foundation, and a visiting professor at Vienna University of Economics and Business and the University of Hamburg. Hein is a member of the coordination committee of the Research Network Macroeconomics and Macroeconomic Policies (FMM), a co-organizer of the Berlin Summer Schools of the FMM, and a managing co-editor of *Intervention: European Journal of Economics and Economic Policies*. He has published in the *Cambridge Journal of Economics*, *European Journal of the History of Economic Thought*, *International Review of Applied Economics*, *Journal of Post Keynesian Economics*, *Metroeconomica*, *Structural Change and Economic Dynamics*, and *Review of Political Economy*, among other journals. His latest books are *The Macroeconomics of Finance-dominated Capitalism—and its Crisis* (Edward Elgar, 2012), *A Modern Guide to Keynesian Macroeconomics and Economic Policies* (co-editor; Edward Elgar, 2011), and *The World Economy in Crisis—The Return of Keynesianism?* (co-editor; Metropolis, 2010).

STEFFEN KAMPETER is a member of the German Bundestag. From 2003 to 2009, he chaired the Bundestag Debt Management Committee, and since 2009 has served as Parliamentary State Secretary with the Federal Minister of Finance. From 2005 to 2009, Kampeter served as Budget Committee spokesman (majority leader), and from 1999 to 2005 was vice spokesman of the joint CDU / Christian Social Union parliamentary group on the Budget Committee. He is a past member of the senate of the Fraunhofer Society for the advancement of applied research, Munich (1996–2001); the board of trustees of CAESAR (Centre of Advanced Studies and Research), Bonn (1996–99); and the Advisory Committee of Dual System Germany, an umbrella organization for the recycling of sales packaging (1997–2009). He is a former chair of the specialized committee on the environment of the North Rhine / Westphalia association of the Christian Democratic Union (CDU; 1992–98) and the supervisory board of the Federal Agency for Civic Education (1993–98). Kampeter is a past member of the Advisory Committee of the German Phono Academy, and since 2010 has served on the advisory committees of the Deutsche Bundesstiftung Umwelt, one of Europe's largest environmental foundations, and the Kulturstiftung des Bundes (Federal Foundation for Culture).

Kampeter graduated with a degree in economics from the University of Münster, where he was a research assistant at the Institute of Transport Economics.

JAN KREGEL is a senior scholar at the Levy Economics Institute of Bard College and director of its Monetary Policy and Financial Structure program. He is also a professor of development finance at Tallinn University of Technology and holds the position of Distinguished Research Professor at the University of Missouri–Kansas City. He is co-editor of the *Journal of Post Keynesian Economics* and the *Post Keynesian Economics Forum*. In 2009, Kregel served as Rapporteur of the President of the UN General Assembly's Commission on Reform of the International Financial System. He previously directed the Policy Analysis and Development Branch of the UN Financing for Development Office and was deputy secretary of the UN Committee of Experts on International Cooperation in Tax Matters. He is a former professor of political economy at the Università degli Studi di Bologna and a past professor of international economics at Johns Hopkins University's Paul Nitze School of Advanced International Studies, where he was also associate director of its Bologna Center from 1987 to 1990. Kregel has published extensively, contributing over 200 articles to edited volumes and scholarly journals, including the *Economic Journal, American Economic Review*, *Journal of Economic Literature*, *Journal of Post Keynesian Economics*, *Economie Appliquée*, and *Giornale degli Economisti*. His major works include a series of books on economic theory, among them, *Rate of Profit, Distribution and Growth: Two Views*, 1971; *The Theory of Economic Growth*, 1972; *Theory of Capital*, 1976; and *Origini e sviluppo dei mercati finanziari*, 1996. His most recent book is *Ragnar Nurkse: Trade and Development* (with R. Kattel and E. S. Reinert), 2009.

Kregel studied under Joan Robinson and Nicholas Kaldor at the University of Cambridge, and received his Ph.D. from Rutgers University under the chairmanship of Paul Davidson. He is a life fellow of the Royal Economic Society (UK) and an elected member of the Società Italiana degli Economisti and Patron of the Associação Keynesiana Brasileira. In 2010, he was awarded the prestigious Veblen-Commons Award by the Association for Evolutionary Economics; in 2011, he was elected to the Italian Accademia Nazionale dei Lincei.

DENNIS P. LOCKHART took office March 1, 2007, as the 14th president and chief executive officer of the Federal Reserve Bank of Atlanta. The Bank serves the Sixth Federal Reserve District, which covers Alabama, Florida, and Georgia, and parts of Louisiana, Mississippi, and Tennessee, with branches in Birmingham, Jacksonville, Miami, Nashville, and New Orleans. In his role as president and CEO, Lockhart serves on the Federal Reserve's chief monetary policy body, the Federal Open Market Committee. From 2003 to 2007, Lockhart served on the faculty of Georgetown University's Walsh School of Foreign Service, teaching in the master's program. From 2001 to 2003, he was managing partner at the private-equity firm Zephyr Management, L.P., based in New York, with activity in Africa and Latin America. Prior to joining Zephyr, Lockhart worked for 13 years at Heller Financial, where he served as executive vice president and director of the parent company, and as president of Heller International Group. He held various positions, both domestic and international, with Citicorp/Citibank (now Citigroup) between 1971 and 1988. Lockhart earned a BA in political science and economics from Stanford University in 1968 and an MA in international economics and American foreign policy from the Johns Hopkins University School of Advanced International Studies in 1971.

WOLFGANG MÜNCHAU is associate editor and European economic columnist at the *Financial Times*. Together with his wife, economist Susanne Mundschenk, he runs eurointelligence.com, an Internet service that provides daily comment and analysis of the euro area, targeted at investors, academics, and policymakers. He was one of the founding members of *Financial Times Deutschland*, the German-language business daily, where he served as deputy editor from 1999 until 2001 and as editor-in-chief from 2001 until 2003. Previous appointments include correspondent posts for the *Financial Times* and the *Times of London* in Washington, Brussels, and Frankfurt. Münchau was awarded the Wincott Young Financial Journalist of the Year award in 1989. He holds the degrees of Dipl-Betriebswirt (Reutlingen), Dipl-Mathematiker (Hagen), and MA in International Journalism (City University, London), and is a member of the Euro50 Group as well as the European Council on Foreign Relations. He has published three German-language books. His book *Vorbeben*, on the financial crisis, received the prestigious GetAbstract business book award in 2008. The English version, *The Meltdown Years*, has been published in the United States by McGraw-Hill.

PHILIP D. MURPHY was confirmed by the US Senate as US Ambassador to the Federal Republic of Germany on August 7, 2009. He presented his credentials in Berlin to German President Horst Koehler on September 3, 2009. For over six decades, Germany has been one of the United States' closest allies. During the Cold War, the German-American relationship was defined by a divided Berlin, Germany, and Europe. Today, the United States works side by side with Germany across the range of its global interests. Engaging Germany's youth, none of whom were born during the Cold War, is a major focus of Ambassador Murphy's, whether through town hall meetings, exchange programs, or his regular communication through a variety of social media.

Ambassador Murphy spent 23 years at Goldman Sachs and held a variety of senior positions, including in Frankfurt, New York, and Hong Kong, before becoming a senior director of the firm in 2003, a position he held until his retirement in 2006. After leaving Goldman Sachs, he served from 2006 to 2009 as the national finance chair of the Democratic National Committee. He has also devoted substantial time to civic, community, and philanthropic affairs, focusing his efforts on civil rights, education, progressive and pragmatic public policy, urban development, and a variety of issues related to his adopted home state of New Jersey. Ambassador Murphy has served on the board of the US Soccer Foundation and was a driving force in bringing a professional women's soccer franchise to New Jersey.

Ambassador Murphy graduated from Harvard University in 1979 with an AB in economics and received an MBA in 1983 from The Wharton School of the University of Pennsylvania.

DIMITRI B. PAPADIMITRIOU is president of the Levy Institute, executive vice president and Jerome Levy Professor of Economics at Bard College, and managing director of ECLA of Bard. He has testified on a number of occasions in committee hearings of the US Senate and House of Representatives, was vice-chairman of the Trade Deficit Review Commission of the US Congress (1999–2001), and is a former member of the Competitiveness Policy Council's Subcouncil on Capital Allocation (1993–98). He was a Distinguished Scholar at the Shanghai Academy of Social Sciences in fall 2002. Papadimitriou's research includes financial structure reform, fiscal and monetary policy, community development banking, employment policy, and the distribution of income, wealth, and well-being. He heads the Levy Institute's macroeconomic modeling team studying and simulating the US and world economies. In addition, he has authored and coauthored many articles in academic journals and Levy Institute publications relating to Federal Reserve policy, fiscal policy, financial structure and stability, employment growth, and Social Security reform. Papadimitriou has edited and contributed to 13 books published by Palgrave Macmillan, Edward Elgar and McGraw-Hill, and is a member of the editorial boards of *Challenge*, the *Bulletin of Political Economy*, and the *Journal of Economic Analysis*. He is a graduate of Columbia University and received a Ph.D. in economics from The New School for Social Research.

MICHAEL PETTIS is a professor of finance at the Guanghua School of Peking University, chief strategist at Guosen Securities (Hong Kong), and senior associate at the Carnegie Endowment for International Peace. His work and research focus on monetary policy, trade policy, and the development of the banking and financial markets in China. Prior to his current positions, Pettis spent 15 years as a banker and trader on Wall Street, nine years as an adjunct professor at the Columbia University Business School, and three years as a professor at the School of Economics and Management at Tsinghua University, in Beijing. Before moving to China in 2001, he was managing director and head of the liability management and Latin American capital markets groups at Bear Stearns. He has also run fixed-income trading and capital market teams at CSFB and JPMorgan. During this time, he has advised the Mexican government on the privatization of its banking system, the Macedonian government on its commercial bank debt restructuring, the South Korean government on its 1998 commercial bank debt restructuring, and various Latin American governments on their debt issuance strategies. Pettis has published widely, including for *Foreign Affairs*, Foreign Policy, World Policy Journal, *Far Eastern Economic Review*, *Columbia Journal of World Business*, *Wilson Quarterly*, *Financial Times*, *The Wall StreetJournal*, *Newsweek*, *Caijing*, and several other leading periodicals. He is also the author of several books, including *Is China Vulnerable? The Causes and Consequences of Financial Fragility* (Tsinghua University Press, 2003), *The Volatility Machine: Emerging Economies and the Threat of Financial Collapse* (Oxford University Press, 2001), and *Managing Sub-Investment Grade Sovereign Risk* (Euromoney Press, 1997). He received an MBA in finance and an MIA in development economics from Columbia University.

Research Associate and Policy Fellow **C. J. POLYCHRONIOU** is a political economist / political scientist whose primary expertise is international political economy. His research focuses on globalization, the political economy of the United States, European economic integration, and the deconstruction of neoliberalism's political project. He has taught at universities in Greece and the United States, and was founder and director of the Center for the Study of Globalization in Athens, Greece. He has published five books, including *Marxist Perspective on Imperialism*: *A Theoretical Analysis* (1991), *Perspectives and Issues in*

International Political Economy (ed., 1992), and *Discourse on Globalization and Democracy: Interviews with Leading Thinkers of Our Time* (in Greek; 2002). His articles have appeared in a variety of journals and magazines, including, among others, *New Politics*, *New Political Science*, *Socialism and Democracy*, *Economic and Political Weekly*, *Theseis*, *and Kyklos*. Polychroniou holds a Ph.D. from the University of Delaware.

PETER PRAET joined the European Central Bank (ECB) as member of its executive board in 2011, with responsibility for economics, human resources, budgeting, organization, and TARGET2 securities. Before joining the ECB, he was executive director of the National Bank of Belgium (2000–11), where he was responsible for international cooperation, financial stability, and oversight of financial infrastructures and payments systems. Between 2002 and 2011, he was also a member of the management committee of the Belgian Banking, Finance, and Insurance Commission, where he was responsible for prudential policy for banking and insurance. Praet served as chief of cabinet for the Belgian minister of finance from 1999 to 2000, as chief economist of Générale de Banque and Fortis Bank from from 1988 to 1999, as professor of economics at the Université Libre de Bruxelles from 1980 to 1987, and as economist at the International Monetary Fund from 1978 to 1980. He taught money and banking at the Université Libre de Bruxelles, where he also held the Chair of Business Ethics at the Faculté polytechnique and the Solvay Business School. Praet has served on several high-level international committees, including the Basel Committee on Banking Supervision, the Committee on Payment and Settlement Systems, the Committee on the Global Financial System, and the European Banking Authority. He was first alternate to the board of directors of the Bank for International Settlements and chaired the Banking Supervision Committee of the European System of Central Banks as well as a number of task forces and working groups, including the Working Group on Fixed Income Strategies of Insurance Firms and Pension Funds of the Committee on the Global Financial System and the Research Task Force of the Basel Committee on Banking Supervision. Between 2004 and 2001, Praet was a member of the board of the European think tank BRUEGEL (Brussels European Global Economic Laboratory), and now serves on the International Advisory Council of the International Centre for Financial Regulation. He holds a Ph.D. in economics from the Université Libre de Bruxelles.

ANDREW SMITHERS is a leading expert on financial economics and global asset allocation. His 45 years' experience in international investment includes 25 years at SG Warburg & Co., where, amongst other roles, he ran the investment management division, and 20 years as head of his own London-based investment consultancy firm, Smithers & Co. He is the co-author of three books on international finance: *Valuing Wall Street* (2000), co-written with Stephen Wright, and *Japan's Key Challenges for the 21st Century* (1999), co-written with David Asher; his book *Wall Street Revalued—Imperfect Markets and Inept Central Bankers* was published by John Wiley & Sons, Ltd., in July 2009. He is also the author of "Can We Identify Bubbles and Stabilize the System?" chapter 6 in *The Future of Finance: The LSE Report*, published by The London School of Economics and Political Science in September 2010. Smithers is a trustee of the Daiwa Anglo-Japanese Foundation and a Fellow of CFA (UK). As head of Smithers & Co., he has helped pioneer the application of academic analysis of financial economics to investment management. Best known for its application of Tobin's q ratio to market valuation, Smithers & Co.'s work on valuing employee stock options led directly to changes in the way these are accounted, whilst its work on Japan has revolutionized the role of demographics in investment analysis.

GEORGE STATHAKIS is a professor of political economy at the University of Crete, where he has taught since 1988. He was appointed vice rector of the University in 2011, and was head of the institution's department of economics from 2000 to 2004. Stathakis has conducted research at Harvard University's Center for European Studies; the Center for Byzantine and Modern Greek Studies, Queens College, City University of New York; and the Mediterranean Studies Foundation. He is the author of *The Unfulfilled Modernization* (2008; in Greek) and *The Truman Doctrine and the Marshall Plan: The Story of American Aid in Greece* (2004; in Greek), and co-editor of *Economic Development and Social Change: Historical Roots and Modern Perspectives* (2006), *The Reform of CAP and Rural Development in Southern Europe (Perspectives on Rural Policy and Planning)* (2003), *Essays on Marx* (1996, repr. 2008; in Greek), and *Marx Revisited* (1996; in Greek). Stathakis is a past member of the Council of Economic Advisors, Greek Ministry of the National Economy, and a former president of Avgi S.A, the Athens-based publishing and press agency. He holds an MA and a Ph.D. in economics from the University of Newcastle upon Tyne.

TAUN TOAY is a research analyst working on macroeconomic modeling and gender-aware analysis. He was a Fulbright research grantee to Greece in 2005–06 and an affiliate of the University of Piraeus, where his work examined the socioeconomic impacts of inflation patterns surrounding the adoption of the euro. Toay has also served as a visiting lecturer in the economics department at Bard College, and was co-editor (with R. Berkowitz) of *The Intellectual Origins of the Financial Crisis* (Fordham University, 2012). His other publications include the research project report *Direct Job Creation for Turbulent Times in Greece* (with R. Antonopoulos and D. B. Papadimitriou), prepared for the Observatory of Economics and Social Development, Labour Institute, Greek General Confederation of Labour (2011); "From Unpaid to Paid Care Work: The Macroeconomic Implications of HIV and AIDS on Women's Time-tax Burdens" (with R. Antonopoulos), in *The Fourth Wave: An Assault on Women, Gender, Culture, and HIV/AIDS in the 21st Century* (UNESCO-SSRC, 2009); and "Expensive Living: The Greek Experience under the Euro" (with T. Pelagidis), *Intereconomics: Review of European Economic Policy* (2007). Toay holds an MA in economics from the New School for Social Research.

DIMITRIOS TSOMOCOS is a University Reader in Financial Economics at the Saïd Business School and a Fellow in Management at St. Edmund Hall, University of Oxford. A mathematical economist by trade, his main areas of expertise include banking and regulation, incomplete asset markets, systemic risk, financial instability, and issues of new financial architecture. Tsomocos's research has had a substantial impact on economic policy around the world. In particular, he analyzes issues of contagion, financial fragility, interbank linkages, and the impact of the Basel Accord and financial regulation in the macroeconomy, using a general equilibrium model with incomplete asset markets, money, and endogenous default. He is working toward designing a new paradigm of monetary policy, financial stability analysis, and macroprudential regulation. He co-developed the Goodhart-Tsomocos model of financial fragility in 2003 while working at the Bank of England. The impact has been significant, and more than 10 central banks have calibrated the model, including the Bank of Bulgaria, Bank of Colombia, Bank of England, and Bank of Korea. In 2011, Tsomocos provided testimony to the House of Lords for the Economic and Financial Affairs and International Trade Sub Committee's report "The Future of Economic Governance in the EU." Tsomocos is an economic adviser to one of the main political parties in Greece and regularly provides commentary on the state of the Greek economy to local and international media. He has worked with central banks in England, Bulgaria, Colombia, Greece, Korea, and Norway, among other countries, to implement the Goodhart-Tsomocos model and advise them on issues of financial stability. He also serves as a senior research associate at the Financial Markets Group at the London School of Economics. Prior to joining the Saïd Business School in 2002, Tsomocos was an economist at the Bank of England. He holds a BA, MA, M.Phil., and Ph.D. from Yale University.

ÉRIC TYMOIGNE is assistant professor of economics at Lewis and Clark College and research associate at the Levy Economics Institute of Bard College. He formerly taught at California State University, Fresno. He is a member of the Association for Evolutionary Economics, the Union of Radical Political Economy, and the French Association for the Development of the Keynesian Studies. His areas of teaching and research include macroeconomics, money and banking, and monetary economics. His current research agenda includes the nature, history, and theory of money; the detection of aggregate financial fragility and its implications for central banking; and the theoretical analysis of monetary production economies. Tymoigne has published articles in the *Journal of Post Keynesian Economics*, *Journal of Economic Issues*, and *Challenge*, and has contributed to several edited books. He is the author of *Central Banking, Asset Prices, and Financial Fragility* (2009) and recently co-authored a book with L. Randall Wray titled *The Rise and Fall of Money Manager Capitalism: Minsky's Half Century*, to be published by Routledge in 2013.

ALEXANDROS VARDOULAKIS is an economist at the European Central Bank in the Financial Research Division, seconded from Banque de France, which he joined in 2010. He received his D.Phil. in financial economics from the University of Oxford, Saïd Business School, and also holds a B.Sc. in business administration and an M.Sc. in mathematical finance and quantitative methods from the Athens University of Economics and Business. Vardoulakis's main areas of research are asset pricing under incomplete markets and default; banking and financial stability; monetary theory and policy; and market microstructure. He is currently researching the effects of the Basel III reforms on financial stability and the real economy.

FRANK VENEROSO is the founder, in 1995, of Veneroso Associates, which provides global investment strategy to money managers. In the German market, he acts as a market strategist for the Global Policy Committee of RCM, a global equity management affiliate of the Allianz Group. Veneroso served from 1992 to 1994 as partner-in-charge of global investment policy formulation at Omega, one of the world's largest hedge funds. Prior to that, he provided investment strategy advice to long-only money managers, hedge funds, and the world's largest private equity firm. In 1988, he was commodities adviser to PHIBRO, then the leading global commodity trading firm. In those years, Veneroso also wore a public policy hat, working as a financial sector policy analyst and adviser to several of the major multinational agencies responsible for economic development and, either through these agencies or directly, to the governments of emerging economies. This work encompassed money and banking, financial instability and crisis, privatization, and the development and globalization of emerging securities markets. His clients included the World Bank, International Finance Corporation, US Department of State, and Organization of American States. During this time, he also advised the governments of Bahrain, Bolivia, Brazil, Chile, Columbia, Ecuador, Korea, Mexico, Peru, Portugal, Thailand, Venezuela, and the UAE. Veneroso has published numerous papers on finance and development and financial instability issues. He also published a lengthy book on the gold market in 1998, when gold, then trading at $282 an ounce, was perhaps the most discredited of all asset classes. Applying classic principles of microeconomics to the gold market, he forecasted that gold would reach $1,200 per ounce in 2010. That year, the price of gold reached $1,200 for the first time ever. Veneroso graduated cum laude from Harvard University.

Senior Scholar **L. RANDALL WRAY** is a professor of economics at the University of Missouri–Kansas City. A student of Hyman P. Minsky while at Washington University in St. Louis, Wray has focused on monetary theory and policy, macroeconomics, financial instability, and employment policy. He has published widely in journals and is the author of *Modern Money Theory* (Palgrave 2012), Understanding Modern Money (Edward Elgar, 1998) and *Money and Credit in Capitalist Economies* (Edward Elgar, 1990). He is the editor of *Credit and State Theories of Money* (Edward Elgar, 2004) and co-editor of *Contemporary Post Keynesian Analysis* (Edward Elgar, 2005), *Money, Financial Instability and Stabilization Policy* (Edward Elgar, 2006), and *Keynes for the Twenty-first Century: The Continuing Relevance of The General Theory* (Palgrave Macmillan, 2008). He has served as a visiting professor at the University of Rome, the University of Paris, and UNAM (Mexico City).

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Barbara Ross and Michael Stephens of

the Levy Economics Institute of Bard College.

LEVY ECONOMICS INSTITUTE OF BARD COLLEGE
Blithewood
Annandale-on-Hudson, NY 12504-5000
Telephone: 845-758-7700 or 202-887-8464 (in Washington, D.C.)
Fax: 845-758-1149
E-mail: info@levy.org
Website: www.levy.org