**Central Banks’ Communication in the Post-crisis Period**

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Abstract

# The global economic crisis has proved that there is a huge space for improvement in the central banking practice. One of the main challenges of the crisis is an effective formulation and management of the monetary policy expectations. Without effective management of expectations and creating an adequate pace for rational decision-making, it is impossible to reach objectives of the Central Banks. Research is dedicated to effective management of expectations on monetary and financial stability policies by central banks through building effective communication with the public.

**Keywords**: monetary policy, central bank communication, post crisis challenges

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*Ability of expression:*

*one of the greatest boons to mankind.*

**I. INTRODUCTION**

The recent global economic crisis has proved that expectation management framework by central banks has not been fairly built, even in developed countries. The ineffective communication was one of the key factors in the deepening of the crisis. There is no doubt about transparency of the public relations of the Fed, ECB, BoJ and other developed countries’ central banks. However, these banks have demonstrated inefficiency in skillful elaboration of the adequate monetary and financial stability expectations, despite application of the latest achievements of the public relations and information technologies during the global economic crisis. Building close relations with the public, increase of transparency should not be a final target of the central bank communication. Logically, there is a huge necessity in the formulation of the new vision on the central banks’ communication strategies. I argue that it is a time to think about the institutionalization of the central bank communication. We have to correctly define the main goals, strategies and tactics and by this way to build a new communication framework to manage expectations by the central banks.

1. **MONETARY POLICY in the POST-CRISIS PERIOD**

**Increasing role of the central banking**

Rules in the central banking are changing very rapidly. The recent global crisis proved that the scale of mistakes in the monetary (also financial stability) policy is capable to paralyze the entire economy. Historically, the fiscal policy dominance as the major driver of the economy makes concession to the monetary policy. The effects on the private demand, as the main sustainable source of the economic development, the monetary policy actions gain a clear priority over the fiscal policy. However, at the same time the global economic crisis surfaced fundamental weakness of the financial framework, where monetary policy is a common variable. Some scholars ponder that the crisis stemmed from expansionary monetary policy of the Federal Reserve after 2001 (L. Svensson, 2010). The scale of results and the post-crisis challenges highlight important growing role of the monetary policy. After the global crisis, even the fiscal policy guidelines are formed considering effects of the failures occurred because of the inefficient monetary policy. In a response to the crisis, the government budgets have provided substantial support for the aggregate demand. In the process, fiscal balances deteriorated, government liabilities expanded, and risks of the future losses escalated (IMF, 2010). The public debt in the advanced economies is projected to rise by about 35 percentage points on average, to about 110 percent of GDP in 2014 (D. Strauss-Kahn, 2010)

The pre-crisis situation around the monetary policy is another proof that the monetary policy framework is inadequate to address its new growing crucial role. Certainly, we cannot claim that all distortions during the crisis are generated from the monetary policy. However, it is true that there are a number of challenges and lessons from the crisis and the significant part of them are related to the monetary policy.

**III. POST CRISIS CHALLENGES AND THE MONETARY POLICY**

**The challenges on the monetary policy, new design of the monetary policy**

It is a fact that the monetary policy framework should be improved relying on the main post-crisis challenges and it is possible that in a short period of time we will witness new, and modernized framework of the monetary policy. At the present time, all discussions on improvement of the monetary policy framework are around the main post-crisis challenges. As is noticed by Mr. S.G. Cecchetti:

*“We are in the early phase of a seismic shift in central banking. The tectonic forces include the massive pressures created by war debts, which could not be managed by the international adjustment mechanism intrinsic to the existing monetary regime of the time. We are again seeing signs that the international adjustment mechanism intrinsic to the current monetary regime is being put under strain by cross-country payment imbalances. And again, we are seeing signs of crippling debt burdens” (BIS 2011).*

Since, these discussions are not the key subject of this research, I will just superficially discuss the problem.

One of the primary post-crisis challenges is about the targets of the monetary policy. After bursting of the U.S. sub-prime mortgage bubble followed by the global financial and subsequent economic crisis, these discussions have gradually become “hot topic”. Some academic circles claim that the monetary policy should contain of two pillars – price and financial stability targets. Moreover, at the same time, according to this framework, central banks should target asset prices in their conduct of the monetary policy. While other academic circles claim that central banks should monitor dynamics of asset prices rather than target them. They claim that assigning twofold objectives to the central banks decreases probability of achieving them simultaneously. All similar discussions are very important with no final results so far.

On the other hand, the coordination between the monetary and financial stability policies, identification of the new targets, such as a leverage rate, measurement of systemic risks, high attention to the lender of last resort function of central banks are the key crisis-learned-lessons for the monetary policy. (Dominique Strauss-Kahn, 2010)

**Rethinking about the monetary policy communication**

I think that one of the main challenges for the post-crisis period is importance of rethinking on effective management of expectations. The central banks’ primary tool for the expectations management is their communication. Unfortunately, still the monetary policy communication is not a common issue of discussions related to the post-crisis challenges. Inadequate and incomplete institutional framework of communication was one of the cardinal causes of the crisis deepening. During the crisis central banks failed to effectively manage the expectations. As a result a range of irrational decisions made by the public accelerated the crisis.

All these facts prove that communication of the policy is as important as the content of the policy, and it is often more challenging. The recent crisis reinforced this growing faith in the communication as central bankers realized, much to their relief that updating the public about the policy strategies actually reduced rather than exacerbated anxiety and panic (D. Subbarao, 2011).

Indeed, from the technical point of view the monetary policy communication is dependent on the central banking and the primal directions of communication are formed under the monetary policy guidelines. However, it does not mean that discussions regarding communication should follow foundation of the new framework for central banking. It has already become true that, sometimes, communication, instead of being a vehicle for policy, can be the policy itself (D. Subbarao, 2011). Though, I claim that, it is possible to analyze the main post-crisis challenges on the communication and start institutionalization of the communication framework.

1. **MONETARY POLICY COMMUNICATION IN PRE- AND POST-CRISIS PERIOD**

**Communication era since 1990s**

Explicitly, during the past two decades, communication and transparency became one of the most attractive issues in the central banking. First of all, this has been driven by gathering momentum of democratic society in the world. Certainly, management of billions of national resources, responsibility about the main economic indicators induce the central banks to be more transparent and have a good communication with the public. Central bankers are public servants and their decisions affect the life of every citizen. However, central banks have to be accountable, transparent in a democratic society. *(Bernanke, 2007)*

From another point of view, with the development of the behavioral economics, it has been realized that without transparent and effective communication it is impossible to reach the final targets of the central banks. From the beginning of 1990s, the central banks retracted from Lucas’ argument that the monetary policy affected real variables, like growth, only if the policy changes were unanticipated. The beginning of the push towards rules over discretion and greater central bank transparency started with actualization of ideas of two economists, Finn Kydland and Ed Prescott, who argued that fully transparent rules rather than discretionary policy changes were more efficient and credible (D. Subbarao, 2011).

During these years, there were committed huge efforts to realizate more transparent and accountable central banking. Since mid 1990s, there has been a growing trend on building more transparent and credible central banking activity. Indeed, we have left a long way behind. The International Monetary Fund presented “Code of Good Practices on Transparency in Monetary and Financial Policies: Declaration of Principles” on September 1999 and central banks are becoming more transparent with every passing day. (IMF, 1999) There is a lot of research on the transparency, credibility, and central bank communication subjects.

Even, it is completely clear that currently central banks are more transparent and accountable than governments in most countries. A lot of central banks have a comprehensive system reporting to the public on results of their activities and visions of the future state of economy using the latest achievements of the public relation techniques and information technologies. Thanks to accomplished works on building communication with the public, speeches of central bank officials, and evaluations of the economic standing are in the focus of the public.

**Principle questions of the communication**

The present framework of the central banking communication is designed through responding to the core questions – “what to say?”, “how to say?”, and “when to say?” (S.Pianalto, 2005). Indeed, these questions characterize the present time communication framework. With central banking permanently improving answers to these questions change periodically. However, I think the vital question for the central bank communication should be “why to say?”, and all other questions should have a sub-question nature to be answered in the later stages.

Generally, central banks communicate about four broad classes of issues (M.Woodford, 2005):

* Economic conditions;
* Policy decisions;
* Strategy that guides policy decisions;
* Outlook for the future policy.

During these two decades huge amount of work has been done to improve the central bank communication framework. Whereas pace of communication development was not synchronized to developments in the central banking. Therefore, there are some important misalignments in communication frameworks and it will be suitable to evaluate the pre-crisis communication in light of the misalignments. According to the below mentioned shortcomings in central bank communication strategies, the direction of implementation of those four broad classes of issues is fuelled by some ineffective or problematic results.

**The main misalignments of the pre-crisis period communication**

Despite two decades of existence, the major problem in the central bank communication framework is its uninstitualization. Still the communication frameworks do not seem to be an integral part of the central banking, but the very framework is a part of the public relations. Therefore, successful effects of the central bank communications in most cases depend on responsible persons’ (as a governor, speaker, and board members) self-communication abilities. Contrary, it is important to reduce individuals’ roles in communication and increase the institutional framework effects.

In real life, in many cases central banks do not possess elaborated strategies of communication with the public. Even though, the central banks do react to the daily issues occurring on routine basis, this approach cannot be considered as a solid communication strategy. From another point of view, some analytics claim that uninstitualization provides more opportunities for a more flexible type of operations and it is favorable mode to achieve effective results by using different ways. The solid communication strategy of central banks can be useful to gather information, analyze trends of public expectations and develop adequate response. As an ultimate output of the institutionalized communication, central banks can achieve better grounds for the efficient monetary policy.

Another misalignment generates from the central banking framework itself. Under central bank’s independence excuse, coordination with the fiscal authorities is not at a reliable level. If to accept that these two institutions are the paramount responsible parts for the management of economy, then they have to build an effective coordinating framework, which will not impair the central banks’ independence. Logically, because of the lack in the coordination with fiscal authorities, central banks’ communications seems to be incomplete.

The current communication seems to be more focused on carrying out a moderate PR of the central banks rather than effectively guiding adequate public expectations. Usually, central banks pump huge amount of information to the public without the guiding task of the adequate expectations’ management. Informing the public is very important, but every step done by the communication should address concrete objective.

Moreover, the problem is related to the staff of the communication departments at the central banks. In most cases, the staff of communication departments is comprised of PR specialists with some economic competences. But, I think that the staff should mainly consist of economists with PR abilities. Heads of communication departments do not have effective competence in the decision making system, and frequently, they are not members of a decision making team of central banks.

**Crisis period: Hard exam for the central bank communication**

Actually, without any exaggeration, the latest global economic crisis was a hard exam for the central banking and especially for the monetary policy communication. The crisis highlighted the major problems of the pre-crisis consensuses and essential challenges of the post-crisis central banking activity. The current state or in other words “state of uncertainties” in the central bank communication describes the real face of the framework. Because, public has a lot of questions regarding the current and future state of economy, which central banks are not able to respond adequately. The state of uncertainties, answers and speeches using common words increase public worries and create distortions in the rational decision-making.

It is a fact that during the crisis credibility of the central banks sharply deteriorated. Central Bank independence, one of the main origins of credibility, was also deteriorated during the crisis. Today, in the post-crisis period, central bank independence, even operational independence seems to be questionable by some scholars*. Financial Times* writes:

 *“If Angela Merkel, Germany’s chancellor, is right that the ECB will not increase the money supply, then it will have to sell other governments’ securities to offset the purchases of Greek debt. This will further increase the tax burden for citizens of those other countries. Of course, Ms Merkel’s comment about how the ECB should set the money supply is another indicator of reduced independence” (FT, 2011).*

During the crisis, the monetary policy was highly politicized and the public could easily observe this politicized environment. The politicization in the monetary policy is opposite to the credibility. The credibility is too hard to achieve, but easy to lose. At the same time, regaining the lost credibility back is even harder in many cases. Therefore, the central banks have to introduce their new, a healthier framework of the monetary and financial stability to the public to get back their pre-crisis high level credibility.

During the crisis the central banks’ balance sheets expanded rapidly to the huge amounts under supporting programs. Some analytics evaluate central banks’ bailout programs as an effective ability of bearing the burden of the economy on its own shoulders in case of emergency. However, other analytics assess the bubbled balance sheets as temporary solutions instead of sustainable settlements. Moreover, these bubbled balance sheets undermine macroeconomic stability, subsequently making the economy pregnant for more scaled up crisis. There are not still definite plans about the exit strategies. This uncertain situation directs the public views about the future economic conditions to puzzle. This situation is another sign of central banks’ state of the internal confusion. Under shadow of huge government debt the public is still under uncertain future of the economic situation. This situation of the governments is a potential threat on the credibility of the governments and central banks.

Indeed, if fiscal sector faces huge problems as a public debt, oil price dynamics follow illogical trends, with a huge army of unemployed people, forecasting and communicating the future economic conditions seems impossible. Under these conditions making the rational decisions by the public seems to be very hard. In this strained situation one of the ways to resolve the uncertainty is rethinking about the current communication strategies and trying to improve the framework relying on the main post-crisis challenges. We have to revise our views on the central bank communication.

**V. NEW APPROACH TO COMMUNICATION**

**High beam headlights of the Central Banking**

As time goes on, the importance of the central bank communication is increasing and supporters of paying special attention on this matter are growing rapidly in the central banking community. Furthermore, behavioral economics has contributed behavioral theories on the expectations formation. There is a lot ongoing theoretical work on the expectation formation that should be very relevant for the monetary policy (L.Svensson, 2008). Since the monetary policy implications depend absolutely on communication effects on the formulation and management of the rational expectations. Without forming and managing the rational expectations as an intermediate target, it is impossible to achieve the final targets of the monetary policy. In the opposite direction, there may be formed irrational expectations, which will lead to different unreliable effects on the aggregate demand and supply.

Bernanke (2004), in his speech entitled “The Logic of Monetary Policy” gives a very interesting analogy about the economy and monetary policy. According to Bernanke’s metaphor, the U.S. economy is to be an automobile, the FOMC to be the driver and monetary policy actions to be taps on the accelerator or brake. According to this analogy, when the economy is running too slowly, the FOMC increases pressure on the accelerator by lowering its target for the federal funds rate, thereby stimulating aggregate spending and the economic activity. When the economy is running too quickly (say, inflation appears likely to rise), the FOMC switches to the brake by raising its funds rate target, thereby depressing spending and cooling the economy.

Defining the place of communication in the above mentioned Bernanke’s analogy is an interesting question to pose. I think that communication in this analogy can be headlights of “car”. Maybe you have a luxurious car and you are a very professional driver. But if there are some problems with your car headlights, driving is too dangerous for you, for other drivers and pedestrians. Using high beam headlights, a central bank should lighten its own way and warn other persons about the way they move to. Probably, the central bank has a very professional staff with high competent management, at the same time they have built adequate analyzing and forecasting models for successful decision-making. But without effective communication, it is impossible to reach targets. Indeed, the central bank communication should play high beam function for safe and effective driving of the economy.

**The main and interim objectives of communication**

Notwithstanding two decades, the primal objective of communication has not been clearly determined. All of us are familiar with two main reasons, which determine the necessity of communication by the central banks. The first reason generates form the democratic essence of society, where public institutions’ accountability and transparency is the key element. According to Bernanke, the secondary reason generates from the evidences which indicate that central bank transparency increases effectiveness of the monetary policy and enhances the economic and financial performance in several ways (Bernanke, 2007).

There should be some additional comments to the second reason, mentioned by Bernanke. Probably, at early 1990s, the central banks’ transparency was one of the stimulators, which ***increased*** effectiveness of the monetary policy. However, at the present time, the effectiveness of the relevant monetary and financial stability policy decisions positively correlates with the effective communication. Currently, communication is a wider concept than transparency or accountability.

The central bank communication should have the primary and interim objectives. The main objective of the central bank communication should be to formulate adequate expectations of the public with respect to the decisions taken by policymakers. Especially, it is important to underline the “formulation of adequate expectations” objective. Maintaining highly transparent central bank through pumping huge amount of information to the public may shape expectations in the multiple directions and this situation may deteriorate the rational decision-making process by the public. To avoid deterioration the central bank communication should have a concrete objective –form adequate expectations of the public in relation to the decisions taken by the policymakers.

The intermediate objectives of the communication are transparency, accountability and credibility. In this range of the objectives, the credibility is the most crucial. Without high credibility of the central bank, formulation of adequate public expectations is impossible. To maintain high credibility of the central bank, increasing transparency to achieve higher accountability is of vital importance. The public confidence in a highly transparent and accountable bank should be enhanced and in this case probability of the formulation of adequate expectations is also increasing. Another key factor in the maintaining high credibility of the central bank is to preserve operational independence status. Logically, by maintaining transparency and accountability, the public starts to believe in the credible central bank which is in charge of resolving any economic problems and capable to stimulate rational decision-making.

**Figure 1. Central Bank communication objectives**

*Final objective*

*Intermediate objectives*

Adequate

Expectations

Transparency

Credibility

Accountability

CB communication objectives

Enlightenment

Preserving operational independence status

**Two quick questions**

 After the above determination of the main and intermediate objectives of the central bank communication, the questions on what adequate expectations and efforts by the central banks to form “adequate expectations” against the common sense are, seem to be logical.

*Question one: What are adequate expectations?*

The effectiveness of every decision taken by monetary and financial stability policymakers depends on their effects on the public expectations in the first (or intermediate) stage. If the public fails to correctly understand the message under the taken decision, they will take irrational actions that will lead to undesirable results. Therefore, if the public is capable to understand the decision message correctly, then the formed expectations will be adequate to the decisions taken by the policymakers.

*Does a central bank always take optimal decisions?*

Certainly, it does not. If not, forming adequate expectations in relation to a non-optimal decision will tend to “rational” decisions of the public, which will be harmful for the economy. It is important to note that these “rational” decisions are just rational in relation to the central bank decision, but will be irrational from the economic point of view.

However, central bankers can make mistakes. But they should minimize the mistakes, because they are public servants and their decisions affect the social economic security of the society as a whole. Nevertheless, a decision-making process should be improved continuously. We have to think about improvements of decision-making committee’s structures and mechanisms.

*If central banks’ decisions are always optimal, how can we measure what adequate expectations are?*

I think that research departments should answer to this question through building suitable models to measure adequate expectations for each set of policy decisions. These models will be an integral part of the new framework for the communication.

**Economic simulations: Without communication strategy and tactics?**

Economic simulations are an integral part of the decision-making process in every central bank. These simulations are conducted quarterly, annually and for special cases. Obviously, one of the baseline or program scenarios among the few implemented will take place. If one of these scenarios occur, how should the central bank communicate in this case? Spontaneously? Certainly, it should not.

Communication departments should build solid communication strategies and tactics in response to every economic simulation, meanwhile avoiding undesirable results of spontaneous communication effects on public expectations.

On the other hand, in response to central bank’s annual guidelines of the monetary and financial stability policies, relevant communication strategies should be prepared with its own tasks and objectives generated from the above mentioned guidelines, tactics and strategies. It is logical if these communication strategies are an internal document and not open to the public**.**

 **Main target groups of seven**

Conditionally, we can divide a central bank communication target group to seven parts:

* Business sector
* Households
* Public (government) sector
* Media
* Educational establishments
* Academic circles
* International organizations

Each group of targets has its own specifications. However, researches are required to obtain more detailed pictures of every group’s behavior, their specifications and the ways they react to to the central bank decisions in the name of improvement of the communication.

**Principles of the communication**

To maintain effective communication the below principles should be guided by:

*Frankness*: There is an elevating tendency of speaking generally as a politician among central bank officials. Sometimes giant politicians may envy central bankers’ speeches. Logically, this type of communication may irritate the public, declining the confidence in the central bank. However, a central bank official should be guided by the principle of frankness in order not to lose confidence.

*Creativity:* TheCentral bank communication should have some creativity. It is not acceptable to imitate other countries’ communication practices as a whole. Because the public consists of ethics groups, different societies and separate groups have their own specific characteristics. Indeed, there is huge amount of general communication means, but they should be carefully implemented. From another point of view, it is important to use the latest achievements of the public relations and information technologies in the name of maintaining modernism in the communication.

**VI. CONCLUSION**

 The post-crisis period is aided by transformation of central banking experiences. All of us are convinced that we need a healthier, more efficient and confident financial system and management. Already, it is accepted that the role of central banks is increasing very rapidly and frontiers of responsibilities of these institutions are broadening as time goes on.

However, it is not clearly defined which direction the central bankers should follow. Notwithstanding all circumstances, it is important to achieve a high degree of central banks’ credibility to ensure healthier, more efficient, and more confident financial system architecture and management. Building the effective communication framework, as an integral part of central banking, with its concrete objectives, strategies and tactics will be favorable for a reliable economic system.

**REFERENCES**

**Alan S. Blinder**, Central Bank Credibility: Why do We Care? How to Build It? NBER working paper series, [www.nber.org/papers/w7161](http://www.nber.org/papers/w7161)

**Ales Bulir, Martin Cihák, Katerina Smidkova,** Writing Clearly: ECB's Monetary Policy Communication, <http://www.imf.org/external/pubs/ft/wp/2008/wp08252.pdf>

**Axel A Weber,** Monetary policy strategy and communication, speech at the Deutsche Bundesbank/Federal Reserve Bank of Cleveland conference on “Monetary policy strategy: old issues and new challenges” in Frankfurt am Main on 6 June 2007, <http://www.bis.org/review/r070608a.pdf>

**Ben S. Bernanke,** Central Bank Independence, Transparency, and Accountability, <http://www.federalreserve.gov/newsevents/speech/bernanke20100525a.htm>

**Ben S. Bernanke,** Emerging from the Crisis: Where Do We Stand? <http://www.federalreserve.gov/newsevents/speech/bernanke20101119b.htm>

**Ben S. Bernanke,** The Economic Outlook and Monetary Policy, <http://www.federalreserve.gov/newsevents/speech/bernanke20100827a.htm>

**Christopher Crowe and Ellen E. Meade,** Central Bank Independence and Transparency: Evolution and Effectiveness, <http://www.imf.org/external/pubs/ft/wp/2008/wp08119.pdf>

Code of Good Practices on Transparency in Monetary and Financial Policies: Declaration of Principles, IMF, September 1999, <http://www.imf.org/external/np/mae/mft/code/eng/code2e.pdf>

Communication of monetary policy decisions by central banks:what is revealed and why, BIS Papers No 47, Monetary and Economic Department, <http://www.bis.org/publ/bppdf/bispap47.htm>

**Frederic S Mishkin:** Whither Federal Reserve communications, <http://www.bis.org/review/r080731f.pdf>

**Frederic S. Mishkin,** The Federal Reserve’s Enhanced Communication Strategy and the Science of Monetary Policy, <http://www.federalreserve.gov/newsevents/speech/mishkin20071129a.htm>

**Geoffrey Heenan, Marcel Peter, and Scott Roger,** Implementing Inflation Targeting:Institutional Arrangements, Target Design, and Communications, <http://www.imf.org/external/pubs/ft/wp/2006/wp06278.pdf>

**John Taylor,** Central banks are losing credibility, Financial Times, [www.ft.com/cms/s/0/eedbe85c-5d2a-11df-8373-00144feab49a.html](http://www.ft.com/cms/s/0/eedbe85c-5d2a-11df-8373-00144feab49a.html)

**Michael Ehrmann and Marcel Fratzscher,** Central Bank Communication: Different Strategies, Same Effectiveness? <http://www.aeaweb.org/annual_mtg_papers/2005/0109_1015_0704.pdf>

**Michael Ehrmann,and Marcel Fratzscher,** THE TIMING OF CENTRAL BANK COMMUNICATION, <http://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp565.pdf>

**Michael Woodford,** Central Bank Communication and Policy Effectiveness, NBER working paper 11898, <http://www.nber.org/papers/w11898>

**N. Nergiz Dincer, Barry Eichengreen,** Central Bank Transparency: Where, Why and With What Effects? Working Paper 13003, <http://www.nber.org/papers/w13003>

**Richard Lambert,** Central Bank Communications: Best Practices in Advanced Economies, <http://www.bankofengland.co.uk/publications/speeches/2006/speech264.pdf>

**Sandra Pianalto,** Expectations, Communications, and Monetary Policy, <http://www.clevelandfed.org/research/commentary/2005/0415.pdf>

Should, or Can, Central Banks Target Asset Prices? The magazin of economic policy, 2009, <http://www.international-economy.com/TIE_F09_AssetPriceSymp.pdf>

**Spencer Dale,** Athanasios Orphanides,and Pär Österholm, Imperfect Central Bank Communication – Information versus Distraction, <http://www.imf.org/external/pubs/ft/wp/2008/wp0860.pdf>

**Stefano Eusepi, Bruce Preston,** CENTRAL BANK COMMUNICATION AND EXPECTATIONS STABILIZATION, NBER Working Paper 13259 <http://www.nber.org/papers/w13259>

Strategies for Fiscal Consolidation in the Post-Crisis World, IMF, Fiscal Affairs Department, <http://www.imf.org/external/np/pp/eng/2010/020410a.pdf>

The future of central banking under post-crisis mandates, <http://www.bis.org/publ/bppdf/bispap55.htm>

The Philadelphia Chapter of the Risk Management Association, <http://www.philadelphiafed.org/publications/speeches/plosser/2011/01-11-11_risk-management-association.pdf>