

Monetary Policy Regimes: a fragile consensus

Peter Howells and Iris Biefang-Frisancho Mariscal

University of the West of England, Bristol

Abstract

The last fifteen years have seen the emergence of widespread consensus that optimum monetary policy is designed on the basis of three pillars: a short-term official rate of interest as the sole policy instrument and the placing of that instrument in the hands of a central bank which is (a) independent of government and (b) transparent in its decision-making.

We take a critical look at each of these. In the first case, we focus attention on the failure of mainstream economics to recognise the choice of instrument and the implications of its adoption.

In the case of independence we argue that the theoretical case for independence has been misunderstood and that it is not an essential requirement for successful policy. We also show that 'independence' is not best measured against a checklist of statutory characteristics.

As regards 'transparency' our argument is slightly different, though we come to a similar conclusion. Unlike independence, 'transparency' does address a real problem for central banks. However, the evidence suggests that transparency is not the only, or even the best, solution. A variety of evidence tells us that agents can understand and anticipate the actions of the most secretive institutions.

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Corresponding author

Peter Howells, UWE, Bristol.

email: peter.howells@uwe.ac.uk

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University of the West of England, Bristol

1. Introduction

In the course of the last fifteen years, there has emerged a remarkable consensus within developed economies about the optimum design of monetary policy regimes. It did not all happen at once. What we might call the ‘three pillars’ of policy emerged in sequence. Simplifying somewhat, we could say that the early 1980s saw the final demise of attempts to control the quantities of money (and/or credit) by any direct method. This included a very public rejection of both ‘administrative’ controls over bank behaviour and of the targeting of the quantity of base money (*BEQB* 1981).¹ Instead, it was accepted that the only realistic instrument of monetary policy was the *price* at which central banks were prepared to make reserves available to the banking system and then to allow market forces to determine the quantity.²

Some ten years later, there developed a substantial literature which argued that monetary policy outcomes were enhanced if the instrument (at least) was in the hands of a central bank which was ‘independent’ of government. Independence here was defined largely by reference to statutory rules or other institutional characteristics, and measured by ticking the number of boxes alongside the characteristics that could be demonstrated. ‘Proof’ that outcomes were enhanced was based on the crudest kind of correlation exercise and the underlying logic drew on the argument that governments were self-interested, subject to conflicting objectives, and therefore not ‘credible’ in their policy pronouncements.

¹ This rejection followed a period (1980-1) of widespread debate over monetary reform. The Bank’s scepticism about monetary base control was apparent at the outset. See *BEQB*, 1979.

² We need to be careful with the term ‘consensus’. A substantial literature has developed in recent years in which it is the norm to take our first pillar – the replacement of monetary aggregates by the rate of interest – (alone) as forming the basis of a ‘new consensus on monetary policy’. On this view the ‘new consensus’ comes down to arguing that monetary policy should be guided by some approximation of a ‘Taylor rule’ rather than money supply targets. Representative publications include Taylor (2000), Romer (2000) and Allsopp and Vines (2000). Critics of this consensus (largely on the grounds that it leaves intact the neoclassical claim that monetary policy has no long-term effect on real variables) include Arestis and Sawyer (2002) and Lavoie (2002). We need to stress that ‘consensus’ in this paper refers to a wider range of issues to do with the design of policy regimes and not just the choice of policy instrument.

Ten years further on, by the turn of the century, optimum policy design was said to require that central bank decision making should also be ‘transparent’. The definition of transparency lacks the consensus enjoyed by independence, frequently becoming bound up with notions of accountability. But a widely accepted view of transparency is that it makes the central bank’s decisions easy to understand and from there it is a short step to saying that transparency helps agents to *anticipate* policy decisions and thus to avoid being ‘shocked’ by them. Other benefits involve the issue of ‘credibility’ again. A CB whose goals and techniques are understood is more credible than one where these are obscure. Early attempts to measure transparency bore an extraordinary resemblance to the earlier attempts to measure independence. The procedure was to identify, *a priori*, those characteristics (again, often statutory in nature) which ‘should’ give rise to the transparent conduct of policy and then to tick the box alongside each characteristic which could be demonstrated. More sophisticated attempts have looked at the behaviour of market interest rates in the days prior to a policy move.

The purpose of this paper is not to contest the *existence* of this consensus. We take that as given. We do, however, bring together a wide variety of recent literature on the design of monetary regimes – institutions and instruments – which taken together suggests that this consensus rests on very flimsy foundations. In our conclusion we point to some of the serious consequences that could follow from the crumbling of that consensus.

There are different weaknesses associated with each ‘pillar’. For example, in section 2, we take a brief look at the experience that lay behind the adoption of ‘price’ as the sole instrument of monetary policy. Our criticisms here focus not upon the decision but upon the steadfast refusal of mainstream macroeconomics to recognise that it has happened. Notwithstanding the ‘new consensus’ literature referred to in footnote 2 above, twenty five years after the switch to short-term interest rates, macroeconomic instruction at the textbook level *still* requires students to learn that monetary policy consists (solely) of exogenously imposed changes in the money stock which transmits itself to changes in demand (and then possibly output but more usually the price level) by some version of ‘real balance effects’. This is wholly at odds with our everyday knowledge of the policy instrument and with what central banks widely believe is the transmission of monetary policy effects.

In section 3, we raise doubts about both the evidence and theory advanced for the benefits of independence. We show (a) that the evidence does not support the argument that independence is

necessary for the successful operation of monetary policy and (b) that the reasons for supposing that it should (usually drawing on the time inconsistency literature) are confused in their understanding of that literature. There is a problem for all monetary policy makers, but it is not addressed by making central banks independent.

In section 4, we are also critical of the third pillar, namely that transparency as commonly understood, is essential to successful monetary policy outcomes. Here the criticism is one of evidence rather than theory. Knowing what a central bank is going to do in any given circumstances probably does enhance policy outcomes by reducing shocks and by enhancing credibility. But this anticipation is not critically dependent upon, for example, whether or not it publishes minutes of its meetings. There are, and have always been, alternative methods.

2. Short-term interest rates as policy instrument

Leaving aside administrative measures like ‘lending ceilings’, ‘qualitative guidance’, ‘moral suasion’ (which were widely used in the UK until the late 1960s), central banks face an apparently simple choice in the monetary policy instrument. This stems from the fact that the central banks ability to *impose* any condition on the banking system stems from its position as a monopoly supplier of liquidity (‘reserves’, ‘monetary base’ etc) in the event of a system-wide shortage. As with any monopolist the central bank (CB) can choose to set either the quantity or the price.³ In practice CBs in developed economies set the price. Furthermore, the way that they do it has also converged (Borio, 1997). The price must be the rate of interest charged by the CB on additional reserves made available to the commercial banks. No other rate will do, since it cannot be imposed. The rate in question, therefore, depends upon the detailed procedure for providing the additional reserves. At various times CBs have engaged in straightforward lending to commercial banks (‘discount window lending’), outright purchases of non-reserve assets (e.g. treasury bills or government bonds nearing maturity) or as now, repurchase deals (‘repos’) with government bonds as the underlying security. Each of these involves a different rate of interest.⁴

Looking at the historical record, two things are interesting about the choice of price as the policy instrument. The first is that, so far as practical central banking is concerned, the choice was never between price and quantity but between price and the *administrative* controls that we set aside

³ This analogy is widely drawn. What is less frequently observed is that a CB is a very special type of monopolist. In most systems, the CB can preside over open market operations in government debt which can be used to reduce or increase the liquidity of the banking system. Few monopolists enjoy a CB’s ability to influence the position of the market demand curve.

⁴ Details of the way in which the Bank of England currently sets interest rates can be found in *BEQB* (2002).

earlier. In the UK, for example, the commitment to a rate of interest as the instrument of control came with the publication of the *Competition and Credit Control* arrangements in 1971. CCC was a deal whereby banks would be required to give up a number of restrictive practices while the Bank of England agreed to end its interventionist practices of setting ceilings and guidelines (*BEQB*, 1971). Furthermore, when credit and money supply growth appeared to get out of control in 1972-3, the Bank turned again to administrative controls (in the form of 'the corset') rather than opting for any control of the quantity of reserves. (Hall, 1983, ch.3).

The second is that price has been the chosen instrument of control even when quantities were regarded as important. One example is the Federal Reserve's famous experiment of 1979-82, where movements in the 'non-borrowed reserve' component of the monetary base were closely monitored. But changes in the NBR were being used as an indicator for the setting of interest rates (B M Friedman, 1984). In Alan Blinder's words, the monetarist rhetoric of this period merely provided the Fed with a 'political heat shield as it raised interest rates to excruciating heights'. (Blinder, 1998 p.29). In so far as the expansion of NBR was 'controlled' it came about as a result of the effect of the federal funds rate on the demand for bank loans and the banks' need for additional reserves. It was precisely for this reason that Milton Friedman rejected the label 'monetarist experiment' which was widely applied to the episode (M Friedman, 1984) and Goodfriend (1983) and Moore (1988, p.124) described it as 'dirty' interest rate targeting. Similarly, while the Bundesbank's conduct of monetary policy for many years stressed the importance of controlling the growth rate of 'central bank money', this was because the '...deviations of the money supply from the projected path can provide important information on the need for corrective monetary action...' The corrective action itself consisted of 'Bundesbank-induced changes in short-term interest rates'. (HC163-II p.294).

Monetary aggregates have played their part in UK policy as well. The rethinking of policy instruments that resulted in CCC originated with the demand by the IMF in 1968 for stricter control over 'domestic credit expansion'. This was the first example of monetary targeting (albeit it covert) in the UK. But instead of opting for control of the base, the Bank of England opted to manipulate the price rather than the quantity. Any effect that policy might have on DCE, would come through the demand side: higher interest rates reduce the demand for loans and thus the rate of deposit creation.

Finally, while we are looking at episodes where references to quantities abound, it is worth noting briefly the case of the ECB whose mandate requires it to base its policy decision on the infamous 'twin pillars'. In the first, the ECB monitors the growth of the M3 monetary aggregate against a 'reference rate'. In the second the ECB is required to monitor all relevant economic

conditions in making a decision. In practice, we know that the ECB pays little attention to the first (thus confirming its redundancy in the light of the second). But the point here lies with the *design* of the system. For better or worse, growth of a monetary aggregate was seen as significant but the only policy instrument envisaged was the price of liquidity.⁵

The reasons for this choice of price over quantity (or to put it another way – the reasons for the rejection of monetary base control) are many and now quite well-known. Most are summarised in Goodhart (1994). In no particular order, one is that fixing the quantity of reserves would result in highly volatile market interest rates. This arises because banks demand for reserves (to meet demand for withdrawals and transfers) is highly inelastic. Secondly, fixing the quantity of reserves requires the central bank both to know in advance and be able to influence flows between government and private sector which cause changes in the quantity of base. A third is the possibility of disintermediation as borrowers seek alternative, non-bank sources of credit. Not only does this partially defeat the purpose of controlling the base – restraining the growth of aggregate demand – but it also deprives the central bank of important information as borrowing flows through less-regulated channels. In slightly different form, the first of these two points is essentially the objection which came to be made of Friedman's attack on the use of interest rate rather than the monetary base, using the analogy of car production.

A precise analogy is like trying to control the output of motor cars by altering the incomes of potential purchasers and manipulating rail and air fares. Far easier to control the output of motor cars by controlling the supply of ... say steel to the manufacturers – a precise analogy to controlling the money supply by controlling the availability of base money to banks and others. (Friedman, 1980, para 11 p.57)

As Marcus Miller (1981) pointed out, it is only in a rigid, centrally controlled, economy that the supply of steel to *individual firms* can be restricted. And even then, so long as substitutes existed, *total* sales of cars in the UK might be unaffected. UK residents could switch to Japanese cars (= offshore disintermediation) and car manufacturers could switch to aluminium or fibreglass (= domestic disintermediation).

One might have thought that an approach to monetary policy which has been widely-established for more than 25 years, would be widely-featured in economics education. But while it is true that in the sub-field of monetary economics the reality has had to be recognised, the treatment of monetary policy in mainstream macroeconomics has proved extraordinarily

⁵ In practice, three interest rates are involved: the 'main' refinancing rate and the rates on the two 'standing' marginal lending and deposit facilities (ECB, 2004 ch.4). The Bank of England is to move to a similar arrangement with effect from March 2006 (Clews, 2005). These details merely strengthen our argument that 'price' is the chosen instrument.

resistant to what happens in the real world, to the inevitable confusion of students who read the financial press and the official statements of central banks.⁶

In footnote 2 above we remarked on the growth of a ‘new consensus’ monetary economics literature. But it is clear from the references given there that this consensus has developed only as far as the journals and even then amongst economists for whom monetary economics, and policy in particular, is a specialist field of interest. To dismiss this as ‘talking amongst themselves’ is perhaps too harsh. But the fact remains that there is little sign of this consensus in the macro textbooks.

It is rather unfair to single out for criticism just a small sample of sources when there are so many to choose from. But the point has to be substantiated. The following is a description of an expansionary policy ‘shock’ as presented in Mankiw’s popular textbook. Following the subheading ‘Monetary Policy’ we read:

Suppose now that the central bank increases the money supply. Because the price level is assumed to be fixed, the increase in the money supply means an increase in real balances. The increase in real balances shifts the LM* curve to the right...
(Mankiw, 2003, p.319)

Note how is the monetary stimulus transmitted to the rest of the economy: a disequilibrium at the centre of which an increase in real balances brought about by an exogenous increase in nominal money, confronts an independent demand for money. No hint here that if the central bank is setting the rate of interest, then the quantity of money is demand-determined and the very concept of disequilibrium is at least problematic.⁷ Later, on p. 396, it is simply stated that ‘the short-term policy instrument that the Fed now sets is the federal funds rate ...’ and a discussion of the Taylor rule follows. There is no recognition that this is at odds with the theoretical modelling of aggregate demand earlier in the book. (A sleight of hand made easier by presenting the Fed’s actions and the Taylor rule in a ‘box’ titled ‘case study’).

A slightly more advanced version of the same assumption and transmission mechanism can be found in many textbook derivations of the dynamic aggregate demand curve since the derivation usually takes as its starting point the LM and its assumption of a fixed money supply.

⁶ The potential for confusion and anxiety raised by this divergence between the textbooks and practitioner reports is growing all the time. In the UK it used to bother only those students who read the well-informed reporting of the *Financial Times*. But now, most central banks have excellent websites where they take their responsibilities to inform and educate very seriously. It is a great pity that what most students are taught prevents them from deriving much benefit from this excellent resource.

⁷ Basil Moore probably overstated the case when he argued that ‘One cannot have a supply of credit money independent of the demand for credit money...’ (Moore, 1991 p.126) but once the money stock is endogenously determined, the notion of real balance effects is called into serious question.

.The [DAD] curve is most simply understood as saying that the *change* in aggregate demand ... is determined by the growth rate of real money balances and by fiscal expansion. The higher the level of real balances, the lower the interest rate and the higher the level of aggregate demand: therefore the more rapidly are real balances growing, *the more rapidly is the interest rate falling* and the more rapidly is aggregate demand increasing... (Dornbusch and Fischer, 1994, p.477. Second emphasis added).

In the ninth edition of *Macroeconomics* by Dornbusch, Fischer and Startz, students are introduced to monetary policy in the following terms:

The Fed conducts open market operations... In an open market operation, the Federal Reserve buys bonds in exchange for money, thus increasing the stock of money, or it sells bonds in exchange for money paid by the purchasers of the bonds, thus reducing the money supply. (pp. 242-3).

In addition to creating the impression that central banks might sometimes wish to reduce the *absolute* size of the money stock, they then go on to provide the familiar picture of rapid money growth leading to falling interest rates (and vice versa). No help here for the well-read student who knows that, in practice, rising interest rates are associated with rapid rates of money and credit expansion. Inevitably (given this) the specialist chapter (16) 'The Federal Reserve, Money and Credit' starts (pp. 375-6) with an explanation of money supply determination in terms of a multiplier relationship between the monetary base (which the Fed controls directly) and the broad money supply.

In Mishkin (2004), 'The Behaviour of Interest Rates' (ch.5) is explained by shifts in the supply of and demand for bonds. This is essentially a loanable funds framework. Although there is brief mention of liquidity preference theory, there is no hint that central banks play any part in the process. Chapters 15 and 16 on the determination of the money supply are dominated by exercises in multiple deposit creation and open market operations. Chapter 17, 'Tools of Monetary Policy' the federal funds rate is listed as a tool but the rate itself is determined by open market operations in reserves and/or changes in reserve requirements.

Burda and Wyplosz's fourth edition of *Macroeconomics* gets no further than this (in chapter 9). The base-multiplier model of money supply determination (which lies behind the exogenously determined money stock of the *LM* curve) was condemned years ago as '...such an incomplete way of describing the process of the determination of the stock of money that it amounts to misinstruction' (Goodhart, 1984, p.188).

This does not mean that the possibility of central banks choosing to set prices rather than quantities is completely ignored. But the context and the reasons are highly instructive. Manfred Gärtner's *Macroeconomics* (2003) is another text where the treatment of aggregate demand is ultimately founded on an IS/LM model with fixed money supply. But in chapter 3 (pp. 77-8) a box discusses the circumstances in which central banks may choose to stabilise the interest rate rather than the quantity of money. The explanation is derived essentially from Poole's (1971) seminal article where it is shown that the rate of interest is the preferred instrument of policy if instability arises from the *LM* curve while the money stock is preferred if instability originates in the *IS* curve. But this outcome results still from the assumption that the money supply is (exogenously) determined by the central bank. In effect the CB is seen to adjust the quantity of money in response to shifts in demand so that the *LM* curve is stabilised. It remains downward sloping, in a position determined by the deliberate interventions of the central bank.⁸ But instability in the money demand curve is not the principle reason (though it may contribute to) why central banks choose to set interest rates. We saw above that the refinancing rate is the chosen instrument because, to put it crudely, there is nothing else that CBs can do. If we revert to the money market diagram behind the *LM* curve, it is not that the CB is in a position deliberately to adjust the position of the supply curve to every twitch in the money demand schedule. In a real world setting where nominal income tends to rise, both curves will drift to the right. If the CB sets the interest rate then, so far as money market equilibrium is concerned, the supply curve shifts as the demand for *loans* creates more deposits. In the simplest case the supply curve will shift broadly in line with the demand for money and the *LM* curve will be *horizontal*.⁹

With an approximate equilibrium between money demand and supply guaranteed, real balance effects cannot possibly provide an appropriate account of the transmission mechanism of monetary policy. The quotation (above) from Dornbusch and Fischer should be read alongside the Bank of England's account of how monetary policy impulses are actually transmitted (*BEQB*, 1999) or the account offered by the ECB (ECB, 2004, p.45).

3. Independence, credibility and reputation

Until fifteen years ago, the idea that inflation could be eradicated by simple legislation would have been treated with ridicule. Incomes policies, for example, had become an amusing curiosity. But the literature that has made central bank independence so fashionable presumes precisely this: that a

⁸ A similar argument appears in a later section (16.5) of Dornbusch, Fischer and Startz (2003).

⁹ But not necessarily at the rate set by the central bank. The interest rate on the vertical axis of the *IS/LM* model must represent the opportunity cost of holding money. This is not the CB's refinancing rate. How best to represent interest rate setting in diagrams designed to show an exogenously determined money stock takes us into deep waters. See Arestis and Howells (1996) for some discussion and also, more recently Fontana and Venturino (2003).

legislative act (which can be easily reversed) carries more credibility than a promise by government to follow a low inflation policy. In a moment we shall show that this somewhat illogical position is based upon some faulty (or at least highly questionable) empirics and a fundamental misunderstanding of (some of) the time-inconsistency literature. We look at each in turn before raising some additional observations about the merits (and otherwise) of independent central banks.

As we noted in our introduction, the support for central bank independence (CBI) blossomed in the late 1980s. Much of it appeared in papers by Alesina (1988, 1989), Alesina and Summers (1993) and Alesina and Gatti (1995). However, the idea certainly goes back to Parkin and Bade (1980) and in 1992 Cukierman published a substantial review of the issue (which expressed *inter alia* some doubts about the methodologies employed by these studies). By the late 1990s, the wisdom that central bank independence improves monetary policy outcomes was widespread in textbooks.¹⁰ In an unhappy echo of Jensen's (1978) description of the efficient market hypothesis,¹¹ Otmar Issing recently remarked that the benefit of an independent central bank was one of '...the established findings of our discipline' (Issing, 1996 p. 289). There is certainly an interesting as to why the same textbooks that seem unable to recognise the rate of interest as the policy instrument have enthusiastically reported the trend to independent central banks.

As techniques of economic analysis go, those used in the case for CBI are modest in their sophistication consisting of (essentially) the calculation of a coefficient measuring the correlation between the average rate of inflation and an index of CBI in a range of countries. As a rule, the studies claim to find a degree of positive association between low inflation and the degree of central bank independence but the objection to the claim that the former is *due to* the latter will be familiar to any student of 'statistics 101'. The possibility that both independence and low inflation rates may themselves be jointly determined by something else is therefore frequently mentioned in the literature but rarely followed up. One, perfectly plausible, candidate suggested by Hayo (1998) is social attitudes or, more precisely, the degree of inflation-aversion shown by a community. The importance of inflation aversion was revealed by the Bundesbank itself in evidence to the UK Treasury and Civil Service Committee on Monetary Policy (1980-81). Asked by the committee's Chairman, Edward du Cann, 'Why do you think it is that Germany has been so successful in keeping close to the monetary targets which the Bundesbank has set?' (Q.984), Dr Hermann-Josef Dudler's (for the Bundesbank) replied:

¹⁰ Amongst those that we referred to in the last section, the merits of CBI appear in Burda and Wyplosz pp. 400-04; Mankiw pp. 397-8

¹¹ '...there is no other proposition in economics which has more solid empirical evidence supporting it than the Efficient Markets Hypothesis' (Jensen, 1978, p.95).

The basic reason if you like, is probably beyond the control of the Bundesbank. It is the assumption from which the Bank can start that the German population is extremely sensitive to inflation and that the role of the Central Bank in public in political terms and *not just in legal terms* is a very strong and autonomous one, so when we set out establishing a target and pursuing this we start from the assumption that the public at large is basically supporting the policy that lies behind it ... So, we rarely face a situation where there is an apparent conflict between the way we see the economy developing and the various sectors of the economy behaving and the kind of target which we set. (HC163-II, p. 299. Emphasis added).

Essentially the same point, that the Bundesbank succeeded because it had a simple task, is amplified in the memorandum that the Bundesbank submitted to the committee in advance. In para. 5c the memorandum explains that the Bank always sets its policy instruments on the basis of a macroeconomic projection agreed with the Federal Government, taking account of the level of *unavoidable* inflation in the system. Hence its task is simplified twice over. Firstly by consensus: ‘This approach underlines the Bundesbank’s conviction that control of the money supply for the sake of combating inflation and ensuring steady economic growth can only be successful if the policies and behaviour of public authorities, enterprises and trade unions are guided by the same objectives.’ (HC163-II p.292); secondly by its choice of limited objectives. ‘Unavoidable inflation’ is created by external cost pressures such as higher raw material prices. ‘...we do not have the illusion that we can fully offset these by a decline in domestic prices or a very low increase in domestic costs and prices...’ (HC163-II p.299).¹²

So much for correlations. But as Forder (1998a) has pointed out, there are problems with the data too. The measurement of inflation rates is relatively straightforward; but the same cannot be said about the measurement of ‘independence’. As a general rule, studies of the inflation-independence relationship have devised a numerical measure of independence by ‘statute reading’ (less kindly – by ‘box ticking’). In this approach, the rules surrounding the creation and operation of the current CB regime are scrutinised for evidence of characteristics that are thought, *a priori*, to conduce towards independence.

¹² The implication of the Bundesbank’s experience is that independence is not *necessary* for an effective low-inflation policy if other conditions are favourable. Interestingly, Germany’s earlier monetary history contributes to the argument that independence is not *sufficient* if other conditions are hostile. The Reichsbank, which presided over the disastrous hyper inflation of 1923, enjoyed statutory independence. See Marsh, 1992, pp. 92-107.

Note that such characteristics are subject to the researcher's judgement. Once the list is established, it is a relatively simple task to check off each one and arrive at an aggregate score for each regime. This introduces arbitrariness at two levels (Bain and Howells, 1998). Firstly there is the question of which characteristics should be excluded or included as indicators of independence. Secondly there is the much trickier question of weights. If the characteristics are treated in a binary fashion (1 = present; 0 = absent) then all characteristics are being equally weighted and (for example) the terms of the Governor's appointment rank equally with the question of whether the government is represented on decision-making bodies.

In addition to the subjectivity involved in deciding what makes for independent behaviour, there is the further problem that a wide range of actual behaviour maybe consistent with any given set of rules and statutes. This lay behind Cukierman's (1992) warning that CBs, especially in some less developed countries, may act in ways quite different from those that the rules appear to require. While this may seem an obvious risk in countries with little tradition of or facility for public scrutiny of official behaviour, one of the most striking examples is provided by the US Federal Reserve itself. As Bain and Howells (1998) and Forder (2003) have pointed out, when the Federal Reserve system was founded in 1913 the 'independence' intended by its founders was very different from the independence envisaged in the current central banking literature. The imperative in 1913 was to create a structure which would be independent of the 'money interest', centred on Wall Street. As Forder in particular shows (2003, pp. 306-9) it is really only since the Volcker regime, starting in 1979, that the Federal Reserve has developed a reputation for independence of the executive and even then not always with the enthusiastic support of Congress. Thus, with no changes in its independence 'score', the Federal Reserve has occupied very different positions in relation to the US administration over the years.

Before leaving this brief discussion of some of the empirical problems, we need finally to refer to some of Posen's work (1993 and 1998). We shall see in a moment that the theoretical argument for a low inflation-independence correlation relies heavily upon the credibility-enhancing effects of independence. If independence enhances credibility, then market expectations of CB actions should respond more readily to announcements of anti-inflation measures and from this we would expect lower 'sacrifice ratios' when disinflationary policies are announced. Posen's studies (using statute-based measures of independence) find no evidence of this. As Forder points out (1998b) this result is consistent with the findings of Egebo and Englander (1992) that membership of the ERM,

often mentioned as a similar credibility-enhancing opportunity, had little effect on the costs of disinflation. One is led to the conclusion either that expectations do not matter much to macroeconomic outcomes, which seems unlikely, or CBI (and ERM) have little effect on inflationary expectations.

The fact that evidence for the benefits of CBI is unconvincing would come as less of a surprise if it were more widely recognised that the theoretical arguments for these benefits relies on a fundamental, but widespread, misunderstanding. Commonly, CBI is recommended as the solution to a problem of credibility said to have been identified initially by Kydland and Prescott (1977). The key to their argument is that once low rates of inflation have been achieved, the marginal benefits of lower unemployment (achievable by springing an inflation surprise) exceed the marginal cost of the inflation surprise. Note that this applies to any well-intentioned policy-maker and is therefore unconnected with any additional assumptions about the policy-maker following sectional interests, seeking re-election or anything else. In a rational expectations world, private sector agents are acquainted with this incentive, anticipate the inflation ‘surprise’ and set prices and wages at higher levels than they would otherwise have done. Equilibrium is achieved when the marginal cost of higher inflation matches the marginal benefit of the lower unemployment, i.e. at a higher rate of inflation than would be the case in the absence of this ‘time inconsistency’. Kydland and Prescott’s solution, as is well-known, is a monetary rule to which governments should pre-commit.

The question of credibility enters the picture, however, only when we (more precisely Barro and Gordon, 1983) ask why well-informed private sector agents should be influenced by Kydland and Prescott’s rule. Knowing that the policy-maker faces a ‘time inconsistency’ problem, private agents will expect the policy-maker to renege and will optimise accordingly. Strictly speaking, therefore, the question of credibility is subsequent to the issue raised by Kydland and Prescott. Furthermore it is separate from it. The incentives arising from time inconsistency apply to any well-intentioned policy maker. Indeed, in their paper, Kydland and Prescott posed the problem as one that faced the US Federal Reserve. There is a problem to be faced by an independent central bank, not eliminated by it. What is required is not independence as such but a central bank (or any other policy-maker for that matter) with a loss function which gives higher weight to inflation than that of the community as a whole. The clearest recognition of this comes with Rogoff’s (1985) creation of the ‘conservative’ central banker with unrepresentative preferences as an *additional* requirement. Arguments that monetary policy outcomes can

be improved by institutional reform, in other words, should be focusing on the nature of contracts and incentives facing the policy-maker, not upon the policy-maker's relationship with government.

Much of what we have argued here can be found in Forder (e.g. 1998b and 2000). But Forder sounds a further note of criticism regarding the uncritical enthusiasm for CBI, which alas we can only mention briefly here. This is that concentrating upon independence rather than the internal arrangements of a central bank has helped avoid a whole set of awkward questions easily derived from the theory of bureaucracy. The possibility that central bankers might be motivated by the maximisation of power and prestige and the minimisation of blame for poor policy outcomes, and that these objectives might be more readily achievable with increasing levels of independence appears to have gone largely unnoticed. The result is major inconsistency in the arguments for CBI. 'In effect, the myth of the benevolent policymaker was debunked [in order] to see off democratic control, and immediately reinstated to establish the claim to authority of the independent central banker.' (Forder, 2002, p.52).

4. Transparency in policy-making

4.1 Predictability, credibility and accountability

Generally, we expect that agents, who are better informed, make better decisions, enhancing the efficiency of the economy in allocating resources. Monetary policy transparency is concerned with the disclosure of information affecting agents' expectations and thus influencing the effectiveness of monetary policy. The various dimensions of policy to which 'transparency' can be applied are discussed in Geraats (2001, p.8)¹³

In the case of independence, we raised doubts about the theory. The argument that improved policy outcomes would follow from independence was based upon a misunderstanding of the policy-maker's problem. By contrast, there are several reasons why policy might be improved by transparency and some appear well-founded. Firstly, transparency makes monetary policy more predictable in the short and medium run. Predictability contributes to market stability since it improves public understanding of the rules that govern central bank decision making. If agents understand how the central bank's mind works, they anticipate monetary policy as if they were making policy for themselves. Consequently 'news' is only in macroeconomic developments and

¹³ The following pages of Geraats (2001) also provide a useful summary of the literature on transparency up to that date.

not in the actions of the central bank itself. Thus, transparency reduces uncertainty about central bank actions and monetary policy becomes ‘boring’. The line of reasoning is illustrated in the remarks of Mervyn King, the Bank’s then Deputy Governor, in 1997:

‘A transparent monetary policy implies that announcements of changes in interest rates by the MPC might come as rather little surprise. The news would not be in the outcome of the meetings of the MPC, but in the economic statistics published during the month. Markets would be able to anticipate the likely reaction of the MPC, and the decisions by the MPC would follow a predictable policy reaction function.’ (King, 1997)

Secondly, by providing the private sector with a clear description of the considerations guiding monetary policy decisions, transparency makes the monetary policy transmission mechanism more effective. Most market analysts believe that long-term interest rates are largely determined by markets’ expectations of the future course of actions by the central bank. Greater disclosure of the policy making process ensures that market expectations can be formed more accurately and efficiently (Blinder et al, 2001). But we need to be careful. Thornton (2002, p. 2) stresses ‘... that transparency, *per se*, is a means to an end. For monetary policy, the only end that matters is policy effectiveness.’ In this sense, monetary policy need not be more effective when markets are able to anticipate policy rate moves *before* the central bank acts. If agents cannot anticipate the change in the policy rate, long-term interest rates will change once the action of the central bank has been taken. The horizon over which long-term rates change depends on agents’ view on how long they perceive the change in rate will remain at its new level. So, agents do not need to predict the change in the policy rate before the action by the central bank, but more importantly, they need to correctly predict how long policy makers will keep the policy rate at the particular level. If agents believe that the level of interest rates will be reversed, in both a transparent and an opaque setting, long-term interest rates will only change over the horizon that agents believe the level of the policy rate will persist. Policy rate changes have the largest effect on long-term rates if central bank actions are significant and persistent.

Thirdly, transparency enhances credibility and greater credibility enhances monetary policy effectiveness, particularly when the central bank’s objective is stable inflation. We recall from section 3 that credibility is indeed a problem facing policy-makers and any strategy which enhances credibility should reduce the sacrifice ratio. Hamalainen provides an interesting variation on the ‘lower costs of policy’ theme when she argues that a credible central bank can achieve price

stability with smaller interest rate movement and at lower interest rate levels than a less credible central bank (Hamalainen, 2001). Credibility of policy makers implies that their policy announcements are believed and more transparent central banks are more credible. But once again, we need to be careful in distinguishing ends and means. Raising an issue that we shall come back to in the next section, Thornton (2002) points out that a central bank is credible only when it does what it says it will do. Central bank's credibility will be judged over time and it will be judged on the basis of its actions. Neither the Swiss National Bank, nor the Bundesbank were models of transparency. However, they both were very effective in keeping inflation low and steady and would be widely regarded as very successful central banks. Geraats (2001) suggests that a central bank can build up its reputation as a credible institution more easily when it is transparent. For example, the ECB, as a new institution (at the time) needs to convince markets that it is serious about inflation targeting. If the ECB reduces interest rates to stimulate the economy in response to signs of slacking demand, then markets may interpret this as a sign of inflationary policy. By explaining its policy moves, the ECB can reduce market uncertainty and strengthen its reputation. Cecchetti and Krause (2002) calculate correlation coefficients for measures of transparency and credibility, credibility and independence, and credibility and accountability. The correlation between measures of credibility and transparency is 0.31. Interestingly in the light of our argument in section 3 that independence had very little to do with credibility, the correlation coefficients between the other two pairs are virtually zero.

Fourthly, transparency necessitates the principle of democratic accountability (Buiter, 1999, Blinder et al, 2001). Central bankers are not democratically elected and the decision making by technocrats is only acceptable and viable if the institution which makes these decisions is accountable to the public and its elected representatives. Also, accountability is an important instrument of quality control. The discussion on accountability is primarily concerned with what information the public should be provided with and who is accountable. While there may be some consensus on the general principle that central banks should be transparent and accountable, the consensus is most fragile when it comes to the implementation of practical guidelines. A good example is the discussion between Buiter (1999) and Issing (1999) who differ on the means with which to achieve accountability. Their most obvious disagreement is about the early publication of central bank forecasts and the voting record of individual monetary policy council members, where the latter is a disagreement on collective or individual accountability. The early publication of inflation forecasts in a system of inflation targeting with a numerically specific inflation target can be seen as an essential element of accountability. Government can judge *ex post* whether deviations from the

target were due to unanticipated macroeconomic shocks or to poor performance by the central bank. Thornton (2002) argues that transparency is not necessary for central bank democratic accountability since central banks are accountable to the government, which itself is elected. Indeed, the question of accountability only arises as a result of central bank independence. It is, as it were, a *quid pro quo* for the loss of democratic control. As such, it has little, if anything, to do with the quality of policy outcomes. If central banks' principal function is to conduct effective monetary policy and if this can be better achieved in a secretive manner, then this is an overriding principle to transparency. Similarly, Issing (1999), discussing ECB transparency, takes the view that the ECB's accountability should be primarily based on its observable record in fulfilling its mandate. Forder (2002) is highly critical of this notion of accountability, saying it amounts to nothing more than a requirement only to report and explain their actions. There are no sanctions and no requirements that the ECB should modify its behaviour if things go wrong.

4.2 Empirical evidence

Leaving aside questions of accountability, we can see that there are three plausible channels through which transparency may enhance policy outcomes. The question now is what does the evidence tell us? More specifically, the question is are the benefits of transparency necessarily secured by the 'transparency apparatus' or 'characteristics' of scheduled meetings, quantified targets, minutes of meetings etc. (for a complete list see eg. Eijffinger and Geraats, 2002).

There are three major types of study that are concerned with measuring transparency or measuring the effect of transparency on markets' monetary policy anticipation. The first group measures transparency by listing the characteristics that seem necessary *a priori* for transparency and then checks them against individual policy regimes. These characteristics are then used to establish a ranking of transparency between different central banks. The 'characteristics approach' conveys *some* consensus across the studies in so far as the Bundesbank and the Swiss National Bank rank rather at the bottom of the table (as we noted they were bound to do), while the ECB has a low-middle position, and the Bank of England comes out as one of the more transparent central banks. In contrast, the US Fed almost seems to cover the entire spectrum of ranks.¹⁴ In general, it is difficult to find some uniformity in the ranking of the institutions, because the studies differ considerably in range and time.

¹⁴ We summarize studies by Fry et al (2000), Eijffinger and Geraats (2002), De Haan and Amtenbrink (2002) and Bini-Smaghi and Gros (2000).

The second approach is a survey of the opinions of market traders on how well they understand the policy of central banks. The third approach is similar in concentrating upon market agents but is more concerned with behaviour than views, using interest rate data to see how well markets predict monetary policy moves. Firstly, turning to the survey results by Goldman Sachs (2000) and Waller and De Haan (2004), rankings vary strikingly for the same institutions between both studies. Some consensus seems to be with the ranking of the ECB, which is at or very near the bottom of the ranking in both surveys. In the Goldman Sachs study, the Bundesbank and the US Fed turn out to be well understood by market agents while in the Waller and De Hahn study, they are both next in the ranking to the ECB. The Bank of England ranks in the Goldman Sachs study close to the bottom and in the Waller and De Hahn study close to the top of the ranking scale.

Taking the results of the surveys and the ‘characteristics approach’ together, there is quite some diversity in the ranking of the institutions and there obviously is not a clear cut relationship between high levels of transparency and a good understanding of monetary policy by market agents.

We turn to the empirical results of the third approach, which relates transparency to predictability by testing markets’ understanding of central bank policy.

The study by Haldane and Read (2000) looks at the degree of ‘surprise’ along the yield curve in response to a policy rate change. Using Bank of England pre-independence daily data from 1985 to 1997, they test the effects of transparency by estimating the changes in implied forward rates at nine different maturities as a function of their lags and the change in the official interest rate. They also include the change in the policy rate times a dummy for the regime after the introduction of inflation targeting in 1992 and find a significant fall in policy surprise since inflation targeting, which was in tandem with a policy of greater transparency. They also compare ‘surprises’ along the yield curve over the maturity spectrum for the USA, Germany, UK and Italy over the period 1990 to 1997. The results for the US and Germany are that surprises at the short end of the yield curve are by far smaller than those for Italy and the UK and that the former countries’ long-rate surprises are effectively zero, while they are greater for the UK and Italy. ‘This is as we would expect of high-credibility countries, whose inflation-track records – and hence inflationary credentials - are well established.’ (Haldane and Read, 2000, p. 30). Their interpretation of results is reminiscent of Thornton’s warning. It is what CBs do over a sustained period which renders their decision-making understandable (or not).

Also, the study by Coppel and Connolly (2003) compares regimes in Australia, UK, USA, Canada and Germany over the period 1996 to 2002. The authors find that ‘... it was not possible to reject the hypothesis that the level of anticipation by the markets of a rate move in each country [was] equal’. Recall that the years 1996 to 1999 in Germany were years of the Bundesbank.

Additionally, an earlier study by Ross (2002) compares market anticipation of the ECB, US Federal Reserve and the Bank of England. He concludes that all institutions are predictable with a high degree of credibility. Perez-Quiros and Sicilia (2002) come to a similar conclusion when comparing the ECB and the US Fed.

Chadha and Nolan (2001) examine the question of transparency through the volatility of market interest rates. They use dummy variables to test for the effect of (i) the publication of the *Minutes* of the MPC meetings and (ii) the publication of the *Inflation Report* on interest rate volatility. They find that there is no significant effect of either publication on interest rate volatility.

More recently, Biefang-Frisancho Mariscal and Howells (2004a, 2004b) also apply the Haldane and Read method to test for surprises at the short-end of the yield curve for the Bank of England (now including the period of Bank of England independence) and for the former Bundesbank and current ECB regimes. They find that the degree of policy anticipation has not changed since independence of the Bank of England and results are very similar to those of Haldane and Read for the shorter period. In their study of the German data, they include the change in the official interest rate times a dummy for the regime shift after the ECB in 1999. They find that the coefficient of the latter variable is insignificant. They also look at the degree of unanimity with which private agents anticipate policy rate changes. They calculate the range of forecasts of private institutions as reported in *Consensus Forecasts* and regress the forecasting range of the three-month euro-DM rate on a trend, a dummy variable times trend, as well as a shift dummy to account for the regime change in 1999. They find a significant change in the trend since 1999, indicating that agents have become more uncertain in forecasting the market rate. They continue to test whether the rise in uncertainty in forecasting is due to uncertainty about future macroeconomic development. There is evidence that for Germany inflation and GDP growth forecasts have become more volatile. The rise in inflation forecasting volatility explains to some degree the increase in market rate forecasting volatility.

Wadhvani (2001, p. 1) summarises the above results succinctly: ‘It is generally acknowledged that UK monetary policy is more transparent than in many other countries. Somewhat unexpectedly, there is some evidence which suggests that our interest rate decisions have, on average, surprised the markets more than the corresponding decisions by other central banks over the last four years.’ He suggests that markets may find a system of ‘individual’ accountability more difficult to understand than ‘collective’ accountability as practiced by the ECB, for instance. Another reason for the low predictability of the Bank of England monetary policy may be that the MPC was a new institution and markets needed to learn how it was going to react to macroeconomic developments (Thornton again). Further, markets felt, contrary to the Bank of England claim, that the Bank of England was biased to undershooting the inflation target, which may have damaged the central bank’s credibility.

Considering the empirical results and particularly also those of more recent studies, it appears that markets are more or equally surprised by central banks which possess the transparency characteristics as by central banks which have been famous for (the Bundesbank) or at least criticised for (the ECB) their lack of the transparency apparatus. This brief survey does not allow us to say definitively what it is that makes a CB more transparent and more credible. But Thornton’s argument that both ‘understandability’ and credibility come from doing what one says and doing it consistently is obviously part of the answer. But reputation building through this route takes time and in this sense, fitting central banks with the transparency kit can be seen as a way of trying to speed up the process. But it seems that markets are not so easily persuaded. They prefer to judge by results.

5. Conclusion

In the course of this paper we have brought together a wide range of material, most of it originally developed by others, which collectively calls into doubt the consensus that the optimum design of monetary policy regime involves an independent central bank, fitted out with all the characteristics of transparency, setting a short-term rate of interest and leaving markets to determine the quantity and allocation of money and credit. What is most striking about the consensus is the speed with which it has emerged and this explains, perhaps, the rather naïve empirical work and the uncritical theorising that has supported it.

The consequence is that many countries have now devolved their monetary policy to independent and transparent central banks confident in the hope that this has taken the conduct of policy to a

new plane. It is just possible that they may be right. Certainly, we appear to be enjoying a period of low inflation and macro-stability with little historical precedent. But on the other hand, circumstances have been benign. The danger lies in the frustrations that will quickly develop if the going gets tough and it becomes obvious that the new regimes do not have the answer – that independence does not deliver credibility and agents do not trust new regimes only because they release lots of information.

Even now, the signs are worrying. It is clear from the financial press that central banks are expected to take steps to counter the inflationary pressure arising from the recent rise in energy prices and it is equally clear from statements from the ECB that the rise in oil prices is one of the factors that they are taking into account in resisting pressure for interest rate cuts. This amounts to depressing domestic demand to combat what the old Bundesbank would have called ‘unavoidable inflation’ – something we know that it would never have tried to do. In Italy, the unthinkable has been spoken, namely that Italy should consider a return to the Lire. This may be dismissed as the call of extremists but recent referenda show that there is a good deal of dissatisfaction with the European project, at least in the richer states. It would be ironic, and the consequences would be very serious, if the policy that was supposed to be the ultimate guarantor of European unity – the single currency – were to lead to its break-up.

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