# Central-Bank Independence Revisited

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The case for central-bank independence (CBI), while not a new one, has been strengthened by a growing body of empirical evidence, by recent developments in economic theory, and by the temper of the times. The case is a strong one,[1] which is becoming part of the Washington orthodoxy.[2]

The purposes of this paper are both to make more precise the type of CBI that is likely to enhance economic performance, and to point to some remaining open issues and anomalies. I start with the two theoretical approaches to CBI.

## I. The Theoretical Basis for Central-Bank Independence

The modern case for CBI begins from the inflationary bias that would otherwise be present in monetary policy. That there has at times been such a bias in practice can be concluded from the high inflation rates of the 1970's and early 1980's in most industrialized countries. Other examples of inflationary bias can be found in multidigit annual inflation rates in both industrialized and developing countries, most spectacularly in hyperinflations. Modern theory attributes the inflationary bias either to the dynamic inconsistency of monetary policy in an expectational Phillips-curve model of output determination or to the revenue motive of the inflation tax, in a context in which the fiscal authority weights the social costs of inflation inappropriately, or to both.[3]

The two main strands of theory that have added precision to the analytic argument for CBI are the conservative-central-banker approach of Kenneth Rogoff (1985), and the principal–agent approach of Carl Walsh (1995) and Torsten Persson and Guido Tabellini (1993). In the Rogoff approach, the social-loss function weights deviations of both output and inflation from optimal levels, and dynamic inconsistency produces higher inflation than is socially optimal. This loss can be reduced in multiperiod models in which the central bank is allowed to develop a reputation. It can also be reduced, as Rogoff points out, by entrusting monetary policy to a person or institution who weights inflation deviations more heavily than in the social-welfare function—the conservative central banker. This results in improved overall performance, in which inflation is on average lower and more stable than with a less conservative central banker, but output is more variable.

In the alternative principal–agent approach, the inflationary-bias problem is solved by structuring a contract that imposes costs on the central banker when inflation deviates from the optimal level. As Walsh (1995) shows, the inflation penalty is

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[1]The arguments for CBI are reviewed and developed at greater length in Fischer (1994), and applied there to support the case for greater independence for the Bank of England. For a complete exposition of the modern approach up through 1992, see Alex Cukierman (1992).

[2]John Williamson's (1990) description of the Washington consensus does not explicitly include CBI. A mid-1990's version would do so.

[3]Inflationary bias is not inevitable: there have been episodes in the past, such as at the time of Britain's return to gold in 1925, and during the downturn phase of the Great Depression in the United States, when central banks suffered from a deflationary bias.

linear in inflation in the standard model and is thus conceptually easy to design.

Both approaches have the smell of realism. The conservative central banker is a familiar type, encountered in his or her anti-inflationary speeches all over the world. In this interpretation, the central bank has to be independent to ensure that its preferences rather than those of society determine monetary policy in a context in which precommitment to optimal (low-inflation) policy is impossible. At the same time as central bankers denounce inflation, they in practice take into account the short-run trade-off between inflation and output in deciding on the speed at which to reduce inflation when it is (or is expected to be) above target levels, and the speed at which to reflate from a recession. They thus satisfy the Rogoff (1985) model's assumptions that the conservative central banker weights deviations of both inflation and output from target levels in setting monetary policy.

The principal–agent approach has been implemented in New Zealand, where the Governor of the Reserve Bank agrees on a target inflation path with the government, with his job on the line if he fails to achieve the targets. Prespecified adjustments to the target inflation rate are made for changes in the terms of trade and indirect taxes. Other countries in which the central bank has a clearly spelled-out inflation contract with the government, such as Canada and, recently, the United Kingdom, can also be thought of as pursuing the principal–agent approach, provided the penalty for excess inflation is interpreted (realistically) as the central banker's loss of reputation. There are also elements of the principal–agent approach in all countries where the central bank has reasonably clearly defined goals, such as in Germany where the Bundesbank is given the task of safeguarding the currency.

These two approaches point to different forms of CBI. Guy Debelle and Fischer (1995) and Fischer (1995) introduce the distinction between *goal independence* and *instrument independence*. A central bank that is given control over the levers of monetary policy and allowed to use them has *instrument independence*; a central bank that sets its own policy goals has *goal independence*. In the Rogoff (1985) approach, the central banker is given control over monetary policy and the independence to maximize his or her own utility function: he thus has both goal and instrument independence. Of course, the government tries to choose the right central banker, but—as in the case of Supreme Court justices—the behavior of a central banker may be different after appointment than before. The central banker in the principal–agent approach has no goal independence but does have instrument independence.[4] In a well-defined sense, the central banker in the principal–agent framework is held *accountable* for the outcome of monetary policy, in that there are definite consequences of failing to achieve well-specified goals.

The most important conclusion of both the theoretical and empirical literatures is that a central bank *should* have instrument independence, but *should not* have goal independence.[5] Rather, the central bank should be given a clearly defined goal or set of goals, and the power to achieve them, and should be held accountable for doing so.[6] Accountability is needed for two reasons: first, to set incentives for the central bank to meet its goals and explain its actions; and second, to provide democratic oversight of a powerful political institution. Forms of accountability differ, with the New Zealand model making the Governor accountable to the Finance Minister in a pre-

[4]The distinction between goal and instrument independence helps make sense of the apparent anomaly that at the same time as CBI is gaining academic and policy support, so once again are nominal exchange-rate pegs. A central bank with the task of maintaining an exchange-rate peg has no goal independence; it may or may not have instrument independence, depending on how tightly specified are the constraints placed on it in creating credit.

[5]The basis for these conclusions is laid out in Fischer (1995).

[6]Of course, central banks cannot achieve targets exactly, and there is need both to specify ranges for target variables and a reasonable procedure for adjusting the targets in response to shocks exogenous to the central bank.

cise way, the U.S. model making the Fed generally but not precisely accountable to the Congress, and the German model making the Bundesbank accountable to the public. Given the importance of reputation to individuals in public life, each approach may work; nonetheless, precise accountability to elected officials is more likely to be effective than vague general accountability.

Instrument independence implies that the central bank should be free of any obligation to finance government budget deficits, directly or indirectly,[7] and should have the power to determine interest rates. The question of whether the central bank should supervise banks remains open, but it is not of much importance. Interestingly, the powers of the central bank to set the exchange rate are typically limited, even for the more independent central banks: the government generally retains the power to determine the choice of the exchange-rate system; in fixed-rate systems, the decision to devalue and the new parity are usually the primary responsibility of the finance ministry, which is shared with the central bank; within a flexible exchange-rate system, if the central bank has the right to determine interest rates, it will also have the right to determine the exchange rate.

## II. Inflation-Targeting

As support for CBI has strengthened, so has the tendency to set the central bank the sole task of achieving a targeted inflation rate or range.[8] Typically the inflation target is for an inflation range over the next year or two, or else for a path of inflation (also within a range) over several years. The choice of an inflation target raises several issues: whether it would not be better to choose a target that is more directly controllable by the central bank, such as growth of a narrow monetary aggregate; whether to choose an exchange-rate peg instead of an inflation target; why inflation should be the sole target given that monetary policy affects both output and inflation in the short run, and the related question of whether to specify a nominal income target rather than an inflation target; and whether to choose a *price-level* rather than an *inflation-rate* target.

Obviously it would be best for the central bank to target a policy variable directly under its control that also closely controls an ultimate target variable, such as the inflation rate or output. For some time, the hope was that monetary targeting would achieve that purpose, but as the relationship between money growth and inflation and/or output has broken down in one country after another, it has not proved possible for any country to rely solely on monetary targeting.[9] In any case, the central bank should be left to decide whether monetary targeting is useful for meeting its ultimate goals. One reason for having a central bank is to centralize both the capacity and the responsibility for figuring out how best to implement monetary policy.

This is not the place to go into the details of the merits of fixed versus floating exchange rates. Nominal-exchange-rate pegs may be useful as a means of anchoring monetary policy and expectations when attempting to stabilize from high inflation. They may also be useful in small open economies, or in economies where the monetary authority has lost credibility and needs to regain it. Sometimes, as in the European Union, an exchange-rate peg may in addition reflect a political commitment. It is of course also possible that the monetary authority chooses both an inflation target and an associated exchange-rate peg or path, as in a crawling-peg system. The choice between an exchange-rate peg and an inflation

[7]However, the central bank may help the treasury in its short-term cash management operations.

[8]Indeed, some researchers measure CBI by the extent to which the central bank is assigned the sole goal of price stability or low inflation (see Cukierman, 1992 Ch. 19).

[9]There is nothing more common after a money demand function appears to have broken down than the demonstration that the demand for some other definition of money was stable. These *ex post* exercises are not impressive.

target, or any other nominal anchor, has to be determined on the basis of the history and structure of each economy. Whatever the choice, monetary policy under an exchange-rate peg is not automatic, except in a strict currency-board system (see Steve Hanke and Kurt Schuler, 1994), and the central bank has to take into account the long and variable lags of policy and deal with the difficulties caused by capital movements in setting interest rates and credit conditions.

One likely answer to the question of why monetary policy should target inflation rather than nominal GDP is that inflation is a monetary phenomenon. This is better poetry than economics. In the short run, monetary policy affects both output and inflation, and monetary policy is conducted in the short run—albeit with long-run targets and consequences in mind. Nominal-income-targeting provides an automatic answer to the question of how to combine real income and inflation targets, namely, they should be traded off one-for-one. There are two main difficulties with nominal-income-targeting: first, and more fundamentally, nominal GDP data appear with a lag and are frequently revised; and these data appear to be of little direct interest to the public. The data-revision problem is a severe one.

The case for inflation-targeting rather than nominal-income-targeting is that the inflation rate is of direct concern to economic agents, and that inflation performance is easier to monitor than nominal-income performance. Inflation-targeting gives the right monetary-policy response to demand shocks, namely, that monetary policy should be tightened in response to shocks that would tend to increase both output and inflation. Because a supply shock leads to higher prices and lower output, monetary policy would tend to tighten less in response to an adverse supply shock under nominal-income-targeting than it would under inflation-targeting.[10] Thus nominal-income-targeting tends to imply a better automatic response of monetary policy to supply shocks. This advantage is offset to the extent that inflation-targeting makes special provision for supply shocks: for instance, the New Zealand inflation target is adjusted for terms of trade shocks, and inflation targets in several countries adjust in a variety of ways to deal with the impact of indirect taxes. I judge that inflation-targeting is preferable to nominal-income-targeting, provided the target is adjusted for supply shocks.

Finally, should the target be a price-*level* path rather than an inflation-rate path? When policy targets a price-level path, it has to offset past inflationary shocks by a period of below-average inflation, in order to return to the targeted path. As shown in Fischer (1995), inflation-targeting tends to produce more certainty about the price level in the near future, at the expense of greater uncertainty about the price level in the distant future. Equivalently, the inflation rate would fluctuate more in the short run under price-level-targeting, as policy strives to come back to the chosen price path. For instance, under price-level-targeting, the Bundesbank, at the end of 1994, would be required to reduce inflation below its 2-percent target range for as far and as long as it takes to undo the effects of the above-average inflation of the period since 1990. If the goal is to encourage long-term nominal contracting, then price-level-targeting would be preferable. However, since the great bulk of nominal contracts are relatively short-term, since the task of monetary policy would be made much more demanding under price-level-targeting, and since the benefits of long-term nominal contracting are equivalently obtained by permitting indexation, inflation-targeting is preferable to price-level targeting.

### III. Open Issues

The most impressive single empirical result in the CBI literature is the well-known chart showing that, among industrialized countries, average inflation performance is negatively related to the degree of legal independence of the central bank (see e.g.,

[10]Of course, the extent of monetary tightening under the two rules would depend on the decisions of the monetary authority.

Alberto Alesina and Lawrence Summers, 1993). One reaction, for example by Adam Posen (1993), is that the relationship is not causal. Rather, countries that are in effect inflation-averse develop the institutions to support that aversion. In particular, Posen argues that countries in which the financial sector is politically powerful, become effectively inflation-averse. This certainly fits the case of Switzerland, but hardly Brazil, where the profits the financial sector made out of inflation were a key element in the political difficulty of stabilization. In any case, unless laws are totally irrelevant to performance, anyone wanting to reduce inflation would still be well advised to support actively the cause of CBI.

There are several anomalous empirical results in the CBI literature, particularly the finding reported in Cukierman (1992) that the basic negative relationship between legal independence and average inflation does not hold for a group of 72 developing countries for which data were assembled; rather the relationship is positive. Among the possible explanations are that the law is not observed in some countries or that key aspects of independence (e.g., the provision of instrument independence by insulating the central bank from the requirement to finance the government budget) are absent.

Another interesting empirical result is the apparent free lunch provided by CBI in industrialized countries (this point has been emphasized by Sylvester Eijffinger and Eric Schaling [1993]). Not only is CBI negatively associated with inflation, it also apparently has no costs in terms of growth; further, both the variance of inflation and the variance of output growth appear on average to be lower for countries that have more-independent central banks. These results are not at first glance consistent with the predictions of the Rogoff (1985) model, which implies that central banks trade off between output and inflation variability. At least three explanations suggest themselves: first, that more-independent central banks are better at stabilization than less-efficient banks, and therefore come closer to the stabilization-efficiency frontier; that fiscal policy is more disciplined in countries with more CBI; and that both inflation and output performance are primarily affected by shocks that differ from country to country.

At a broader level, the question arises of why the political system should shield monetary but not fiscal or other economic policies from political pressures. The answer is that there are good reasons to attempt to shield fiscal policy from certain populist pressures and from dynamic inconsistency: many systems prohibit *ex post* tax changes (despite the efficiency of lump-sum taxes); capital taxation is restricted in some contexts; and balanced-budget or deficit-limitation laws are widely discussed and sometimes implemented. The trick is to attain the appropriate balance between the need to be responsive to short-term pressures and the need to ensure that those pressures are exerted in a system that safeguards the long-term interests of the population.

Finally, there is the question of whether a central bank can be too independent. The answer is yes. As a matter of theory, both of the basic analytic models of central banking imply that the central banker can be too inflation-averse, and too insensitive to the possibilities of stabilizing output. Further, there are potential benefits from the coordination of monetary and fiscal policy that may be forgone when the central bank is independent. Central-bank accountability, through the structure of the board, through reporting to and questioning by elected officials, and through the provision of information to and effective receptivity to criticism from the informed and general public, is therefore essential if monetary policy is to be both shielded from inappropriate political pressures and sensitive to the real needs of the public.

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