

No. 1999/16

Transparency in Monetary Policy

Hermann Remsperger / Andreas Worms

Transparency in Monetary Policy*

Hermann Remsperger / Andreas Worms**

January 1999

Abstract: For some time now the buzzword “transparency” has been bandied about in the media almost daily. For example, calls were made for greater transparency in the financial system in connection with developments in the Asian financial markets. But the call for greater transparency goes far beyond the financial markets. It is now regarded as a necessary part of "good governance" demanded of all economic policy makers. As the World Bank's chief economist Joseph Stiglitz put it: “No one would dare say that they were against transparency (...): It would be like saying you were against motherhood or apple pie.”¹ This paper focuses on transparency in monetary policy, in particular with respect to the European System of Central Banks.

Keywords: Transparency, monetary policy, ESCB

JEL classification: E58

* An earlier version of this paper has been presented at the CFS by Hermann Remsperger on Dec. 10, 1998.

** Andreas Worms, Deutsche Bundesbank, Economics Department, Postfach 10 0602, D-60006 Frankfurt am Main, Germany, E-mail: andreas.worms@bundesbank.de

¹ Quoted in the Financial Times of 5 October 1998.

I. Introduction

In order to introduce a little transparency into the discussion about transparency in the monetary policy field, we shall consider two pairs of interrelated questions. The first pair is: Transparency – for what purpose and for whom? And the second pair is: Transparency – what should it cover and how is to be achieved?

These questions are answered in the context of monetary policy within the European System of Central Banks (ESCB). After all, the European Central Bank itself has frequently been accused of lacking transparency. Thus a commentary in the renowned newspaper Financial Times said: “The ECB intends to make decisions in secret, using forecasts it will not reveal, to achieve objectives it does not need to justify.”¹

II. Transparency – for what purpose and for whom?

Since most economic decisions are made amid uncertainty, assessments of current and future trends play a key role in economic decision-making. If these assessments are wrong, the decisions based on them – barring lucky chance – are unlikely to be right either. At the microeconomic level, therefore, everyone is keen to minimise his or her uncertainty. For this reason institutions operating at the macroeconomic level are generally expected to keep the uncertainty associated with their policy as small as possible. At the very least they should make sure they do not actually increase existing uncertainty.

With respect to the central bank, this requirement applies in the first instance to uncertainty associated with its monetary policy². Advocates of ultra-transparency demand that the central bank reveal to the parties on the receiving end of its policies each and every strand of reasoning and piece of evidence on which its decisions were based. This, they claim, would make the central bank more predictable for outsiders. The advocates – and potential beneficiaries – of this extreme definition of transparency are above all the financial markets. They can profitably convert the information directly into transactions. But the call for greater predictability on the part of the central bank is also prompted by the hope of being able to avoid market overreaction and the associated excessive

¹ The Financial Times of 15 October 1998.

² In the context of “moral hazard”, on the other hand, it is frequently demanded that the central bank should leave the banks unclear about whether or not it will act as a lender of last resort in the event of a crisis. See for example Enoch, Carles/Stelle, Peter/Khamis, May (1997).

volatility.³ This applies not least to the period shortly before and after the meetings of the central bank's policy makers.

However, predictability also has its drawbacks. It can make the central bank a hostage to market sentiment. The central bank would then be constrained to act – or rather react – solely in order to meet the short-term expectations of outsiders. If the central bank is guided too much by prevailing expectations this can lead - as many central bankers have always suspected and as Ben Bernanke and Michael Woodford have formally demonstrated⁴ - to instabilities and multiple equilibria, which reduce total welfare. Hence limits have to be defined for central bank predictability. To ensure that the central bank can counteract undesirable developments, it must not be completely predictable at all times, i.e. in the short run.⁵ Thus European monetary policy makers, too, must have the option of taking the financial markets by surprise. We are talking about the short-term horizon, of course. Surprises in longer-term policy would be self-defeating as monetary policy must be predictable in the long run. This will undoubtedly be true of the policy of the ESCB, too. We shall come back to this point when we consider the second pair of questions.

In addition to the predictability of monetary policy, the transparency debate also emphasises central bank accountability. Since the ESCB is ultimately accountable to the public, so the argument goes, it must also make available the information needed to evaluate its monetary policies.⁶ The accountability obligation is, so to speak, the necessary counterweight to central bank independence. At the same time, the transparency associated with the accountability obligation should help to build up the credibility of European monetary policy from the start.

According to this argument, the ultimate beneficiary of transparency is the "European public". This remains so even when European institutions such as the European Parliament act as "intermediaries". However, this could result in different forms of accountability; these range from hearings before the appropriate committees of the European Parliament to a more or less binding commitment by the central bank to provide explanations of its own accord whenever it thinks that is necessary.

It is in the central bank's own interests to make use of transparency in order to build up its credibility. Since transparency makes it easier for the public to make an *ex post* assessment of the ESCB's monetary policy stance, the *ex ante* statements made by the central bank gain greater credibility.

³ See Goodfriend, Marvin (1986) and Tabellini, Guido (1987).

⁴ See Bernanke, Ben S./Woodford, Michael (1997) and Woodford, Michael (1994).

⁵ See for example, Bhattacharya, Uptal/Weller, Paul (1997).

This in turn is necessary to enable the ESCB to stabilise long-term inflation expectations - which have a major bearing on the rate of price increases - at a low level. Hence it would be wrong to imply that the ESCB is not interested in transparency. The very opposite is true. We shall likewise return later to the relevance of central bank credibility to the transparency debate.

III. Transparency - what should it cover and how is to be achieved?

In economic theory transparency is analysed on the assumption of an asymmetric distribution of information. Given a symmetric distribution of the available information, it is not possible for one or more of the economic agents to create greater transparency because everyone already has the same level of information. It follows, therefore, that calls for a central bank to improve transparency can only relate to information available to itself but not to outsiders. Three possible sources of asymmetric information between the central bank and the public need to be distinguished: firstly the monetary policy transmission channel, secondly the data and forecasts used by the central bank, and thirdly the central bank's objective function.

III.1 The transmission of monetary impulses

It is by no means clear exactly how monetary policy measures are transmitted to the real economy. Although economic theory has identified many different transmission channels (e.g. the interest rate channel, the asset channel, the exchange rate channel and the credit channel), assessing their empirical relevance is an extremely difficult task. Furthermore, the transmission process could differ from one country to another owing to institutional specificities (e.g., the financial system, structure of trade). So empirical results for a particular country cannot be applied automatically to another country or group of countries.

Thus uncertainty about the transmission mechanism is likely to be particularly great at the start of Stage Three of EMU and for some time afterwards. Studies of the transmission process in monetary union are based either on purportedly similar economies or on conclusions drawn from national data. But the first approach is handicapped by the insufficient comparability between EMU at Stage Three and other economies, while the second approach is handicapped by the problem of aggregating the data and the assumptions on which the aggregation is based. One common problem facing all

⁶ See for example, Briault, Clive B./Haldane, Andrew G./King, Mervin A. (1996).

empirical studies is the fact that the transition to monetary union might lead to changes in behaviour (“Lucas critique”).⁷ Seen in this light, the transmission mechanism remains a largely opaque process, particularly during the early stages of monetary union.

This insufficient knowledge about the transmission process or the effects of monetary policy measures exists not only outside but also inside the central bank. It is therefore not so much a problem of asymmetric information as insufficient information, which affects everyone equally: the central bank can reduce the uncertainty surrounding the transmission mechanism only if it understands this process itself. It cannot create transparency in this area since knowledge about the issue is just as limited within the central bank as it is outside. And this limited knowledge in turn restricts the possibilities for creating transparency in general. This relates to inflation forecasts but also to the task of interpreting the trend in monetary growth.

The demand for transparency of the ESCB’s thinking with regard to the transmission of monetary impulses can therefore only relate to those perceived insights which it considers to be fairly certain. One such insight is that monetary policy can have an expansionary impact on real variables at most in the short term only. With respect to long-term effects, i.e. the effects persisting after all the adjustment processes have run their course, there is now a broad consensus that monetary policy determines the development of the aggregate price level. In other words, in the long run inflation can only emerge (other things being equal) if a corresponding expansion in the money stock is there. To the extent that the ESCB imparts this to the public, it is creating transparency. And it has already done so.⁸ The announcement of the reference value for M3 growth of 4 ½ percent should be interpreted in this light. In addition the ESCB announced that it would provide detailed reasons if actual monetary growth were to deviate from the reference value.⁹ In this way the ESCB is ensuring the aforementioned predictability of its policy in the medium to long term.

⁷ Examples of empirical work on the transmission mechanism during Stage Three of EMU are to be found in Ramaswamy, Ramana/Sloek, Torsten (1998), Dornbusch, Rüdiger/Favero, Carlo A./Giavazzi, Francesco (1998) and Peersman, Gert/Smets, Frank (1998) and the studies mentioned there.

⁸ See for example, Duisenberg, Willem F. (1998a), p.5 and likewise Issing, Otmar (1998a), p.14.

⁹ See Issing, Otmar (1998b), p.13.

III.2 Data and forecasts

The second possible source of asymmetric information between the central bank and outsiders are the data and forecasts concerning macroeconomic trends. Data transparency is in principle self-evident, particularly as many of the data which help to shape monetary policy decisions are compiled outside the central bank. It must be remembered, however, that – for practical reasons – a central bank cannot publish all its data. It therefore only publicises those data which it believes to be important. But it should not simply publish the “bare figures” but should also provide an interpretation. Thus the Bundesbank, in its Monthly Reports and Statistical Supplements, has never contented itself with publishing numerical data only but has always explained and commented on the underlying trends. The European Central Bank will adopt a similar approach and thereby create transparency.

Besides analyses of the current economic situation, forecasts also play a key role in monetary policy – which is by nature forward-looking. Owing to the long lead-time between a monetary policy decision and its effect on the price level, the central bank cannot avoid taking future developments into account.

It is a matter for dispute whether a central bank should publish inflation forecasts. Two aspects deserve special mention in this context. Firstly, it should be noted that the publication of an inflation forecast is being called for in particular by those who in the debate on monetary policy strategy advocate “direct inflation targeting”¹⁰. But that is not the strategy for which the Governing Council of the European Central Bank opted. Secondly, it should be borne in mind that a central bank can be bound more tightly by the publication of an inflation forecast than is actually warranted by the quality of that forecast. In practice a forecast cannot amount to a complete summary of all the information relevant to monetary policy decisions. This is mainly because there is no universally optimal forecasting method. For example, the specification of the macroeconomic model used for forecasting contains a number of degrees of freedom. Moreover, assumptions also have to be made regarding the exogenous variables.

Another problem is that macroeconomic models cannot adequately capture structural changes. This problem will become particularly apparent in the early stages of monetary union because the likelihood of structural breaks occurring is especially high in the initial phase: the introduction of the

¹⁰ Compare for example Illing, Gerhard (1998).

euro will cause financial markets to change. In addition, the mode of operation of the new European System of Central Banks will differ from previous practice in some countries. It is also possible that private economic agents will behave differently from before in their portfolio decisions. Statements and decisions based solely on econometric estimations using historical data may thus be inadequate or incorrect.

This is all the more true if - as at the start of the “euro era” - changes in the relations estimated in econometric models cannot be ruled out. However, presumptions about such changes cannot be generalised and systematically included in forecasting models. Their inclusion therefore inevitably implies discretionary intervention in the models. Incorporating structural changes into the forecasts in this way also makes the forecast difficult for outsiders to grasp.

For all these reasons, the ESCB will not publish inflation forecasts. Publication would bestow on the forecasts a status which they simply cannot be accorded in monetary policy decisions.

The decision not to publish inflation forecasts has already been interpreted as a sign of deficient transparency. But what the critics fail to realise is that the alternative would be to publish rather vague forecasts which would be opaque to outsiders and would have to be continually adjusted to short-run developments in an *ad hoc* fashion. Their relevance for monetary policy decisions might well be fairly small and their publication would not increase the transparency of European monetary policy. On the contrary, they might even paint a wrong picture of the decision-making process within the ESCB.

It should also be remembered that inflation forecasts contain an interest rate assumption. Those central banks which publish their inflation forecasts, such as the Bank of England, in general assume constant short-run interest rates. However, this is problematical with respect to creating transparency. If the published inflation forecast deviates from the real or normative inflation rate, a central bank pursuing an inflation rate target in effect ought to raise short-term interest rates. Yet if economic agents base their expectations on the published inflation forecast, their inflation rate expectations will be too high. Hence such an inflation forecast can send wrong signals, which runs counter to transparency.¹¹

Another shortcoming is that inflation forecasts appear in principle to be somewhat arbitrary. This criticism is often countered by the argument that competing forecasts compiled inside and outside the

¹¹ For a different point of view see Illing, Gerhard (1998).

central bank would put the “official” inflation forecast into perspective. But this still does not resolve the transparency problem. How can the public judge different assessments and the debate about their respective merits? How can Joe Public be expected to evaluate a specialist discussion among experts about appropriate assumptions and the better forecasting method? Given divergent assessments of the “correct” inflation forecast, the public will find it difficult to evaluate the policy pursued by the central bank.

By comparison, it is easier to identify a deviation of the reference value for the money stock from the actual growth of this aggregate. However, analysing these deviations can prove to be just as complicated as interpreting inflation forecasts. This applies especially to the initial phase of the ESCB's monetary policy. Thus it is not possible – at least at the present time – to give a clear-cut answer to the question of whether a reference value for monetary growth creates more transparency than the publication of inflation forecasts. One thing that clearly is fallacious, however, is the implication, which has occasionally surfaced during the debate, that inflation forecasts *per se* create greater transparency than a reference value for monetary growth.

III.3 The central bank's objective function

The most important point of reference in the theoretical literature on transparency is the central bank's objective function. Asymmetric information exists in this context not only regarding the variables to which the central bank attaches particular importance in its decisions but also to the respective weight that it assigns to each of these variables.

The key importance emphasised in the literature to information asymmetry concerning the objective function can be explained not least by the fact that the aspects of asymmetric information already discussed can also be interpreted solely in the light of this point. Thus in the literature it is postulated that it must be possible to draw inferences about a central bank's intentions from observations of its monetary policy measures. And this also presupposes that not only the central bank's views on the transmission process but also that the data and forecasts on which the decisions were based are known. However, perfect transparency as described in the theoretical literature cannot be achieved in the real world.

The Maastricht Treaty lays down price stability as the primary monetary policy objective of the European Central Bank. This has already been defined – and publicly announced – as an increase in

the HCPI of less than 2 per cent, and so has been rendered transparent. In order to achieve this objective the ESCB must influence the determinants of price movements as appropriate. In the short term, however, it can influence price movements only via long-term inflation expectations.

Monetary policy problems would arise if the public did not believe that the central bank aimed to achieve stable prices. This credibility problem was addressed earlier. In the academic literature it is associated primarily with the assumption of time-inconsistent behaviour of monetary policy makers. In a seminal study Robert Barro and David Gordon¹² showed that monetary policy makers - once a given inflation expectation has been factored into the decisions of economic agents - have an incentive to induce a higher rate of inflation than that expected. It is argued that, by means of such “surprise inflation”, they could achieve for a time a production level higher than the “natural” level of output.

This behaviour on the part of monetary policy makers is often taken as given in the academic literature, but it is questioned by central bankers – and with good reason. Thus Alan Blinder, former Vice Chairman of the Federal Reserve Board of the US Federal Reserve Bank, writes: “I can assure you that it would not surprise my central banker friends to learn that economic theories that model them as seeking to drive unemployment below the natural rate imply that their policies are too inflationary. They would no doubt reply, ‘Of course that would be inflationary. That’s why we don’t do it’. (...) That is exactly what I felt duty-bound to do while I was Vice Chairman of the Fed”.¹³

A different kind of doubt about the relevance of the time-inconsistency problem was expressed by Charles Goodhart.¹⁴ The Barro/Gordon model assumes that the central bank affects the inflation rate faster than existing contracts can be revised, for only if this is true it is impossible to incorporate a price increase initiated by the central bank into a contract and hence for real effects to ensue. In reality, however, it is likely that the transmission of monetary policy measures to prices stretches out over a period which is longer than the duration of many contracts.¹⁵

The objections raised by Blinder and Goodhart to the core notion of time-inconsistency cannot be dismissed out of hand. Nonetheless the question arises as to how the ESCB can anchor inflation expectations at a low level. How can it demonstrate that it will always pursue an appropriate

¹² Barro, Robert J./Gordon, David B. (1983). See also Kydland, Finn E./Prescott, Edward C. (1977).

¹³ Blinder, Alan S. (1998), p. 42f.

¹⁴ See for example, Goodhart, Charles/Huang, Haizhou (1995).

¹⁵ For a discussion of the relevance to reality in the “time inconsistency” literature See also McCallum, Bennett T. (1995).

monetary policy? Some experts argue that it can always claim to do so (“cheap talk”), but that it can credibly underpin its policy only by quickly publishing the minutes of ECB Council meetings and the votes of its members.

The minutes, it is said, would keep the public regularly informed of the background to monetary policy decisions. They would be given an insight into the degree of controversy in the monetary policy discussions, i.e. how certain or uncertain the Council was in its decisions. This information, it is argued, should allow outsiders to gain an insight into the intentions of the ECB Council members and thus into the monetary policy objective function. In reality, however, it is doubtful whether publishing the minutes and votes of the individual policy makers would in fact create more transparency. It is even to be feared that this would actually reduce the efficiency of monetary policy.

Amazingly, the demand that individual votes be made public is even justified by the assertion that this would reduce potential political pressure on Council members.¹⁶ It is claimed that the publication of the minutes of ECB Council meetings containing details of the discussion and the individual votes would enable the Council members right from the start to erect a barrier against any attempt by their national governments to influence them and would underline their determination to honour their European mandate. Furthermore, they could also demonstrate to the “European public” in this way that they were not being motivated by national considerations. What this argument forgets, however, is that under such a scenario the voting pattern and discussion contributions of the individual Council members would be influenced by their awareness of their subsequent publication. There is a danger that the discussion would not be frank as it is to be subsequently made public. It is important to emphasise once again that the members of the Governing Council of the European Central Bank have a European mandate, not a national one. If the minutes were to be made public, they might be subjected to pressure in their home country¹⁷. This would endanger the independence of the ECB Council members and thus of the ESCB as a whole. Therefore non-publication of the voting behaviour of ECB Council members is right and proper.

This leaves the question of whether it would be valuable to publish the minutes without naming names. But this too would hardly stop outsiders from attempting to identify Council members on the basis of the opinions expressed. Thus this approach, too, might heighten the sensitivity of the ECB Council members to how the “folks back home” will react to their contribution to the discussion. That

¹⁶ See for example, Buiters, Willem H. (1998).

¹⁷ See Issing, Otmar (1998a)

is not compatible with the goal of ensuring that the decision-making process is as efficient as possible. Given the ESCB's special nature as a supranational institution, it is therefore to be feared that publishing the minutes could entail the danger of a renationalisation of monetary policy.

In evaluating the ESCB's decision to keep the minutes of meetings confidential it is also pertinent to ask just how much transparency would really be achieved if they were made public. In actual fact it is rather doubtful – as in the case of inflation forecasts - whether publishing the minutes really would enhance transparency decisively. If the minutes were published, the suspicion might arise that other meetings had been held prior to that meeting and that the crucial discussion had taken place off the record. This again shows that "perfect transparency", as described in theoretical studies, is not possible in practice. In other words, the public never knows whether it really knows everything. We must be clear about this point: keeping the minutes of meetings confidential does not prevent or resolve these questions – but neither does their publication. This is often forgotten in the debate on transparency. There are natural limits to transparency.

III.4 Natural 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. The theoretical models commonly used are typically based on just a few variables. Making all the information available therefore does not entail any great effort. The same applies to processing this information.

In the real world, however, this problem is much more complex. "Perfect transparency" would imply that the central bank must make available all the information which contributed, however remotely, to its decisions. But on purely practical grounds it cannot publish everything, such as the course and results of all workshops, all the committee meetings of the national central banks, every discussion about conceptual or statistical definitions, and so on. In practice, therefore, transparency is invariably partial and can never be complete and perfect in the sense of the theoretical models. Also it is doubtful whether maximum information really creates maximum transparency.

A certain selection must inevitably be made when publishing information. This is particularly true if the central bank wishes to create transparency. And it must also be obvious to the recipients that the selection of the information undertaken by the central bank transmits signals. Why is the central bank

informing us about this particular issue? And why now? And 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 deciding on a particular monetary policy measure.

Moreover, in the real world there are also limits to processing information; the relevant kernel has to be selected and interpreted from the mass of data available. This is an easy process in the theoretical models of the appropriate literature because usually everyone knows the right model. In reality, however, opinions about the (short-run) effects of monetary policy are extremely heterogeneous. This means that one and the same piece of information may be interpreted in different ways. And it also means that different subsets will be formed from the mass of information available to the economic agents who are the target of monetary policy. Thus, an inflation forecast by the central bank may be incorporated into the decisions of one observer on a one-to-one basis, while another observer suspects that the central bank itself internally relativises the published figure. This varying approach to selecting and processing information can lead to sharply divergent assessments and actions.

III.5 The ESCB's principal means of creating transparency

The ESCB has an inherent interest in transparency since it knows that transparency is necessary in order to build up credibility quickly. The fact that it does not publish its inflation forecasts or minutes of meetings should not be seen as an indication of a reluctance to be transparent since there are good reasons in both cases for not doing so. Transparency can also be attained by other means, for example, by speeches of the members of the Governing Council, the reports and other publications of the European Central Bank and the National Central Banks and the commentaries on the current situation, delivered by the President of the European Central Bank directly after every meeting of the Governing Council.

The ESCB will create transparency by regularly informing the public about its assessment of the monetary, economic and fiscal situation in EMU and its monetary policy decisions¹⁸. Besides press releases, the European Central Bank publishes a Monthly Bulletin and an Annual Report. The members of the ECB Council will also regularly comment on their monetary policy in speeches and interviews.

¹⁸ See Duisenberg, Willem F. (1998a), p.5/6. See also Duisenberg, Willem F. (1998b) and Issing, Otmar (1998b).

Over and above this, the President of the ECB Council will report to the European Parliament four times a year.

When considering all these questions, it must be emphasised that the ESCB has clearly defined its price objective. It has precisely defined the relevant variable and has made the number public. It has also announced a reference value for monetary growth which enables the public to assess monetary policy in the euro area on an ongoing basis and when necessary to demand explanations from the ESCB. It is to be expected that these measures as a whole are well suited to making European monetary policy transparent.

IV. Summary

To sum up, the ESCB should do all it can to make its policies transparent. However, it must be realised that transparency has its limits, *inter alia* because we still have so little certainty about the monetary policy transmission process, particularly in the initial phase of monetary union. If the ECB were to publish inflation forecasts, they would inevitably be very vague. However, the uncertainty surrounding the transmission mechanism also poses problems of interpreting the trend in monetary growth.

Publishing the minutes of ECB Council meetings might even endanger the efficiency of monetary policy in the euro area. But above all, even if inflation forecasts and the minutes of meetings were published, the public would never be sure that they really knew everything. In essence, therefore, transparency is less a matter of the quantity of information provided than of its plausibility.

Literature

- Barro, Robert J./Gordon, David B. (1983): A positive theory of monetary policy in a natural rate model; in: *Journal of Political Economy* 91, pp. 589-610.
- Bernanke, Ben S./Woodford, Michael (1997): Inflation Forecasts and Monetary Policy; in: NBER Working Paper No. 6157, September 1997.
- Bhattacharya, Uptal/Weller, Paul (1997): The advantage to hiding one's hands: Speculation and central bank intervention in the foreign exchange market; in: *Journal of Monetary Economics* 39, pp. 251-277.
- Blinder, Alan S. (1998): *Central Banking in Theory and Practice*; MIT Press, Cambridge (Mass).
- Briault, Clive B./Haldane, Andrew G./King, Mervin A. (1996): Independence and Accountability; Bank of England Working Paper.
- Buiter, Willem H. (1998): Independence of ECB likely to be perverted if council voting is secret; in: *Financial Times*, September 24, 1998.
- Dornbusch, Rüdiger/Favero, Carlo A./Giavazzi, Francesco (1998): Immediate challenges for the European Central Bank; in: Begg/von Hagen/Wyplosz/Zimmermann (Hrsg.): *EMU: Prospects and Challenges for the Euro*, *Economic Policy* 26, April 1998.
- Duisenberg, Willem F. (1998a): The stability-oriented monetary policy strategy of the European System of Central Banks and the international role of the euro; Speech at the Economic Club of New York, New York, November 12, 1998. Reprinted in: *Deutsche Bundesbank, Auszüge aus Presseartikeln Nr. 67*, 12. November 1998, pp. 4-7.
- Duisenberg, Willem F. (1998b): The European System of Central Banks: Current Position and Future Prospects; keynote address delivered to the conference »European Economic and Monetary Union - Markets and Politics under the Euro«, London, November 27, 1998.
- Enoch, Carles/Stelle, Peter/Khamis, May (1997): Transparency and Ambiguity in Central Bank Safety Net Operations; *International Monetary Fund Working Paper* 97/138.
- Goodfriend, Marvin (1986): Monetary Mystique: Secrecy and Central Banking; in: *Journal of Monetary Economics* 17, pp. 63-92.
- Goodhart, Charles A.E./Huang, Haizhou (1995): What is the Central Bank's Game?; *LSE Financial Markets Group Discussion Paper* No. 222, November 1995.

- Illing, Gerhard (1998): Herausforderungen an die Europäische Zentralbank; in: Wirtschaftsdienst 1998/VIII, S. 491-500.
- Issing, Otmar (1998a): Open for business; in: Financial Times, September 22, 1998.
- Issing, Otmar (1998b): Die Euro-Zentralbank wird weit über gesetzliche Vorgaben hinaus die Öffentlichkeit ausführlich informieren; in: Frankfurter Rundschau, 12. Oktober 1998. Reprinted in: Deutsche Bundesbank, Auszüge aus Presseartikeln Nr. 62, 16. Oktober 1998, S. 13-15.
- Kydland, Finn E./Prescott, Edward C. (1977): Rules rather than discretion: The inconsistency of optimal plans; in: Journal of Political Economy 85, pp. 473-491.
- McCallum, Bennett T. (1995): Two fallacies concerning central bank independence; in: The American Economic Review - Papers and Proceedings, Vol. 85, No. 2, May 1995, pp. 207-211.
- Peersman, Gert/Smets, Frank (1998): The Taylor-Rule: A Useful Monetary Policy Guide for the ESCB?; Paper presented at the Banca d'Italia Conference on »Monetary Policy of the ESCB: Strategic and Implementation Issues«, Milano, July 6-7, 1998.
- Ramaswamy, Ramana/Sloek, Torsten (1998): The Real Effects of Monetary Policy in the European Union: What are the differences?; IMF Staff Papers, Vol. 45/2, (Juni 1998), pp. 374-391.
- Tabellini, Guido (1987): Secrecy of Monetary Policy and the Variability of Interest Rates; in: Journal of Money, Credit, and Banking 19, No. 4, pp. 425-436.
- Woodford, Michael (1994): Nonstandard indicators for monetary policy: can their usefulness be judged from forecasting regressions?; in: Mankiw, N. G. (ed.): Monetary Policy; The University of Chicago Press (Chicago/London), pp. 95-115.