

# Central Banking in the Crisis: Conceptual Convergence and Open Questions on Unconventional Monetary Policy

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. . . here is a case in which it is difficult to know what to say about the recent past. There possibly has been another major change in the interpretation of the theory in roughly the last decade . . . but it is hard to know, for sure.

—Edward Witten

*Lecture at the Institute of Physics, July 1, 2010*

## INTRODUCTION

Thank you. Thank you very much indeed Guillermo for all these very nice and friendly introductions. I have a very vivid memory of all encounters in Washington, in Mexico City, many times, in various positions that you had yourself as Minister and as Governor, and in very difficult circumstances from time to time, and admiring the recovery that you had engineered. So thank you very much indeed for this invitation. And let me also say that it's a great, great pleasure indeed to see so many friends in the room. I appreciate enormously the honor of delivering the lecture in front of so many friends and so many of the best brains that international institutions, policymakers, academia, and central banking can offer.

I would like to reflect with you on central banking in the crisis. Today is a little more than six years after the start of the financial crisis, in August 2007, when the subprime market was gravely disrupted. This disruption triggered major turbulences in the functioning of money markets in all large advanced economies, with abrupt—almost overnight—very substantial increases of the LIBOR-EURIBOR-OIS [overnight index swap] spreads in major markets.

Since then, central bankers have experienced extraordinarily demanding and difficult times, characterized by a succession of shocks that were unseen, in the advanced economies, since World War II. The successive shocks, culminating in the occasion of the bankruptcy of Lehman Brothers five years ago, were potentially even more alarming than those which triggered the 1929 crisis in the industrialized economies. I call the present episode the “advanced economies crisis” (AEC), as we have spoken in the 1980s of the Latin America crisis and in the 1990s of the Asian crisis.

I see many reasons why the financial system of the advanced economies proved as fragile as a house of cards. Without being exhaustive, I would propose five major reasons, which are mutually reinforcing:

- First, the extreme sophistication of financial instruments, the securitization, the generalization of derivatives markets of all kinds, the very rapid growth of shadow banking and of the industry of highly leveraged institutions created progressively a new financial environment that was complex, obscure in many respects, and extremely difficult to decipher.
- Second, there was an extraordinary increase of interconnectedness between all financial and nonfinancial institutions, markets, and economies at national and international levels, fostered by the advances of information technologies and by the globalization phenomenon.<sup>1</sup>
- Third, a generalized excess of leverage, private and public, was progressively built in the advanced.<sup>2</sup> This reason was almost totally neglected by the international community over many years before the crisis, as were forgotten the financial instability hypothesis of Hyman Minsky and the debt-deflation analysis of Irving Fisher.<sup>3</sup> This third reason was strongly underlined in the time of the crisis.<sup>4</sup>

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<sup>1</sup> J. Yellen, “Interconnectedness and Systemic Risk: Lessons from the Financial Crisis and Policy Implications,” speech delivered at the Joint American Economics Association/American Finance Association Luncheon, San Diego, January 2013.

<sup>2</sup> A. Turner, “Credit, Money and Leverage: What Wicksell, Hayek and Fisher Knew and Modern Economics Forgot,” paper prepared for the Stockholm School of Economics Conference “Towards a Sustainable Financial System,” Stockholm, September 12, 2013; C. Kindleberger, *Manias, Panics and Crashes: A History of Financial Crises* (London: Palgrave Macmillan, 1978).

<sup>3</sup> H. Minsky, *Stabilizing an Unstable Economy* (New York: McGraw-Hill, 1986); I. Fisher, “The Debt-Deflation Theory of Great Depressions,” *Econometrica*, Vol. 1, No. 4 (1933), pp. 337–57.

<sup>4</sup> C. Reinhart and K. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton, New Jersey: Princeton University Press, 2009); M. Shirakawa, “Deleveraging and Growth: Is the

- Four, the progressive generalization of a sentiment of excessive tranquility and confidence, both in the public and the private sector. The “great moderation,” marking the period from mid-1980s to mid-2000s, gave the false impression that the low volatility of both output and inflation—in a context of steady growth and low inflation—would last for a considerably longer period of time and was no longer requiring the traditional more prudent and cautious policies. The governance of many private financial institutions was exceptionally loose and the risk management culture dramatically risky. This relative ignorance of longer-term economic and financial risks was largely shared in the public sector, including in central banking, even when the buildup of potential deflationary and inflationary risks (due to public and private sector excessive indebtedness) was particularly accentuated.<sup>5</sup>
- And fifth, closely linked with the previous reason, the large consensus of the international community on the efficiency of markets in almost all circumstances and therefore on the virtues of large deregulation exercises, on the related belief that the financial system could never be far away from a Pareto-optimal single equilibrium and that the possibility of multiple equilibria should be neglected. As a matter of fact, dominant macro models failed to predict the crisis and seemed, during the three quarters following Lehman Brothers, largely incapable of explaining what was happening to the economy in a convincing manner. “In the face of the crisis, we felt abandoned by conventional tools.”<sup>6</sup>

The first two reasons mentioned suggest that the important recent structural changes observed in global finance and in the global economy are presenting important new challenges, both for economic theory and

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Developed World Following Japan’s Long and Winding Road?” lecture delivered at the London School of Economics and Political Science, January 10, 2012.

<sup>5</sup> J. Taylor, “The Financial Crisis and the Policy Responses: An Empirical Analysis of What Went Wrong,” Working Paper No. 14631 (National Bureau of Economic Research, Cambridge, Massachusetts, 2009).

<sup>6</sup> J.-C. Trichet, “Reflections on the Nature of Monetary Policy: Non-standard Measures and Finance Theory,” in M. Jarociński, F. R. Smets, and C. Thimann (eds.), *Approaches to Monetary Policy Revisited: Lessons from the Crisis, Sixth ECB Central Banking Conference, 18–19 November 2010* (Frankfurt: European Central Bank), pp. 12–22.

for policymaking. IT [information technology] advances, globalization, and related ongoing financial and economic creativity and innovation are likely to give birth to new emerging properties of global finance that are far from being fully elucidated. The international community can be forgiven for having missed some of these new emerging properties—including the immediate global transmission of financial shocks—which certainly contributed significantly to the acuteness of the crisis.

The three last reasons are less forgivable. Forgetting Kindleberger as well as Fisher and Minsky, at a time when the debt outstanding was clearly piling up in many constituencies at a global level, was strange. Stating that central banks should neglect an analysis of money, of its components and of its counterparts—as recommended by the mainstream of central banking economists—appears hard to believe, with the benefit of hindsight. Demonstrating an excessive confidence in models that were mathematically oversimplified and ignoring the very existence of tail risks proved mistaken. The crisis was a cruel reminder not only of the “financial instability hypothesis” or of the “debt-deflation” analysis but also of the “Knightian uncertainty,”<sup>7</sup> which refuses to be encapsulated in probability modeling.

Having to cope with these dramatic events occurring in the advanced economies, independent central banks had the lucidity, the rapidity, and the courage to take bold and swift decisions. They were coping with very different economies from the structural standpoint, having different historical and cultural backgrounds and different conceptual references. One could have expected that, under the pressure of their own national or continental idiosyncrasies, the shock of the crisis would have accentuated their differences and given rise to an even more diverse set of central bank policies, conceptual references, and measures in a selfish, inward-looking mode.

As E. Witten said about theoretical physics, “it is difficult to know what to say about the recent past.” It is even truer in the case of central banking, in a period when uncharted theoretical and practical waters are explored. Past collective mistakes recommend the greatest prudence and caution in expressing new observations and views.

But I think we can say that, contrary to what could have been expected and feared, a phenomenon of “practical and conceptual rapprochement” took place between central banks, in the economic and financial turmoil.

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<sup>7</sup> F. Knight, *Risk, Uncertainty and Profit* (Boston: Houghton Mifflin, 1921).

This phenomenon has been spectacular not only immediately after the Lehman Brothers bankruptcy, with the closest central bank cooperation ever, but through a multilateral network of swaps lines which remains a historical prowess.<sup>8</sup> This unseen level of close cooperation has also been symbolically illustrated by the coordinated decrease of interest rates that took place on October 8, 2008.

But the crisis has also started or accelerated a multidimensional process of convergence of key elements of monetary policy thinking and -making. I propose to qualify this phenomenon as a process of “conceptual convergence.” It is far from being achieved, if it ever can or should be. But my own perspective suggests that it is a global feature that should call for great attention both from academia and from policymakers.

After having in the first part of this lecture concentrated on this convergence process, I suggest reflecting, in the second and third parts, on some theoretical and practical issues that are associated with the so-called unconventional monetary policy (UMP) liquidity and quantitative measures and the forward guidance (FWG) generalization, themselves part of the conceptual convergence phenomenon.

### A MULTIDIMENSIONAL CONCEPTUAL CONVERGENCE

Perhaps paradoxically, in a period which has been intensively demanding for all central banks in different economies and different societies, one of the most impressive features of the last 15 years and, more particularly, of the last six years, has been what I would call the “convergence” towards a number of close, if not identical, monetary policy concepts. This has been observed, particularly but not exclusively, amongst the central banks of the advanced economies. The “rapprochement” has been indeed remarkable in six major domains:

- The definition of price stability which is now set up in Europe, in the United States, and in Japan at a level close to 2 percent or at 2 percent.
- The concept of communicating through press conferences, which is now generalized, in particular in the United States, in Europe, and in Japan.

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<sup>8</sup> F. Papadia, “Central Bank Cooperation during the Great Recession,” Bruegel Policy Contribution, Issue 2013/08 (June 2013).

- The concept that banking surveillance is better placed very close to the central bank, if not necessarily in the direct hands of the central bank.
- The idea that it is no more anathema for a central bank to examine seriously the evolution of money, whether base money, monetary aggregates, and the dynamics of their components and counterparts.
- The unconventional monetary policy, consisting of real or potential supply of liquidity at a very large scale, either through banks or through outright purchases, was generalized in the advanced economies.
- Finally, one of the most recent dimensions of conceptual convergence was the recourse to “forward guidance” on future decisions on interest rate.

Let us examine more closely these six dimensions.

### *Price Stability*

As regards the definition of price stability, or the level of inflation target, 15 years ago, only two central banks amongst the four major central banks of the advanced economies were mentioning a precise definition or target: the European Central Bank (ECB) and the Bank of England (BOE). Both were mentioning the 2 percent figure: “less than 2 percent”—clarified as “less than 2 percent, but close to 2 percent” on May 8, 2003—for the ECB and “2 percent” exactly for the BOE. At that time, neither the Federal Reserve Board nor the Bank of Japan were signaling their price stability definition or target. Since the recent statement of Bank of Japan (BOJ), on April 4, 2013, all four are mentioning the 2 percent figure, which became a global benchmark amongst all the large advanced economies.

The BOJ statement reads: “The Bank will achieve the price stability target of 2% . . . at the earliest possible time, with a time horizon of about two years.”

It is important to note that this convergence is recent—2013 for Japan and 2012 for the Fed; the Federal Open Market Committee “Statement on Longer-Run Goals and Policy Strategy” published in January 2012 reads: “The inflation rate over the longer run is primarily determined by monetary policy and hence the Committee has the ability to specify a

longer run goal for inflation. The Committee judges that inflation at the rate of 2% . . . is most consistent over the longer run with the Federal Reserve's statutory mandate."

This convergence does not mean that the concepts of monetary policy are identical. Among the four, some central banks are theoretically remaining or becoming inflation targeters, even if the introduction of medium- and long-term considerations has considerably transformed the initial concept of "pure inflation targeting" (Bank of England).<sup>9</sup> Others are explicitly or implicitly mentioning that they do not have an inflation target but a "definition of price stability" (ECB, to some extent the Fed). The crisis episode, since 2007–08, has driven central banks to pay considerable attention to growth and job creation and to financial stability with, for several, a statutory, or de facto accepted, "dual mandate" (Fed, BOJ), while others would consider long-term price stability a necessary condition for sustainable growth and financial stability (ECB).<sup>10</sup>

But this remarkable convergence, which took place in a relatively short span of time, should not be underestimated. Particularly striking is the fact that all central banks concerned have stressed the importance of solidly anchoring inflation expectations over the medium and long run. It is precisely this major goal of anchoring inflation expectations that has been the main driver for central banks to indicate precise targets, or a precise definition of price stability. The central banks of all major advanced economies, issuing the four major convertible currencies, namely, the four currencies of the present weighted currency basket of the special drawing right (SDR), are all publicly committed to solidly anchoring inflation expectations at 2 percent or close to 2 percent in the medium and long run. They have all confirmed this commitment in recent statements made public in the present very demanding circumstances. *We have now an affirmed global nominal anchor for the first time since the dismantling of the Bretton Woods system.* It would be naïve to say that it is per se an effective global game changer. But it is, in my view, one of the necessary conditions for engineering more stability at the level of the international monetary system. I would not exclude that this convergence played a role in the apparent paradox that the only segment of the financial markets that was not hit until now by major dramatic

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<sup>9</sup> M. King, "Twenty Years of Inflation Targeting," Stamp Lecture, London School of Economics, October 2012.

<sup>10</sup> M. Draghi, opening remarks at the session "Rethinking the Limitations of Monetary Policy," Farewell Conference Honoring Governor Stanley Fischer, The Israel Museum, Jerusalem, June 18, 2013.

disruptions, since the start of this financial crisis, was the exchange markets amongst major convertible currencies.

### *Communication*

As regards the improvement in communication through the generalization of press conferences, the rapprochement took a little more time. But it has also been spectacular, with the first Fed chairman conferences starting in April 2011. It is not surprising that such communication tools generalized amongst major central banks. The absence of immediate real-time explanations, which was the rule in the 1990s, was often triggering several—and sometimes contradictory—interpretations of the decision of the central bank, creating unwelcome market volatility. It also could happen, fortunately rather exceptionally, that the interpretation of the majority of market participants was not in line with the intention of the monetary policy decision makers. From that standpoint, it is not surprising that the need for such press conferences of the president appeared necessary in the case of the ECB: there was a need to ensure clarity and absence of ambiguity in the new central bank communication. This was made more complex because 11 countries, with their different cultures, public opinions, and languages, were part of the euro area since the very beginning. The need for avoiding diverging messages and interpretations was particularly acute in a central bank issuing a currency for many countries. Finally, it appeared that the real-time communication that was compulsory in the euro area since its inception was also found extremely useful—in the very difficult and demanding financial turbulences triggered by the crisis—even in an achieved political federation like the United States or in centralized nations.

### *Banking Surveillance*

The third dimension of conceptual convergence—namely, the need for the central bank to be associated with or in charge of banking surveillance and macroprudentials—is also noteworthy. Fifteen years ago, there was a profound split amongst countries and central banks. The United Kingdom was becoming definitively hostile to the central bank's being involved in banking surveillance. The euro area was split between countries favoring a deep implication of the central bank in banking surveillance and countries that were opposing such a concept: the Netherlands, France, Italy, for example, were of the first persuasion; Germany, Belgium, Finland, of

the second one. In several respects the United States itself looked to be between the two schools.

Today the landscape is profoundly different. The United Kingdom got back to its previous long-standing tradition of giving central responsibilities in banking surveillance to the central bank. The euro area has decided to put its new “single surveillance authority” very close to the European Central Bank. And the United States has reformed banking surveillance in reinforcing the responsibilities of the Federal Reserve System. Today Japan remains the sole exception. I will also stress that all major advanced economies, without exception, consider that their central banks are institutions well placed to play an important role in the domain of the prevention of systemic risks and of macroprudential policy. Two new institutions, on both sides of the Atlantic, bear witness to this major trend:

- The Financial Stability Oversight Council established by Title 1 of the Dodd-Frank Act, signed into law on July 21, 2010, of which the chairman of the Federal Reserve is a voting member. The Federal Reserve Board has an important role to play, to the extent that the primary responsibility of the council is to identify nonbank financial firms that pose a risk and designate them as systemically risky financial institutions. If this is the case, then the Board of Governors of the Fed subjects the institution concerned to heightened prudential oversight.
- The European Systemic Risk Board was set up slightly later, on December 16, 2010. It is chaired by the president of the European Central Bank and is very close to the central bank, to the extent that the ECB is providing the board with analytical, statistical, administrative, and logistical support.

It is obvious that academia had already identified the importance of the concept of systemic risk before the last global crisis. The extremely important literature on the 1929 crisis and its developments bears witness to this awareness.<sup>11</sup> The thesis that the financial sphere was systemically unstable was presented with great accuracy in the 1970s.<sup>12</sup> The functioning

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<sup>11</sup> B. Bernanke, *Essays on the Great Depression* (Princeton: Princeton University Press, 2000).

<sup>12</sup> H. Minsky, “A Theory of Systemic Fragility,” in E. Altman and A. Sametz (eds.), *Financial Crises: Institutions and Markets in a Fragile Environment* (New York: Wiley, 1977).

of markets when information is asymmetrically distributed was studied in great depth in the 1970s and 1980s.<sup>13</sup> A wealth of important work on systemic risk came in the 2000s, before the crisis.<sup>14</sup>

But it remains true that the dramatic unfolding of systemic financial crisis events since 2007–08 drew new attention to the concepts of systemic risk and of macroprudential action. One of the major lessons drawn for the very beginning of the crisis was that, in very highly globalized, integrated, and complex financial systems, microprudential supervision alone can no longer guarantee financial stability. There is therefore an urgent need for macroprudential supervision, aiming at detecting systemic risk and proposing remedial action. The main challenge in systemic risk analysis is to integrate all relevant perspectives on the financial sector to take a holistic view on the system, its dynamics, and its interlinkages.<sup>15</sup>

I think it is remarkable that the financial crisis has not only contributed to creating a large consensus in favor of central banks' being significantly involved in banking surveillance and "microprudential action" but has also helped crystallize an emerging global consensus on the decisive importance of "macroprudential action" where central banks are also called to play a pivotal role.

That being said, many implications of the greater role of central banks in these domains can be discussed. The micro and macro surveillance responsibilities should not compromise the ability of central banks to pursue their price stability mandates. One way of ensuring the integrity of monetary policy is to put the new functions very close to the central bank but not necessarily under the direct responsibility of the governing council, monetary policy council, or open market committee.

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<sup>13</sup> J. E. Stiglitz and A. Weiss, "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, Vol. 71, No. 3 (1981), pp. 393–410.

<sup>14</sup> F. Allen and D. Gale, "Financial Contagion," *Journal of Political Economy*, Vol. 108, No. 1 (2000), pp. 1–33; X. Freixas, B. Parigi, and J.-C. Rocket, "Systemic Risk, Interbank Relations and Liquidity Provision by the Central Bank," *Journal of Money, Credit and Banking*, Vol. 32, No. 3 (2000), pp. 611–38; O. De Bandt and P. Hartmann, "Systemic Risk: A Survey," Working Paper No. 14 (European Central Bank, Frankfurt, 2000).

<sup>15</sup> O. De Bandt, P. Hartmann, and J. Peydro, "Systemic Risk in Banking: An Update," in A. Berger, P. Molyneux, and J. Wilson (eds.), *Oxford Handbook of Banking* (Oxford: Oxford University Press, 2009); J.-C. Trichet, "Systemic Risk," Clare Distinguished Lecture in Economics and Public Policy, Clare College, Cambridge University, 2009; M. Brunnermeier and L. Pedersen, "Market Liquidity and Funding Liquidity," *Review of Financial Studies*, Vol. 22, No. 6 (2009), pp. 2201–38; F. Boissay, F. Collard, and F. Smets, "Booms and Systemic Banking Crises," Working Paper No. 1514 (European Central Bank, Frankfurt, 2013).

*Money and Credit Matter*

Even if it might be still disputed, I see personally a fourth dimension of what I call “conceptual convergence”: the progressive recognition that monitoring money and credit remains important in monetary policy. After years of financial crisis, so evidently triggered by the dynamics of credit to the private and public sectors, namely, the dynamics of counterparts of monetary aggregates, things have changed. The benign neglect of money and finance by the dominant concepts in monetary policy resulted, in the advanced economies, in one of the most dramatic challenges for monetary policy over a century. It is hard to believe, in retrospect, that the models utilized by central banks were indeed almost totally neglecting money and credit. Perhaps even more striking is the fact that those rare central banks that were giving importance—but not exclusivity—to the concept of “monetary analysis” were considered undoubtedly rearguard and obsolete! I have experienced this strange period with all my colleagues in the ECB Governing Council, in particular with Otmar Issing and Jürgen Stark, before the crisis, when the ECB’s monetary policy, with its “two-pillars” framework, was heavily criticized by part of academia.<sup>16</sup>

The observation that in the long run “inflation is always . . . a monetary phenomenon”—a statement which was not necessarily disputed by many economists, provided that “long run” would be transformed into “very long run”—was the main justification for the first interpretation of the monetary pillar of the ECB. At the time of our inception, empirical analysis suggested a good stability of money demand function. We recognized over the years that we could not rely on the kind of stability of money demand that had been observed in the past. We considered nevertheless—rightly so, I trust—that we had to continue to do this monetary analysis. The idea that a lot of hard work had to be done to enhance and enrich the monetary analysis was stressed, particularly the necessity of a deeper understanding of the dynamics of the major counterparts of the monetary aggregates.<sup>17</sup>

So we did not say that the ECB had the best monetary policy concept one could dream of, or that the two-pillars strategy was not deserving

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<sup>16</sup> O. Issing, “A New Paradigm for Monetary Policy?” *International Finance*, Vol. 16, No. 2 (2013), pp. 273–88.

<sup>17</sup> L. Papademos and J. Stark (eds.), *Enhancing Monetary Analysis* (Frankfurt: European Central Bank, 2010).

of permanent, very significant improvements. On the contrary, we mentioned explicitly over the years that the ECB was very prudent and cautious in the interpretation of monetary analysis and that, in any case, we had no mechanistic instrumentation of monetary analysis (as well as of the economic analysis pillar).

But I remember vividly in particular the skepticism I encountered when I explained that the monetary analysis pillar had been important when the ECB refused to decrease interest rates in 2004, when all governments (including Germany, France, and Italy) were asking us to do it. A similar situation occurred at the end of 2005 when international institutions, many observers, and ten governments out of twelve were vocal in advising the central bank not to move up.

We are now in a slightly different universe. It is more largely accepted by academia that there is indeed information contained in money and credit dynamics that is important for monetary policy, even if this information is difficult to extract and decipher.<sup>18</sup> Central banks are still today of quite different theoretical persuasions despite the elements of convergence already mentioned. Some are attached to the third generation of “flexible inflation targeting.” The Fed is applying a dual mandate enriched with explicit quantitative inflation and employment goals. The ECB applies its primary mandate of price stability, with a strategy relying on cross-checking of the economic and monetary analysis. But my understanding is that they all, without exception, would agree that the information extracted from money and credit should not be excluded a priori from their analysis. The interest in having a holistic approach, including analyzing the real economy, money, and finance is no longer denied by the dominant part of academia.

This does not mean that there is a consensus on how to extract the pertinent information from monetary and financial data and how to process this information in order to have the best informed monetary policy decisions. But it is now not really disputed, after the hard lessons learned from the crisis, that monetary dynamics might supply important information on asset price developments.<sup>19</sup> I see also a growing consensus

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<sup>18</sup> A. Orphanides and V. Wieland, “Complexity and Monetary Policy,” *International Journal of Central Banking*, Vol. 9, Suppl. 1 (2013), pp. 167–203.

<sup>19</sup> A. H. Meltzer, “What’s Wrong with the Fed: What Would Restore Independence?” *Business Economics*, Vol. 48, No. 2 (2013), pp. 96–103; L. Alessi and C. Detken, “‘Real Time’ Early Warning Indicators for Costly Asset Price Boom/Bust Cycles: A Role for Global Liquidity,” Working Paper No. 1039 (European Central Bank, Frankfurt, 2009).

on the necessity of a thorough analysis of money and credit in order to facilitate the best contribution possible of the central bank to preserving financial stability: a holistic strategy contributes to protecting monetary policy from becoming in contradiction with the goal of maintaining price stability.<sup>20</sup>

I cannot embark here on a full-fledged discussion of the “leaning against the wind” policy approach, but it seems to me that the information contained in the dynamics of private and public credit are in the longer run very important in terms of private and public financial stability, namely, of potential deflationary and inflationary risks, which are at the heart of monetary policy.<sup>21</sup>

### *Unconventional Monetary Policy Liquidity and Quantitative Measures and Forward Guidance*

In my view, the last two dimensions of conceptual convergence are the generalization of unconventional liquidity/quantitative monetary policy and the adoption of the practice of forward guidance as regards future interest rate policy. In these domains the convergence fostered by the 2007–08 crisis has been particularly impressive. All central banks in the large advanced economies engaged in very large-scale supply of liquidity through outright purchases or through banks five years ago and continue to do so or to promise to do so, if necessary. And since a few months ago, the ECB and BOE have joined the Fed, BOJ, and Bank of Canada to communicate in a forward-guidance mode. The fact that UMP and FWG are practiced by all central banks of the large advanced economies does not mean that they are fully conceptually stabilized. This is the reason why I trust they deserve a more thorough examination.

### **OPEN QUESTIONS AS REGARDS UMP: THE USEFULNESS OF APPLYING A PRINCIPLE OF SEPARATION BETWEEN CONVENTIONAL AND UNCONVENTIONAL MONETARY POLICY**

A rapid inspection of the academic literature suggests that a dominant interpretation of the policies of advanced economies’ central banks is

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<sup>20</sup> O. Issing, “Monetary and Financial Stability: Is There a Trade Off?” paper presented at Bank for International Settlements, Basel, 2003.

<sup>21</sup> M. Brunnermeier and Y. Sannikov, “Redistributive Monetary Policy” [2012 Jackson Hole Symposium], *Proceedings* [Federal Reserve Bank of Kansas City] (2012), pp. 331–84.

that they are essentially utilizing nonconventional instruments to pursue accommodative policies, taking into account that they all are at, or close to, the zero lower bound. In this frequent presentation, conventional interest rate policy, forward guidance as regards future interest rates decisions, and so-called quantitative unconventional monetary policy are all assumed to be designed to push down real medium- and long-term interest rates, even below the zero bound. According to this view, the zero level of short-term interest rates alone would be unable to drive the medium- and long-term real interest rates down to the negative level required by the state of the economy. Naturally, the statement that real medium- and long-term rates should theoretically be very significantly lower can be discussed.<sup>22</sup> Also the technical possibility of driving down real interest rates into the negative territory without limits could be discussed, as I will illustrate later.

But let us first concentrate on the fact that both the interest rates policy—with its nonstandard appendix of FWG—and the UMP liquidity and quantitative measures—as they are often presented—are supposed to aim at the same goal: pushing down real interest rates. This entails necessarily a very important consequence: the two instruments, pursuing the same objective, convey to market participants the wrong message that they are very closely linked. This high level of apparent close linkage comprehends a number of dangerous unintended consequences to which I will come later.

But I will simply first observe that, at the beginning of the crisis, central banks' decisions were suggesting a presentation very different from today's dominant one. The first significant cases of unconventional supply of liquidity were justified by the necessity to counter major disruptions or dislocations of market or segments of market, to cope with risks of sudden stop in the functioning of money and financial markets and to address major difficulties encountered by financial institutions in gaining access to liquidity. These swift and bold decisions were taken when interest rates were not at the zero bound. To take the example of the ECB, which was the first central bank to take action, the first nonstandard measure (supply of liquidity on the basis of full allotment—unlimited—at fixed rate) was decided on August 9, 2007: at the time the policy rates were at 4 percent. The unconventional monetary policy measures of different kinds decided

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<sup>22</sup> R. Rajan, "A Step in the Dark: Unconventional Monetary Policy after the Crisis," Andrew Crockett Memorial Lecture, Bank for International Settlements, Basel, June 23, 2013.

by the ECB were characterized as “enhanced credit support.”<sup>23</sup> In the case of the euro area, they focused primarily on banks, which were and are the main source of credit and were at the heart of the financial crisis, because, in particular, of the liquidity stress in the interbank markets. Three dimensions characterized the ECB UMP measures:

- *Liquidity management measures*: fixed-rate tenders with full allotment; enlargement of eligible collateral; lengthening of the maturities of refinancing operations (LTRO [Longer-Term Refinancing Operation])—first six months, then one year (July 2009), then three years (December 2011); supply of liquidity in foreign currencies (U.S. dollars) via swap lines with the Federal Reserve.
- *Outright purchases of covered bonds* (at a modest volume in comparison with the liquidity measures);
- *Outright purchases of treasuries*, in order to help restore a better transmission mechanism (again at a relatively modest volume in comparison with the liquidity measures).

These measures were considered fully justified by the disruption and dislocation of the money and financial markets and the ensuing dysfunction of the monetary policy transmission channels. They were neither understood nor presented as pursuing conventional monetary policy accommodation by other means at the zero lower bound.

The first nonconventional allocation of liquidity by the Fed was signaled on August 10, 2007: the Federal Open Market Committee (FOMC) indicated that “the Federal Reserve will provide reserves as necessary.” It added that “in current circumstances, depository institutions may experience unusual funding needs because of dislocations in money and credit markets.” At the time the policy rate was 5.25 percent. On December 11, the Term Auction Facility (TAF) was decided upon, together with the swap agreements with a number of central banks. The policy rate at the same time was put at the level of 4.25 percent.

A number of measures were taken during that period by several central banks. The Fed took on two new unconventional liquidity schemes: the Primary Dealer Credit Facility (PDCF) and the Term Securities Lending Facility (TSLF) (March 17, 2008). The next day, the policy interest rate was lowered to 2.25 percent.

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<sup>23</sup> J.-C. Trichet, “The ECB’s Enhanced Credit Support,” Munich, July 13, 2009.

As we see, even before the start of the acute episode of the crisis, a large number of measures were taken to face up to dislocations and disruptions of market. These unconventional measures—full allotment of liquidity at fixed rates, long-term refinancing agreements (LTRO), TAF, PDCF, and TSLF—were taken well before the zero lower bound had been reached.

After Lehman Brothers collapsed, several new unconventional measures were taken by the different central banks. As far as the Fed is concerned, it set up the AMLF [Asset Backed Commercial Paper Money Market Mutual Fund Liquidity Facility], the MMIF [Money Market Investor Funding Facility], the CPFF [Commercial Paper Funding Facility], and the TALF [Term Asset-Backed Securities Loan Facility] from September 19 to November 25, 2008. The policy rate during this period went from 2 percent down to 1 percent until mid-December. The understanding and the presentation at the time was that the Federal Open Market Committee was running an unconventional policy of “credit easing” and not a policy of “quantitative easing.” As the Fed chairman said at the time: “in particular credit spreads are much wider and credit markets more dysfunctional in the U.S. today than was the case during the Japanese experiment with quantitative easing. To stimulate aggregate demand in the current environment, the Federal Reserve must focus its policies on reducing those spreads and improving the functioning of private credit markets more generally.”<sup>24</sup> The liquidity and securities purchases through nonconventional measures taken from August 9, 2007, up to January 2009 were mainly justified by the necessity imposed by the crisis to counter disruption and dislocation of markets, to combat the risk of sudden stops, and to help restore a better functioning of the monetary policy transmission mechanism, not to engineer additional easing once the zero bound had been reached. The difference from quantitative easing was explicitly stressed even after the intended federal funds rate was put at the level of 0 to 0.25 percent (December 2008). In the same speech, in January 2009, the Fed chairman stressed that “in a pure quantitative easing regime the focus of the policy is the quantity of bank reserves, which are the liabilities of the central bank; the composition of loans and securities on the asset side of the central bank’s sheet is incidental.”

It is visible from the explanations given by the chairman and by the members of the Federal Open Market Committee that the qualification

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<sup>24</sup> B. Bernanke, “The Crisis and the Policy Response,” Stamp Lecture, London School of Economics, January 13, 2009.

of credit easing was considered appropriate in 2009 and even in 2010, before the decision taken in November 2010 to reinforce the large-scale asset purchases, which were christened by market participants as “QE2.” The shift of the attention from the asset side of the central bank (credit easing) to the liability side of the central bank (quantitative easing) has been slow and gradual. From August 2007 up to at least November 2010, the increases in the volume of the monetary base, in the amount of reserves and in the size of the balance sheet of the central bank were not considered goals in themselves but a result of the market interventions.

As I will stress later, one of the major advantage of this presentation and understanding of the UMP measures, from the policy standpoint, is that it is fully in line with a handling of the UMP measures independent from the interest rate policy: “depending on the circumstances, declines in reserves may indicate that markets are improving, not that policy is effectively tightening.”<sup>25</sup>

A provisional conclusion can be drawn from this review of the nonstandard measures during the first episodes of the crisis: major central banks had to cope with a dramatic financial crisis. They demonstrated a swift and bold capacity to face up to unprecedented challenges. Through various means they concentrated on the asset sides of their balance sheets—supply of liquidity, outright purchases (credit easing, enhanced credit support). Naturally, at the same time, they were simultaneously increasing the liability side of their balance sheets and increasing very significantly their overall intermediation, substituting massively central bank intermediation for failing private sector intermediation. The consequence of these actions was the very strong increases in depository institutions’ excess reserves.

From that standpoint, a very important decision was taken by the Federal Reserve Board on October 6, 2008, only a few days after the collapse of Lehman Brothers: the decision to start paying interest on depository institutions’ required and excess reserve balances. This decision was designed to preserve the possibility of handling separately the interest rate policy and UMP measures at a moment when unconventional measures of the credit-easing type were generalizing, under the shock of the crisis.

Depending on whether one concentrates on the asset side or on the liability side, the same set of actions can be understood as

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<sup>25</sup> D. Kohn, “Monetary Policy in the Financial Crisis,” speech delivered at the Conference in Honor of Dewey Daane, Nashville, Tennessee, April 18, 2009.

- First, quantitative easing, namely, the pursuit of additional monetary easing at the zero lower bound in order to try to reach a lower level of interest rates (real negative interest rates) along the yield curve and provide the economy as much high-powered money as possible. “It’s very simple. They can buy long-term government securities, and they can keep buying them and providing high-powered money until the high-powered money starts getting the economy in an expansion.”<sup>26</sup>
- Second, credit easing or enhanced credit support, designed to combat dislocation and disruption of markets and re-establish a more correct transmission mechanism. In line with this second understanding, unconventional monetary policy measures can be understood as massive financial intermediation, provided by the central bank at very low cost at a moment when markets are not functioning or are threatening to lose their liquidity and when the private sector financial institutions, savers, and investors are unwilling or unable to supply the appropriate intermediation.

I will call paradigm 1 the quantitative easing (presentation and understanding) and paradigm 2 the credit easing (large-scale intermediation by central banks) interpretation. One might wonder why the interpretation and the presentation of what all central banks in the advanced economies are presently doing is of any importance. Still I think it is, as a matter of fact, relevant to consider what the implications of paradigm 1 and paradigm 2 are.

### *Paradigm 1*

If we are taking decision within the framework of paradigm 1, there will be a high level of mutual influence between the interest rate policy and the unconventional monetary policy measures. More precisely the central bank will be inclined to take decisions according to the following simplified rules:

- First—wait for policy interest rates to be at zero level before embarking on unconventional monetary policy measures.

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<sup>26</sup> M. Friedman, “Canada and Flexible Exchange Rates,” keynote address, Bank of Canada, 2000.

- Second—wait for the exit from unconventional measures before increasing policy interest rates from zero, or close-to-zero, levels.
- Third—to the extent that they are both aiming at the same goal, namely, pushing real interest rates as far down as possible—the interest rates and the UMP should have the same sign as regards their future direction: either accommodation or restriction.

This creates a very high level of mutual dependence between responses on both sides—conventional and unconventional: if interest rates are at zero, the presumption is that there is indeed UMP; if interest rates are positive, the presumption is that there are no such measures.

Symmetrically, if there are UMP measures activated, the presumption is that interest rates are at zero level. If there are no such measures, the presumption will be that nominal short-term interest rates are at a positive level.

Finally, if there are indications that tapering of UMP might start, it might trigger a market sentiment that interest rates might go up in the future, even if it is explicitly stated that this will not be the case. This is what we have recently observed in the market.

In some circumstances, such mutual dependence might be clearly counterproductive, because it could impose stickiness on decisions that might call for a large degree of flexibility and mutual independence between interest rates levels and UMP. Among such circumstances are situations where one needs positive short-term rates to continue anchoring inflation expectations whilst some markets continue to be clearly dysfunctional and are gravely hampering the transmission of monetary policy—it is to address such situations that the Fed decided to start remunerating excess reserves on October 2008—or the reverse situation, where one is aiming at orderly diminishing the volume of UMP to accompany a progressive normalization of market functioning, whilst interest rates should not necessarily be moved up in the foreseeable future.

The main drawback of this additional stickiness of both conventional and nonconventional measures is that the central bank would not be able to take fully into account the dangers associated with too long a period when interest rates are maintained at a zero level as well as the dangers of maintaining large UMP measures for too long.

Without aiming at completeness, let me mention five negative dimensions that might be associated with too long a period of very low interest rates:

- First, the incentive given to all investors and market participants to take higher risks;
- Second, the hampering of the restructuring of the financial sector, essentially because very low rates would mask underlying weaknesses in balance sheets;<sup>27</sup>
- Third, the adverse impact on a number of financial institutions depending heavily on long-term fixed interest rates, including insurance companies and pension funds;
- Fourth, permanent distortion of allocation of capital<sup>28</sup> and possible large unintended redistributive effects;<sup>29</sup>
- Fifth, additional significant vulnerability to the necessary and inevitable exit.<sup>30</sup>

There are also significant negative unintended consequences that would be triggered by unnecessarily long periods of significant UMP measures.

First, financial risk taking might just augment without necessarily triggering new net real investment, but fostering new potential bubbles. This danger is particularly stressed by a number of economists.<sup>31</sup>

Second, by modifying asset prices and creating potentially artificial price signals, UMPs might trigger large investments in sectors that are particularly sensitive to these price signals and are not subject to international competition. This could lead to financing again too many buildings and too few machines, a consequence that is all too recent to forget.<sup>32</sup>

Third, the externalities of large quantitative UMPs have to be considered very closely. The mechanism by which very accommodating liquidity conditions in the advanced economies are feeding large cross-border gross banking flows and fostering stock market appreciation and credit and

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<sup>27</sup> C. Borio, "The Financial Cycle and Macroeconomics: What Have We Learnt?" Working Paper No. 395 (Bank for International Settlements, Basel, 2012).

<sup>28</sup> B. White, "Ultra Easy Monetary Policy and the Law of Unintended Consequences," Working Paper No. 126 (Federal Reserve Bank of Dallas, 2012).

<sup>29</sup> Brunnermeier and Sannikov, "Redistributive Monetary Policy."

<sup>30</sup> H. Hannoun, "Monetary Policy in (the) Crisis: Testing the Limits of Monetary Policy," speech delivered at the 47th South East Asian Central Banks Governor's Conference, Seoul, February 2012.

<sup>31</sup> J. Stein, R. Greenwood, and S. Hanson, "A Gap-Filling Theory of Corporate Debt Maturity Choice," *Journal of Finance*, Vol. 65, No. 3 (2010), pp. 993–1028.

<sup>32</sup> Rajan, "A Step in the Dark."

asset prices booms in the receiving countries has been documented and studied in various configurations.<sup>33</sup>

The impact on exchange rates, by pushing up the currencies of the receiving countries, might also be counterproductive and has been strongly criticized by some emerging countries as “currency wars.” The discussion on this point should not be oversimplified, as noted by Eichengreen.<sup>34</sup>

The fact that most of the advanced economies—if not absolutely all—are pursuing large UMPs might contribute to canceling their cross-border effects within the advanced economies constituency. In that sense the “beggar thy neighbor” component of these policies might be minimal within this particular constituency. But it is not negligible when considering the overall relationship between the advanced economies, as a group, and the emerging economies.<sup>35</sup> Convincing research has also stressed that monetary policies of the advanced economies are the main driver for the global financial cycle as well as for the financial cycle of the emerging economies, whatever their exchange rate regime.<sup>36</sup>

Fourth, what I would call the “graceful exit problem.” It is likely that any exit strategy is all the more difficult to implement if it is engaged after a long period of UMPs. This will be ever more difficult if those policies have been understood and presented, not as transitory in principle, commensurate with a period of abnormal disruptions and dislocations of markets and designed to help restore a better transmission of monetary policy, but as the “normal” pursuit of conventional monetary policy through other means, taking into account the zero lower bound.

## *Paradigm 2*

In this period of continuous financial tensions, paradigm 2 might suggest a better framework for decision making. According to this

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<sup>33</sup> T. Adrian and H. S. Shin, “Procyclical Leverage and Value at Risk,” Staff Report No. 338 (Federal Reserve Bank of New York, 2008, rev. 2013); C. Borio and P. Disyatat, “Global Imbalances and the Financial Crisis: Link or No Link?” Working Paper No. 346 (Bank for International Settlements, Basel, 2011).

<sup>34</sup> B. Eichengreen, “Currency War or International Policy Coordination?” *Journal of Policy Modeling*, Vol. 35, No. 3 (May–June 2013), pp. 425–33.

<sup>35</sup> J. Caruana, “Luncheon Address: Policy Making in an Interconnected World” [Jackson Hole Symposium, 2012], *Proceedings* [Federal Reserve Bank of Kansas City] (2012), pp. 313–24; G. Ortiz, “The Emerging Markets Crisis Is Threatening the Global Recovery,” *Financial Times*, September 1, 2013.

<sup>36</sup> H. Rey, “Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence” [Jackson Hole Symposium, 2013], *Proceedings* [Federal Reserve Bank of Kansas City] (2013).

paradigm, both conventional short-term interest rate policy and UMP measures have to be assessed and decided upon independently. This corresponds to the “separation principle” I have always considered appropriate to apply.<sup>37</sup> Interest rates should be able to move up or down without implied consequences for UMP decisions. Reciprocally, UMP measures could be amplified or tapered without implied consequences for the policy interest rates of the central bank. As expected, paradigm 2 corresponds well to situations where the central bank has to take into account a progressive return to a more normal functioning of financial intermediaries and financial markets, implying a better functioning of the monetary policy transmission channels, without signaling a bias over an increase of interest rates, which would not be justified by the overall economic situation and inflationary threats. This situation is not only a theoretical one as already noted. The reverse situation is also possible. Paradigm 2 would also correspond to circumstances where the central bank might have to counter the start of the destabilization of inflation expectations and the materialization of an inflationary risk whilst, at the same time, the transmission channels of monetary policy are still hampered by the aftermath of the financial crisis—in particular, by persistence of a powerful deleveraging process, absence of functioning of financial arbitrage, and an abnormally high level of market spreads and risk premia, signaling a bad equilibrium in a multiple equilibria situation, and persisting threats of materialization of tail risks and “sudden stop.”

The difficulty of the situation, seen from the decision makers’ as well as the market participants’ standpoint, is that there is a complex blend of paradigm 1 and 2 in concrete circumstances. It is not excluded that a central bank would be voluntarily engaged, on the one hand, in substituting for a failing private financial intermediation—countering, in so doing, the market disruptions and dislocations that are hampering the monetary policy transmission—and, simultaneously, on the other hand, this same central bank would be pursuing a policy of increasing monetary base and banks’ reserves seen as designed to push medium- and long-term real interest rates as low as possible (into negative territory).

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<sup>37</sup> J.-C. Trichet, press conference, European Central Bank, March 3, 2011; J.-C. Trichet, “Unconventional Monetary Policy Measures: Principles—Conditions—Raison d’Être,” *International Journal of Central Banking*, Vol. 9, Suppl. 1 (January 2013), pp. 229–50 [comments prepared as a speech delivered at the International Journal of Central Banking Conference, March 23–24, 2012, Washington, D.C.].

The paradox of the present presentation of their policies by the central banks is that a large majority of them (three out of the four major central banks) claim that they are very largely or exclusively engaged in quantitative easing—or let the market believe that they are so doing—when it is not obvious that they are doing so or even intending to do so in reality, and when they now all have the technical means to disconnect interest rates from the liquidity measures, since the decision of the Fed of October 2008. I do not exclude that this univocal presentation might make more difficult, in certain circumstances, their communication with market participants.

I see four main reasons for giving a significantly much larger importance to UMP following paradigm 2.

First, empirical research suggests that UMPs—to the extent they are aiming at influencing risk premia in the economy as a whole—are more effective when the purchases of securities are concentrated on risky assets (like mortgage-backed securities) and not on extremely safe assets securities like treasuries.<sup>38</sup> At the same time, it appears that the purchase of treasuries seems to produce effects primarily through a “signaling channel” on future interest rates. To sum up, the part of the quantitative measures which is concentrating on markets and securities badly hit by the crisis is effective (paradigm 2). The part of the measures that can be described as the quasi-pure quantitative easing component (purchase of treasuries) seems to operate on the economy not through a direct Keynesian “interest rate channel” but through a direct signaling channel on the likely future decisions on interest rates. These empirical observations are raising two questions. First, if the main channel of transmission for the treasury purchases in the UMP measures is future monetary policy, why not utilize directly other means to signal future monetary policy?<sup>39</sup> Second, in the light of this research, is it justified to give the same qualification—whatever it may be: credit easing, enhanced credit support, quantitative easing, etc.—to highly heterogeneous and different policy tools?

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<sup>38</sup> A. Krishnamurthy and A. Vissing-Jorgensen, “The Effects of Quantitative Easing on Interest Rates: Channels and Implications for Policy,” *Brookings Papers on Economic Activity* (Fall 2011), pp. 215–87; A. Krishnamurthy and A. Vissing-Jorgensen, “The Ins and Outs of LSAPs” [Jackson Hole Symposium, 2013], *Proceedings* [Federal Reserve Bank of Kansas City] (2013).

<sup>39</sup> *Ibid.*; M. Woodford, “Methods of Policy Accommodation at the Interest-Rate Lower Bound” [Jackson Hole Symposium, 2012]; *Proceedings* [Federal Reserve Bank of Kansas City] (2012), pp. 185–288.

Second, a very important dimension of UMP measures is their redistributive effects. Every purchase of tradable securities by the central bank entails consequences not only in terms of market interest rates and better functioning of markets but also in terms of revenues and in terms of relative wealth of the owners of the various financial instruments. In the case of the full allotment of liquidity at fixed rate of the ECB, the channels activated are not the same but—depending on collateral eligibility—the European UMP also has consequences in terms of interest rate and values of the corresponding financial instruments.

Seen from this angle of redistribution of wealth and revenues, UMP appears as a powerful means to rebalance wealth, after the occurrence of a previous shock triggering significant wealth imbalances through, in particular, liquidity and deflationary spirals. It is also remarkable to note that UMP redistributes not only wealth but also risk, namely, contingent future wealth.<sup>40</sup>

This “redistributive channel” is entirely dependent on the asset side of the balance sheet of the central bank: it is the distribution of the relative volumes of purchases of different assets that counts. This powerful channel of monetary policy belongs, from that standpoint, to paradigm 2.

Third, I think we have to reflect more on the reason why the purchases of treasuries appeared appropriate in the aftermath of the crisis despite the paradox that they seem to have a modest effect on the economy as a whole and risk being confused with FWG of future interest rate decisions. Such purchases might have played the role of an insurance policy against any start of materialization of the ultimate tail risk: the challenge to sovereign signatures (not only the weakest European ones) which has been the main characteristic of the third episode of the advanced economies crisis after the first episode of subprime “financial turbulences” and the post-Lehman “grave threat of financial collapse” which characterized the second episode of the crisis. The counterfactual is naturally impossible to figure out. But is it illegitimate to wonder what could have happened, in the past three years, if a number of central banks had not purchased any treasuries, at a moment when investors and savers, losing confidence, were starting to put into question all signatures, including the traditionally unchallengeable risk free? In this perspective, even what might be called the “pure quantitative easing” component in UMP could be interpreted as partially relevant for paradigm 2.

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<sup>40</sup> Brunnermeier and Sannikov, “Redistributive Monetary Policy.”

Fourth, there is another reason why paradigm 2 might not only better reflect the reality of what central banks are really doing and better capture the best framework for communication, but also be theoretically more appropriate in the present circumstances. The dominant interpretation of paradigm 1 in terms of activating aggregate domestic demand is that quantitative easing helps push down real medium- and long-term interest rates as low as possible into negative territory when conventional monetary policy hits the nominal zero lower bound.

It is then important to reflect on whether there are constraints on real interest rates that have to be taken into account in any case. I see two constraints to be stressed.

First, as regards short-term interest rates, the zero, or very close to zero, nominal interest rates of the central bank drives down into the negative the real short-term rates around the level of the short-term inflationary expectations. If  $x$  percent is that level, the short-term real rates will be around  $x$  percent. The best way then to drive the real short-term rates down further would be to elevate the level of inflationary expectations at say  $(x + y)$  percent. Part of academia recommends,<sup>41</sup> or recommended, to go in this direction.<sup>42</sup> It is true that if the inflation expectation was anchored at 4 percent, the short-term real interest rates could be around -4 percent. But the price to be paid would be a big increase in medium, long, and very long nominal interest rates—to incorporate the new inflationary expectations—which would be highly counterproductive. Another consequence would be a significant increase of the inflationary risk premium to take into account the possibility of missing the target of 4 percent and/or changing again the definition of price stability.

These are some of the reasons why the policy-making question on the inflation objective has already been answered. All central banks in the advanced economies have decided to confirm the very solid anchoring of inflation expectations at 2 percent or very close to 2 percent. As I have previously noted, this is even the area where a remarkable recent convergence of major central banks has been observed.

So the first conclusion is that whatever central banks are doing in terms of liquidity measures and large increases of monetary base and bank reserves (and also in terms of FWG), they cannot go lower than around -2 percent in terms of short-term real rates.

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<sup>41</sup> L. Ball, "The Case for 4% Inflation," Johns Hopkins University, April 2013.

<sup>42</sup> O. Blanchard, G. Dell' Ariccia, and P. Mauro, "Rethinking Macroeconomic Policy," Staff Position Note No. 10/03 (International Monetary Fund, Washington, D.C., 2010).

As regards the real long-term rates, it seems extremely difficult to imagine that central banks would be able to convince the market that the economic situation is so dramatic that, over ten years, the real short-term interest rates will remain sufficiently negative for a sufficiently long period of time to produce a negative real long-term ten-year rate. If that were really the case, investors, savers, and market participants would totally lose confidence in the capacity of the authorities and of the private sector to overcome the difficulties of the time: it would be a recipe for continuing catastrophe! This simple remark makes me think that, even in the worst possible medium-term situation, when the likelihood of many years of major difficulties is high, the extreme lower bound for the ten-year risk-free real interest rate is around 0 percent. But this is an extreme lower bound: as soon as the policies pursued by the central bank appear credible, the real rate should go over and above this zero lower real bound, and this should be considered by economic agents and market participants good news and not bad news. It is also interesting to note that this long-term real interest rate lower bound is independent from the level of the goal for inflation.

The pertinence of policies pushing real medium- and long-term rates as far as possible into negative territory, through very large quantitative measures, has been thoroughly discussed by many economists. As already noted, one of the deepest recent discussions puts into question the objective itself.<sup>43</sup> Another way of looking at it is to stress the existence of these two real rate lower “bounds,” short and long term, along the yield curve that, in many cases, show that there are constraining limits to what UMP pure quantitative measures can theoretically attain, particularly as regards real long-term interest rates, whatever level of long-term inflation expectations is observed.

This additional argument in favor of paradigm 2 does not mean, of course, as already noted, that credit easing, or enhanced credit support, designed to help restore a better transmission of monetary policy when markets are dislocated and disrupted has no quantitative element. Every penny of assets purchases means also augmentation of the liabilities of the central bank, increase in the size of its balance sheet, and, all things being equal, increase in commercial banks’ reserves. But it means that there are a lot of solid arguments to stress the asset side of the balance sheet and to give as much authority as possible to the principle of separation according

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<sup>43</sup> Rajan, “A Step in the Dark.”

to which the liquidity quantitative measures taken in the name of UMP are not only potentially technically separated, thanks to the remuneration of reserves, but also conceptually separated, in terms of goal and in terms of instrumentation, from the interest rate measures.<sup>44</sup>

### *UMP Measures in Postcrisis Operational Frameworks*

An important question is whether or not present UMP, or part of UMP, are to be kept in the future “new normal” of monetary policy, when all the consequences of the crisis in the advanced economies will have disappeared. Even when markets function smoothly again and the counterparty risks represented by the financial institutions are back to normal, the avenues explored by the present UMP might still appear appealing in the eyes of the central bank. The direct targeting of interest rates along the various durations of the yield curve, the handling of redistributive monetary policy, the tireless optimization of the collateral eligibility might be considered legitimate part and parcel of new conventional monetary policy in the postcrisis operational framework.

I see all the temptation for central banks to embark on this very significant expansion of the monetary policy tools. But I also see all the risks associated with such a move, which could contribute to blurring the market economy’s functioning in normal times and would deliberately put the central bank in the political field. We can already observe the scrutiny of the British Parliament on the redistribution effects of UMP.<sup>45</sup> This last point is extremely important. By normalizing such activities the central bank might risk its authority, its legitimacy, and, by way of consequence, its independence. The central banks were fully legitimate to embark on UMP to cope with the unfolding of the crisis and to accompany the progressive repair of financial markets and financial institutions. They will not be legitimate in redistributing wealth, UMP-like, in normal times.

I would call for a reconfirmation that UMP measures are transitory and that the exit must be progressively and orderly organized in sync with the progressive return of the financial sector and of the real economy to a normal functioning. This, again, is fully in line with the presentation and understanding of paradigm 2.

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<sup>44</sup> J.-C. Trichet, press conference, European Central Bank, March 3, 2011.

<sup>45</sup> Bank of England, “The Distributional Effects of Asset Purchases,” July 12, 2012.

## FORWARD GUIDANCE

The ECB always made the point that “steady-handedness” should not be confounded with lethargy and incapacity/unwillingness to act.<sup>46</sup>

In turbulent times, the risk to price stability over the medium term might change significantly. It is therefore up to the central bank to ensure that its monetary policy is adjusted swiftly, in order to address the change that occurs in the balance of risks. I always considered that policymakers must be ready to act promptly and decisively when this is required by a significant change in the overall balance of risks. Delay for its own sake is never a good basis for policy decisions.

So choosing whether to change policy rates requires what I called “credible alertness.” A new threat to price stability emerges, it is identified promptly, and policy action follows. That being said, it is also true that conferring persistence on the policy rate is desirable because it helps strengthen transmission of the new policy rate. And if persistence is considered desirable and in line with the reaction function of the central bank, transparency could call for appropriate communication.<sup>47</sup>

### *The Emergence of Forward Guidance*

There comes the emergence of the concept of forward guidance, which consists in communicating in advance the forecasts of the central bank as regards future interest rates. Some central banks have followed this path for a number of years: the Reserve Bank of New Zealand since 1997 and the Norges Bank since 2005 (also—which is not necessarily known—the Bank of Japan in 2001). In the case of the Norges Bank, a confidence interval was given around the short-term interest rate path. This concept of FWG, which I will call FWG of the “first type,” can be interpreted as an application of transparency. The central bank communicates to the public its likely future decisions on short-term interest rates, on the basis of all the information it possesses, applying its reaction function to its own perspectives on the real economy and its own present analysis of future threats to price stability. There is no intention of the central bank to make any commitment in this concept of FWG. The central

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<sup>46</sup> J.-C. Trichet, “Credible Alertness Revisited” [Jackson Hole Symposium, 2009], *Proceedings* [Federal Reserve Bank of Kansas City] (2009), pp. 437–60.

<sup>47</sup> A. Blinder, M. Ehrmann, M. Fratzcher, J. de Haan, and D.-J. Jansen “Central Bank Communication and Monetary Policy,” Working Paper No. 898, (European Central Bank, Frankfurt, 2008).

bank explicitly says that it is free to change its own projections, on the basis of new information, to modify its analysis of the balance of risks, and therefore not to stick to its previous communication, with or without a confidence interval. Still, it is difficult to avoid totally that market participants would consider that there is an element of implicit commitment in this communication.

Totally different is the concept of FWG of the “second type,” which is aiming at influencing deliberately the longer-term rates, by promising investors and market participants a certain path for future interest rates. More particularly, when interest rates are at the zero bound, a number of economists are suggesting that the central bank makes a commitment to maintain a zero interest rate policy for a long period of time, even if, conditions changing, a firming of the monetary policy stance would be recommended.<sup>48</sup> In this FWG, the element of unconditional commitment dominates. The concept was given a witty definition by Paul Krugman: “the central bank needs to credibly promise to be irresponsible.”

Pure unconditional FWG presents the merit of total clarity. The central bank is bound to do what it has promised. The risks taken are twofold if economic conditions change. On the one hand the central bank, sticking to its promise, takes the risk of unanchoring inflation expectations, with all the adverse consequences it entails in terms of credibility of the bank and as regards medium- and long-term interest rate increases. On the other hand, if the central bank does not respect its promise and raise rates, it will be seen by market participants as not meeting its affirmed commitments and therefore not being credible in the future.

Nevertheless, in the view of the supporters of the FWG of the second type, those risks are worth taking because of the extraordinary situation which characterized Japan in the 1990s and 2000s and is characterizing all major advanced economies since the start of the advanced economies crisis.

The starting point before the start of the crisis was that only one among the central banks of the large advanced economies had adopted a kind of “targeted” FWG: the Bank of Japan. On March 19, 2001, BOJ incorporated in its “new procedures for money market operations and monetary easing” the guidance that “the new procedures . . . continue

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<sup>48</sup> P. Krugman, K. Dominguez, and K. Rogoff, “It’s Baaack: Japan’s Slump and the Return of the Liquidity Trap,” *Brookings Papers on Economic Activity*, Vol. 29, No. 2 (1998), pp. 137–206; G. Eggertson and M. Woodford, “The Zero Bound on Interest Rates and Optimal Monetary Policy,” *Brookings Papers on Economic Activity*, Vol. 34, No. 1 (2003), pp. 139–235.

to be in place until the consumer price index . . . registers stably a zero percent or an increase year on year.”<sup>49</sup>

Today all four large advanced economies’ central banks are experiencing FWG. “Experiencing” seems to be the right expression because the concept was not stable over the most recent years.

The evolution of the press releases of the Fed as regards FWG reflects the progressive evolution of the concept applied from 2008.<sup>50</sup>

FWG started in the United States with a first statement of the FOMC in December 2008 according to which “the Committee currently anticipates that economic conditions are likely to warrant exceptionally low levels for the federal funds rate for some time.” Then from “some time” the qualification came to “an extended period” (March 2009). Much more precise time guidance was provided in August 2011, marking the shift toward “date-based FWG”: “at least through mid-2013.” Then the end of the period was moved forward: “late 2014” (in January 2012) and “through mid-2015” (September 2012). At the end of December 2012, a very important change came. It was the shift from a date-based commitment to a “targeted FWG”: “at least as long as the employment rate remains above 6.5%, inflation between one and two years ahead projected to be no more than a half point above the Committee’s 2 percent longer run goal and longer-term inflation expectations continue to be well anchored.”<sup>51</sup> These successive qualifications signal a progressive shift from a relatively vague commitment at the very beginning, to an unconditional, date-based commitment—the period considered being more and more extended—and then back to a conditional commitment precisely defined in terms of unemployment and price stability targets.

The introduction of FWG in Europe is more recent and seems to have been largely fostered by the will of the ECB and BOE to avoid as much as possible that the last increase in U.S. long-term market rates would be transmitted to the European long-term fixed-interest markets.

The BOE introduced a targeted FWG on August 7, 2013, with a promise to maintain rates at very low level until the unemployment rate fell to a threshold of 7 percent. But it mentioned explicitly three conditions also to be met for the commitment to hold. On top of a financial stability condition, two are specifying the price stability constraints: inflation

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<sup>49</sup> Bank of Japan, Communiqué on New Procedures for Money Market Operations and Monetary Easing, March 19, 2001.

<sup>50</sup> O. Issing, “A New Paradigm for Monetary Policy?”

<sup>51</sup> Federal Reserve, Federal Open Market Committee Statement (December 12, 2012).

18 to 24 months ahead should not be over 2.5 percent, and medium-term inflation expectations should remain sufficiently well anchored. The two conditions are the same as those mentioned in the last Fed communication.

The ECB introduced FWG on July 4, 2013. Mentioning the “key ECB interest rates to remain at present or lower levels for an extended period of time,” the ECB is simultaneously communicating stability at a low level as well as a downward bias which reinforces the message. The ECB insists not only that there is no change in its strategy—namely, the pursuit of price stability, in line with its definition—but that its FWG is a “sharp pronouncement to reassert it.”<sup>52</sup> The ECB’s FWG is therefore presented as a conditional forward guidance which clarifies both its assessment of the outlook and its reaction function.

Despite what I would call another remarkable illustration of conceptual convergence, some differences remain between actual FWG practiced by the different central banks: in particular the explicit mentioning of numerical figures related to the unemployment rate might be interpreted as a statement of some central banks to express readiness to accept precise targeted responsibilities in this field.

### *Conditions for Effective FWG*

It is too early to draw definitive conclusion on FWG, particularly because the concept has evolved considerably over time in the Fed practice and that it is extremely recent in Europe.

My own personal starting point was the reference to “credible alertness” concentrating on anchoring inflation expectations and delivering price stability, and therefore excluding ex ante “precommitment” on interest rates. I do not exclude that finally, after having tested all possible concepts of FWG, credible alertness without other precommitments will finally appear as a good solution.

Also, the fact that all central banks in the large advanced economies are converging on FWG is not a reason to think it is necessarily right: experience has unfortunately demonstrated that even dominant quasi-global consensus could be wrong!

But on the basis of theoretical and practical considerations, particularly in an environment when global markets have a tendency to oversimplify

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<sup>52</sup> P. Praet, “Forward Guidance and the ECB,” VoxEU.org (August 2013).

their perception and analysis and to align wrongly the cycles of the different economies, I tend to accept that FWG can be useful, provided it respects four conditions.

First, it should not incorporate an unconditional commitment to take, or not, any decision on future interest rates in the medium term “whatever happens.” It must be always clear that FWG is conditioned, in any case, upon the credible delivery of price stability without materialization of the risk of inflation as well as of the risk of deflation.

Second, to crystallize this first condition, the central bank should mention that it closely monitors the anchoring of inflation expectations, in line with its goal or its definition of price stability. This is what is explicitly mentioned by the Fed and by the BOE as part of FWG. It is also strongly implied by the ECB communication. It is also fully in line with the BOJ present strategy.

Third, FWG might be effective—and therefore useful—only when the central bank observes that there is an obvious significant difference between what the market believes as regards future interest rate moves and what the central bank really expects to do on the basis of all pertinent information in its possession. Such a situation might be observed more frequently when the various economies’ business cycles, and related balance of risks for inflation, are diverging in a global financial system where advanced economies’ medium- and long-term market interest rates are highly correlated. It might be the present situation of the ECB and of the BOE. This condition is very important. If there is no significant difference between market beliefs and the central bank expectations, FWG is either useless, if the central bank communicates on its own expectations, or dangerous, in my view, if the central bank communicates a guidance deliberately biased. In the second case it would risk its own credibility.

Fourth, last but not least, a central bank should embark on FWG only if it is reasonably confident in its own time consistency. If decisions of the monetary policy council are volatile, either because of frequent changes in the composition of the council, or because of the fact that decisions are taken on the basis of very slight majorities and that the position of the council can change in a relatively short span of time, FWG can indeed be quite risky for the authority and credibility of the institution.

My sentiment is that all these conditions are necessary. If one of them is not met, it might be better to stay away from FWG and to prefer the concept of “no precommitment” on future interest rate moves, associated with a reaffirmation of the pursuit of price stability and of anchoring inflation expectations.

## CONCLUSION

The crisis in the advanced economies, starting in 2007–2008—the AEC—has the unique feature, in the post–World War II period, that it is precisely striking the wealthiest, most economically influential, and financially most sophisticated countries in the world. This entails a number of consequences.

The global influence of the present economies in crisis is a multiple of the influence of Latin America of the 1980s, or of the Asian countries of the 1990s, or of any other constituencies of economies in crisis in the previous decades. It was therefore legitimate to handle this present particular crisis in a particularly cautious and prudent way. Taking into account the global reach, and the global risks, associated with the AEC, the bold and swift measures taken by the central banks—as well as by governments—in 2007, 2008, and 2009 were fully justified. A full-blown collapse of the financial system of the advanced economies would have borne an unacceptable cost for the entire global economy, for all societies and people of the world.

At the same time, the considerable influence of the advanced economies gives rise to another danger: it would be the implicit refusal by the countries and societies concerned to adjust, to improve appropriately their economic, fiscal, and financial fundamentals and to put their economies on a healthy sustainable path, as has been done by the emerging economies in the 1980s, 1990s and 2000s. This danger is not only theoretical. A quick inspection of the public debate in the wealthiest countries could rapidly convince the observer that a good part of the debate relies upon the assumption that public authorities should not take into account financial constraints, either domestic or external. In a way, a large part of the public debate seems to ignore or neglect the fact that advanced economies are no longer alone in the present globalized economy. Today's advanced economies should not ignore the externalities of their policy decisions and should now know that they cannot permanently rely upon the external massive financing coming from the emerging economies.

The independent central banks in the large advanced economies have all been engaged for many years in zero interest rate policies and UMP measures. They are envisaging continuing to do so for a more or less further “considerable period of time.” For these central banks the main issue can be summed up in two questions. Firstly, is it correctly understood, by society at large, that these extraordinary policies are justified only if significant efforts are made to get back to sustainable public finances,

to implement courageous and bold structural reforms, and to engineer a resilient financial sector, which are essential preconditions for sustainable growth and jobs? Secondly, are the efforts made by the public authorities and by the private sector proceeding in a convincing way?

The response to the first question seems to me to be hesitant, to say the least. The response to the second question is partially yes, as is the case for a number of fiscal adjustments and as regards some G20 progress in financial reforms.<sup>53</sup> Then, there is a case for alleviating progressively and orderly UMPs to accompany the normalization of the functioning of the financial sector and of the economy as a whole. If the response were to be no, then it should be said, loud and clear, that it is of the essence for the public and the private sector to engage resolutely in these indispensable policies.

In this demanding AEC period, I take it that central banks in the advanced economies have already demonstrated that they are not shy! Their message to public authorities as well as to the private sector on the necessity of putting their house in order was crystal clear. That being said, they are really now, six years after the crisis erupted, at the limit of what they can do.

Boldly and swiftly they have been up to an extraordinary situation from the very beginning of the crisis. Taking very difficult decisions, in full independence, they avoided what would have been the worst financial crisis ever. They did well. Then they have countered with very large UMP measures, during several years, an extremely hectic financial episode characterized by threats of sudden stop and various impairments of monetary transmission mechanism. They were right to do so. But the AEC cannot be a permanent feature of the global economy. And therefore central banks' UMP cannot either.

In this perspective, let me summarize the major observations and guiding principles about monetary policy in present times mentioned in the present lecture:

First, there is an underlying *trend toward a degree of conceptual convergence among the central banks in the large advanced economies*. This phenomenon is observed along many dimensions—conventional and unconventional monetary policy, communication, banking surveillance, macroprudentials, forward guidance. This convergence, particularly impressive as regards the definition of price stability, might be interpreted as a collective response in time of crisis.

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<sup>53</sup> M. Carney, "Progress of Financial Reforms," letter to G20 leaders, Financial Stability Board, Basel, September 2013.

Second, unconventional monetary policy, which has been playing a decisive role in the crisis, should be *transitory and commensurate with the degree of dysfunction of the financial sector*. In a medium- and long-term perspective, it is *justified only if public and private partners are actively correcting their own weaknesses*.

Third, UMP and conventional interest rate policy should be decided upon independently from one another and be fully flexible. This “*principle of separation*” in the handling of interest rates and UMP should be applied and communicated clearly, for monetary policy to regain degrees of liberty which seem to have been partially lost. It is, in particular, necessary to avoid the unintended consequences of too-long periods of large-scale UMP and zero interest rates.

Fourth, *forward guidance should respect certain conditions to be effective* and minimize possible counterproductive consequences: in particular, being conditional on price stability, correcting, where necessary, biased market perceptions, and being given by a highly “time-consistent” central bank.

Our societies, our executive branches, our parliaments, our private sector institutions are all tempted to ask independent central banks to take responsibility for all main economic objectives: price stability, naturally, but also growth and job creation. But fiat currency relies upon the central banks’ credibility and their ultimate responsibility to be independent, to deliver stability and to preserve the people’s trust in their currency over time, without inflation and without deflation.

Confidence in a stable currency is certainly a necessary condition for all the other legitimate goals of society to be attained, and, more than all others, growth and jobs. But these other goals depend also decisively on courageous and bold structural reforms, on sound and sustainable public finances, and on a healthy and resilient private sector respecting fully the values of integrity and risk awareness.

Paul Volcker and Jacques de Larosière reaffirmed recently, using practically the same words, that “monetary policy cannot resolve all problems” and that “any central bank should not be asked to do too much, to undertake responsibilities that it cannot reasonably meet with the appropriately limited powers provided.”<sup>54</sup>

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<sup>54</sup> J. de Larosière, “Monetary Policy Cannot Resolve All Problems,” September 2013, available at [http://www.eurofi.net/wp-content/uploads/2013/09/2013\\_Monetary-policy-by-J-de-Larosiere.pdf](http://www.eurofi.net/wp-content/uploads/2013/09/2013_Monetary-policy-by-J-de-Larosiere.pdf); P. Volcker, “Central Banking at a Crossroad: Remarks by Paul A. Volcker upon Receiving the Economic Club of New York Award for Leadership Excellence, May 29, 2013,” available at [http://econclubnyny.com/events/Transcript\\_VolckerMay2013.pdf](http://econclubnyny.com/events/Transcript_VolckerMay2013.pdf).

If our advanced economies' societies expect their central banks to substitute for the public authorities for their difficulty or failure to act and for the private sector for its difficulties in correcting its weaknesses, not only would they be wrong, but they would risk paving the way for the next acute episode of the present crisis.

I thank you very much for your attention.

(Applause.)