TO TALK OR NOT TO TALK? - REFLECTIONS ON CENTRAL BANK COMMUNICATION IN TIMES OF CRISES

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Abstract. *During the last decade, central bank communication and transparency became undisputable conditions of an effective monetary policy. Central banks around the world seek to consolidate their credibility by communicating effectively their policy goals to the financial markets and the public at large. Nevertheless, transparency has its challenges, particularly in times of financial turmoil when markets can misinterpret central bank messages. The way central banks manage to maintain credibility through effective communication both in normal and exceptional situations remains part of the art of monetary policy. Important challenges are posed to communication, in the context of conflicting pressures towards disclosure versus secrecy. The mantra of transparency still has its ayatollahs but some precepts have to be reconciled with the risks of misguiding the markets. Crowding out of private information, potential fuelling of banking panics and moral hazard are few of the problems that could threaten the performance of a central bank in communicating to its various audience.*

Keywords: *central bank, communication, transparency, financial crisis.*

JEL: *E58, F34, G14*

Preamble

The current financial turmoil with sweeping consequences at global level, fuels the concern over the capacity of central banks to navigate the uncharted waters of turbulent phenomena in the financial markets. With a limited room for manoeuvre in monetary terms, central banks have to rely increasingly on their ability to inspire confidence to the public, on the basis of their knowledge about the markets. In a situation where their material capacity to steer liquidity is diminished, central banks throughout the world are seeking ways to provide for financial stability by improving the strategic communication and the provision of information to their audience.

The ability to convey a sense of being in command could for example make the difference between a monetary authority that earns public trust and one that fails to do so despite effective policy measures. In 67 BC, when the Roman Senate granted Gnaeus Pompeius a special task-force to eliminate the pirates from the Mediterranean who were threatening the supply of grain from Sicily, the price of grain plunged on the same day as a result of the mere announcement of Pompeius' nomination. In times of crises, state authorities can fight against contagion and panic by appropriately correcting public misperceptions through the provision of understanding about the real threats and the solutions to the crisis. Needless to say that words have to be matched

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by deeds, otherwise confidence could vanish irreversibly. As Mervin King, the governor of the Bank of England put it, speaking about transparency in monetary policy making: “*Do as you say and say as you do*”[1].

There is undoubtedly a certain mystique in the art of monetary policy that a priori confers to a central banker a political clout that is perceived as such by the public, despite the legal independence of the central bank from inputs from the political world. To say that the central bank is a political institution goes in the sense that preserving the value of money is a matter of utmost importance for the functioning of a society. Tomaso Padoa-Schioppa remarks that: “*When we say that a currency is a “safe haven”, we refer not only to the quality and credibility of its central bank, but to the solidity of the whole social, political and economic structure to which it belongs*” (Padoa-Schioppa, 1999).

To what extent central banks, and in particular the ECB, manage to sustain this architecture of trust in the course of a financial turmoil, will be the core theme of my reflections. More specifically, I will look at the challenges posed to communication, in the context of conflicting pressures towards disclosure versus secrecy. Central bankers aggregate private information and in-depth knowledge about the economy, to make it available to the public and the markets, thus being responsible for the impact that they might have on market agents' behaviour. Crowding out of private information, potential fuelling of banking panics and moral hazard are few of the problems that could threaten the performance of a central bank in communicating to its various audience.

To Talk ...

After more than a decade of fundamental changes of vision regarding the central bank's stance in terms of providing information to the public, speaking in support of transparency became almost superfluous. Joseph Stiglitz wittingly observed that “*no-one would dare say that they were against transparency (...): It would be like saying you were against motherhood or apple pie*”[2]. One after another, the most important central banks were caught by the wave of transparent monetary policy, drastically changing their minds about how to speak to the public and the financial markets.

In 1987, Alan Greenspan famously said to a senator: “*Since becoming a central banker, I have learned to mumble with great incoherence. If I seem unduly clear to you, you must have misunderstood what I said.*”[3] In a less playful spirit, his conviction was that “*immediate release of the directive could threaten to roil markets unnecessarily,*” and “*concern about market reaction could reduce flexibility in decision making.*” Well after a decade he was of a completely different opinion: “*Openness is more than just useful in shaping better economic performance. Openness is an obligation of a central bank in a free and democratic society.*”[4]

Or to start from the hard days at the Bank of England during the Great

[1] Symposium at the Bank of England, 2002.
[2] *Financial Times*, October 5, 1998.
[3] Testimony to Congress, 1987.
[4] Remarks at the Federal Reserve Bank of St. Louis, Economic Policy Conference, 2001

Depression, one would be more than surprised today to hear the words of Deputy Governor at the time, Sir Ernest Harvey, speaking to the Committee on Finance and Industry in 1931, as he was answering questions of a Committee member named Keynes:

Keynes: "*Is it a practice of the Bank of England never to explain what its policy is?*"

Harvey: "*Well, I think it has been our practice to leave our actions to explain our policy.*"

Keynes: "*Or the reasons for its policy?*"

Harvey: "*It is a dangerous thing to start to give reasons.*"

Keynes: "*Or to defend itself against criticism?*"

Harvey: "*As regards criticism, I am afraid, though the Committee may not all agree, we do not admit there is need for defence; to defend ourselves is somewhat akin to a lady starting to defend her virtue.*"

This philosophy was maintained till not very long time ago at the Bank of England. Richard Lambert, an external member of the Bank of England's Monetary Policy Committee and former journalist, admitted that during his time as a press officer at the bank, his job was explicitly to "*keep the Bank out of the press, and the press out of the Bank.*"[5] The great leap forward from that type of thinking is proved by the very fact that Lambert was confessing this at a recent seminar on central bank communication, where he was pleading for many of the virtues of transparency.

An important step towards transparency of central banks was made with the process of granting them independence[6] from the political power. Bank of England gained operational independence in 1997 and the ECB was a 'born free' institution (Dyson, 2000) as provided for in Article 107 of the EU Treaty: "*When exercising the powers and carrying out the tasks and duties conferred upon them by this Treaty and the Statute of the ESCB, neither ECB, nor a national bank, nor any member of the decision-making bodies shall seek or take instructions from Community institutions or bodies, from any Government of a Member State or from any other body.*" The FED has been highly autonomous in making its monetary policies since the day of its inception, but as far as transparency is concerned, it was only in 1995 that it adopted the policy of announcing all its decisions immediately. Furthermore, the minutes of the Federal Open Markets Committee are made available to the public three weeks after the FOMC meeting.

But independent central banks ought to be accountable in order to be invested with legitimacy by the public. The importance of accountability in relation with ECB's legitimacy is stated clearly in the first ECB Report: "*To retain democratic legitimacy, an independent central bank must be accountable (ECB Annual Report, 1999).*" Accountability is in the same time an aspect of status and role. An institution is accountable in the sense that it is obliged by law to explain its actions – the status dimension, and also in the sense that the environment in which it activates has to produce the

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[5] Speech at the IMF Regional Seminar on Central Bank Communications, Mumbai, 2006.

[6] It should be noted that some authors prefer different terms such as "*autonomy*" or "*autonomy with discretion*" because of the terminological risk that "*independence*" could imply a decision without any form of restriction.

incentives and the instruments to make that institution responsible as regards its accountability – the role dimension.

In the case of the ECB, a sound framework was established allowing the general public and the competent political institutions to monitor and assess whether it is accomplishing the tasks conferred upon and is acting within the scope of its responsibilities. Several channels for the practical implementation of the ECB's accountability are stipulated in the Treaty[7]. Thus, the ECB is subject to stringent reporting requirements vis-à-vis the European Parliament, the EU Council, the European Commission and also the European Council.

The need for a mechanism of democratic accountability may be also explained because of the area where the ECB operates, namely monetary policy that controls the supply of money. Monetary policy is generally part of the larger area of economic policy, which is under the responsibility of the democratically elected government. In the EU, the Broad Economic Policy Guidelines are decided by the European Council and monitored by the Council on the basis of reports submitted by the Commission[8] raising issues of co-ordination with the monetary policy. Secondly the money was always a political expression of statehood and national identity. In such condition the functioning of a successful monetary union may well require support from the public opinion and economic agents, a support reinforced through the mechanism of democratic accountability. Consequently a large body of literature both in economic and political science discuss the issues of independence versus accountability of the ECB (Randzio-Plath and Padoa-Schioppa (2000); *Smaghi* and *Gros*, (2000). Most authors have no problem with the ECB independence but their concern increases with respect to the ECB democratic accountability. However, accountability should be seen as a complement, if not a necessary requirement for independence. Some observers in fact stressed that accountability is essential to keep central bank credible in the long-run (*Eijffinger* and *De Haan*, 1996).

The constant preoccupation for anti-inflationary policies as well as the academic interest for explaining inflation, has stressed the practical importance of accountability as the need to solve the credibility problems that can arise when policy is conducted under discretion, i.e. by an independent central bank. In the view of *Barro* and *Gordon* (1983), discretion leads to a socially inflation bias; a discretionary policy regime that doesn't ensure accountability runs the risk to erode what the German tradition calls '*stability culture*'. A discretionary policy, with lack of transparency, can control the inflation only by making the economic agents to react to short term monetary incentives. When the ability to monitor is imperfect, incentives that are too low powered fail to ensure accountability (moral hazard problems) while ones that are too high powered can distort policy responses to changing economic conditions (*Amtenbrink*, 1999). The optimal power of the incentive must balance accountability and independence. For example, any policy that succeeds in raising the costs of responding to short-run political pressures

[7] Article 109 TEU.
[8] Article 99 TEC.

for greater economic expansion will also limit the central bank's response to economic disturbances (*Walsh*, 2000).

Accountability is imperfect if the information on which the central bank bases its policy is restricted and publicly unverifiable. Thus, the accountability can also be described in terms of the transparency of policy; a transparent policy improves the accountability. The ECB, "*committed to the principles of transparency and accountability*"[9], is conducting a communication policy directed on providing information to the public through various audiences, reports, bulletins, brochures, working papers, press conferences, public speeches etc. *Kohn & Sack* (2003), *Ehrmann & Fratzscher* (2005) underline the fact that transparency not only improves the public's understanding and support of monetary policy but also facilitates the accountability of the central bank to the public.

A transparent policy regime is one in which the public knows what the central bank should do. Whatever arrangements concerning democratic accountability may exist, their scope is limited without transparency because information concerning the institutional behaviour is crucial for the evaluation of its performance. When monetary decisions are transparent it is easier to make a judgement and to hold the central bank officials accountable for their behaviour.

Hence, a central bank should be required to report at regular intervals on its past performance as well as on future plans for monetary policy in accordance with the monetary objective. As *Smaghi* and *Gros* (2000) explain, "*transparency increases the credibility of the central bank, especially when the latter does not enjoy a particularly high reputation. It thus enables the central bank to conduct a less restrictive monetary policy than would otherwise be required. Transparency and accountability increase the overall welfare of the economy.*"

An important formalisation of the impact of credibility for the monetary policy is the Barro-Gordon Model. *Barro* and *Gordon* (1983) correlated rules, discretion and reputation in a model of monetary policy, suggesting that often the rules can be substituted by reputational forces. In a discretionary regime, the monetary authority can print money and create more inflation than people expect. The benefits from this surprise inflation may include expansion of economic activity and reductions in the real value of the government debt. However, because sooner or later people understand the policymaker's incentives, these types of surprises – and their potentially resulting benefits – cannot arise systematically in equilibrium. People adjust their inflationary expectations in order to eliminate surprises and to protect themselves against real losses. In this case, enforced commitments on monetary behaviour, as embodied in monetary norms, eliminate the potential for surprises, insuring a high degree of predictability as regards the monetary policy. Because of the repeated interactions between the policymaker and the private agents, it is possible that reputational forces can support the rule. The potential or real loss of reputation – or credibility – affects the policy and motivates the policymaker to abide by the rule. Then, the policymaker gives up the short-term benefits from inflation

[9] ECB Annual Report 1999, p. 128

shocks in order to secure the gain from low average inflation over the long term.

As the monetary policy acts directly only on short term interest rates, the transmission mechanism towards the long end of the interest rate spectrum depends essentially on market expectations about future central bank decisions. The role of expectations is clearly explained by *Blinder* (1998): *"Central banks generally control only the overnight interest rate, an interest rate that is relevant to virtually no economically interesting transactions. Monetary policy has important macroeconomic effects only to the extent that it moves financial market prices that really matter—like long-term interest rates, stock market values and exchange rates. The links from the direct lever of monetary policy (the overnight rate) to the prices that matter depend almost entirely upon market expectations." Woodford* (2005) goes even further, stating that expectations are in fact the most important transmission mechanism for monetary policy: *"not only do expectations about policy matter, but (…) very little else matters."*

In February 2000, Goldman Sachs conducted a direct survey in order to assess whether market participants understand the overall monetary policy strategy of major central banks. A sample of financial markets participants was asked to rate on a scale of 1 to 5 how well they understood the reasoning behind monetary policy decisions at four central banks. A higher grade indicates a better understanding.

Given its track record and elaborated communication strategy, it is probably not surprising that all respondents give the US Federal Reserve a top rating of 4.3 for intelligible monetary policy. Moreover, votes are relatively highly concentrated on the two top ratings. Clearly behind the Fed comes the Bank of England. At 3.5 and 3.3, respectively, these central banks differ only slightly in transparency. On fourth place comes the ECB with a rating of only 2.2, which was fairly reasonable at that time due to the recent inception of the ECB.

Distribution of ratings (in percent)

	1	2	3	4	5	Average
US Federal Reserve	0.0	1.8	7.1	48.7	42.5	4.3
Bank of England	5.5	10.0	42.7	33.6	8.2	3.3
ECB	21.2	43.4	27.4	7.1	0.9	**2.2**

Source: Goldman Sachs

A more comprehensive and elaborated index of central bank transparency has been constructed by *Gerrats & Eijffinger* (2003), (2006). The results of their research not only illustrate the underlying determinants of central bank transparency but also indicate a significant correlation between transparency and monetary policy performance, i.e. lower nominal interest rates. In their analysis, transparency is proved to enhance the credibility, reputation, and flexibility of monetary policy, thus leading in the long run to the result of lower nominal interest rates. Compared with the scores of Goldman Sachs, ECB performs better as assessed in 2003 and even better in the 2006 survey. More recently, *Crowe & Meade* (2008) measure with a new methodology the levels of central bank independence and transparency in large set of countries. They find that independence and

transparency are significantly correlated, while transparency is also determined by the quality of the national institutions. Furthermore they identify an interesting determinant of transparency in the feedback the central bank receives from its communication to the private sector.

	Transparency 1999	Transparency 2006
Austria	0.20	0.60
Belgium	0.30	0.60
Bulgaria	0.30	
Czech Rep.	0.80	0.70
Finland	0.60	0.60
France	0.40	0.60
Germany	0.35	0.60
Hungary	0.50	0.90
Iceland	0.65	0.70
Ireland	0.65	0.60
Italy	0.60	0.60
Latvia	0.40	
Luxembourg	0.30	0.60
Netherlands	0.70	0.60
Norway	0.60	0.70
Poland	0.70	0.90
Romania	0.55	0.60
UK	0.90	1.00
Brazil		0.65
China	0.65	0.15
India	0.50	0.15
Japan		0.85
USA	0.85	0.80

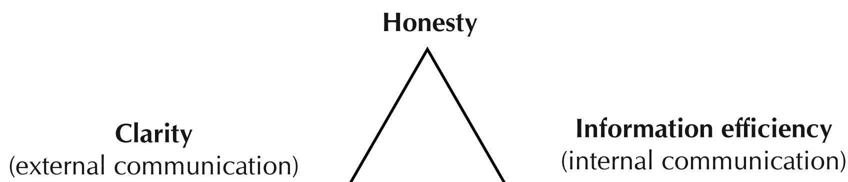
Source: Crowe and Meade (2008)

A conceptual framework better illuminates the intricacies of transparency and communication in the case of a central bank. *Winkler* (2000) has constructed a pyramid of a transparent monetary policy strategy in which he stresses the importance of simplified and condensed information in the communication strategy of a central bank to the different external target audiences. He relates greater transparency expressed by central banks with greater clarity.

Honesty is defined as the degree to which the representation of information employed in external communication corresponds to the actual structuring of information adopted internally. The external communication reflects to a certain extent the internal framework in structuring and interpreting the information. Concluding, it is not only the degree of openness but also the informational efficiency, relevance and clarity for the audience, which should be taken into account to assess the degree of transparency of the ECB. Beyond the provision of information, it is more the provision of understanding about the economic outlook and the monetary policy objectives that the central bank has to convey to the public. In a sense, *Issing* (2000) considers central bank communication a more complicated matter that simple public relations - by underlying the importance of a whole setting of accountability and transparency - but in another sense he regards communication as a method to simply create the subjective feeling of familiarity.

... Or Not to Talk

But can we speak about central bank transparency as a categorical imperative? While communication and transparency are closely related in many ways, they are not identical: although communication can be a means to achieve transparency, not all communication necessarily contributes to transparency. As we will see, it is not only that communication is a risky business for a central banker but even transparency has its drawbacks. Experience shows that the way policies



The Transparency triangle of monetary policy (Winkler, 2000)

are perceived by the public can be at times beneficial but also detrimental for the performance of the policy maker. Speaking about the activity of the Commission, in his public report before the European Parliament, Jaques Santer said: *"We know and you know that perceptions can make or brake policies, even the best ones*[10]*."* There is probably a way to transmit information to the public in such a form that it creates the optimal context for the realization of policy goals, but this can only remain an ideal for policy makers. As Issing (2005) observed, in an ideal world, *"the optimum amount of information is determined by the point where the supply and demand curves intersect"*[11].

Cruijsen, Eijffinger & Hoogduin (2008) show that transparency has its pitfalls. They suggest that there is an optimal level of central bank transparency beyond which communication risks to become redundant and to spoil the perceptions of the public vis-à-vis the implementation of the monetary policy. The risks are that people might: (1) start to attach too much weight to the conditionality of their forecasts, and/or (2) get confused by the large and increasing amount of information they receive. *Gerrats, Eijffinger & Cruijsen* (2006), in their analysis of transparency scores for major central banks, also point out the fact that in some cases increased transparency is negatively correlated with interest rates. This fact seemed to have been even speculated by the Fed in 1994, with the unusual announcement of an interest rate decision.

Mishkin (2004) finds that transparency could go too far when excessive focus on central bank communication could weaken support for monetary policy long term objectives. This time-inconsistency problem is further amplified by interference of central bank communication and objectives with the political process that often directs perceptions on a completely different time horizon of policy making. *Gerrats, Eijffinger & Cruijsen* (2006) identify even a time-inconsistency problem inherent in the central bank's transparency as it is influenced by economic circumstances. Evidence suggests that central banks tend to become more transparent when interest rates are low compared to the macroeconomic situation and to become more opaque when things go the wrong way. Furthermore, central banks are not far from spin-doctoring public perceptions, a fact that poses moral problems but can also be traced back to an honest approach to effective central bank communication that has to use simple words (Woodford, 2005) to portray complex situations, thus giving the impression that the world is

[10] Commission's Report for the European Parliament, 1996

[11] Otmar Issing: Communication, Transparency, Accountability: Monetary Policy in the Twenty-First Century. Federal Bank of St. Louis Review, March/April, 2005.

more straightforward and secure than it actually is (Issing, 2005).

Morris & Shin (2000), continued by *Amato & Shin* (2003), suggest that too much information can harm the capacity of market participants to take actions appropriate to underlying fundamentals. If it is desirable for monetary policy to the accompanied by timely publications, statistics and media addresses, excessive disclosure of central bank information to the public could result in crowding out of private information from other sources. One conclusion is that in the absence of private information, the dissemination of public information increases welfare, but when agents have access to independent sources of information, the welfare effect of increased public disclosure is ambiguous. It is illustrative for this argument that the first version of the Morris and Shin paper was circulated under the title "*The CNBC Effect*" suggesting the pernicious effects of markets moved by a single source of information. At the end of they day, as J.M. Keynes observed there is a always a risk of herd behavior in the financial markets that could lead to a tendency of blindly following the average opinion or in the worst case to bank panics and runs. Here is how he describes the underlying mechanism, talking about the way people form their investment preferences:

"*Professional investment may be likened to those newspaper competitions in which the competitors have to pick out the six prettiest faces from a hundred photographs, the prize being awarded to the competitor whose choice most nearly corresponds to the average preferences of the competitors as a whole; so that* each competitor has to pick, not those *faces which he himself finds prettiest, but those which he thinks likeliest to catch the fancy of the other competitors, all of whom are looking at the problem from the same point of view. It is not a case of choosing those which, to the best of one's judgment, are really the prettiest, nor even those which average opinion genuinely thinks the prettiest. We have reached the third degree where we devote our intelligences to anticipating what average opinion expects the average opinion to be.*"[12]

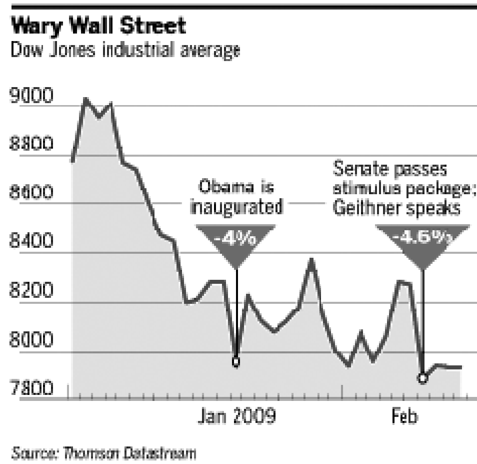
How to Talk in Times of Crises

Angeletos & Werning (2004), apply the rationale of *Morris & Shin* (2002) to currency crises, bank runs, debt crises or financial crashes, arguing that in such circumstances, public information leads even more dramatically to the collapse of informational multiplicity. People tend to progressively ignore alternative sources when they observe fundamentals with small enough idiosyncratic noise, relying predominantly on public information. If a crisis emerges in this context, the lack of informational multiplicity negatively affects coordination capacity and reactivity, creating informational asymmetries and adverse selection. In a model of currency crises with self-fulfilling expectations, *Metz* (2003) shows that show that if the fundamental state of the economy is good, the probability of a currency crisis decreases in the precision of public information, but increases in the precision of private information. In case of bad fundamentals, however, more precise public information increases the likelihood of a crisis, whereas more precise private information leads to a lower crisis probability. In a world where

[12] *The General Theory of Employment, Interest and Money*, 1936.

"*we will never have a perfect model for risk*"[13], relying unilaterally on a limited number of information sources can put the market participants at peril.

Talking to the markets in times of crises is an even greater challenge for the central banker. "*Finding the right words at the right time, with respect to monetary policy as well as financial stability, remains at the core of the art of central banking*" remarked Tommaso Padoa-Schioppa, speaking to a Frankfurt audience after the financial turbulences of the dotcom crisis. Not only finding the right words but also the right personality at the right time is a matter of utmost importance in communicating to an unsettled audience. As the sub-prime crisis was unfolding in the US, the solution of a "*bail-out*" plan, as thoughtful as it may have been conceived, sounded dreadful to a distressed public that would have been less contemptuous to hear for example about a "*rescue plan*". Not only the nuances in wording but also the role of personalities in shaping perceptions could make an important difference. The refreshing charisma of Barack Obama and his well choreographed interventions helped the American public and the financial markets restore confidence in a rather quick recovery. After the presidential inauguration of Obama, the Dow Jones Industrial Average, spectacularly surged. A month later, after the Senate successfully passed the stimulus package proposed by the Obama administration, the failure of the Treasury Secretary, Timothy Geithner to inspire confidence in that sense of being in command, sent the DJIA down at unprecedented levels since the start of the crisis. In the aftermath of Geithner's speech, Loyd Blankfein, CEO and chairman of Goldman Sachs declared "*In my 26 years at Goldman Sachs, I have never seen a wider gulf between the financial services industry and the public.*"[14]



Providing liquidity to the financial system, as in the plan of the US Treasury, is actually the task of most central banks. If transparency of such actions would normally reduce volatility in the financial markets, central bank announcements about interventions in a turbulent context might prove to be a double-edged sword. Although there is some evidence that historical transparency of a central bank can predict future performance in crisis management (*Fry, Julius & Mahadeva*, 2000), maintaining such transparency in the case of emergency refinancing for ailing banks might create anxiety and even panic in the markets.

When the news about the Bank of England providing Northern Rock with liquidity went to the public, the run

[13] Alan Greenspan, *Financial Times*, March 2008.

[14] Testimony to the Financial Services Committee of the US House of Representatives.

on deposits was inevitable. This is the reason for which, the well established transparency principles of the Bank of England are bypassed by the total secrecy about the amounts and the subjects of such operations. Classic cases of bank runs after central bank announcements of emergency lending are observable in all major financial crises in the last decades. As a consequence, during the current crisis, due to the reputational risks, many banks refuse to make use of the liquidity made available by the lender of last resort. *Roth* (2008) provides some solutions for central bank intervention to support banks in trouble without inducing reputational risks: i) communicate about exceptional lending in a way that trivializes it; ii) adopting silence as the sole effective communication strategy; or even iii) changing transparency rules about central bank actions in a context of financial turmoil.

The communication problem when it comes to the operations of a lender of last resort in times of crises becomes relevant also in the case of international financial institutions such as the IMF. The long track record of the IMF in helping countries to solve their liquidity problems is still subject to debate about how to avoid market perceptions vis-à-vis possible default risks. Suspicion that the country is in serious trouble may cause the markets to abruptly curtail its provision of credit, thus creating a vicious circle that could create self-fulfilling pessimism about the IMF intervention. This could be one of the reasons for which both the IMF representatives and the Romanian government denied any intention of signing an agreement, despite repeated meetings during the recent period. It could be a proof of a good communication strategy that only after the public got used with the trivialities of IMF discussions, the Romanian ministry of finance announced that an agreement with the IMF could be signed in the coming couple of months.

REFERENCES

- Amtenbrink, F. (1999): *The Democratic Accountability of Central Bank – A Comparative Study of the European Central Bank*. Hart Publishing, Oxford.
- Angeletos, G.M. & Werning, I. (2004): *Crises and Prices: Information Aggregation, Multiplicity and Volatility*. NBER Working paper.
- Barro, R. and Gordon, D. (1983): "Rules, discretion and reputation in a model of monetary policy", *Journal of Monetary Economics* 12, North-Holland.
- Bini Smaghi, L. and Gros, D. (2000): *Open Issues in European Central Banking*. Macmillan Press Ltd., London.
- Blinder, A. (1998): *Central Banking in Theory and Practice*. MIT Press, Cambridge.
- Crowe, C. and Meade, E. (2008): *Central Bank Independence and Transparency: Evolution and Effectiveness*. IMF Working Paper.
- van der Cruijsen, C., Eijffinger, S. & Hoogduin, L. (2008): *Optimal Central Bank Transparency*. DNB Working Papers.

- De Haan, J. and S.C.W. Eijffinger (2000): "The Democratic Accountability of the ECB: A Comment on two Fairy-Tales". *Journal of Common Market Studies,* September 2000.
- Dyson, K. (1980): *The State Tradition in Western Europe - A Study of an Idea and Institution*. Martin Robertson, Oxford.
- Ehrmann, M. and Fratzscher, M. (2005): *The Media and Monetary Policy*. ECB Working Papers.
- Fry, M., Julius, D., Mahadeva, L., Roger, S., Sterne, G. (2000): *Key Issues in the choice a monetary policy framework*.
- Geraats, P.M., Eijffinger, S. & van der Cruijsen, C. (2006): *Does Central Bank Transparency Reduce Interest Rates?*. DNB Working Paper
- Issing, O. (2000): Communication Challenges for the ECB. Opening Statement delivered at the CSF research conference "The ECB and its Watchers", Frankfurt.
- Keynes, J.M. (1936): *The General Theory of Employment, Interest and Money*.
- Metz, C. (2003): *Private and Public Information in Self-Fulfilling Currency Crises*.
- Mishkin, F. S. (2004): *Can Central Bank Transparency Go Too Far?* NBER Working Paper.
- Morris, S. and Shin, H.S. (2002): *Social Value of Public Information*.
- Padoa-Schioppa, T. (1999): *Eurosystem: New Challenges for Old Missions*. Speech at Deutsche Bundesbank, Frankfurt.
- Randzio-Plath, C. and Padoa-Schioppa, T. (2000): The European Central Bank: Independence And Accountability. *ZEI Policy Paper*.
- Roth, J.-P. (2008): *La politique de communication des banques centrals a l'epreuve de la crise financiere*. Speech at the Swiss National Bank.
- Walsh, C. (2000): *Accountability, Transparency and Inflation Targeting*. Working Paper, University of California.
- Winkler, B. (2000): *Which Kind of Transparency? On the Need for Clarity in Monetary Policy-Making*. European Central Bank Working Paper Series, Working Paper.
- Woodford, M. (2005): *Central Bank Communication and Policy Effectiveness*. Presented at the Federal Reserve Bank of Kansas City Symposium.
- Wyplosz, Ch. (2001): *The ECB Communication Strategy*. Briefing Notes to the Committee for Economic and Monetary Affairs of the European Parliament.
- ECB Annual Reports: 1999-2007.
- The Treaty on European Union and the Treaty establishing the European Community as in force from 1 February 2003 (Nice consolidated versions).