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ACCOUNTABILITY, CREDIBILITY, TRANSPARENCY AND STABILIZATION POLICY IN THE EUROSISTEM

by

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ABSTRACT

This paper surveys and evaluates alternative views regarding the desirable combination of accountability, credibility and transparency in the newly created ECB, including recent controversies regarding publication of minutes, Council member votes and ECB forecasts. The paper shows that premature publication of central bank forecasts reduces the ability of the bank to engage in stabilization policy while maintaining inflation reasonably close to its inflation objective. This is demonstrated for an economy in which the transmission mechanism is characterized by a conventional, expectations' augmented Phillips relation. When the transmission mechanism operates via a Keynesian real interest rate channel (of the type used in a number of econometric models, and compactly summarized in Svensson (1997a)) premature publication of forecasts does not affect expected social welfare provided only price stability and stabilization policy matter. But when (due, possibly, to detrimental effects of interest rate variability on financial stability) social welfare is also negatively related to interest rate variability, premature publication of forecasts, again, reduces expected social welfare.

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1 Introduction

The formation, at the beginning of 1999, of the European Monetary Union (EMU) and of its institutional arm - - the European Central Bank (ECB)- - has transformed the twin issues of accountability and credibility of the ECB from a mere academic discussion into a practical policy issue.¹ The basic dilemma is the following one: On one hand, both theoretical and empirical research during the last two decades supports the view that central bank independence is a desirable institutional device because it is associated on average with lower inflation and no lower growth.² The policy recommendation emanating from this rather large body of research is to make the central bank (CB) responsible for only one objective, which is price stability, and to endow it with sufficient authority over the conduct of monetary policy to be able to attain this objective. The charters of the ECB and of its predecessor - - the Bundesbank - - reflect this point of view to a large extent.

It has been claimed, on the other hand, that total delegation of a major aggregate demand management policy instrument like the interest rate to unelected officials is undemocratic. This conception underlies the insistence on accountability embodied in several recent CB charters like the 1989 law of the Bank of New-Zealand and the 1997 charter of the Bank of England. On this view, in a democracy, control over major macroeconomic policy instruments should be ultimately controlled by "the people" presumably through their elected representatives.³ In the absence of **temporary** effects of monetary policy on employment and output, it is likely that this argument would have been dismissed on the ground that monetary policy cannot affect real variables, and that it is therefore better to direct the CB to focus **only** on price stability. But existing evidence shows that, although such effects are temporary, they are nevertheless present

¹The term "Eurosystème" which appears in the title includes the ECB and the 11 national central banks (NCB) of the countries that chose to join the EMU and to adopt the Euro. The European System of Central Banks (ESCB) includes in addition, the four non participating NCBs. The Eurosystème is governed by the ECB's decision-making bodies which are the Governing Council and the Executive Board. The Governing Council includes the six members of the Executive Board and the Governors of the 11 participating NCBs.

²The empirical and theoretical cases for CB independence are reviewed in Eijffinger and de Haan (1996), Cukierman (1998) and Papadia and Ruggiero (1999).

³Stiglitz (1998), p. 19, has recently expressed the view that since monetary policy is a key determinant of macroeconomic performance removing it from the control of democratically elected officials should at least raise questions.

and sometimes non negligible. ⁴Hence monetary policy can **also** be gainfully used to stabilize real shocks to employment and output. Thus, there is a tradeoff between the credibility needed to maintain low inflation and the flexibility necessary to conduct anticyclical monetary policy.⁵ This tradeoff is, I believe, at the root of the current debate regarding the appropriate level of accountability of the ECB.

At first blush it would seem that since the only legal objective of the ECB is price stability even the consideration of stabilization policy is out of the question. But the matter is not as clear cut for several reasons. First, if history is any guide there is a precedent backing the belief that even a highly independent Bank that is legally directed to focus only on price stability will engage in stabilization policy. In particular, Clarida and Gertler (1997)) produce evidence supporting the view that the Bundesbank **did** engage in stabilization policy. Second, in spite of the fact that it is not mentionned in the Treaty, various policymaking circles expect and wish that the ECB engage in stabilization policy. Its worth noting in this context that the Treaty of Maastricht does not totally close the door for stabilization policy by stating that without prejudice to its main (price stability objective) the ECB should help promote the economic policies of the European Community.⁶ Finally, it is hard to distinguish in practice a CB that responds to economic conditions because it **only** aims at achieving a target rate of inflation from a CB that behaves in this manner **also** because it desires to reduce fluctuations in economic activity.⁷

The ECB enjoys a high level of legal independence in conjunction with relatively little legal accountability. The first year of operation of the ECB witnessed a number of suggestions on how to improve the accountability of the ECB and triggered a lively debate in both poli-

⁴Recent evidence from econometric models appear in Smets (1995) and is broadly surveyed and interpreted in Vinals and Valles (no date).

⁵Practical policymakers have probably been aware of this tradeoff since the heydays of Keynesiansim. But Rogoff (1985) was the first academic to formulate it explicitly within the modern dynamic inconsistency literature and to show that it implies that the appointment of a central banker that is more conservative than society is beneficial for social welfare.

⁶Recent literature on optimal contracts for central bankers opens the door for the possibility that, under appropriate structuring of institutions, an independent CB will engage in stabilization policy while maintaining price stability on average (Persson and Tabellini (1993), Walsh (1995a) and Svensson (1997a)).

⁷This observation is due to Mervyn King. In the first case the CB possesses a loss function that depends only on deviations of actual from targeted inflation. In the second case the loss function also depends on deviations of actual from a target level of output. Svensson (1997c) refers to those types of central banks as **strict** and **flexible** inflation targeters respectively.

cymaking as well as academic circles. Although some aspects of accountability may enhance independence there appears to be, on balance, a negative relation between the independence and the accountability of central banks.⁸ Accountability has two distinct aspects to which I shall refer as narrow and broad accountabilities respectively. When, as is in the case of the ECB, the only (or main) objective of the CB is price stability narrow accountability means that the CB is responsible for its performance on this objective to a higher authority. Broad democratic accountability means that there is a mechanism whereby elected officials can in some precisely specified circumstances override the CB and change the Bank's tradeoffs between price stability and other objectives. With some stretching narrow accountability may be fitted into the Maastricht Treaty. By contrast broad accountability is clearly incompatible with the Treaty. It is therefore important, in future debates on this issue to be explicit about the type of accountability that is being discussed.

Advocates of more accountability for the ECB believe that an important practical prerequisite for accountability is policy transparency. Transparency has several dimensions some of which are hardly controversial and others that are more problematic. An important non controversial aspect of accountability is that the Bank should preannounce a quantitatively precise target for inflation by which its performance in achieving price stability can be subsequently evaluated (Tabellini (1998), Svensson (1999)).⁹ Although the Treaty of Maastricht does not require it, the ECB has chosen to preannounce a quantitatively precise target even before the start of formal operations on January, 1, 1999.¹⁰

A rather controversial aspect of transparency concerns the publication of the Bank's economic forecasts and the minutes of Governing Council meetings including the votes of individual Council members. Some of the pros and cons of those contentious, but practical issues, appear in a recent exchange between Buiter (1999) and Issing (1999). Other aspects of transparency

⁸This negative relation is documented for a cross section of central banks in Briault, Haldane and King (1996) and in De Haan, Amtenbrink and Eijffinger (1999). Using a thirteen characteristics aggregate index of accountability the second paper finds that the level of legal accountability of the ECB is third lowest in a sample of 16 CB charters. See also De Haan (1997).

⁹This is the case in all the countries that have instituted inflation targets. Those countries are New-Zealand, Canada, UK, Sweden, Finland, Australia, Spain and Israel.

¹⁰In October 1998 the ECB issued the following press release: "...price stability shall be defined as a year-on-year increase in the Harmonized Index of Consumer Prices (HICP) for the Euro area of below 2 percent". Price stability "is to be maintained over the medium term" (ECB (1998), Angeloni et.al. (1999), p. 13).

involve the publication of an inflation report that reports the Bank's inflation forecast given the current policy stance, preferably with some indication of the associated uncertainty, and evaluates its performance in attaining the preannounced inflation objective. The new operating procedures of the Bank of England embody all the above mentioned features of transparency including the publication of minutes and of the votes of individual members of the Monetary Policy Committee (MPC).

Due to uncertainty about the transmission mechanism and future shocks no CB has perfect control over inflation. This statement has particular relevance for the ECB which started operating in a novel institutional environment. As forcefully stressed by Svensson (1997a, 1997b) inflation targeting involves, therefore, setting the current policy instrument at a level that would make the expected value of inflation, given this setting and given other information possessed by the Bank equal to the preannounced inflation target. Full transparency then involves advance publication of the factors that in the Bank's view determine the current inflationary environment. Svensson (1999) makes a strong case for the publication of this private information by the Bank and comes close to stating that the optimal level of transparency is as large as is technically feasible. This statement is at least partially influenced by recent theoretical analysis in Faust and Svensson (1999a, 1999b) in which they show that when the CB has private information about its own shifting objectives, higher transparency regarding those objectives is conducive to higher social welfare.¹¹

Are we to conclude from this that the CB should also reveal the private information it has about upcoming velocity and other shocks to the public as soon as this information becomes available to the Bank? Simple minded intuition suggests that when the Bank tries to achieve the twin objectives of inflation targeting and of output stabilization its private information may be beneficial in attaining better values for those two objectives. This intuition is examined by means of two analytical exercises that are presented in sections 4 and 5. In both cases the social loss function includes the conventional quadratic function that penalizes deviations from both the inflation and the employment targets at an increasing rate. In the second case the objective

¹¹Transparency is taken to be higher when the fraction of the inflation control error that is revealed to the public expost is higher. More detail appears in section 3.

function also includes a term that penalizes fluctuations in the nominal rate of interest.¹² In the first case the economy is characterized by a Lucas type aggregate supply function in which only unanticipated inflation affects output. The second exercise uses a Keynesian specification of the Svensson (1997b) type in which inflation responds to the lagged deviation of output from its normal level. This cyclical output deviation responds in turn to changes in the rate of interest set by the CB. Both specifications also feature a velocity shock and a non monetary aggregate demand shock about which the CB has advance private information.

Two types of regimes are examined in each case. A regime of **limited transparency** in which information about the shocks is kept private at the time inflationary expectations are formed and embedded in nominal contracts, and a regime of **full transparency** in which this information is relinquished to the public before the formation of expectations. The main result is that, in the presence of more than one objective, expected social welfare is higher under the limited transparency regime. This is always true in the economy with the Lucas supply function and, provided interest rate variability is socially costly, also in the economy with a neo-Keynesian, Taylor-Svensson specification. The reason, in the second case, is that premature publication of CB forecasts requires more variability in nominal interest rates in order to stabilize the ex ante real rate, and through it the output gap and inflation. Ironically, a Lucas type transmission mechanism implies that advocates of stabilization policy as a goal for monetary policy (in addition to price stability) should support limited transparency because it makes it possible to attain lower variabilities of both inflation and employment around their target levels, while strict inflation targeters would be indifferent.

Although one should not rush to conclude from these analytical exercises that transparency regarding CB forecasts should always be minimized they, at the very least, establish a strong presumption against the opposite view according to which it should always be maximized. The matter clearly deserves more careful consideration.

Section 2 reviews existing knowledge about the multi-faceted relation between accountability and credibility and discusses factors that might affect this tradeoff, as well as the choice of a point along it in the case of the ECB. Section 3 examines how various transparency enhanc-

¹²A discussion of factors that make it desirable to limit nominal interest rate variability appears in Cukierman (1991) and in chapter 7 of Cukierman (1992).

ing measures interact with accountability and credibility, how they alter the tradeoff between those two attributes, and discusses implications for the institutional structure of the ECB. The next two sections examine, within precise analytical frameworks, whether it is a good idea to publish the CB forecasts about the economy as soon as they are formed. Section 4 examines this question when the transmission mechanism is a Lucas, expectations augmented, Phillips curve and the objectives of society are to minimize fluctuations in both inflation and economic activity around their desired values. Section 5 examines the same question in the presence of a neo-Keynesian transmission mechanism in which the ex ante real rate affects the output gap and the latter affects subsequent inflation. Here the objectives of society also include, in addition to price stability and stabilization policy, interest rate smoothing. The general message of both sections is that in the presence of several objectives the temporary information advantage of the CB is valuable and can be gainfully utilized in order to achieve better values for the objectives of society.¹³

The recent exchange between Buiter (1999) and Issing (1999) mentioned earlier reflects two conceptions regarding the setup of monetary policymaking institutions. It covers a broader spectrum of issues concerning accountability, independence and transparency than just publication of forecasts and votes. The last and concluding section takes this exchange as a point of departure for an overall evaluation of the desirable combination of accountability, independence and transparency for the ECB.

2 Accountability and Credibility - Substitutes or Complements?

Recent developments and reforms of monetary institutions in the UK were influential in shaping conventional wisdom regarding the specific legal attributes of accountability. According to Briault, Haldane and King (1996) accountability is higher when the CB is subject to monitoring by Parliament, when Parliament or Government has the option of giving policy instructions to the CB, when the minutes of the Governing Board of the CB are required to be published

¹³This result contrasts with the views expressed in Svensson (1999) and Buiter (1999). Issing (1999) is also against the advance publication of CB forecasts but for different reasons than those of this paper.

quickly and when the CB is required to publish a monetary policy report in addition to its standard publications. Clearly, the last two requirements enhance accountability by increasing the transparency of the process by which monetary policy is made. De Haan, Amtenbrink and Eijffinger (1999) supplement those attributes by providing more detail regarding the identity of the institution that has final authority over monetary policy and add the extent to which the law provides an explicit formulation of CB objectives as a component of accountability. In particular, the clearer the law about the objectives of the CB and the clearer the prioritization and quantification of those objectives, the higher accountability. They also look at the kind of majority needed to reform the CB law.

A clear statement and prioritization of objectives contributes to both central bank independence (CBI) and accountability. Even if they do not add to independence, the publication of an inflation report and of minutes are unlikely to detract from the independence of the CB.¹⁴ But the remaining two features (monitoring by Parliament and the existence of an override option through which Parliament or Government can influence monetary policy) increase accountability at the expense of independence. Similarly, the lower the kind of majority needed to change the CB law the higher accountability and the lower CBI. The upshot is that some features of accountability and transparency enhance the independence of the CB while other impair it. Since the anti-inflationary credibility of the CB is positively related to its independence this means that, for some aspects of accountability, there is a tradeoff between accountability and credibility. Here "credibility" refers to the effective relative dedication of the CB to the objective of price stability.¹⁵ What is the overall relation between accountability and independence? The work of Briault et. al. (1996) and De Haan et. al. (1999) suggests that there is a negative, but not always significant, association between aggregate indices of legal accountability and aggregate indices of legal CBI.

What are the implications of those observations for the appropriate level of accountability of the ECB? Obviously there is no harm in instituting the features of accountability that also either enhance CBI and credibility or do not affect it. Those features are a "free lunch".

¹⁴This statement assumes the minutes do not include the votes of individual members of the Bank's Governing Board. This issue is discussed more fully in section 6.

¹⁵Blinder (1998b) reports that this definition of credibility is the most prevalent among central bankers. But credibility has a number of other, not unrelated, meanings that are discussed in chapter 11 of Cukierman (1992)).

But in the case of the features that compete with independence there is a tradeoff between accountability and credibility and some choice along this tradeoff has to be made.¹⁶ The following subsection discusses this issue.

2.1 Considerations for choosing a point along the accountability - credibility tradeoff

The choice of a particular location along the accountability - credibility tradeoff obviously depends *inter alia* on tastes concerning the relative importance attributed to price stability and to democratic accountability as an intrinsic value. I have little to say about this determinant of the optimal combination of accountability and credibility. Different people and different cultures may and will obviously differ on that. But since, given tastes, the optimal point also depends on the shape of the transformation curve between those attributes it is instructive to examine the factors that determine this tradeoff.

2.1.1 General considerations

McCallum (1995) and Sargent (1999) argue that, since they now understand that the long run Phillips curve is vertical, central bankers today abstain from trying to maintain output above its natural level. After serving as vice Chairman of the Fed Blinder (1998a) reports that, in his view, this is a reasonable description of the attitude of decision makers at the Fed. Does this mean that the level of CBI is no longer important for credibility? I believe the answer to this question is negative for several reasons. First, even if most central bankers are currently aware of the long run neutrality of money it is highly likely that most politicians are not.¹⁷ Due to short political horizons, even those who are somewhat aware of it have little interest, as well as knowledge, to take it too seriously. CBI remains therefore an essential safeguard against the natural tendencies of politicians to push for expansionary measures.

Secondly, even if politicians were aware of the inflationary bias created by systematic

¹⁶This tradeoff is particularly acute with respect to government's ability to override the CB and to a lesser extent with respect to monitoring of the CB by Parliament.

¹⁷I had the opportunity to observe this phenomenon directly while listening to the testimonies and discussions in the Committee for Reforming the Law of the Bank of Israel.

attempts to maintain employment above its normal level there still is a bias due to the conjunction of imperfect information about the future state of the economy with the higher sensitivity of policymakers to the costs of recessions than to the benefits of expansions. After serving as Vice Chairman of the Fed Blinder observes that:

"In most situations the CB will take far more political heat when it tightens preemptively to avoid higher inflation than when it eases preemptively to avoid higher unemployment" (Blinder (1998a, pp. 19, 20).

In the presence of imperfect information about the future state of the economy policymakers who are more concerned about downward deviations of employment from its normal level than about upward deviations would set monetary policy in a way that makes the probability of erring on the side of over expansion larger than the probability of erring in the opposite direction. As a result planned and actual inflation, as well as inflationary expectations, would all be positive on average. Cukierman (1999) demonstrates that this, uncertainty cum asymmetry induced, mechanism leads to an inflation bias even if policymakers aim, on average, to achieve the normal level of output, and that this bias is larger the larger the probability of recession.¹⁸ Obviously the more independent is the CB the less likely is this, uncertainty induced bias, to affect monetary policy and to spoil credibility.

Third, recent work reveals that in the presence of a strategic interaction between a unionized labor market and the CB, the level of CBI has systematic effects on employment and output even in the absence of shocks to the economy (Cukierman and Lippi (1999a), Guzzo and Velasco (1999), Lippi (1999a) and Lippi (1999b)). In particular, with unionized labor markets and monopolistic competition the effective level of CB independence (characterized by the importance attributed by the CB to price stability in comparison to employment) has beneficial effects on **both** inflation and employment even when there is no motive for stabilization policy (Coricelli, Cukierman and Dalmazzo (2000)).¹⁹

¹⁸ A related result is obtained in the context of imperfect (additive) inflation control by Jordan (1999).

¹⁹ This statement abstracts from the benefits of stabilization policy by considering an economy with no shocks. Obviously the no shocks assumption is introduced in order to focus on the additional real effects of CBI in the presence of a strategic interaction between unions and the CB, rather than because of its realism.

The Guzzo and Velasco (1999) paper obtains the sweeping result that a populist CB is socially desirable at all levels of centralization of wage bargaining. But, as shown in Lippi (1999b) Guzzo and Velasco obtain this sweeping result because they implicitly assume that unions set real rather than nominal wages. Lippi shows that

In the last framework the central bank affects the price level through its choice of money supply rather than directly. As a consequence the money supply reacts to the rate of inflation anticipated by the CB. Hence, when nominal wages, and therefore prices are higher, the CB tends to tighten monetary policy. The monopolistically competitive firms react to this tightening by increasing their prices and by reducing production and their derived demands for labor. When it chooses its nominal wage the individual union is aware of the fact that such a chain reaction on the part of the monetary authority and firms will be triggered by an increase in its own nominal wage. Since each union dislikes the resulting contractionary consequences for employment among its members it shades down its **real** wage demands somewhat. This reduces both unemployment and the inflation bias.

When CBI is higher this mechanism is stronger inducing higher employment and a lower inflation bias. The upshot is that in the presence of unionized labor markets and monopolistic competition CBI has beneficial effects on both employment and inflation even in the long run. In view of the pervasiveness of unions in Europe and the relative (to perfect competition) realism of monopolistic competition on product markets those findings should not be ignored in spite of the fact that, at this stage, they are grounded mainly in theory.

2.1.2 Considerations specific to the ECB

What are the implications of the above general considerations for the recently formed ECB? The ECB enjoys one of the highest levels of legal independence in the world. So do the eleven central banks of the Eurosystem. It is endowed, through the Maastricht Treaty with a strong legally ordained conservative bias since price stability is its main objective, and all other objectives are subordinated to it. This clear prioritization of objectives also contributes to the legal transparency of the ECB. The Bank enjoys instrument independence and narrow goal independence, in the sense that it is free to quantify the meaning of "price stability". It is also shielded from possible changes in its charter since the latter can be changed only through the unanimous consent of **all** the countries in the system. By contrast the charters of practically

when unions set nominal wages (and understand that all other unions do the same) the Guzzo and Velasco model is not inconsistent with the social desirability of a conservative CB provided wage bargaining is not extremely centralized.

all other central banks, including the Bundesbank when it existed as a separate entity, can (or could) be changed with less overwhelming majorities. In addition the Stability Pact limits the pressure of fiscal excesses on monetary policy, and the risk of having the political business cycle injected into monetary policy is smaller than before the creation of the Euro because of the asynchronization of elections across the EMU.

It would therefore seem that perhaps the ECB is too independent and not sufficiently accountable. Fischer (1994, p. 293) summarizes this view as follows: *"An important reason to expose central bankers to elected officials is that, just as the latter may have an inflationary bias, the former may easily develop a deflationary bias. Shielded as they are from public opinion, cocooned within an anti-inflationary temple, central bankers can all too easily deny that cyclical unemployment can be reduced by easing monetary policy"*. Although Fischer might have adjusted his position somewhat since 1994 this quote is nonetheless a succinct statement of the view that one should not move too far towards CB independence and conservativeness at the expense of accountability.

On the other hand, there are several reasons for making the ECB highly independent. The most important of these is that, unlike national central banks, the ECB faces a formidable free rider problem since each government internalizes only the costs of inflation to its own country rather than to the entire Eurosystem. In the absence of sufficient safeguards the expansionary tendencies of individual governments designed to take care of various domestic problems are likely to put the nominal stability of the entire system at risk.²⁰ As a consequence the combination of accountability and independence that is appropriate for an individual country like the UK is likely to be biased, in the case of a Bank like the ECB that faces eleven national governments, in the direction of too much accountability and too little independence.²¹ Secondly, since

²⁰ A rather extreme illustration of the nominal instabilities created by the free rider problem in the absence of sufficient CBI is Brazil prior to the 1994 stabilization of inflation and CB reform. In Brazil a relatively weak CB facing a number of strong Federal Governments yielded to the expansionary pressures of individual governments creating chronic high inflation in the process. Obviously this example is not meant to suggest that the risk of such a scenario in the Eurosystem is large. The point is that, in the absence of strong safeguards the potential expansionary tendencies within a Federal system are quite powerful.

²¹ The view that the ECB is subject to an "accountability deficit" partly relies on a comparison to the Bank of England (De Haan, Amtenbrink and Eiffinger(1999)). But the ECB is in a somewhat different position than the Bank of England was even before becoming legally independent in 1997. Although, prior to 1997 monetary policy in the UK was conducted by the Chancellor of the Exchequer the UK enjoyed reasonable nominal stability. A frequently cited explanation is that the Treasury, in line with the British "civil service"

the Eurosystem is a large block the costs of inflation and of inflation instability are larger in absolute value. This reinforces the case for strengthening independence. Third, recent evidence due to Clarida and Gertler (1997) suggests that in spite of its high independence and conservativeness and relative (to the Bank of England since 1997) lack of transparency the Bundesbank did engage in anticyclical monetary policy. If history is any guide this suggests that, provided it inherits the credibility of the Bundesbank, the ECB will engage in stabilization policy in spite of, and perhaps because of, its high level of independence and credibility.

Finally, Cukierman and Lippi (1999b) show that, given the level of CBI, the formation of EMU is likely to reduce the long run level of employment by increasing the number of unions involved in a strategic interaction with a single CB. As a consequence real wage moderation, due to the internalization by each union of the effects of the reaction of the CB on inflation and employment among its members is likely to go down.²² The work of Coricelli, Cukierman and Dalmazzo (Op. Cit.) suggests that one way to offset this weakening of discipline is to raise CBI.

3 How Does Transparency Affect the Accountability-Credibility Tradeoff?

Transparency facilitates the task of monitoring the CB and of holding it accountable. The level of transparency is in principle separate from the number of objectives that the CB is legally required to attain. But it assumes more importance when, in addition to price stability, the CB is required to engage in stabilization policy and to achieve other objectives. When the only objective is a clearly quantified price stability target it is easy to hold the CB accountable, even without going into its decision making process in great detail. The existence of additional objectives like stabilization policy or real growth makes it more difficult to monitor the CB and to hold it accountable. Given the level of transparency there is, therefore, a tradeoff between the number of objectives that the CB is saddled with and the degree of accountability. To

tradition, largely internalized the inflationary consequences of its actions. For obvious reasons, Euroland cannot rely on this tradition.

²²This effect of the establishment of EMU is likely to be particularly strong in countries with relatively centralized bargaining structures like Austria.

achieve the same level of accountability more transparency is needed the larger the number of objectives. In terms of Svensson's (1997c) terminology more transparency is needed to achieve a given level of accountability when the CB is a flexible inflation targeter than when it is a strict inflation targeter.

This may explain why there is so much insistence on transparency at the Bank of England in comparison to the ECB. The new 1997 Bank of England law includes both price stability and real growth as objectives whereas that of the ECB focusses mainly on price stability. Since it is responsible for only one main objective less transparency is required of the ECB to achieve the same level of accountability.

3.1 Should the ECB continue to target M3?

The ECB use of M3 as an intermediate target has been strongly criticized on the ground that it reduces policy transparency by focussing public attention on a target that the Bank is not committed to attain since it really subordinates this target to its inflation objective. The essence of the criticism is succinctly summarized in Tabellini's (1998) statement to the Subcommittee on Monetary Affairs of the European Parliament (EP): "*Money growth is not a goal in itself. In the presence of shocks to money demand the ECB would (and should) deviate from the announced target. But verifying the occurrence of such shocks would be impossible for the European Parliament. Hence, announcement of intermediate monetary aggregates act as a smoke screen to protect ECB decisions from outside scrutiny*".²³ Following up on this Svensson (1999) suggests that the EP could establish a close scrutiny of the Eurosystem through a committee of appointed experts and demand all the information available to the ECB.

Obviously, a target that is specified in terms of the final objective, which is inflation, is more comprehensible to the general public than a stock target whose relation to the final objective is uncertain. Furthermore, as stressed in Cukierman (1995), whereas most of the public monitors inflation a large part of it does not have the capacity, knowledge and motivation to monitor M3 or other nominal stock targets. An inflation target is therefore more **visible** to the general public than a nominal stock target like M3. Hence it is a more effective communication

²³ But Tabellini (1999) has moderated his position somewhat after analysis of the first several Bulletins of the ECB.

device between the CB and the public and is likely to have a stronger advance impact on inflationary expectations. On the other hand Angeloni, Gaspar and Tristani (1999) provide several arguments in favor of maintaining the M3 intermediate target: First, since in the long run money is a major determinant of the rate of inflation it is not unreasonable to target it perhaps in addition to inflation. Second, since the highly credible Bundesbank announced M3 targets for many years the continuation of this practice may help the ECB inherit some of the credibility of its illustrious predecessor.²⁴ Finally, they seem to claim that the absence of professional consensus about the transmission mechanism (together with the fact that the diversity of views about this matter among eleven different countries is higher than within a single country) is an argument for retaining the M3 target. Although they do not say that explicitly I presume the last argument is based on their (correct presumption) that there is wide professional consensus that in the long run inflation is a monetary phenomenon.

What do we make of all this? My own view is that in the long run an explicit inflation target is preferable both because it is likely to have a stronger impact on expectations as well as because it enhances the transparency and accountability of the ECB with respect to the variable that the public cares about. In the long run it may even raise credibility somewhat. In any case it is highly unlikely it will reduce it. However, since it is possible that, due to the experience of the last twenty years part of the public, particularly in Germany, has come to associate an M3 target with high credibility there is no much harm in maintaining this procedure until the ECB establishes its credibility directly by delivering low inflation over a sufficient long period. As a matter of fact it could be phased out over time and the inflation target phased in by gradually reducing the emphasis on M3 and increasing the emphasis on inflation in public pronouncements of the ECB.²⁵ During this interim period it is important to clarify to the public that in case a conflict should arise, in the Bank's view, between achieving the inflation target and the M3 target the former will take precedence. But, obviously, M3 and/or other nominal stocks will always remain important indicators (in B. Friedman's (1975) sense) for the Bank and the community

²⁴This argument has actually been made by EMI sources. References appear in Angeloni et. al. (1999).

²⁵Clarida, Gali and Gertler (1998) report evidence suggesting that since 1979 the Bundesbank and some other European central banks have been implicitly targeting inflation. Lamfalussy (1997) argues that the difference between inflation and monetary targets is not as big as it appears to be at first blush. A broad discussion of the relative merits of those two targeting methods appears in Cukierman (1997). A narrower more technically oriented comparison appears in Cukierman (1995).

of specialists that monitor monetary policy.

3.2 Transparency about the changing objectives of policymakers

Due to political pressures and other reasons the goals of central banks are subject to fluctuations that become clear to the general public only after a while. This is particularly true for central banks in which decisions about monetary policy are made by committees composed of members with different views and inclinations. This raises an obvious but important question about the socially desirable level of transparency regarding those fluctuating objectives. Cukierman and Meltzer (1986a) have modeled this state of affairs, within a dynamic framework, by postulating that the effective degree of conservativeness of a CB (characterized as the relative weight on inflation in the CB loss function) is subject to fluctuations and that the CB possesses private information about those fluctuations.²⁶ The period's loss function in Cukierman and Meltzer is linear in the deviation between desired and actual employment, implying that the CB is not averse to fluctuations in output.

Schaling and Nolan (1998) consider a similar framework but with a quadratic loss from deviations between desired and actual employment. They do that in a one shot game and show that the equilibrium rate of inflation is a convex function of the stochastic conservativeness parameter of the CB. An important consequence of this convexity is that, given the mean level of conservativeness the inflation bias is an increasing function of the variance of CB objectives. Taking this variance as an inverse measure of transparency Schaling and Nolan show that, given the mean level of conservativeness, the higher transparency the lower is the inflation bias. The implication of this result is that an increase in transparency about the shifting objectives of policymakers is unambiguously desirable since it increases accountability and also increases credibility by lowering the average inflationary bias.²⁷

Faust and Svensson (1999a, 1999b) consider a dynamic version of a similar framework in which the stochastic shifting objective is the employment target of the CB rather than its

²⁶ A discussion of political and other reasons for those fluctuations appears in the article and in chapters 8 and 9 of Cukierman (1992).

²⁷ An extension of this model to the case in which there is a shock that has been unanticipated at the time nominal contracts (and expectations) were formed, and in which there is consequently room for stabilization policy appears in Eijffinger, Hoebericht and Schaling (1997).

degree of conservativeness, and in which the CB does not have perfect control over inflation. The analysis in Faust and Svensson modifies earlier work by Cukierman and Meltzer (1986a, 1986b) in two ways. It distinguishes between the roles of transparency and of inflation control and incorporates an aversion to output fluctuations in the CB's loss function by making the loss function quadratic in unemployment. Due to the private information of the Bank about its own shifting goals the public is unsure, even *expost*, how much of past inflation was due to deliberate planning and how much to the control error. But the CB **does** know *expost* how much of past inflation is due to its own actions and how much to good or bad luck. Faust and Svensson decompose the control error into two components. One that is revealed *expost* to the public, and one that is never revealed to the public. The larger the variance of the first component in comparison to the second the larger transparency since the public is better able to evaluate, after the fact, how much of past inflation was due to deliberate planning by the CB. In the presence of some persistence in the Bank's shifting objectives higher transparency raises the precision of the public's forecast of inflation. Faust and Svensson show that in many cases the higher is this concept of transparency the higher is social welfare.

The Schaling-Nolan paper and the two papers by Faust and Svensson establish a theoretical presumption for the view that more **public** information about either the degree of conservativeness of the CB or its employment objective is socially desirable. Somewhat paradoxically it is likely that the democratically elected political authorities to which the Bank is supposed to be accountable may not be completely happy with such full openness to the general public. The reason, of course, is that some part of the shifts in actual CB objectives are generally due to political pressures that governments often like to keep behind the scene.

Putting this more practically oriented consideration aside for now, are we to conclude from the above that the ECB should also publish its forecasts about the future state of the economy? Both Svensson (1999) and Buiter (1999) make a strong case for the publication of such forecasts, the first in the context of transparent motivations for policy decisions, and the second to evaluate the quality of monetary policy and increase accountability. In Svensson's words:

"given the crucial role of conditional forecasts in forward-looking medium-term monetary policy, the best motivation of interest changes or the absence thereof is with reference to condi-

tional forecasts, especially an unchanged- interest-rate inflation forecast. Thus the Eurosystem should publish their forecasts, and use them to motivate their policy decisions”.

In a similar vein, reacting to the ECB decision not to publish its internal forecasts, Buiter (Op.Cit. p. 14) expresses the view that:

“The decision not to publish the internal forecasts represents an unnecessary reduction in the availability of information that would allow market participants, the public at large and those formally charged with the political oversight of monetary policy, to reach a more informed view about the performance of the ECB Council.”

The two following sections examine this question when the CB has an information advantage about upcoming velocity and other shocks to the economy, and shows that advance publication of this information generally **reduces** the expected value of social welfare.

4 The Case For Limited Transparency about CB Forecasts with a Neo-Monetarist Transmission Mechanism

This section and the next one present two classes of cases in which advance revelation of CB forecasts about upcoming shocks to the economy **reduces** the expected value of social welfare. In the first version, presented in this section, the transmission mechanism from monetary policy to economic activity is through a Lucas type, expectations augmented, Phillips curve. In the second version, presented in the next section, the transmission mechanism has a Neo-Keynesian specification in which the ex ante real rate affects the output gap, and the latter affects inflation with a one period lag. In both cases standard one shot monetary policy games, each with two stages, are considered. In the first stage of each game expectations are formed and embedded in nominal contracts. In the second stage the setting of the monetary policy instrument is chosen.

At the beginning of the game the CB possesses, possibly noisy, private information about upcoming shocks to the economy.²⁸ Two alternative regimes are considered. A **full trans-**

²⁸ Note that this does not necessarily imply that the CB has overall better information about the economy than some other sophisticated analysts in the private sector. All the analysis in the text goes through for the case in which the private information about **some** upcoming shocks would not have been known without publication of this information by the CB. This interpretation of the analysis is added, for the sake of skeptics, in spite of the fact that I personally believe that in many cases central banks are not far from having a better overall view of

parency regime in which the CB reveals its forecasts to the public before expectations have been formed and embedded in nominal contracts and a **limited transparency** regime in which this information is revealed after that point or not at all. In both cases the social loss function includes quadratic terms in deviations of inflation from its target and in deviations of economic activity from its desired level. In the second case, in which the policy instrument is the nominal rate of interest the loss function also includes a quadratic term that penalizes nominal interest rate variability.

The social benefits of private CB information about upcoming shocks to the economy arise because the CB tries to achieve several objectives with a single instrument. In the first case it tries to achieve both an inflation target and an output objective. In the second case it is also interested in preventing variability in the nominal interest rate. Consequently none of those objectives is perfectly attainable. In equilibrium the CB optimally trades, at the margin, the costs of not fully achieving those various objectives. In the first case it equates at the margin the cost of missing the inflation target with the cost of missing the employment target. In the second case it also equates those two marginal costs to the marginal cost of interest rate variability. When it possesses private information about upcoming shocks the CB can generally allocate the disrupting effects of shocks to the various cost components in its objective function in a better way.

Since the benefits of private information arise even in the absence of reasons for an inflation bias I abstract from the latter by postulating that the socially desirable level of output and the normal (or mean level) are identical. I also abstract from any principal agent problems between the CB and society by assuming that the CB fully internalizes the objectives of society.

4.1 Private CB forecasts with a Lucas type transmission mechanism

The model is essentially a variant of Rogoff (1985) and Walsh (1995a) models but without any reason for an inflationary bias.²⁹ As a consequence there is no tradeoff between credibility and flexibility, but there is a tradeoff (of the kind emphasized by Taylor (1993) and in some of his earlier papers) between output and inflation variability around their target values. The social

the economy than most of the public.

²⁹I use the notation from chapter 3 of Cukierman (1992).

loss function, as well as that of the CB, are given by:

$$L \equiv \frac{A}{2}(N - N_n)^2 + \frac{\pi^2}{2} \quad (1)$$

where N and N_n are actual and normal employment respectively, π is the rate of inflation and A is a positive parameter that characterizes the degree of (non) conservativeness of the CB. Employment is given by an expectations augmented, Lucas-type Phillips curve whose explicit form is:

$$N = N_n + \varepsilon + \alpha(\pi - \pi^e) \quad (2)$$

where ε is a, non monetary, zero mean stochastic supply shock to the level of employment and therefore to output, π^e is expected inflation, and α is a positive parameter that describes the effect of unanticipated inflation on employment. Actual inflation is given by

$$\pi = m + v - \gamma\varepsilon \quad (3)$$

where m is the rate of monetary expansion, v is a zero mean velocity shock, and γ is a positive parameter that characterizes the (negative) marginal impact of the employment shock, via output, on inflation.³⁰ Equation (3) states that inflation is positively related to monetary expansion and to the velocity shock, and is negatively related to the supply shock. The strategic interaction between the CB and the public is captured by means of a standard two stages game. In the first stage expectations are formed and embedded in nominal wage contracts. In the second stage the CB takes those expectations as given and picks the rate of monetary expansion so as to minimize the loss function in (1).

³⁰This statement implicitly assumes that γ is positive so that a positive shock to employment and output reduces the rate of inflation. However, when γ is negative ε can be reinterpreted as a non monetary shock to demand since it has, in this case, a positive impact on both economic activity and inflation.

Before the beginning of the game the CB has advance private information about the realizations of the shocks ε and v .³¹ To evaluate whether welfare is higher under limited or under full transparency I proceed to characterize equilibrium under each of those two regimes. Obviously CB forecasts are usually imperfect predictors of future shocks. But for pedagogical reasons, I first consider the particular case in which the CB forecasts are perfect and only then the case in which they are noisy.

4.1.1 Perfect CB forecasts

When forecasts are perfect the CB possesses **fully precise** advance information on the shocks and can therefore condition the choice of monetary policy on the **actual** values of the shocks.

A limited transparency regime: In this regime inflationary expectations are formed without knowledge of the shocks' realizations by the public. As customary in this literature equilibrium is characterized by first solving for the optimal rate of monetary expansion chosen by the CB in the second stage. Minimizing (1) subject to (2) and (3) and rearranging, the reaction function of the CB is:

$$m = \left(\gamma - \frac{\alpha A}{1 + \alpha^2 A} \right) \varepsilon - v + \frac{\alpha^2 A}{1 + \alpha^2 A} \pi^e \quad (4)$$

I now turn to the formation of expectation in the first stage. From equation (3), and since the public does not know the shocks' realizations, its expectation of inflation is:

$$\pi^e \equiv E\pi^e = Em = \frac{\alpha^2 A}{1 + \alpha^2 A} \pi^e. \quad (5)$$

which implies that

³¹The precise timing of the shocks' realizations does not matter. The analysis in the text is consistent both with a story in which the shocks realize before the beginning of the game, or after its second stage, or at any point in between, provided the CB has private information about the shocks at the beginning of the game.

$$\pi^e = 0. \quad (6)$$

It follows that

$$\pi = \pi - \pi^e = -\frac{\alpha A}{1 + \alpha^2 A} \varepsilon \quad (7)$$

and

$$N - N_n = \frac{\varepsilon}{1 + \alpha^2 A}. \quad (8)$$

Note that the shock v does not appear in the equilibrium expression for inflation which implies that the optimal monetary policy rule fully offsets the effect of velocity shocks on inflation. Since the velocity shock directly impacts only on inflation there is no need to compromise with the stabilization of employment. By contrast, since the supply shock, ε , impacts on both employment and inflation the response to it, requires some compromise between being near the inflation target which is zero and the output target which is N_n . This can be seen from equation (8) which suggests that the direct impact of the shock on output is only partially offset by the optimal rule in order to allocate the variability cost of the supply shock optimally between stabilization of inflation and stabilization of output. Substituting equations (7) and (8) into the loss function (equation (1)), and rearranging the expected value of social losses under limited transparency is given by:

$$EL_{LT} = \frac{A\sigma^2}{2} \frac{1}{(1 + \alpha^2 A)} \quad (9)$$

where the subscript "LT" stands for "limited transparency" and σ^2 is the variance of ε .

A full transparency regime: Under full transparency the CB reveals its forecasts of the shocks to the public before inflationary expectations are formed. As a consequence inflationary expectations incorporate this information. But the optimal reaction to the shocks and to those expectations remains the same and is still given by equation (4). From equation (3) inflationary expectations are now given by:

$$\pi^e = E[\pi | v, \varepsilon] = -\frac{\alpha A}{1 + \alpha^2 A} \varepsilon + \frac{\alpha^2 A}{1 + \alpha^2 A} \pi^e. \quad (10)$$

from which it follows that

$$\pi^e = \pi = -\alpha A \varepsilon \quad (11)$$

and that unexpected inflation is zero implying that

$$N - N_n = \varepsilon. \quad (12)$$

Comparing equations (11) and (12) with their counterparts in the case of limited transparency it is immediately apparent that the absolute values of the deviations of **both** inflation and employment from their respective targets are larger under full transparency than under limited transparency. Since this is true for any realization of ε it follows that the expected value of social losses under full transparency is larger than under limited transparency. This intuition can be verified by calculating the expected value of social losses under full transparency which is

$$EL_{FT} = \frac{A\sigma^2}{2}(1 + \alpha^2 A) \quad (13)$$

where the subscript "*FT*" stands for "full transparency". Comparing equations (9) and (13) it

is immediatly apparent that

$$EL_{FT} \geq EL_{LT}.$$

The intuition underlying this rather strong result is that while under LT the CB has some possibility to affect employment it has no such option under FT since unexpected inflation is always zero in this regime. Although it cannot affect inflationary expectations, in the LT regime, the CB can nonetheless affect real activity by appropriately adjusting its monetary policy so as to create the optimal amount of inflation surprise. This amount is chosen so as to equate at the margin the cost of being away from the inflation target with the cost of being away from the employment target. Under the LT regime the CB has more flexibility in satisfying this condition since it controls both the marginal cost of inflation and the marginal cost of the employment gap. By contrast under the FT regime it controls **only** the marginal cost of inflation.

Note that the two regimes produce identical average levels of welfare when social welfare depends **only** on fluctuations of inflation around its target ($A = 0$). This confirms the intuition that when social welfare depends only on one objective the two regimes are equivalent. As will become evident from the discussion below this intuition transcends the specific setting of the model in this subsection.

4.1.2 Noisy CB forecasts

For simplicity, and without much loss of generality, I will abstract from the velocity shock by assuming that its variance is zero so that equation (3) simplifies to

$$\pi = m - \gamma\varepsilon. \tag{14}$$

Now the CB possesses, at the beginning of the game, an imperfect, but unbiased - - given the information it has, private forecast, f , of the shock ε . The forecast is also a stochastic variable with zero mean. The relation between f and ε is given by

$$\varepsilon = f + e \quad (15)$$

where e is a zero mean forecast error that is uncorrelated with the forecast f . Minimizing the expected value of the loss function in equation (1), over the distribution of ε , subject to equations (2) and (14) the optimal policy rule, or the reaction function of the CB is:

$$m = \left(\gamma - \frac{\alpha A}{1 + \alpha^2 A} \right) f + \frac{\alpha^2 A}{1 + \alpha^2 A} \pi^e. \quad (16)$$

Using (16) in (14) inflation is given by

$$\pi = -\frac{\alpha A}{1 + \alpha^2 A} f - \gamma e + \frac{\alpha^2 A}{1 + \alpha^2 A} \pi^e. \quad (17)$$

Not surprisingly, inflation reacts differently to the part of the shock that has been forecasted by the CB than to the part that the CB did not anticipate at the time monetary policy was chosen.

A limited transparency regime: In this case the public does not know either the CB forecast, f , nor the error, e , so that expected inflation is given by equation (5) which implies again that expected inflation is zero. Using this fact, (15) and (17) in (2) it follows that

$$N - N_n = \frac{f}{1 + \alpha^2 A} + (1 - \alpha\gamma)e \quad (18)$$

and

$$\pi = -\frac{\alpha A}{1 + \alpha^2 A} f - \gamma e \quad (19)$$

Using the last two equations in equation (1) the expected value of social losses under limited transparency about imperfect CB forecasts is:

$$EL_{LT} = \frac{A}{2} \left(\frac{\sigma_f^2}{(1 + \alpha^2 A)^2} + (1 - \alpha\gamma)^2 \sigma_e^2 \right) + \frac{1}{2} \left(\frac{(\alpha A)^2 \sigma_f^2}{(1 + \alpha^2 A)^2} + \gamma^2 \sigma_e^2 \right) \quad (20)$$

where σ_f^2 and σ_e^2 are the variances of f and of e respectively. The first expression in big parenthesis is the variability of output and the second is the variability of inflation.

A full transparency regime: Under full transparency regarding the CB forecast, f , is published prior to the formation of expectations. The analysis up to and including equation (17) is the same as in the case of limited transparency. However inflationary expectations now incorporate the information about the CB forecast. In particular

$$\pi^e = E[\pi | f] = -\frac{\alpha A}{1 + \alpha^2 A} f + \frac{\alpha^2 A}{1 + \alpha^2 A} \pi^e \quad (21)$$

which implies that

$$\pi^e = -\alpha A f. \quad (22)$$

Inflation and the deviation of employment from its target level are given respectively by

$$\pi = -[\alpha A f + \gamma e] \quad (23)$$

and by

$$N - N_n = f + (1 - \alpha\gamma)e. \quad (24)$$

Using the last two equations in the loss function the expected value of social losses under full transparency regarding imperfect CB forecasts is given by

$$EL_{FT} = \frac{A}{2} (\sigma_f^2 + (1 - \alpha\gamma)^2 \sigma_e^2) + \frac{1}{2} ((\alpha A)^2 \sigma_f^2 + \gamma^2 \sigma_e^2). \quad (25)$$

The first expression in big parenthesis is the variability of output and the second is the variability of inflation. Comparing those expressions pairwise with the corresponding expressions for the case of limited transparency in equation (20) it can be seen that the variabilities of both inflation and employment around their target levels are higher under full transparency than under limited transparency. It follows that independently of whether the CB forecasts are noisy or not their early publication reduces the expected value of welfare. Interestingly the contribution of the forecast error to expected losses is the same under both transparency regimes in spite of the fact that inflationary expectations are more variable under the full transparency regime. Thus the advantage of the limited over the full transparency regime operates only through that part of the shock, ε , that the CB is able to forecast.

4.2 Discussion

In his reply to Buiter (1999) Issing (1999, p. 17) argues the case for keeping CB forecasts confidential on the following grounds:

"forecasts are subject to considerable uncertainty...In the Eurosystem this problem is exacerbated by the uncertainty about the economic environment and structural changes associated with the transition to Stage Three of Monetary Union. It is particularly important in the initial phase of the euro's life that inaccurate forecasts do not undermine the credibility, accountability and transparency of monetary policy with respect to its price stability objective".

Although both the analysis above and Issing produce arguments in favor of limited transparency regarding CB forecasts they are based on rather different considerations. Issing's concern is that frequent releases of CB (often inaccurate) forecasts may undermine the credibility of the CB as an inflation fighter. The preceding analysis abstracts from this factor. The analysis reveals that it is, nonetheless, a good idea to withhold CB forecasts for a while, even in the

absence of a credibility problem, when the social welfare function assigns positive weights to the stabilization of **both** inflation and employment. The reason is that full transparency amounts, in this case, to throwing away an information advantage that could have been used to achieve lower fluctuations in both inflation and employment.

As a consequence there is an important difference between the long run recommendation emanating from the analysis here and that of Issing regarding the release of CB forecasts. Whereas he implies that, as forecasts become more accurate, there is room for more openness about them, the analysis here suggests that, in the presence of more than one objective it is not a good idea for the CB to publish its forecasts, **independently of the degree of informativeness of CB forecasts.**

Obviously, one may argue that since the ECB is directed by the Treaty of Maastricht to focus only on price stability it has only one objective and the analysis here is irrelevant. My feeling is that this would be too simple a reading of European reality. There is in many circles an expectation that the ECB will **also** engage in stabilization policy, and the Treaty does not close the door on such policy. As a matter of fact the recent controversy about the accountability and transparency of the ECB would have been far less important if advocates of those characteristic did not believe, at least implicitly, that the ECB should engage in stabilization of output in addition to being reasonably close to its inflation objective.³²

5 The Case For Limited Transparency about CB Forecasts with a Neo-Keynesian Transmission Mechanism

This section examines the desirability of publication of CB forecasts when the transmission mechanism is of a Neo-Keynesian type which highlights the effect of interest rates on aggregate demand and through it on inflation. In particular the ex ante real rate (negatively) affects the output gap, and the latter (positively) affects inflation with a one period lag.³³ Inflation and

³²Tabellini (1999), for example, explicitly expresses the view that the ECB should engage in stabilization policy. Furthermore, as demonstrated by Clarida and Gertler (1997) even the Bundesbank engaged in output stabilization.

³³The formal model is a variant of the structure in Svensson (1997b). Svensson stresses that although the model is relatively simple it bears some similarity to more elaborate models used by some central banks.

the output gap are given by the following two equations respectively:

$$\pi_{t+1} = \alpha y_t + v_{t+1} \quad (26)$$

$$y_t = -\beta(i_t - \pi_{t+1}^e) + \eta_t \quad (27)$$

where π_{t+1} is the rate of inflation between period t and period $t + 1$, π_{t+1}^e is the (rational) public's forecast of this inflation, given the information available to it in period t , y_t is the output gap (characterized as the deviation of the log of actual from the log of normal output which is normalized to zero), i_t is the nominal rate of interest on one period loans contracted in period t , v_{t+1} is a velocity shock, η_t is a non monetary shock to aggregate demand, and α , and β are non negative coefficients. The two shocks have zero means and variances denoted by σ_v^2 and σ_η^2 respectively. For simplicity the two shocks are assumed to be mutually and serially uncorrelated. The first equation states that current inflation is an increasing function of the output gap and the second, that the output gap is a decreasing function of the ex ante real rate of interest.³⁴

The CB has advance perfect information about the two shocks η_t and v_{t+1} , and can either choose to reveal this information **only after** the formation of inflationary expectations or to reveal it **prior** to their formation. Similarly to the previous section, I will refer to those two regimes as limited transparency and full transparency respectively. The nominal rate of interest is the policy instrument of the CB and is set so as to minimize the following loss function:

$$L_t \equiv \frac{1}{2} [(\pi_{t+1} - \pi^*)^2 + \lambda_y y_t^2 + \lambda_i (i_t - i_{t-1})^2] . \quad (28)$$

³⁴ Although I abstract, for simplicity, from serial correlation in output and from the effect of other variables on the output gap and inflation, my intuition is that the main qualitative result of this section will go through also in the presence of those additional factors.

The first term penalizes deviations of inflation from its target, the second penalizes cyclical deviations of output from its normal level and the third penalizes nominal interest rate variability. The first two components of the loss function are identical in spirit to those in the the loss fncion of the previous section (equation (1)). The third one penalizes interest rate variabilty. One reason that nominal interest rate variability is undesirable is that such variability increases the risk of financial crises by interfering with the ability of private banks to efficiently hedge their assets and liabilities.³⁵ In any case there is little doubt that most central banks dislike nominal interest rate variability (see for example Goodhart (1998) and Eijffinger, Schaling and Verhagen (1999)). As in the previous section the interaction between the CB and the private sector takes place in two stages. First inflationary expectations are formed and then the CB sets the nominal rate of interest taking expectations and the previous period's interest rate, i_{t-1} as given.

For the benefit of the hasty reader the two main lessons from this section are summarized upfront. When interest rate variability does not matter ($\lambda_i = 0$) advance publication of CB forecasts does not affect the expected value of social welfare. But when this variability is considered to be detrimental for social welfare ($\lambda_i > 0$) premature publication of CB forecasts **always reduces** expected social welfare. The rough intuition underlying this result is that advance publication of CB forecasts increases nominal interest rate variability. To achieve the same degrees of stabilization of output and inflation around their targets the CB must increase the variability of the nominal rate, which is detrimental to social welfare. Further elaboration appears at the end of this section.

Substituting equation (27) into equation (26) next period's inflation can be expressed as a function of the current policy instrument, i_t .

$$\pi_{t+1} = -\alpha\beta(i_t - \pi_{t+1}^e) + \alpha\eta_t + v_{t+1}. \quad (29)$$

Minimization of equation (28) with respect to i_t subject to equations (29) and (27) yields,

³⁵Details about the mechanism through which this occurs appear in Cukierman (1990) and in chapter 7 of Cukierman (1992).

after rearrangement, the following CB reaction function:

$$i_t = \frac{\lambda_i i_{t-1} - \alpha\beta\pi^* + \beta(\alpha^2 + \lambda_y)(\beta\pi_{t+1}^e + \eta_t) + \alpha\beta v_{t+1}}{\beta^2(\alpha^2 + \lambda_y) + \lambda_i} \quad (30)$$

which implies that the nominal interest rate is raised in reaction to an increase in inflationary expectations, an increase in the non monetary demand shock or in velocity, and a decrease in the inflation target. Not surprisingly all the marginal reactions to those variables are smaller, in absolute value (and the effect of the historically given interest rate larger) the higher the marginal cost of interest rate variability as measured by λ_i . Using equation (30) in (29) and rearranging

$$\pi_{t+1} = \frac{\alpha\beta(\alpha\beta\pi^* - \lambda_i i_{t-1}) + \lambda_i\alpha\beta\pi_{t+1}^e + \lambda_i\alpha\eta_t + (\beta^2\lambda_y + \lambda_i)v_{t+1}}{\beta^2(\alpha^2 + \lambda_y) + \lambda_i}. \quad (31)$$

To this point there is no difference between a regime of limited and of full transparency. The difference arises with respect to the formation of the public's expectations since in the first case they are formed without knowledge of the shocks, and in the second case they are formed with this knowledge.

5.1 Limited transparency (LT)

Since the CB forecasts of the shocks are not published prior to expectation formation this expectation is equal to the expected value of equation (31) without knowledge of v_{t+1} and η_t . This expected value is given by:

$$\pi_{t+1}^e \equiv E[\pi_{t+1}] = \frac{\alpha\beta(\alpha\beta\pi^* - \lambda_i i_{t-1})}{\beta^2(\alpha^2 + \lambda_y) + \lambda_i(1 - \alpha\beta)} \quad (32)$$

Thus inflationary expectations are directly related to the inflation target, but with a coefficient

that is smaller than one.³⁶ The higher last period's interest rate the lower inflationary expectations, since the public correctly expects serial correlation in the behavior of interest rates. Using equation (32) in the expression for the nominal interest rate (equation (30)) it is possible to obtain reduced forms for i_t and for $i_t - \pi_{t+1}^e$. They are given by:

$$i_t = -\frac{(1 - \alpha\beta)(\alpha\beta\pi^* - \lambda_i i_{t-1})}{\beta^2(\alpha^2 + \lambda_y) + \lambda_i(1 - \alpha\beta)} + \frac{\beta}{\beta^2(\alpha^2 + \lambda_y) + \lambda_i} ((\alpha^2 + \lambda_y)\eta_t + \alpha v_{t+1}) \quad (33)$$

and

$$i_t - \pi_{t+1}^e = \frac{\lambda_i i_{t-1} - \alpha\beta\pi^*}{\beta^2(\alpha^2 + \lambda_y) + \lambda_i(1 - \alpha\beta)} + \frac{\beta}{\beta^2(\alpha^2 + \lambda_y) + \lambda_i} ((\alpha^2 + \lambda_y)\eta_t + \alpha v_{t+1}) \quad (34)$$

Substituting (34) into (27) and into (29), and using the resulting expressions, along with equation (33), in the loss function (equation (28)) the expected value of losses under a limited transparency regime is given by:

$$EL_{LT} = \frac{1}{2} [K_0 + K_\eta^L \sigma_\eta^2 + K_v^L \sigma_v^2] \quad (35)$$

where

$$K_0 \equiv K_\pi^2 + \lambda_y K_y^2 + \lambda_i K_i^2, \quad (36)$$

$$K_\eta^L \equiv \left(\frac{\lambda_i \alpha}{D_1} \right)^2 + \lambda_y \left(\frac{\lambda_i}{D_1} \right)^2 + \lambda_i \left(\frac{\beta(\alpha^2 + \lambda_y)}{D_1} \right)^2, \quad (37)$$

³⁶The reason is that, unless the target is zero, hitting it on the nose is not optimal for the CB since that would imply a larger than necessary deviation from normal output. Note that this is true even in the absence of shocks.

$$K_v^L \equiv \left(\frac{\beta^2 \lambda_y + \lambda_i}{D_1} \right)^2 + \lambda_y \left(\frac{\alpha \beta^2}{D_1} \right)^2 + \lambda_i \left(\frac{\beta \alpha}{D_1} \right)^2, \quad (38)$$

$$D_1 \equiv \beta^2(\alpha^2 + \lambda_y) + \lambda_i, \quad D_2 \equiv \beta^2(\alpha^2 + \lambda_y) + \lambda_i(1 - \alpha\beta),$$

and K_π , K_y , and K_i are linear combinations of π^* and of i_{t-1} whose explicit forms are given in the appendix.

5.2 Full transparency (FT)

Under full transparency the CB forecasts are published prior to the formation of inflationary expectations so that those expectations reflect the knowledge of the shocks by the public. Consequently expectation are equal to the actual rate of inflation in equation (31), which depends, in turn, on expectations. This provides an implicit expression for the expectation whose solution is:

$$\pi_{t+1}^{eF} \equiv E[\pi_{t+1} \mid v_{t+1}, \eta_t] = \pi_{t+1}^{eL} + \frac{\alpha \lambda_i \eta_t + (\beta^2 \lambda_y + \lambda_i) v_{t+1}}{D_2}. \quad (39)$$

where π_{t+1}^{eF} and π_{t+1}^{eL} denote expected inflation under full and under limited transparency regimes respectively. Equation (39) reveals that inflationary expectations under full transparency are equal to (the non stochastic) inflationary expectations under limited transparency plus a linear combination of the two shocks. This implies that expectations under full transparency are more variable. Using equation (39) in equation (30) the reduced forms for i_t and for $i_t - \pi_{t+1}^e$ are given by:

$$i_t = -\frac{1 - \alpha\beta}{D_2} (\alpha\beta\pi^* - \lambda_i i_{t-1}) + \frac{\beta}{D_1} \left\{ (\alpha^2 + \lambda_y) \left[1 + \frac{\alpha\beta\lambda_i}{D_2} \right] \eta_t + \left[\alpha + \frac{(\alpha^2 + \lambda_y)(\beta^2 \lambda_y + \lambda_i)}{D_2} \right] v_{t+1} \right\} \quad (40)$$

and

$$i_t - \pi_{t+1}^e = \frac{\lambda_i i_{t-1} - \alpha\beta\pi^*}{D_2} + \frac{\beta((\alpha^2 + \lambda_y)\eta_t + \alpha v_{t+1})}{D_1} - \frac{\lambda_i(\alpha\lambda_i\eta_t + (\beta^2\lambda_y + \lambda_i)v_{t+1})}{D_1 D_2}. \quad (41)$$

Substituting (41) into (27) and into (29), and using the resulting expressions, along with equation (40), in the loss function (equation (28)) the expected value of losses under a limited transparency regime can be written:

$$EL_{FT} = \frac{1}{2} [K_0 + K_\eta^F \sigma_\eta^2 + (K_v^L + \lambda_i P) \sigma_v^2] \quad (42)$$

where P is a positive combination of parameters whose explicit form is given in the appendix and

$$K_\eta^F \equiv \left(\frac{\lambda_i \alpha}{D_1}\right)^2 \left(1 + \lambda_i \frac{\alpha\beta}{D_2}\right)^2 + \lambda_y \left(\frac{\lambda_i}{D_2}\right)^2 + \lambda_i \left(\frac{\beta(\alpha^2 + \lambda_y)}{D_1}\right)^2 \left(1 + \lambda_i \frac{\alpha\beta}{D_2}\right)^2. \quad (43)$$

Comparing this expression for K_η^F with the explicit form of K_η^L in equation (37), and noting that $D_1 > D_2$, it follows that $K_\eta^F > K_\eta^L$. Comparing equations (35) and (42), and using the inequality $K_\eta^F > K_\eta^L$, leads to the following proposition:

Proposition 1 : (i) *If nominal interest rate variability is costly ($\lambda_i > 0$) the expected value of losses under full transparency is larger than the expected value of losses under limited transparency.*

(ii) *If nominal interest rate variability does not affect the loss function ($\lambda_i = 0$) the expected values of losses under the two regimes are the same.*

The intuition underlying this result follows. Since under a full transparency regime inflationary expectations are more variable, the CB has to produce more frequent changes in the nominal rate of interest in order to achieve the same time path for the ex ante real rate as would have been achieved under a limited transparency regime. When nominal interest rate

variability is costly it does not pay to stabilize deviations from the inflation and employment objectives by as much as under the limited transparency regime. As a consequence expected losses are higher under a full transparency regime and a premature release of CB forecasts is socially costly. On the other hand when the loss function does not depend on interest rate variability the two regimes are equivalent. Since excessive interest rate variability may raise the risk of financial instability the first case is normally more relevant.

6 Conclusion - What is the Desirable Combination of Accountability, Credibility and Transparency for the ECB?³⁷

It would be presumptuous on my part to pretend that I have a definite answer to this difficult question. But it is nonetheless worth to summarize the, at times conflicting, arguments recently made on this issue and to evaluate them in light of existing theoretical and practical knowledge about the effects of monetary institutions on the performance of the economy. The interchange between Buiter (1999) and Issing (1999) seems like a good point of departure for this task. Although there is nowadays a good deal of consensus this interchange reflects somewhat different philosophies regarding the institutional organization of modern central banks. Buiter's position largely reflects what may be called the (new) Bank of England (BE) philosophy and Issing's position reflects the philosophy of the Bundesbank (BB) during the last several decades. Both schools of thought agree that the main objective of monetary policy should be price stability and that the CB should have the freedom to set the interest rate without political interference. In view of the fact that ten years ago, and before, there was no consensus even about those issues one should not take it lightly.

There are, nonetheless differences about the following issues. First, the BE philosophy explicitly admits that monetary policy should **also** include the level of economic activity as an objective of monetary policy while that of the BB insists on elevating the objective of price

³⁷For the sake of brevity the conclusion section and the summary discussion of the desirable levels of those attributes have been merged.

stability above all other objectives, including stabilization policy. Second, whereas it is government that is expected to quantify the meaning of price stability by setting an inflation target in the BE school, the BB school leaves the quantification of "price stability" to the CB. Third, whereas the BE school admits of the possibility that government will, under some circumstances, take over the conduct of monetary policy, the BB school does not admit of such a possibility. Fourth, the BE school insists more than the BB school on the accountability of the CB as an institution, as well as on that of individual policymakers at the Bank, to elected officials. The BB school deemphasizes accountability to elected officials while emphasizing the obligation of the CB towards the public at large to maintain price stability. While the new BE school insists **also** on the transparency of its procedures to maintain accountability, the BB school tends to rely on accountability through final results. Finally the BB school relies relatively more on a culture of "collective responsibility" at the CB. Since the ECB has been conceived in large part along the central bank philosophy of the BB it is hardly surprising that many of those issues underly the recent interchange between Buiter and Issing. The disagreement about publication of CB forecasts and of individual votes of CB council members is a natural consequence of those different approaches to the organization of monetary policymaking institutions.

6.1 Are the Bank of England and other inflation targeters a good model for the ECB?

There is little doubt that the announcement of a quantitative inflation objective that would anchor inflationary expectations and provide a public measuring rod for the performance of the ECB is a good idea. But this does not necessarily mean that all the features of inflation targeting as currently practiced in the UK, New-Zealand and Canada are appropriate for the the ECB. In particular, an important element of inflation targeting in those countries is that government picks the target.

Would it be a good idea to have governments decide directly, or via proxy, the inflation target for Euroland? I believe the answer is no for several reasons. The first, practical, difficulty is that there is no existing institutional body that is naturally appropriate for this function. Ecofin is one possibility, but its decision would be substantially more politicized than that of

the ECB General Council reducing the credibility of monetary policy. Second, an important advantage of having inflation targets decided by governments in countries like the UK, New Zealand, Canada and Israel, in which the CB has only one government to deal with, is that it makes it politically easier for the CB to defend and insist on its policy in the face of political pressures. It also reduces government's incentive to pressure the CB into adopting more expansionary policies, since under existing inflation targeting methods government has to explicitly admit its responsibility for higher inflation by **publicly** setting a higher target.³⁸

This disciplining mechanism is likely to be substantially weaker, in the case of the Euro because of the division of responsibility for price stability in Euroland among the different governments. The powerful free rider problem created by this split responsibility makes it particularly important to maintain the independence and nurture the credibility of the ECB. The high degree of legal independence granted to the ECB by the framers of the Maastricht Treaty was largely due to their recognition of the inflationary risks of this split responsibility. Since some recent discussions seem to take the view that the actual independence and credibility of the ECB are already assured it is useful to reiterate, even at the risk of some repetitiveness, that part of the work on this front is still ahead.

6.2 Should the individual votes of General Council member and minutes be published?

Publishing individual votes may increase the transparency of the procedure by which decisions are made at the ECB but it is also likely to affect the voting pattern of Council members in rather unpredictable ways. As stressed by Issing it is likely to increase national pressures on Council members who also are CB governors and to reduce both the actual and the collective responsibility of the Council.³⁹ But this does not necessarily mean that revelation of votes will bias the votes in favor of, or against European wide considerations. The effect of making the votes public may work either ways as some CB governors may not want to appear as not being sufficiently "European" while others may not want to appear sufficiently sensitive to the

³⁸ A similar mechanism also deters political authorities in New-Zealand and Canada from using their legal powers to override the CB.

³⁹ A recent game theoretic analysis of some of those issues appears in Seidmann (1999).

concerns of their own countrymen. The effect of vote publication, if any, on the vote pattern of an individual member ultimately depends on the expectation of that member regarding his/her subsequent career. The effect is likely to differ depending on whether the member is seeking a subsequent appointment at a European institution or within his own country.

Be that as it may, the pertinent consideration is that, when made public, votes are likely to be based relatively more on political and personal considerations, and relatively less on professional considerations. These considerations are likely to be particularly important when unpopular professional decisions have to be made. This is probably one of the reasons for the confidentiality of Jury and most Supreme Courts deliberations.

An important difference between members of the Monetary Policy Committee in the UK and members of the ECB Governing Council is that the members of the first Committee are unlikely to function as the representatives of particular geographical areas each with its own fiscal policy. By contrast, the NCB governors on the ECB Council may be expected to, at least partially, act as representatives of the views of their own countries. Publication of individual votes will inject this natural and legitimate divisiveness between the governors into the media and is likely to compromise the spirit, as well as the public perception, of collective responsibility of the ECB stressed by Issing (1999).

Should minutes be published? My feeling is that this is, at least partly, a non issue since it is always possible to manipulate the minutes in a way that would make them rather uninformative.⁴⁰ Conversely, a CB can be relatively transparent about its major policy stance without the publication of minutes. One argument against the publication of verbatim reports of Council deliberations is that it may reduce credibility by publicizing the fact that there is no consensus forecast, even within the council. This effect may be particularly important in the presence of substantial uncertainty about the transmission mechanism of monetary policy. Publication of minute is also likely to discourage the frank exchange of views and information among Council members and may also induce them to transfer such activity into informal smaller groups meetings.

⁴⁰ An interesting illustration of that tendency occurred during the second half of the Seventies, when the US FOMC was required by a Court decision to publish its minutes. The FOMC reacted by discontinuing the production of minutes (Goodfriend (1986)).

6.3 Should CB forecasts be published early on?

At the conceptual level, the issue of whether it is desirable to publish CB forecasts is far from being settled. In a model with private and changing information about the CB employment target Faust and Svensson (1999a) show that a higher degree of ex post transparency about this target is usually better than a lower degree. In a model with private and changing information about the CB inflation target Geraats (1999) shows that full transparency (defined as the immediate release of CB forecasts to the public) is preferable to a regime of opaqueness in which those forecasts are not published.

On the other hand there are two arguments against premature publication of CB forecasts. The first is that frequent releases of CB (often inaccurate) forecasts may undermine the credibility of the CB as an inflation fighter. The second argument, elaborated in this paper, is that, in the presence of several objectives like price stability, stabilization policy and smooth interest rates, early publication of private CB information about the economy amounts to discarding too early an advantage that could have been used to achieve a more desirable allocation of fluctuations in employment, inflation and interest rates. The precise arguments are developed in sections 4 and 5.⁴¹

Finally, using a Neo-Keynesian Phillips curve that emphasizes forward looking behavior in price setting Jensen (2000) shows that higher ex post transparency about the CB output target involves a familiar tradeoff between the reduction of the inflationary bias and the flexibility to conduct optimal stabilization policy. His analysis implies that the optimal degree of transparency is less than full. In the model of the economy used by Jensen, as in Woodford (1999) for example, inflationary expectations directly affect current inflation and there is no expectation augmented Phillips relation (contrary to Faust and Svensson (1999a) and Geraats (1999)). Instead, economic activity is affected by aggregate demand which depends in turn on the ex ante real rate of interest. Those scattered observations, as well as the analysis in sections 4

⁴¹ Although quite distinct this argument is broadly related to Cukierman and Meltzer (1986a) case for some ambiguity in monetary policy. In the Cukierman and Meltzer's framework ambiguity is useful because it enables the CB to produce positive inflationary surprises in times during which it is particularly concerned about employment and to leave the inevitable negative inflationary surprises for times in which it is concerned relatively more with inflation. In this paper, by contrast, private information about shocks to the economy allow the CB to better smooth fluctuations in employment and inflation around their desired levels.

and 5 of this paper, suggest that conclusions regarding the social desirability of full transparency about CB forecasts are sensitive to the type of transmission mechanism believed to operate in the economy

In addition there, most likely, are practical limits on the extent to which full transparency about the forecasts on which the CB bases its actual policy decisions can be implemented in practice. Such limitations arise both because of the inability of policymakers to **fully** document **all** the considerations affecting their decision, as well as because of a limited absorption capacity on the part of the public. An illustration of this claim within the context of the recent debate about the degree of openness of the ECB follows; Wim Duisenberg has recently pledged to eventually publish the economic model of the ECB (*Financial Time*; October, 27, 1999). However as practical monetary policymakers well know econometric forecasts are only one of several inputs into monetary policy decisions.⁴² In view of those conflicting results my own feeling is that, at the current state of knowledge, the decision regarding early publication of CB forecasts should be left to the discretion of the ECB.

6.4 How much accountability and to whom?

Good governance practice requires that every public institution be ultimately accountable to the public for the discharge of the functions for which it has been created. Obviously this general principle applies to central banks in general and to the ECB in particular. It is likely that those statements will draw a large consensus. But the devil is in detail like what is the frequency with which accountability has to be discharged, by what means and methods, and with what degree of detail. There is a continuum of possible approaches to those questions.

One polar position is that the ECB should be held accountable for the various details of the procedures it uses. The opposite polar position is that it should be judged only by its record. The optimal arrangement is likely to be at an interior point along this continuum but nearer to the latter than to the former extreme position. The success of the Bundesbank in delivering its main objective for many years (and even engaging in stabilization policy (Clarida and Gertler (1997)) is living testimony that the second approach to accountability works well.

⁴² A fuller discussion of these and related considerations appears in Vickers (1998) and in Winkler (1999).

In the long run what will matter most for the credibility of the ECB is its stability record rather than some of the institutional details.⁴³ But until such a record is built the credibility building impact of institutions is relatively more important. Hence in gradually feeling its way along the accountability - credibility tradeoff it is preferable that the ECB err on the side of excessive credibility than in the opposite direction. Such a cautious approach is likely to entail lower costs in the long run.

To whom should the ECB be made accountable? Making it accountable to an elected but political body like Ecofin runs the risk of politicizing monetary policy, so this is obviously undesirable. The European Parliament (EP) and its Committees has been suggested as another possibility. Although the risks of political influence on the Bank in this case are probably smaller than in the case of accountability to Ecofin, the risk of fragmentation due to free rider problems of the various interest groups represented in the EP is also likely to undermine the credibility of the ECB. It is of some interest to note in this context that Russian inflation soared to hyperinflationary dimensions during the first half of the nineties when the Russian CB was largely independent from the executive branch but had to report to the Russian Parliament (Popov, (1994)). The Russian case is, admittedly, far in many respects from the much more politically stable Euroland countries but it should not be totally dismissed either.

Part of the argument for making a CB accountable is based on theoretical literature on optimal contracts for central bankers. This literature characterizes the optimal contract within a principal-agent framework (Persson and Tabellini (1993), Walsh (1995a)). The CB is the agent and it is assumed that there is a socially minded authority that acts as the principal and enforces the contract ex post. When this framework is applied to the area of practical advice regarding monetary institutions the principal is usually taken to be the democratically elected government or parliament. As stressed by McCallum (1995) such an institutional setup runs into a serious problem. Since the inflation bias originates with elected officials they have little incentive to enforce the contract ex post. As a consequence the contract is not credible and the inflationary bias reappears through the back door. Although the experience of New-Zealand since enactment of the 1989 CB law suggests that when Parliament is the principal this arrangement may function

⁴³Blinder (1998b) reports that this also the view of most central bankers.

reasonably well within a **single country**, it is less likely to work in a monetary union that is subject apriori to free rider problems.⁴⁴

So who should the ECB be accountable to? One possible solution is that it should be largely accountable to the people of the Euro area, who are the ultimate principals, by appropriately discharging the tasks assigned to it by its charter. At first blush this may appear to lack teeth. But when one considers the alternative of making the ECB accountable to elected officials this view may not be as far fetched as it seems for several reasons. First is the fact, mentioned above, that politicians are likely to have a larger inflationary bias and to inject the political business cycle into monetary policy. Second, current European political institutions do not provide a balanced representation of voters in the area (Alesina and Wacziarg (1998)). Last but not least, direct accountability of the Bundesbank to the German public during the last thirty years appears to have worked quite well.

Another, not mutually exclusive, possibility is to form a new non political body of independent experts specifically for the purpose of creating an institution to which the ECB could report with more openness without running some of the risks discussed earlier (Romer and Romer (1997)). The members of such a body would not be associated with interest groups in Euroland, and should have high levels of professional expertise, to be able to evaluate the decisions of the ECB. They should also possess high levels of personal integrity. This "auditing" institution could also be endowed with (the deemed appropriate) enforcement powers.

6.5 Should accountability be collective or individual?

Should the ECB be accountable as an institution or should each of the members of the Governing Council be accountable individually? Although the optimal arrangement is likely to involve both it seems that the collective accountability of the ECB as a policymaking institution should get priority. This is consistent with Issing's (1999, p. 10) notion of 'collective responsibility'. I fully agree with his view that:

"Longer-term, it would appear preferable to build up credibility and a reputation for the institution as a whole, rather than to tie it too closely to the particular individuals at the helm".

⁴⁴The extent to which New-Zealand's Reserve Bank Act of 1989 is consistent with the theoretical conception of an optimal contract is explored in Walsh (1995b).

In addition to reaching decisions an important function of committee work involves the candid exchange of information between the committee members prior to voting. This exchange often leads to revision of views and to adjustments in pre-exchange voting patterns. When done efficiently and not disturbed by extraneous factors it leads to a more informed , and therefore better, decision making process. This is particularly true in the case of the ECB Governing Council whose members are likely to possess heterogeneous information about the economic outlooks for their own countries, as well as for the totallity of Euroland. Nitzan and Parush (1985) show that, in the presence of uncertainty, appropriate aggregation of the information possessed by different experts leads to better decisions. This is an additional, more economically oriented, reason for building up a spirit of collective responsibility.⁴⁵

6.6 Transparency, Council size and financial stability

Buiter (1999) has strongly criticized the existing structure of the ECB Governing Council on the ground that it is too large to function efficiently.⁴⁶ In the absence of a strong center the seventeen members' Council may find it hard to build the necessary spirit of collective responsibility emphasized by Issing (1999). This problem is compounded by the fact that different Council members have different traditions and outlooks on how the economy works and need to reach some consensus in the face of substantial uncertainty about the transmission mechanism of monetary policy in the new Euro area. Changing the size of the Council obviously requires a change in the Treaty of Maastricht which is unlikely to occur in the near future. In the mean time, given its current size and the large uncertainties surrounding the new transmission mechanism the Governing Council should be allowed sufficient time to develop some minimal consensus about the transmission mechanism before going public. In addition, publication of the process through which the consensus is established, is likely to reduce, rather than to increase, the clarity of the policy process.⁴⁷ Those are arguments for temporarily maintaining transparency

⁴⁵ A preliminary investigation of how reputation of a monetary policy committee is determined along with that of its individual members appears in Sibert (1999).

⁴⁶ In addition Eiffinger and de Haan (1999, chapter 2, Box 8) report that small countries are strongly over represented in the Governing Council. They also note, as do Gros (1999) and Begg et. al. (1998), that the ECB overall staff and, in particular its research staff, is miniscule in comparison to those of the national central banks.

⁴⁷ This point is made by Issing (1999).

below its long run desirable level.

Begg et. al. (1998) point out that the legal and other institutional structure of the ECB is poorly arranged to deal with a serious financial crisis. Until at least some of those drawbacks are corrected the Governing Council will have to be particularly vigilant in order to compensate for those structural deficiencies. In doing that it may have to, sometimes, thread along a fine line between price stability and financial stability in the Euro area. In particular it may have to temporarily suspend its pursuit of price stability to avert a projected financial crisis.⁴⁸ Premature publication of CB forecasts about the risks of financial instability are, in such a case dangerous. They may actually precipitate a crisis. This is an additional rather strong argument against premature publication of forecasts about issues like the potential weakness of the financial system. It seems that in such cases the ECB should first take steps to avert the crisis and let the public know about it (if at all) only in retrospect, after it is reasonably confident that the release of such information is unlikely to trigger the crisis.

7 Appendix: Explicit forms of K_π , K_y , K_i and P

$$K_\pi \equiv - \left(\frac{(\beta^2 \lambda_y + \lambda_i)}{D_1 D_2} (\beta^2 (\alpha^2 + \lambda_y) + \lambda_i (1 - \alpha \beta (1 + (\alpha \beta)^2))) \pi^* + \frac{\alpha \beta \lambda_i}{D_2} i_{t-1} \right),$$

$$K_y \equiv \frac{\beta}{D_2} (\alpha \beta \pi^* - \lambda_i i_{t-1}),$$

$$K_i \equiv - \frac{\beta}{D_2} (\alpha (1 - \alpha \beta) \pi^* + \beta (\alpha^2 + \lambda_y) i_{t-1})$$

⁴⁸Wyplosz (1998) expresses the view that in such situations the ECB will have to act as lender of last resort, whether it likes it or not.

$$P \equiv \frac{\beta^2 \lambda_y + \lambda_i}{D_1^2 D_2} \left[\frac{\beta^2 (\beta^2 \lambda_y + \lambda_i) (\alpha^2 + \lambda_y) (\lambda_i + \lambda_y + \alpha^2)}{D_2} + 2\alpha\beta D_1 \right] > 0.$$

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