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Theoretical Base of Monetary Policy Transparency

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Abstract: Transparency is most often defined as the absence of asymmetrical information between financial markets and monetary policy makers. There are different views on the central bank transparency (Assuring, Exacting, Irrelevance, Conditional, Disturbing and Diverting view). The examination of the central bank transparency is actually the examination of the effects of inflation targeting.

Keywords: transparency, inflation targeting, inflation

JEL Classification: E52, E58

Introduction

Central banking system has undergone significant changes during the last ten years. There are three characteristics of modern central bank system: independence, accountability and transparency. Although the importance of central bank independence and accountability was already discussed in academic literature, the research on monetary policy transparency are relatively new and to a great extent are responsible for the best practice of central banking system. Central bank transparency has become one of the key characteristics of monetary policy.

First, we will discuss the concept of transparency that is not easy to define. However, it is commonly defined as the absence of asymmetrical information between financial markets and monetary policy makers. Then some practical views on central bank transparency will be presented (Assuring, Exacting, Irrelevance, Conditional, Disturbing and Diverting view).

Chapter 1. Concept of central bank transparency

Definition of central bank transparency

During the late 1980s and early 1990s there has been an interest in academic literature on the role of transparency in monetary policy-making, which partly reflects the increased attention that central bank devotes to communication issues in monetary policy practice. A trend towards greater transparency can be related to increasing independence and accountability of central bank in a large number of countries. Then, it can be associated with the importance of recognizing financial markets and private agents' expectations for the outcome of monetary policy conduct. Greater transparency makes monetary policy more predictable as well as more effective and credible. The concept of transparency cannot be easily defined. In the standard models used in literature transparency is defined as the amount and precision of information that the central bank releases to the public.[1]

Most commonly, transparency implies the absence of asymmetrical information between financial markets and monetary policy makers. Release of precise, comprehensive information at regular intervals (in time) is useful since it reduces the information asymmetry and uncertainty in financial markets.

The increasing trend of central bank transparency has been first observed in the central banks of New Zealand, Canada, Great Britain and Sweden. They adopted "inflation targeting" as a frame of monetary policy during the early 1990s. This monetary strategy is characterized by explicit targeting/aiming of low and stable inflation rates, announcing inflation forecasts and monetary policy changes (interest rates) depending on whether the predicted inflation rate is above or below targeted rate. The examining of central bank transparency mainly consists of the examining of inflation targeting effects.

The increase of transparency has greatly been influenced by the practice of publishing the Inflation Report, which is especially common for countries that accepted inflation targeting as monetary strategy. The Inflation Report includes the following:

1. Basic inflation determinants;
2. Inflation forecast and its assumptions;
3. Explanation why changes in monetary policy were (or were not) necessary and
4. Explanation of expected effects of changes in monetary policy

A lack of transparency could be said to arise when the central bank has private information about the nature of shocks and the way in which monetary policy affects economy (Cukierman, 1992, 2000); or when the central bank has not stated its objectives clearly (Cukierman and Meltzer, 1986); or when the public is uncertain about the preferences of the central bank (Nolan and Schaling, 1998).[2]

Limits to transparency

In the academic literature "perfect transparency" is regarded as being achieved when the public is given all the information it needs to be able to infer the central bank's intentions from its monetary policy measures.[3]

However, in the real world this problem is much more complex. “Perfect transparency” might imply that the central bank must make available all the information that contributed no matter to which extent, to its decisions. But on purely practical grounds it cannot publish everything, such as the minutes of all the meetings, every discussion about conceptual or statistical definitions, all information at its disposal etc. Therefore, in practice transparency can never be complete and perfect as in theoretical models. Finally, it can be argued whether maximum information really leads to maximum transparency. Even if inflation forecasts were to be announced, the public would wonder whether this was really the only inflation forecast made by the central bank. Similarly, if minutes of meetings were published, some people would ask whether they really contain everything that was discussed when decisions on a particular monetary policy measure were made. In the real world there are also technical limits to processing information, so the relevant core has to be selected and interpreted from the mass of data available.

Most economists consider greater transparency in monetary policy desirable since it enables the private sector to be more effective in decision-making (i.e. to improve welfare) and to make decisions based on more information available. But, some does not agree with this statement. Some argue incomplete transparency to be optimal, since the effect on the central bank credibility and its ability to control inflation must be balanced with regard to the orientation of the private sector to accomplish other goals, such as output, employment, prices etc. Others claim that certain restrictions to transparency are significant for operational reasons.

The purpose of transparency

Since most economic decisions are made under uncertain conditions, assessments of current and future trends play a key role in economic decision-making.[4] If these assessments are wrong, the decisions based on them are likely to be wrong as well. Therefore, institutions operating at the macroeconomic level should keep the uncertainty regarding their policy as small as possible. At least, they should make sure they do not increase existing uncertainty.

With respect to the central bank, transparency requirement applies in the first instance to minimizing uncertainty associated with its monetary policy. Advocates of ultra-transparency demand that the central bank reveal each and every detail and piece of evidence on which its decisions are based. They are of the opinion that this would make the central bank more predictable. The advocates and potential beneficiaries of this extreme definition of transparency are above all the financial markets. They can profitably convert the information into transactions. The request for greater predictability of the central bank is also prompted by the need to avoid market overreaction and the associated excessive volatility.

However, predictability also has its disadvantages. It can make the central bank a hostage to the market. The central bank would then be forced to act, or rather react, solely in order to meet the short-term expectations of interest parties. Therefore, the limits for central bank predictability have to be defined. To ensure that the central bank can counteract undesirable developments, its activity must not be completely predictable all the time. The short-term horizon is being discussed here, of course.

Instrument and target transparency

In general, central banks use instruments to influence their operational goal in order to influence the ultimate goal of monetary policy. For example, the Federal Reserve targeted the excessive liquidity (operational goal) from 1979 to 1982, and then they started to target monetary aggregates as operational goal. By the late 1980s, the Federal Reserve abandoned the targeting of monetary aggregates and took up explicit targeting of interest rates in money market. Not until 1994 did the Federal Reserve announce that the interest rate is operational goal. The instrument transparency exists when the public is familiar with the goal of the central bank and instruments that the central bank uses to pursue that goal.

The most common goals of central bank are price stability alone, or, rarely, both price stability and output increase. Target transparency exists when the public is familiar with the goals of the central bank including the relative significance of every goal, if they were numerous.

A great number of central banks have adopted "inflation targeting" (e.g. New Zealand, Canada, Great Britain, Switzerland) with specific numerical interval for target inflation rate.

Central bank uses certain policy instruments in order to achieve its goals in defined time frame. Adjustments of policy instruments depend on the estimation of macroeconomic developments by the central bank, since the expected influence of the policy on the economy is based on the way in which the makers of that policy understand the functioning of the economy. The interpretation of macroeconomic developments creates a link between policy goals and instrument changes. Transparency in policy exists when the public is familiar with the way in which the information on economy status is transformed into actions. That connection includes relevant information that the central bank may have, economic models (if any) that monetary policy makers use to explain economy functioning and the way in which decisions are made.

For each type of transparency, there is also the possibility of different degrees of transparency.[5] For example, the central bank may announce that it targets interest rates, but not state what the current level is. The central bank may announce that it is concerned with both inflation and output, but not what it considers to be their optimal relation. In some cases, it may not be possible for a central bank to be precise; the models it uses do not have adequate performances. Alternatively, the central bank may not believe in any economic model, thus not explaining the functioning of economy. Most central banks currently use a short-term interest rate as their policy instrument and precisely quantify their goals (operational and ultimate).

Chapter 2. Different views of central bank transparency

Introductory notes

Like many other broad concepts in economic policy, such as "fiscal discipline" or "price stability", central bank transparency remains a matter open to debate. Widely used term "inflation targeting" is usually considered the expression of increased central bank transparency.[6]

In practice, central bank transparency has implications for a certain number of relevant day-to-day issues that include: the persistence of inflation, the response of financial markets to central bank announcements, the role of short term targets, that is, the central bank transparency influence on short-term and medium-term expectations of the private sector etc. The effect of greater transparency on these dynamics is considered to be beneficial. Although there are some other interpretations according to which excessive transparency is unduly constraining, leading to sub-optimal results, they are without empirical foundation.

Recent developments in Japan and, to a lesser degree, in the United States and the Eurozone, have demonstrated that central bank independence can be at risk when transparency increases by adopting inflation targeting as a monetary strategy.

Two common misleading claims about transparency relate to the misconception that increased transparency inhibits central bank independence and that the high level of transparency automatically means central bank accountability.

More explicitly, there are six views of enhanced transparency impact on the reaction of the public and markets in relation to the monetary policy.[7]

1. The public could be *assured* via information such as monetary policy objectives and their fulfillment, description of monetary policy regime, current measures, as well as their expected effects;
2. The public and particularly markets could find it easier to plan their activities if central bank prognosis and respective explanations are available;
3. The public can find all announcements of the central bank irrelevant as long as central banks start to respond to shocks more strictly;
4. The public, and especially markets, can become greatly aware of central bank activities and demand information about central bank mandate and voting of particular members of monetary board;

5. The public, and particularly markets, can become disturbed if central bank fails to fulfill its objectives or forecasts. Also, too much information can pose a threat since this can make public confused;
6. The public can make pressure on the fulfillment of announced objective thus diverting central bank from optimal response to shocks. If politicians become involved in such situation, the result shall be higher level of intervention than it is desirable.

As it can be seen in Table 1 each of these six practical views of central bank transparency focuses on a specific set of information releases, with a specific hypothesis for the impact of those releases upon expectations and central bank behavior, and for the mechanism by which this impact is transmitted. Examination of central bank transparency is largely a matter of examining the effects of inflation targeting.

Table 1. Different views of central bank transparency

View of Transparency	Information Release	Central bank conduct	Market response	Final result	Empirical verification
Assuring	Monetary policy regime, Speeches	Greater flexibility	Greater trust	Inflation persistence	Supported by evidence
Exacting	Forecasts, Models	Greater disclosure	Greater predictability	Inflation persistence	Supported by evidence
Irrelevance	Various speeches	No changes	Only actions matter	Inflation level	Unsupported by evidence (lower inflation)
Conditional	Central bank mandate, Votes of monetary board members	Greater openness	Greater credibility	Inflation volatility	Unsupported by evidence
Disturbing	Minutes from monetary board meetings	Greater confusion	Increased policitization	Effect of target misses	Unsupported by evidence
Diverting	Medium term goals and tasks	Less discretion	Increased error possibility	Output volatility	Unsupported by evidence

Source: Adam S. Posen, Senior Fellow (2002), “Six Practical Views of Central Bank Transparency”

The Assuring View of Central Bank Transparency

The “assuring view” is the view in which the central bank communicates its general intentions to the public and the markets. The key information released by the central bank, in operational terms, is statements about the monetary regime, about the goals of that regime and factors which made bank fail to fulfill that goal, that is, to reduce or increase inflation in relation to the targeted one. These are conveyed in the speeches of monetary policy makers (usually voting board members) about the intentions of the central bank.

The theoretical framework or underlying model for such a view of central bank transparency is the “optimal state contingent rule”.[8] In this framework, communication by the central bank about its long-term inflation goal allows the bank to be more flexible in response to (supply) shocks. Greater flexibility is the result of greater trust in the central bank that its deviations from the target do not indicate a lack of commitment to the long-term target. The hypothesis of the optimal state contingent rule is testable.

“Assuring” view of central bank transparency is that inflation will decrease as the central bank approaches the “optimal contingent state” (which implies greater trust). In this situation, one-time shocks will not have effects on inflation expectations since it is expected that long-term inflation will return to target level.

Empirical evidence is quite strong in support of this view. Kuttner and Posen (1999) observed the shift in bond market responses (representing inflation expectations) in Canada, New Zealand, and the United Kingdom before and after adopting inflation targeting as monetary strategy[9]. They examined: (1) whether there is a change in inflation dynamics; (2) whether there is a tendency towards an increase in inflation rates following shocks; (3) whether there is a tendency towards a decrease in interest rates. There is strong evidence of decreases in interest rates, consistent with the interpretation that adoption of inflation targeting increases central bank flexibility.

If transparency in the form of inflation targeting does reduce inflation persistence, it has a major impact on welfare. Therefore one policy implication of this view is that explicit statements of long-term goals in a world of shocks provide benefits and that implicit inflation targeting, characteristic of the Federal Reserve, does not. When shocks arise, market expectations will bring back inflation rate to expected long-term pathway.

The Exacting View of Central Bank Transparency

The exacting view of central bank transparency is much narrower than that of the assuring view, and much more focused on the response of financial markets to central bank behavior. The information released by central banks important to this view is that of forecasts, economic models, and the accompanying explanations of specific central bank decisions (e.g., interest rate movements). For instance, the Federal Reserve has taken steps in this direction, for example, by eliminating directives suggesting changes between meetings of the Federal Open Market Committee (FOMC) and announcing the monetary aggregates rate target, along with the rationale for the decision. This view suggests that detailed information will allow the (bond) markets to see greater predictability in central bank actions. Some European central banks in the 1970s and 1980s tended to surprise markets with their exchange rate and other interventions so as to intentionally cause greater uncertainty in markets.

The testable hypothesis of this view is whether shifts in disclosure policy about central bank decisions affect the market response. The evidence is clear in the US Treasury Securities market where the changes in disclosure policies of the Federal Reserve in the last 15 years (particularly since 1994) have reduced market volatility and increased monetary policy predictability. There is less clear evidence regarding foreign exchange markets and very short-term movements in financial markets (including bond markets).

This effect is independent and acts through different channels (and over a short time frame) than the effect examined under the assurance view: the independent variable is interest rate in the exacting view, but explanation of long-term targets in the assuring view; the dependent variable is market volatility in the exacting view and inflation persistence in the assuring view. This has the implication on monetary policy, that is, the policy of exacting view of transparency can have its effects without any change in fundamental regime of inflation targeting.[10]

The Irrelevance View of Central Bank Transparency

This list of practical views of central bank transparency must include the commonly expressed view of some central bankers (particularly in the USA) that central bank transparency is irrelevant for central bank efficacy. This "irrelevance view" asserts that this is a very cheap trick, and that central bank credibility is built up only through its actions. The only private information the central bank has is about its own preferences (goals) while the focus of markets and the public is on inflation and output outcomes.

The empirical implication of this irrelevance view is that changes in policy announcements should be ineffective in changing inflation expectations. Explicit inflation targeting should be indistinguishable from implicit inflation targeting in its effects, so long as both have the same goal for inflation, presuming the same real variables. However, this view is rejected by the empirical data. The classification of monetary regimes directly separates those central banks that explicitly target inflation from the central banks without announced targets, and establishes that those that explicitly target inflation have lower inflation (and lower inflation persistence) than those with implicit inflation targeting (such as the Federal Reserve). In short, explicit inflation targeting seems to matter, whereas the irrelevance view of transparency suggests that inflation targeting does not. This has a significant implication for some central banks that claim that there is no need for the public announcement of inflation target.[11]

The Conditional View of Central Bank Transparency

The view of central bank transparency based on the most sophisticated theoretical framework and attracting the most research attention is the conditional view. This group of models (Cukierman, 2001; Faust and Svensson, 2001a, 2001b) is based directly on the work about the optimal level of transparency. It is presumed that credible central banks should induce more flexibility in price and wage setting (and a more vertical short-run Phillips curve). Consequently, monetary policy instruments are thought to have less effect on the real economy. Accordingly, there is an inverted U-shaped curve that represents the desirable level of transparency and shows that the central banks with extremely high or extremely low credibility level should have the highest level of transparency. The key information, in this view, is about central banks' mandates and the votes of monetary policy board members. In this framework it is possible to test whether there is a connection between inflation volatility and output volatility. This is because in the model of the more credible central bank there is a stabilization of inflation, at the expense of the stabilization of output, while the role of the central bank in the output stabilization is minimal.

The practical dangers that arise from premature acceptance of this conditional view without adequate empirical support is threefold: first, it may encourage some "fine regulating" of transparency for the supposed optimal level of information disclosure and thus take some of the benefits seen in the assuring and exacting views; second, and related, it may put an undue emphasis on the release of mandates and votes to the detriment of other important information disclosures available to central banks; and third, it may contribute to a climate opposed to output stabilization by monetary policy makers without much basis for such opposition. There must be strong empirical evidence for the significant beneficial effects of inflation targeting on inflation persistence and (bond) market stability and especially of countercyclical monetary policy on the real economy (even when undertaken by highly credible central banks like the Federal Reserve). Strong empirical confirmation of the conditional view should be awaited before making any decisions upon it.[12]

The Disturbing View of Central Bank Transparency

The next issue is how a high level of transparency might be harmful. The weaker version of how central bank transparency might cause harm to policymaking and economic outcomes is the "disturbing" view. In this view, if the central bank discloses too much information the public may be confused. Also, the public may become disturbed if central bank fails to accomplish announced goal or forecast. This confusion will give an opening for opportunistic politicians to criticize the central bank. So disclosure leads to confusion, which leads to politicization, which in turn disturbs optimizing central bankers into reacting to short-term pressures and targets.[13] This view is very different from that of the irrelevance view of central bank transparency. For instance, the Bank of Japan has opposed the inflation-targeting regime, partially due to fear that they would fail to fulfill an announced objective.

It would be wise to examine the effects of transparency when intermediates objectives on inflation are not fulfilled and particularly measure political pressures (perhaps represented by newspaper reports of criticism of the central bank by legislators). There is some evidence that increasing transparency is associated with lower average inflation rates, which is the opposite of disturbing view - that disclosure gives the opportunity for political pressures.

The Diverting View of Central Bank Transparency

The central bank transparency might cause harm to policy making and economic outcomes since the announced inflation targets and other disclosures force the central bank to follow the rules more strictly. This view is called the "diverting "view because the inflexibility and imprecise (inflation) targets divert the central bank's attention from responding appropriately (optimally) to shocks. This is the real mirror image of the assurance view - the key information for the central bank to release is its medium-term targets and ultimate goals, but in this view by releasing that information the central bank creates increased disturbance (rather than increased public trust), resulting in less discretion (rather than more flexibility) in responding to economic events.[14]

The theoretical view that central banks might be excessively constrained by explicit inflation targets or other forms of disclosure, however, does not mean that they inherently must be or that they in fact are so constrained. Kuttner and Posen (1999, 2000, 2001) have investigated the behavior of central banks before and after inflation target announcements as its response to economic shocks. They found that inflation targeting of central banks increase their flexibility in responding to shocks, and show no reduced flexibility in responding to output volatility.

Conclusion

Transparency in central bank operations has become one of the key characteristics in monetary policy. The term "transparency" has been used without adequate translation, which is also common in other countries. This paper defines transparency as well as different views of central bank transparency (assuring, exacting, irrelevance, conditional, disturbing and diverting). Transparency is defined as the absence of asymmetrical information between financial markets and monetary policy makers.

In literature on monetary policy there are six different views of central bank transparency. The public could be *assured* via information such as monetary policy objectives and their fulfillment, description of monetary policy regime, current measures, as well as their expected effects (Assuring view). The public and particularly markets could find it easier to plan their activities if the central bank prognosis and respective explanations are available (Exacting view). The public can find all announcements of the central bank irrelevant as long as central banks start to respond to shocks more strictly (Irrelevance view). The public, and especially markets, can become greatly aware of central bank activities and demand information about central bank mandate and voting of particular members of monetary board (Conditional view). The public, and particularly markets, can become disturbed if central bank fails to fulfill its objectives or forecasts. Also, too much information can pose a threat since this can make the public confused (Disturbing view). The public can make pressure on the fulfillment of announced objective thus diverting central bank from optimal response to shocks. If politicians become involved in such situation, the result shall be higher level of intervention than it is desirable (Diverting view). Only two of the views – the assuring and the exacting – have clear empirical support. Central bank announcement of medium-term inflation targets increase flexibility in response to shocks and decrease inflation persistence, with obvious important welfare benefits; the disclosure of information regarding specific interest rate movements reduces volatility in bond markets (except at the very short time-horizon).

NOTES

1 Winkler, B., *Which kind of transparency? On the need for clarity in monetary policy-making*, Europen Central Bank, Working Paper 26, (2000), p. 7.

2 Demertzis, M. (de Nederlandsche Bank) and Hallett, A.H. (Vanderbilt University and CEPR), *Central Bank Transparency in Theory and Practice*, (2003), p. 3.

3 Remsperger H., Worms A., *Transparency in Monetary Policy*, CFS Working Paper 16, (1999), p. 10.

4 Ibid, p. 1.

5 Carpenter B.S., *Transparency and Monetary Policy: What does the Academics Literature Tell Policymakers?*, (2004), p. 4.

6 Posen, A.S and Fellow S., *Six Practical Views of Central Bank Transparency*, Institute for International Economics, (2002), p. 1.

7 Ibid, p. 4 – 5.

8 Ibid, p. 7.

9 Ibid.

10 Posen, A.S and Fellow S., (2002), Op. cit., p. 9 – 10.

11 Ibid, p. 12.

12 Ibid, p. 14.

13 Ibid, p. 15.

14 Ibid, p. 16 – 17.

REFERENCES

Alesina, A. and L. H. Summers. 1993. Central Bank Independence and Macroeconomic Performance: Some Comparative Evidence. Journal of Money, Credit and Banking, 25(2), 151-162.

Allsopp, C. 2002. Macroeconomic Policy Rules in Theory and in Practice. Paper presented in Conference on Policy Rules – The Next Steps, Clare College, Cambridge University, September 19-20.

Barro, R. J. and Gordon, D.B. 1983. Rules, discretion and reputation in a model of monetary policy. Journal of Monetary Economics 12(1), 101-121.

Bernanke, B. S. 2004. Central Bank Talk and Monetary Policy. Remarks at the Japan Society corporate luncheon, New York, October 7.

Bernanke, B. and Mishkin, F. 1997. Inflation Targeting: A New Framework for Monetary Policy. Journal of Economic Perspectives 11, 97-116.

Bernanke, B.S., Laubach, T., Mishkin, F.S. and Posen, A.S. 1999. Inflation Targeting: Lessons from the International Experience. Princeton University Press, Princeton, New Jersey.

Bernanke, B. S. and Woodford, M. 1997. Inflation Forecasts and Monetary Policy. In: NBER Working Paper No. 6157.

Blinder, A. S. 1998. Central Banking in Theory and Practice. Cambridge, MA: MIT Press.

Blinder, A., Goodhart, C., Hildebrand, P., Lipton, D. and Wyplosz, C. 2001. How do central banks talk?, Geneva Report on the World Economy 3, ICMB.

Chadha, J.S. and Nolan, C. 2001. Inflation targeting, transparency and interest rate volatility: Ditching "monetary mystique" in the U.K.. Journal of Macroeconomics 23(3), 349-366.

Cukierman, A. 2001a. Accountability, credibility, transparency and stabilization policy in the eurosystem, in C. Wyplosz, ed., "The Impact of EMU on Europe and the Developing Countries". Oxford University Press, chapter 3, pp. 40-75.

Demertzis, M. and Hughes Hallet, A. 2002. Central bank transparency in theory and practice. CEPR Discussion Paper 3639.

Eijffinger, S.C. and Geraats, P.M. 2002. How transparent are central banks? CEPR Discussion Paper 3188.

Eijffinger, S.C. and Hoeberichts, M.M. 2000. Central bank accountability and transparency: Theory and some evidence, Bundesbank Discussion Paper 06/00.

Faust, J. and Svensson, L.E. 2001. Transparency and credibility: Monetary policy with unobservable goals. International Economic Review 42(2), 369-397.

Faust, J. and Henderson, D. 2004. Is Inflation Targeting Best Practice Monetary Policy? Federal Reserve Bank of St. Louis Review 86(4), July/August, 117-143.

Geraats, P. M. 2000. Why adopt transparency? The publication of central bank forecasts. CEPR Discussion Paper 2582.

Geraats, P. M. 2001b. Transparency of monetary policy: Does the institutional framework matter? Mimeo, University of Cambridge.

Geraats, P. M. 2002. Central bank transparency. Economic Journal 112, F532-F565.

Geraats, P. M. and Eijffinger, S. C. 2004. Does central bank transparency reduce interest rates? Paper presented at the European summer Symposium on International Macroeconomics (ESSIM), Tarragona, May 26-29, 2004.

Jensen, H. 2000. Optimal degrees of transparency in monetary policymaking. CEPR Discussion Paper 2689.

Kuttner, K. N. and Posen, A. S. 1999. Does talk matter after all? Inflation targeting and central bank behavior. Institute for International Economics Working Paper No. 99-10.

Kydland, F. E. and Prescott, E. C. 1977. Rules rather than discretion: The inconsistency of optimal plans. Journal of political Economy 85(3), 473-491.

Morris, S. and Shin, H. S. 2000. Welfare effects of public information. Bundesbank Discussion Paper 07/00.

Neumann, M. J. M. 2002. Transparency in Monetary Policy. Atlantic Economic Journal 30(4), pp. 353-65.

Posen, A. S. 2002. Six Practical Views of Central Bank Transparency. In Central Banking, Monetary Theory and Practice: Essays in Honour of Charles Goodhart, Volume 1, Paul Mizen, ed. Edward Elgar, London, forthcoming.

Rogoff, K. 1985. The optimal the degree of commitment to an intermediate monetary target. Quarterly Journal of Economics 100(4), 1169-1189.

Sargent, T. J. and Wallace, N. 1975. Rational Expectations, the Optimal Monetary Instrument and the Optimal Money Supple Rule. Journal of Political Economy 83: 241-254.

Schaling, E. and Nolan, C. 1998. Monetary policy uncertainty and inflation: The role of central bank accountability. De Economist 146(4), 585-602.

Siklos, P. L. 2000. Monetary policy transparency, public commentary and market perceptions about monetary policy in Canada. Bundesbank Discussion Paper 08/00.

Svensson, L. E. O. 1997. Inflation forecast Targeting: Implementing and Monitoring Inflation Targets. European Economic Review 41: 1111-46.

Svensson, L. E. O. 1999. Inflation Targeting as a Monetary policy rule. Journal of Monetary Economics 43(3): 607-54.

Taylor, J. 1993. Discretion versus Policy Rules in Practice. Carnegie-Rochester Conference Series on Public Policy 39: 195-214.

Vickers, J. 1998. Inflation Targeting in Practice: The U. K. Experience. Bank of england Quarterly Bulletin.

Walsh, C. E. 1998. Monetary Theory and Policy. MIT Press, Cambridge, Massachusetts.

Walsh, C. E. 1999. Announcements, inflation targeting and central bank incentives. Economica 66, 255-69.

Winkler, B. 2000. Which kind of transparency? On the need for clarity in monetary policy-making. European Central Bank Working Paper 26.