Successes and Failures of Monetary Policy since the 1950s

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Department of Economics
Department of Political Science
Social Science Centre
The University of Western Ontario
London, Ontario, N6A 5C2
Canada

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Successes and Failures of Monetary Policy since the 1950s*

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David Laidler

Professor Emeritus at the University of Western Ontario
Fellow in Residence at the C. D. Howe Institute

Abstract: Successes and failures in monetary policy stem mainly from coherence or lack thereof in the monetary order, rather than the tactical skills of policy makers. Crucial here are questions of consistency among the economic ideas that the policy regime embodies, the way in which the economy actually functions, and the beliefs of private agents and policy makers about these matters. These postulates are used to frame accounts of the Bretton Woods System and its collapse, the Great Inflation that followed, the subsequent disappointing performance of money-growth targeting, the breakdown of the Japanese "bubble economy" the onset of theEMS crisis at the beginning of the 1990s, and since then, the launch of the Euro and the apparent success of inflation targeting. Though monetary policy seems rather successful at present, certain weaknesses in currently prevailing monetary orders are noted.

Key Words: Monetary policy, policy regimes, crises, pegged exchange rates, flexible exchange rates, inflation, inflation targets, money supply, central banks, central bank independence.

JEL Classifications: E42, E58, E 65, F33.

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Introduction

Of the 42 countries listed in a recent (June 23rd-29th, 2007) *Economist* "league table" of inflation rates, only two (Venezuela and Egypt) experienced inflation in double digits over the previous year, and a further nine (Hungary, Russia, Turkey, India, Indonesia, Pakistan, Argentina, Columbia and South Africa) inflation in excess of 5 per cent. To someone who believes that the main thing to be asked of monetary policy is a modicum of price-level stability, the assigned title of this paper presents a strong temptation to label it as an art that has at last been widely mastered, and, given that this is the Bundesbank's fiftieth birthday, to add that perhaps this is because so many central banks are now following the good example that this institution has set for so long.

This temptation should be resisted, though, because many of the world's advanced economies have been here before, even during the last half century. With the exceptions of France as she made her transition from the Fourth Republic to the Fifth, and Japan in the 1960s, the early years of our period were a rather quiet time for inflation, quieter than the present in some places, not least Canada and Britain, where the success of inflation targeting has recently created much local satisfaction, and in the United States too, whose recent economic performance suggests that formal targeting might not be quite as essential as its more enthusiastic supporters tend to argue. The inflationary facts of fifty years ago, that is to say, when viewed through the prism of subsequent experience, suggest that monetary policy's apparent successes should never be taken for granted.[1] Evidently they can easily turn into failures, whose consequences are hard to undo.

If we look past statistics to the institutional, political and intellectual background, moreover, similarities between the present and fifty years ago become harder to find. Coping with monetary problems is not merely a matter of what central banks do, but of the workings of the monetary order within which they go about their business, and this order - a complicated amalgam of institutional arrangements, not to mention beliefs and policy goals - has changed beyond recognition since the 1950s.[2]

This essay presents a necessarily selective survey of some of monetary policy's successes and failures in advanced economies over the last fifty years.[3] It argues that these have mainly arisen from coherence, or lack thereof, in that monetary order, both in its international and domestic aspects, and only incidentally from variations in the tactical skill of particular central banks. It will pay particular attention to the extent to which policy makers' beliefs about how the monetary system works have or have not matched the facts of the case at various times, and the influence of this feature of the monetary order on their choices. Today's stability will thus be presented as the product of a monetary order very different to that in place fifty years ago and

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[1] Specific data on inflation rates given from time to time below are for year-on-year changes in consumer prices taken from various annual issues of *IFS*

[2] I first discussed this concept in Laidler (1993). I am aware of having borrowed it from Karl Brunner (1984) but, as George Tavlas has pointed out to me, it was extensively discussed earlier by Robert Mundell (1972) in an article to which Fillipo Cesarano (2006a) has recently given attention.

[3] Thus, the discussion that follows does not deal with the often fascinating and instructive monetary experiences of emerging economies in Asia, Africa, Latin America and Eastern Europe. There is simply insufficient space in a single paper to deal adequately with this material

more coherent too, but not to be taken for granted, nevertheless, because some of the very faults that led to problems in earlier times are once again discernable.

The Role of the Monetary Order

In the real world, the monetary and financial system performs the functions that textbooks assign to the "market", and the ultimate purpose of the monetary order is to facilitate the co-ordination of economic activity.[4] Given this end, however, its more proximate goals can be many and various: price stability, full employment, the convertibility of currencies into one or more precious metal at a given price, exchange rate stability, stability of the financial system, not to mention the generation of revenue for governments. Sometimes these goals are pursued single-mindedly, and sometimes in various combinations with one another. As to the institutional arrangements and mechanisms through which these goals are chosen and pursued, the day-to-day conduct of monetary policy is nowadays invariably the responsibility of a central bank, but there is no single model for its interaction with other political and financial institutions. In the important matter of setting and pursuing policy goals, and ensuring the accountability of those who do so, the extensive literature dealing with central bank independence (of which Stanley Fischer (1994) remains a definitive survey) is testimony to the diversity of possible arrangements, and there is also good deal of variety, that need not concern us here, in the day-by-day implementation of policy.[5]

Beliefs about how the economy functions are, as Daniel Heymann and Axel Leijonhufvud (1994) have emphasized, central to the workings of the monetary order. This is because the postulate of purposeful maximizing behaviour implies that agents' actions depend upon their expectations about how the economy is likely to evolve in response both to stimuli that are independent of those actions - the typical case for members of the public at large - and to those imparted by them - a possibility more commonly faced by the policy maker. In either case, however, rational behaviour in a monetary economy must be grounded in beliefs about how it works, whether these derive from crude rules of thumb at one extreme or from formal economic models at the other; and when those beliefs prove to be false, the economy is likely to malfunction, undermining those beliefs in the process. Since, moreover, the monetary order's other defining characteristics - goals, institutional design, etc. - are themselves subject to choices made by policy makers, and by the public at large acting mainly through political processes, changes in economic beliefs are likely to lead to their revision too, whose consequences for the economy's future behaviour will in turn influence beliefs again, in a potentially ongoing recursive process, that may or may not be benign.[6]

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[4]To stretch Adam Smith's metaphor a little, the invisible hand has monetary and financial fingers, and their deftness is a necessary condition for the successful co-ordination of the myriad decisions and activities upon which our society's economic well-being depends Though this is not the place to debate the matter, it should be acknowledged that this does indeed mean that the "Classical Dichotomy" between the economics of choice and markets on one hand, and of money on the other, on which so much modern economics is based, is drawn in the wrong place.

[5]Michael Woodford (2003, Part. 1) presents an excellent discussion of current practices, and an assessment too of their relative merits. His preferred scheme involves the central bank setting a "corridor" for overnight interest rates, and does not include the use of reserve requirements. This is essentially the one currently in place in Canada.

[6]This is why the subject's own history is an integral part of economics, and should be taught as such, a matter which I have argued at greater length in Laidler (2004a, Ch. 19).

The Bretton Woods System and its Breakdown

The post-world-war-2 revival of monetary policy and the re-emergence of central banks as distinct agencies charged with its implementation, occurred against the background of an international monetary order, the Bretton Woods system, whose architects' over-riding priority was to avoid a repetition of the economic chaos that had followed the First World War and done so much to precipitate the Second. They sought a stable international monetary environment within which national governments would nevertheless have adequate scope to make high employment the prime goal of domestic macroeconomic policy, and a central feature of that environment was a system of fixed exchange rates among national currencies that were nevertheless adjustable should their maintenance threaten employment - though not unilaterally, so as to rule out beggar-thy-neighbour manipulation.[7]

The Bretton Woods system did not entirely neglect the price level and its stability, for it was supposedly based on the convertibility of the US dollar into gold at a fixed price, while its central institution, the International Monetary Fund, was just that, a fund and not the international central bank with power to create reserve money that Keynes had initially proposed. Nevertheless, for any individual country's local monetary order, membership of this system implied that stability of the exchange rate rather than of prices was the key goal, though its pursuit could be subordinated to other domestic ends, particularly the maintenance of full employment, as and when local conditions demanded and (in principle at least) other members' governments permitted. If domestic price stability goals were not quite absent from the typical domestic monetary order under Bretton Woods, then, they in no sense had pride of place.

Variety within the System

In all this, the Bretton Woods system reflected certain beliefs about how market economies work that had emerged from the inter-war experience. First, they were regarded as unlikely to deliver stable and high levels of employment without essentially continuous policy intervention, which was why the system left room for the pursuit of such goals by national governments. Second, exchange rates were thought to be prone to excessive fluctuations if market determined, and open to abuse if their control was left to the discretion of individual countries, which was why the system was based on pegged rates. Third, the influence of monetary policy on domestic economic variables, the price level included, was believed to be limited relative to that of fiscal policy. Since the latter involved taxation and government expenditure, quintessentially matters for close legislative control, there was also a presumption that monetary policy should be subordinated to the will of elected politicians.[8]

As post-war economies moved back towards greater reliance on market mechanisms in the 1950s, the place of the central bank within the monetary order would nevertheless generate

[7] Cesarano (2006a) presents a recent and comprehensive discussion of the Bretton Woods system considered as an international monetary order and of the pitfalls inherent in its failure to set unambiguous priorities for the goals of domestic monetary policy of its members. This work also contains an extensive bibliography of earlier literature dealing with these topics.

[8] The first of these beliefs stemmed directly from the revolution in economic thought that found its focus in Keynes (1936) and the second received powerful support from Ragnar Nurkse's (1944) League of Nations study. Evidence for the pervasiveness of the third of them may be found in the *Reports* of both the Radcliffe Committee in the UK (1959) and the Commission on Money and Credit in the US (1961), while the fourth received a powerful statement in Scott Gordon (1961)

controversy. For example, in the United States, the 1951 Accord between the Treasury and the Federal Reserve System (henceforth the Fed) re-established the latter's authority over interest rate decisions, making it, perhaps for the first time in its history, an agency independent, if not *of,* then at least *within* government, as the saying goes (cf. Allan Meltzer 2003, Ch, 8); and subsequent uncertainty about how that independence might best be used in due course provoked the creation of the privately funded Commission on Money and Credit. In the UK, a sharp local debate about monetary policy within Harold Macmillan's first cabinet led to the creation of the Radcliffe Committee, whose *Report* (Committee on the Workings of the Monetary System, 1959) acquiesced in keeping the recently nationalized Bank of England firmly under political control to ensure that its powers over interest rates and the state of "liquidity" would be used in support of a more broadly based and generally interventionist policy apparatus. And with the coming to office of the Kennedy Administration in 1961, closely related doctrines, albeit in less extreme versions, began to dominate US policy as well.

Nor was debate confined to the US and Britain. Canada and the Federal Republic of Germany, for example, also saw lively disagreements about the central bank's powers at this time. Canada's unilateral adoption of a floating exchange rate in 1951 in the face of the Korean War commodity boom - a radical step for one of the original signatories to Bretton Woods agreement to take after so short an interval - inevitably shifted the emphasis of monetary policy towards domestic variables, and in due course, a bitter and extremely public conflict broke out between politicians and the Bank of Canada, one of whose consequences was a clarification and strengthening of the Bank's position within Canada's monetary order, though the extent of this was masked by the return to a pegged exchange rate in 1961.[9]

The newly created Bundesbank also entered the 1960s with a useful degree of independence, though hardly enough to render it unchallengeable.[10] The central bank law already in place in West Germany prior to the Bundesbank's formal creation had sought to establish this, but Chancellor Adenauer and his allies nevertheless tried to bring monetary measures into a politically controlled and activist policy armory during the mid-1950s. A constituency among other politicians - the name of Dr. Ludwig Erhardt should be explicitly mentioned here - and among the general public too, that explicitly recognized a link between central bank independence and the stability of the currency and welcomed both, successfully opposed such a development, however. Their success was perhaps not surprising in a country that had endured devastating inflations after two world wars, but it nevertheless put the Bundesbank in a distinctive position for that time, though not a unique one, for the Swiss National Bank also enjoyed considerable independence and was equally committed to a sound currency. In 1961, furthermore

[9]The "Coyne affair", as it is usually known, has been described in detail by James Powell (2007). It reached its climax in 1961 with the forced resignation of Bank of Canada Governor, James Coyne, and led to a significant clarification of the relationship between the bank and elected politicians. Under the so called *dual responsibility doctrine* the Bank conducts policy, but in the event of a disagreement, the Minister of Finance may issue a directive that the Bank must obey. However, this must be specific, written, and promptly published. Crucially, and (though not legally required) its issue will lead to the Governor's resignation. The overall effect of these measures is mutually assured destruction should things ever come to such a pass, and they therefore create an overwhelming incentive for Minister and Governor to resolve any differences privately.

[10]The work of Professor Helge Berger has proved an extremely helpful guide to these matters. See for example, Berger and Jacob de Hahn, (1999), where references to other papers by Berger may also be found. My discussion here has also benefited from the comments of Dr. Hans Tietmeyer.

the increasing importance that Germany would come to attach to domestic monetary stability was heralded by that year's small revaluation of the Deutschmark in the face of inflationary pressures emanating from abroad, although this measure was actually opposed by the Bundesbank itself, which at the time was inclined to give priority to external stability.

In short, a rather wide range of national monetary orders coexisted within the Bretton Woods system from its earliest days of full operation (which is usually thought of as beginning with the December 1958 establishment of the dollar convertibility of its members' currencies for current account transactions). At one extreme, some central banks - for example the Bank of England - explicitly occupied a subordinate position within an activist policy apparatus that was firmly under political control, and price stability was simply one among several goals that this apparatus was expected to deliver. At the other, the Bundesbank had claimed a significant degree of independence from day to day politics, and was already taking seriously its special responsibility for the soundness of Germany's currency, even though it had not yet fully faced up to the conflicts that might arise between its external and internal elements.

Cost-push Theories of Inflation and their Policy Influence

Fifty years ago, Milton Friedman's doctrine that "inflation is always and everywhere a monetary phenomenon" - nowadays a cliche - had few adherents. This was the heyday of academic debates about "demand-pull" versus "cost-push" as causes of inflation, as survey papers by Martin Bronfenbrenner and Franklin Holzman (1963) and David Laidler and Michael Parkin (1975) clearly show, and monetary policy figured in these at most as one possible factor among many that might work on the demand-pull side of things. In some versions of "cost-push", where inflationary forces were said to emanate from competition over income shares that was itself the consequence of profound social tensions, demand-led economic growth, driven by fiscal policy and accommodated by *expansionary* monetary policy, appeared as a *cure* for inflation.

As Edward Nelson (2004) has stressed, this latter doctrine influenced policy makers in some countries.[11] In Britain, for example, it provided the rationale for the government-spending led "dash for growth" of 1963-64, whose effects foundered on balance of payments problems that eventually culminated in the 1967 devaluation of sterling, and for the later 1972 "go for growth" budget as well, of which more below. But the US was much more important than the UK for the evolution of the international monetary order, and, as Bradford De Long (1997), Thomas Mayer (1999) and Nelson (2004, 2007) have documented, these cost push ideas also gained influence there in the early 1970s, both within the Fed under Arthur Burns, and more generally within the Nixon Administration, and prompted policies that interacted destructively with the consequences of prior institutional developments within the Bretton Woods system.[12]

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[11] It was sometimes hard to distinguish between the influence of elected politicians and that of appointed policy makers. The dominance of the former over the conduct of monetary policy in the UK at this time was taken for granted, but even in the US, as Mayer (1999) makes particularly clear, the Fed. was anything but a free agent in designing monetary policy at the beginning of the 1970s. This does not mean, however, that central bankers were unwilling accomplices in the policies they implemented in either jurisdiction.

[12] Athanasios Orphanides (eg. 2002) has shown that estimates of the "output gap" and "natural unemployment rate" available to policy makers in the 1970s systematically and significantly understated the extent of demand pressures on the economy. Though it is possible *ex post* to interpret the period's monetary policy as the consequence applying an appropriate Taylor-style rule to faulty data, an alternative interpretation of the contemporary policy significance of these measurement errors is, as Nelson (2004) has suggested, that they gave a great deal of credibility to claims that inflation could not plausibly be attributed to monetary policy, but had to be explained as the consequence of cost-

Crucially among the latter, though that system had tried to provide for the maintenance of price stability through the convertibility of the US dollar into gold, the post war recovery of the international economy had created a growing demand for liquidity that was met by a US balance of payments deficit; and this, in turn, had generated a chronic tendency for the ratio of U.S. gold reserves to its international indebtedness to fall. In due course, therefore, the long-run reliability of dollar-gold convertibility had come into question. These tendencies were already evident in 1961 when the Kennedy Administration took office, but it was unthinkable for the US to react to them with domestic monetary restraint. This would have created deflationary pressure at home and abroad and interfered with further liberalization of the international economy whose growth - given the exigencies of the Cold War, a matter of overwhelming strategic importance - was driving the international demand for liquidity in the first place. In any event, in the early 1960s, inflation was still low everywhere that mattered (except Japan, where it ran above 5 per cent in 1961-63), not least in the US itself, where unemployment was judged to be uncomfortably high and domestic politics was asking for less, not more, monetary restraint.[13] The upshot was a series of ineffective ad hoc measures aimed at the US balance of payments - e.g. an interest equalization tax, "operation twist" on the term structure of interest rates - a more systematic program of domestic expansion - e.g. wide ranging tax cuts, and a distinct easing of monetary policy, accompanied by various direct measures intended to hold inflation in check - and a continued outflow of US dollars as the international monetary system slowly shifted to a fiat dollar standard in which gold would play no significant role.[14]

This shift, benign at first, had profound effects as the 1960s progressed, for it ensured that discretionary US monetary policy, and not any automatic mechanism based on gold convertibility, would come to provide the *international* monetary order's price level anchor, while leaving that policy's executant, the Fed, answerable to purely *domestic* political constituencies for the way in which it pursued purely *domestic* goals. So long as US monetary policy remained restrained, pegged exchange rates would force restraint on other countries, and their domestic monetary orders would continue to function. There was, however, no similar restraint on US policy. This fundamental asymmetry was firmly established by the early 1970s - the very time at which the idea of cost push inflation began, as Nelson (2004) shows, to make it hard for the Fed, now in effect the international central bank that had *not* been created at Bretton

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push factors. Also, as Tim Congdon has pointed out to me, there was some confusion at this time about just what concept of the output gap was relevant for policy. Some already focused on deviation of output from a "natural" level, others were more focused on the deviation – almost invariably a shortfall - of output from some higher Keynesian "full employment" level

[13]It is sometimes argued that the Kennedy administration's policies involved a deliberate attempt to exploit a stable inflation-unemployment trade-off. Though it is certainly true that the Phillips Curve idea was being much discussed among academics at this time – e.g. A. W. (Bill) Phillips (1958) Paul Samuelson and Robert Solow (1960) - and its policy relevance explored, a careful reading of the contemporary evidence suggests that the policy trade-off idea was not fully developed until a little later, and probably did not begin to influence policy much before the beginning of the 1970s, when, even when adapted to incorporate the role of inflation expectations, its main message was to strengthen the case against deploying monetary measures to bring inflation under control. See Laidler (2004a) Ch. 16

[14]Crucial evidence of this shift is that the behaviour of gold reserves in general, and the declining ratio of those reserves to the international liabilities of the US in particular, had no discernable influence on the conduct of US monetary policy. See the thorough empirical study of these and related matters by Michael Darby and James Lothian (1983).

Woods, to recognize that its activities could have any over-riding significance for the behaviour of prices even within the US, let alone elsewhere in the world - and it ensured that there was no mechanism within the international monetary order to correct the consequences of this faulty economic understanding, once the Fed. began to act upon it.[15]

The Onset of Inflation

In the second half of the1960s the "perversion of fixed parities from an instrument of discipline on deficit countries to one forcing monetary debauchery on surplus countries" noted by Dr Otto Emminger in his 1973 *Per Jacobson Lecture* (p. 40) was thus already well advanced, and the international monetary order was awaiting a US policy accident, which duly happened. Perhaps monetary stability could have survived John F. Kennedy's tax cuts and his experiments with wage-price guidelines, and even Lyndon Johnson's declaration of war on poverty, but the war in Vietnam was one war too many. Domestic US politics required that its costs had to be hidden from the electorate, fiscal deficits spilled over into the US balance of payments, and a world-wide inflation was set in motion.

The early history of that inflation, even in a single country, let alone across the whole Bretton Woods world, is far too complex to be recounted here, but certain of its salient features should be noted. First, though inflation did not reach truly alarming rates anywhere until the early 1970s, it clearly began to rise in the second half of the1960s, too early to have been caused by oil price increases, or any of the other commodity market shocks to which fashionable opinion tended to attribute it. Secondly, though inflation was a system-wide phenomenon, peaking everywhere in the mid-1970s, it did so at very different rates. For example, in 1974-75, the German CPI rose by 7 per cent, its greatest annual increase in our whole period, but the equivalent UK index rose by more than 25 per cent. And finally, though its roots surely lay in US fiscal excesses and their monetary accommodation, the world-wide inflation's dissemination was not solely or even mainly through a simple channel whereby domestic US fiscal expansion fed domestic money growth which first affected prices in the US, and then, through the trade balance, prices in other countries. There was some of that, to be sure, but much of the US fiscal deficit spilled directly into the balance of payments to be monetized elsewhere in the world economy.

The Smithsonian agreement of 1971 was essentially an attempt to re-stabilize an already tottering international monetary order on the basis of a *de facto* depreciated dollar; and it might just have succeeded for a while too, had it been accompanied by a reversal of the domestic US policies that simultaneously were undermining the system. But it was not: the agreement did nothing to address the fundamental asymmetry of a system that permitted them to continue, and rising world commodity prices, themselves an international consequence of US policy, were all too easily misinterpreted as exogenous "imported" factors amplifying other, domestic, "cost push" forces. In late 1971, the Nixon administration introduced wage and price controls to offset these alleged causes of inflation, but expansionary fiscal and, with the support of the Fed (cf. Mayer 1999, pp 86 et seq.), monetary policies remained in place. The collapse of the Smithsonian agreement under the pressure of these contradictory policies, the abandonment of the gold convertibility of the dollar, and the adoption by the US of a flexible exchange rate in 1973 as

[15]In contrast, in the 19th century, the potentially inflationary consequences of central banks being guided by the real-bills doctrine were kept in check by their convertibility obligations. It is no accident that the great German hyper-inflation that began under the Imperial regime and came to full fruition under the Weimar Republic got under way only when the convertibility obligations of a central bank that had long been guided by this doctrine were suspended.

inflation there approached double digits, all followed in due course, marking the final demise of an international monetary order that had been increasingly dysfunctional for several years.[16]

The extent to which other economies suffered domestic inflation at this time depended upon local reactions to the US balance of payments deficit, and underlying these reactions, upon the nature of local economic understanding. Once again contrasts among Germany, the UK and Canada, are instructive. The Deutschmark had been revalued in 1969, with the explicit aim of staving off imported inflationary pressures - an event that in hindsight perhaps marked the beginning of the end for the Bretton Woods system - and when the Bundesbank's control of domestic monetary conditions, and hence prices as well - as it correctly saw it, for cost-push ideas never gained much purchase in Germany - continued to be threatened, the Deutschmark was finally floated in 1973. Initially this was done in co-operation with other members of the fragile and ineffective "snake in the tunnel" program for stabilizing exchange rates within Europe, but the Bundesbank then adopted money growth targets in 1974, (as did the Swiss National Bank) thus ensuring that the behaviour of domestic prices would have pride of place among its policy goals.[17]

In the UK, on the other hand, the authorities seem to have read the first easing of balance of payments pressures in the late 1960s as a sign that the 1967 devaluation of sterling was bearing fruit, while simultaneously interpreting domestic inflationary pressures, especially in the labour market, as symptoms of cost push. In due course, a "dash for growth" was begun in 1972, buttressed by wage and price controls that consciously followed the US model. Like the Deutschmark, Sterling was floated too, not to stave off imported inflation, however, but to ensure that the monetary accommodation of these policies would be free of any external financial constraint - which is perhaps why Britain remained in the "snake" for only a brief period. As to Canada's reaction, this occupied an unfortunate half-way house between Germany and the UK: after successfully floating the Canadian dollar in 1970 to stave off imported inflation, policy makers were then lulled into a false sense of security by its - inevitably temporary - strength against its US counterpart, and presided over a domestic boom of their own making that took inflation well into double digits by 1975.

It is often remarked that the collapse of the Smithsonian agreement and its aftermath marked the completion of the long transition from commodity to fiat money that had begun with the suspension of the gold standard in 1914. It is less often noticed that the replacement of this commodity standard by one based on fixed parities against a fiat US dollar that had seemed to be possible in the 1960s was also aborted in the early 1970s, with the immediate effect of demoting the exchange rate within national monetary orders. Its value ceased to be the main anchor of domestic monetary policy, and a variety of other goals, about which there was no international consensus, took its place. Thus, whereas the member economies of the Bretton Woods system had

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[16] As Robert Leeson (2003) has shown, however, the adoption of a flexible exchange rate by the US in 1973 was due to much more than the force of immediate circumstances. It also marked the culmination of the policy influence of one aspect of the monetarist critique of post-war macroeconomic orthodoxy, that which originated in Milton Friedman's (1953) essay on "The case for flexible exchange rates", which had been slowly but steadily making converts for many years.

[17] This episode is described in detail by Jurgen von Hagen (1998). Given the clarity displayed by Emminger (1973) about the nature of processes then at work in the international monetary system, what is surprising in retrospect is not that the Bundesbank acted relatively early, but that it took as long as it did to do so.

belonged to a single, albeit flawed, international monetary order, the flexible exchange rate economies of the 1970s constituted no such coherent grouping.

Searching for a New Monetary Order

Between the early '70s and the early 1990s, the efforts of national monetary orders that had lost their common international anchor to find a substitute were dominated by sometimes differing local goals and beliefs. To this extent the period has much in common with the inter-war years, but this comparison should not be pushed too far. In particular, where so-called "Keynesian" economics did not really come onto the scene until the very end of the period it seemed to explain and provide remedies for, "Monetarism" was already complete as an academic doctrine even before Bretton Woods collapsed and the economic ideas underpinning that system were discredited.[18] In the early 1970s, therefore, monetarists, having largely won a twenty year long academic debate, had the dubious privilege of being invited to provide policy advice of their own in a number of countries.

Monetarism and Money Growth Targeting

Monetarism's basic tenets flatly contradicted the ideas upon which the post-war monetary order had been based. It denied the inherent instability of the market economy, interpreting the inter-war experience as the result of flawed policies; it argued that a regime of flexible exchange rates could be relied on to operate smoothly, attributing their inter-war behaviour to policy instability; and on the domestic front it argued for the primacy of monetary over fiscal policy, and of price level over real income and employment goals. Much of this remains conventional wisdom even today, despite the fact that money growth targeting, the specific monetarist remedy for the economic ills that had developed by the 1970s, did not turn out well.

Money growth targeting was based on two propositions. The first was simply a revival of an old orthodoxy that had been pushed into temporary obscurity in the post-war period.[19]. This had it that inflation, being a falling value of money, was explicable as the result of its supply expanding faster than demand. The second monetarist proposition was new, however: namely, that the demand in question was a stable function of a few arguments. Taken together, these implied that, provided some real income (or wealth) measure, and one or more representative nominal interest rates, were not fluctuating excessively, the inflation rate, and perhaps the real economy too, could be kept stable by having the money supply grow at a constant rate. Such a policy had first been recommended by Milton Friedman (1960) as a means of *maintaining*

[18]There is no better evidence to support this claim than that, apart from its neglect of open economy issues, Thomas Mayer's (1975) survey of Monetarism is comprehensive and remains definitive even today. It is a defensible claim that the final major academic contribution to the doctrine's structure was Friedman (1968), where the concepts of the natural unemployment rate and accelerationism were developed. Note that some will find this judgment controversial, since it implies another, namely that James Tobin (1981) was in error when he gave New Classical Economics the label "Monetarism Mark II".

[19]Though evidently not in the Federal Republic of Germany, for the early development of the Bundesbank's views and position described above occurred too early to have been the product of post-war monetarism, Milton Friedman's assignment as an advisor there in the late 1940s notwithstanding. Presumably, traditional monetary policy ideas that were already well developed by the early 1930s in a rich German literature– see Howard Ellis (1934) - had survived there among liberal economists, whereas they had been largely eclipsed elsewhere by the so-called Keynesian Revolution.

stability in an already well-behaved macroeconomic environment. To the extent that *restoring* stability was understood not to be quite the same problem, and that the money growth slowdown needed to reduce inflation would imply a transitional, but not necessarily trivial, slowdown in income and employment too, the monetarist recommendation was to proceed gradually towards the desired long run target.[20]

Money growth targets were not quite the universal failure that they are sometimes said to have been. They lasted in Switzerland until 1999, and, much transformed from their origins, still inform the "second pillar" of the policy framework that the European Central Bank (henceforth ECB) inherited from the Bundesbank, and it is surely not entirely co-incidental that Germany and Switzerland's inflationary records in the 1970s and 80s were much better than those of other advanced countries. But such targeting certainly turned out to be a great deal more complicated than expected, even in these cases, and in many others it was in due course judged to be unworkable. A basic problem everywhere was a significant degree of dissonance between the ideas underlying the new policy and the actual workings of the economy. Demand for money functions, whether the aggregate chosen for targeting was narrow (e.g. in Canada) or broad (e.g. in the UK), were found in practice to lack sufficient stability to support it.

These problems ought not to have been surprising, but they were.[21] To begin with, the stability that Friedman (1959) had claimed for the demand for money was for a function fitted to *cycle average* data - whose principal argument was *permanent* income. Policy, on the other hand, required stability on a quarter to quarter, or even month to month basis, and perhaps some reliable way of assessing the influence of current higher frequency fluctuations in income on its underlying permanent component as well. Furthermore, much hindsight about the effects of *past* institutional change had gone into creating the data on monetary aggregates to which stable demand for money functions had been fitted in the 1950s and '60s, but that was no help when an essential, but initially under-appreciated, policy problem was how to allow for the effects of *future* institutional change on the stability of the relationships that were supposed to guide policy.

Even where money growth targeting was introduced early by rather independent central banks, and more as a means of staving off inflation than of bringing it under control, and where regulatory constraints on the ability of financial institutions to be innovative in the types of deposits and services they offered their customers inhibited institutional change - Germany and Switzerland fit these criteria - it quickly became a matter of creative and ongoing trial and error on the part of pragmatic policy makers, rather than of strict adherence to a pre-set rule. In these

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[20]The formal analysis of the transitional costs of reducing inflation came in the late 1960s. Though Friedman (1968) developed its monetarist version, it was Edmund Phelps (1967) who went more deeply into the dynamics of the inflation-unemployment trade-offs that were implicit in what came to be called the "expectations-augmented Phillips curve." Note, however, that this trade-off was habitually discussed in terms of Okun gaps (lost output) and Harberger triangles (better known as "shoe-leather" costs of inflation) - See James Tobin (1977), and that, because the latter seemed to be trivial, the relevant literature yielded little support for serious efforts to eliminate inflation It is hard to realize now that the capacity of inflation fundamentally to disrupt the market economy's co-ordination mechanisms did not begin to figure prominently in the academic discussion before the appearance of Axel Leijonhufvud's (1977) paper on this topic.

[21]The change in the sub-title of this author's *Demand for Money*, from *Theories and Evidence* to *Theories, Evidence and Problems* between its second (1977) and third (1985) editions reflects the influence of accumulating evidence on his own confidence in the extent of our understanding of this relationship. Michael Bordo and Lars Jonung (1987) remains an important study of the influence of institutional change on the secular behaviour of velocity.

cases, nevertheless, the double digit inflation that became so prevalent elsewhere was avoided, and the policy makers who persevered with money growth targets earned a degree of credibility among the public at large for their capacity to manage inflation. New and coherent local monetary orders, loosely based on monetarist ideas implemented by relatively independent central banks, did become established for a while in Germany and Switzerland. And, as Kazumasa Iwata (2006) has reminded us, such an order was also informally established in Japan at the end of the 1970s, this despite the fact that the Bank of Japan at that time had only limited independence.

In other places however, where, like Japan, double digit inflation had taken hold before money growth targets were introduced, and perhaps crucially, where the regulatory framework was already configured to permit and even encourage innovation within the financial system - Canada and the UK fit these criteria - matters were much more problematic.[22] In these cases, institutional responses to the tightening of policy itself, and their concomitant effects on the meaning of the monetary aggregates, were dramatic enough to cause policy makers to lose confidence in the whole enterprise. The 1982 comment of Governor Gerald Bouey of the Bank of Canada - "we did not abandon the monetary aggregates - they abandoned us"- found resonance far beyond the Canadian border, and has become a much quoted epitaph on the whole episode as it worked out in such countries.

The *de facto* abandonment of money-growth targeting in Canada, where its 1975 adoption had represented an early example of the central bank exercising the increased autonomy it had obtained a decade earlier, had in fact begun well before 1982, but it was still formally in place when Canada was side-swiped by the US disinflation engineered by a Fed which, under Paul Volker, seems to have very quickly lost patience with a gradualist approach to reducing inflation, if indeed it had ever really had any.[23] The Bank of Canada resisted the massive downward pressure imposed on the exchange rate by US policy, pushing short term interest rates to the vicinity of 20 per cent, and permitting an actual *contraction* of the narrow money supply that it was still formally committed to targeting. Canada, like the US, duly went into recession - the deepest since the 1930s - and, again as in the US, inflation quickly fell. For the balance of the decade Canadian inflation continued to run in the 4-5 per cent range - a little higher than in the US, that is to say - but monetary policy remained unanchored and improvised.

The Persistence of Exchange Rate Goals

The Bank of Canada's decision to defend the exchange rate in 1981 was but one instance of a world-wide tendency for monetary policy makers to cling to exchange rate goals long after the demise of the Bretton Woods system, and they had some reasons for doing so, because during the

[22]Canada had significantly deregulated its financial system in response to the *Report* of the Porter Commission (Royal Commission on Banking and Finance, 1964) set up in the wake of the Coyne affair, as Charles Freedman explains in his (1983) discussion of the breakdown of money-growth targets in Canada. Tim Congdon (2005, Ch.3) explains the role of the so-called "Competition and Credit Control" reforms of 1972 in preparing the ground for subsequent developments in the UK financial system.

[23]As Michael Bordo, Christopher Erceg, Andrew Levin and Ryan Michaels (2007) have shown, the likely effectiveness of gradualist disinflationary policies hinges critically upon the credibility of the central bank implementing them, and since this was very much in question in the early 1980s, a more vigorous contraction probably had a better chance of signaling that the stance of policy had changed and of reducing inflation. For a contemporary, albeit brief, statement of this insight in the context of Canada's gradualist experiment, see Ronald Wirick (1981).

1970s and into the ‘80 flexible exchange rates were orders of magnitude more volatile than their monetarist advocates had predicted before the event. And though, contrary to the expectations of some, trade continued to grow despite exchange rate fluctuations, not all of the policy problems they created were merely symbolic.[24]

Nowhere was this truer than within Europe. It was not just that exchange rate stability was thought to be important for the development of private sector trade within the EEC, but also that it was required to ensure the continued feasibility of the Common Agricultural Policy (CAP), which in the 1970s accounted for around 90 per cent of the budget, and also - far more important - underpinned the Franco-German political bargain that lay at the very foundation of the European project. The ineffective “snake in the tunnel” arrangement of 1973 was the first of a series of arrangements and plans, culminating in the creation of the Euro, meant to address these issues. It was succeeded by the European Monetary System, based on a new unit of account, the European Currency Unit (ECU) - a weighted basket of member currencies - , and an exchange rate mechanism (ERM) within which each of those same members would then peg their exchange rates against the ECU, thus implying a grid of bilateral exchange rates as well, that were then to be maintained within a plus or minus 2.25 percent band (6 per cent for the Italian Lira).

The by then highly credible Deutschmark had a weight of just under one third in the ECU basket, and it hence was close to being the key currency of the system, with other currencies being forced to adjust along with it when its external exchange rate, notably against the dollar, moved. The UK, though a member of the EEC, stayed outside of the system initially, preferring to anchor its policy to money growth targets, but these were slowly abandoned in the first half of the 1980s, and a policy of shadowing the Deutschmark was adopted in 1987 as a prelude to full EMS membership in 1990. Sweden and Finland, on the other hand, though not EEC members, were informally part of the EMS from the outset to the extent that they maintained pegged exchange rates against the Deutschmark, though they did not take on the intervention responsibilities associated with full membership.

It was not only within Europe that exchange rates issues loomed large in the 1980s. Though the Bretton Woods system was gone, the dollar was still the international economy’s principal currency, and large swings in its exchange rate against other important currencies, particularly the Yen and Deutschmark, were bound to call into play policy instincts left over from earlier pegged exchange rate days. So, while Europe was trying to develop its internal monetary system, while Japan continued to enjoy the low inflation that the Bank of Japan’s adoption of informal money growth targeting had helped to bring it, and while the US adapted to the uneasy domestic monetary stability that followed the recession of the early 1980s, their authorities simultaneously made efforts to influence exchange rates among their currencies, first by organizing a devaluation of the US dollar with the Plaza Agreement of 1985, and then by reaching an accord on the stabilization of their parities at the Louvre in 1987.

[24]There seems to be no consensus about why exchange rates moved so much in the 1970s and 1980s. My own favorite conjecture is that being asset prices, these variables are affected today about any news which arrives about what might occur at any time in the future. In a world where domestic monetary policies were without clear goals, there was huge scope for opinions to change often and sometimes significantly about what the future held in store in different countries. A corollary of this conjecture would be that the widespread adoption of inflation targets would tend to anchor expectations in foreign exchange markets, and hence help stabilize them.

The Crises of the Early 1990s and Afterwards

The difficulty, both within Europe and world-wide, was that the international obligations that key players had undertaken on joining various exchange rate arrangements were either incompatible with domestic goals - the prime example of this being the expansionary consequences for Japanese domestic monetary policy of that country's Louvre commitment to support the dollar/yen exchange rate - or were likely to prove extremely hard to stick to in the face of any destabilizing shocks - the prime example here being the vulnerability of EMS exchange rates to anything that might affect monetary conditions within Germany. And these problems were made all the more acute by the rapid development of international capital mobility that the 1970s and '80s had seen. The international monetary order of the late 1980s was, that is to say, incoherent in some respects, and fragile in others, as would soon become apparent. As at the end of the 1960s, so once again, accidents began to happen. Two were of particular importance, the development and collapse of the Japanese "bubble economy", and the 1992 crisis within the EMS.[25]

The Japanese Bubble

The Louvre accord of 1987 committed its participants to support the US dollar, and for Japan, this entailed a relaxation of monetary policy. Had this relaxation quickly resulted in a noticeable step-up in domestic price inflation, perhaps it would have been equally quickly reversed, but instead there developed a boom in domestic asset markets, with year on year consumer price inflation increasing rather modestly, from 0.1 per cent in 1987, to 2.3 per cent in 1990 when the collapse of the stock market signaled the end of the asset market boom, and finally peaking at 3.3 per cent in 1992. For Japanese policy makers used to treating the inflation rate as the all-important domestic indicator of success or failure, their new exchange rate obligations must have seemed more or less consistent with their domestic goals in the late 1980s, and though they must have been puzzled by the behaviour of asset prices, it was, as always, difficult to judge *ex ante* the extent to which changing "market fundamentals" unrelated to monetary policy could, in any event, justify them.

Asset market booms are usually accompanied by a generalized and significant step up in the inflation rate, and a policy that successfully stabilizes the latter reduces the risk of them getting out of hand, but asset market booms unaccompanied by inflation do sometimes happen and are even today not well understood.[26] Nevertheless, the phenomenon was not unprecedented in the Japan of the late 1980s, for a mixture of easy money, low inflation and booming asset markets had also characterized the US in the late 1920s, (as it would again in the late 1990s), and some would argue that the Bank of Japan should have pre-empted the "bubble economy" rather than let it run its course. The trouble with this argument is that, by the time it was reasonably clear that there was indeed a bubble to be dealt with, it was much too late for so blunt an

[25]This list is far from complete. There were banking crises in the Nordic countries in the early 1990s, and later the so-called "tequila crisis" of 1994-5, as well as crises that affected the pegged exchange rate economies of Asia in 1997-98. Space does not permit further discussion of these episodes.

[26]We have learned much about financial instability, thanks largely to the persistence of researchers at the BIS - for example Claudio Borio and Phillip Lowe (2002) and more recently at the ECB as well - for example Ramon Adalid and Karsten Detken (2007), but not to the point at which there can be much certainty about how to deal with it. Perhaps it requires the attention of financial market regulators rather than central banks (or, where central banks are also regulators, of their regulatory rather than their monetary policy divisions), or perhaps it is a phenomenon that signals that market economies are, after all, not quite as inherently stable as we nowadays think, or at least hope. That was certainly the predominant view in the inter-war years - See Laidler (2002)

instrument as monetary policy to cope with it smoothly: after all, the mid-1929 down-turn that ushered in the Great Depression in the US is plausibly attributed to a tightening of monetary policy aimed at cooling off the stock market, a goal that was certainly accomplished, though to what further purpose is not clear. Thus, though Japan can be faulted for undertaking international obligations at the Louvre that were potentially inconsistent with its domestic goals, it is much harder to blame its central bank for failing before the event to recognize and react to subsequent asset market developments that only in hindsight can be seen to have been significantly problematic.

If the body of economic knowledge available as a foundation for any monetary order failed in 1990 (as it still does) to provide a completely reliable guide about how to recognize and deal with a potentially damaging asset market bubble as it develops, however, "it does not follow" as Donald Kohn (2006, p. 5) has recently noted, "that conventional monetary policy cannot adequately deal with the threat of deflation by expeditiously mopping up after the bubble collapses". It is an idea almost as old as the institution itself that the central bank is the lender of last resort, and that, in times of the crisis, it should inject liquidity into the financial system in whatever amounts are needed, first to keep it functioning and then to support its recovery. For close to a decade after the Japanese bubble economy collapsed, the Bank of Japan did not do this, having concluded that once it had reduced short term interest rates essentially to zero, it had exhausted the powers of monetary policy. It was supported in this belief, moreover, by a number of economists who proclaimed (and still do) the return of the *liquidity trap*.[27]

This diagnosis was based on what Orphanides (2004) suggests were faulty readings of empirical evidence that were very similar to some of the errors made by the Fed in the 1930s. Business and banking confidence in Japan was deeply depressed throughout the 1990s, and this surely created (among other consequences) a low elasticity of demand for *credit* with respect to the *short* interest rate, but the liquidity trap is a state of affairs characterized by a (close to) infinite elasticity of the demand for *money* with respect to the *long* interest rate The former state of affairs used to be called a *credit deadlock,* (the term is Ralph Hawtrey's, eg. 1932) for which the recommended remedy was, and remains, open market operations on whatever scale was necessary to induce a revival of private sector spending, a policy, as Orphanides points out, also recommended (though for reasons slightly different to Hawtrey's that need not concern us here) by Keynes (1930).[28] In the absence of such measures in Japan during the 1990s, no evidence could be generated about whether or not there existed a liquidity trap to prevent them working. *Quantitative easing*, was finally instituted in 2001, and Japan's economic recovery began, albeit haltingly, about a year later. Perhaps this is a case of *post hoc ergo propter hoc,* but the timing is

[27]See, for example Paul Krugman (1998, 2007) and Lars Svensson (2003), and see Laidler (2004b) for a discussion of the confusion between the credit deadlock and the liquidity trap in the context of the Japanese experience. The fact that I here concentrate on monetary policy measures alone, and do not discuss, for example, the deep structural problems within the banking sector that the collapse of the Japanese bubble revealed and which surely required policy attention, does not mean that I regard these latter problems as unimportant.

[28]Two further similarities between Japan in the 1990s and the US during the Great Depression might be mentioned: namely, that between claims made in both cases about the limited powers of central banks once short interest rates have been moved close to zero, and that between the abovementioned counter-arguments, and those first advanced about the US by such commentators as Hawtrey (1932), Lauchlin Currie (1934), and later by Friedman and Anna J. Schwartz (1963) as part of their successful monetarist attack on the conventional economic wisdom upon which the post-world-war 2 monetary order had been built.

surely intriguing, as it so often has been when the behaviour of money, output and prices has been subjected to empirical scrutiny.

There is not space here to argue the case in detail, and there is surely room for disagreement about Japanese experience, but let me here express my agreement with Orphanides (2004) that there never was a liquidity trap in Japan in the 1990s, and suggest that the credit deadlock that undoubtedly developed there would have been much easier to break had the kind of vigorous open market operations associated with quantitative easing been instituted a much earlier. If this is correct, then Japan's lost decade was the product of a monetary order based on too narrow a view of monetary policy's powers in general, and of its transmission mechanism in particular.[29] It is notable that the Fed's reaction to the Long Term Capital Management Crisis of 1998 bears a remarkable resemblance to the Bank of England's lender of last resort operations in the wake of the Baring crisis of 1890, and that its subsequent prompt response to the collapse of the dot-com bubble was also firmly in the Classical central banking tradition of supporting the financial system in time of potential trouble with as much liquidity as it seemed to demand; though with benefit of hindsight, the response in this case was perhaps too vigorous and prolonged, helping to push the inflation rate to well over 4 per cent by 2006, and contributing to a housing market bubble whose eventual collapse precipitated a financial crisis with international repercussions in the late summer of 2007.

The ERM Crisis and the Emergence of the Euro

Japan's problems in the 1990s began with an event that was endogenous to her monetary order, albeit one difficult to understand given the state of economic knowledge. Europe's monetary problems at this time, on the other hand, had a political origin, and though they posed difficult political choices, their economics was rather straightforward. The re-unification of Germany in 1990 was as unexpected as it was sudden, and the subsequent merging of the East German Mark with the Deutschmark at par (for most purposes) was more a matter of political symbolism, and of labour market and social policy, than of monetary policy. There was, therefore, nothing inappropriate about this decision being taken by politicians, even though they do appear to have ignored warnings from the Bundesbank about its economic wisdom.

Be that as it may, the new European political environment required wide ranging choices to be made about the future of the local monetary order, and, though the 1992 Maastricht Treaty was part of a process that had begun long before 1990, one aim of its commitment to full European Monetary Union was nevertheless to bind a now enlarged Germany into the European project far more securely than its earlier commitment to the CAP and other programs could ever have done. But German re-unification and the need to finance it, as well as the decision not to do so out of current taxation - again appropriately one for politicians, whether wise or not - also had immediate monetary consequences. The Bundesbank's key choice was between accommodating fiscal policy, and letting deficits feed money creation, or sticking to its mandate to maintain the Deutschmark's soundness. Its selection of the latter option was hardly surprising in the light of earlier history, but it presented problems for monetary authorities elsewhere in the EMS, not least because it meant that the Bundesbank would no longer meet the obligations to unlimited intervention in favour of weaker currencies at going parities that Germany's political commitment

[29]Hiroshi Ugai (2007) surveys studies of quantitative easing and finds its effects to have been extremely modest. Precisely: the increase in the base and narrow money that it engendered was huge, though that in broad money was extremely modest, and Japan's subsequent recovery was, as already remarked, halting, but it did occur.

to the ERM had imposed upon it. Germany's real exchange rate had to appreciate to maintain equilibrium within the system, and with a rise in domestic prices ruled out, this implied either a major re-alignment of ERM parities, involving devaluations against the Deutschmark, or deflation (or at least disinflation relative to Germany) everywhere else - unless, of course, political pressure could be exerted on the Bundesbank to reconsider its own inflationary option. The scene was thus set for the EMS crisis of the autumn of 1992.

A blow-by-blow account of this crisis is not needed here.[30] Suffice it to say that the Bundesbank proved unreceptive to political pressure to inflate, that, in due course, Sweden followed the lead of Finland in abandoning its pegged exchange rate in early September 1992, and that, with their currencies under heavy speculative attack, Italy and the UK left the system later in the same month, the latter, as it turned out, never to rejoin it. These developments in themselves raised Germany's real exchange rate and hence weakened pressure on exchange rates that had survived the immediate crisis, but uncertainty about the ERM's future was only finally relieved later in 1993 by widening the bands within which the exchange rates of its remaining members were to be pegged, from 2,5 to 15 percent. With the remaining one-way bets that the workings of the ERM offered to speculators thus essentially eliminated, exchange rates thereafter settled down close to their central parities.

Crucially, the Franc remained within the system, though not without with considerable bilateral support from the Bundesbank. It is plausible that the exchange rate's level weighed on French economic activity even after the crisis had long passed, but it would surely be wrong to categorize its maintenance as a policy mistake. Whatever the economic costs of a strong Franc, the preservation of the EMS in some significant form was a necessary condition for moving forward with the Maastricht agenda for monetary union, and this agenda had, as noted above, only a little to do with economic issues. In due course, the European Monetary Institute began its work in 1994, the European Central Bank (ECB) replaced it in 1999 and the Euro was introduced, first as a virtual currency in 1999, and then as a fully fledged one in January 2002. A new monetary order was thus installed in Europe based on a fiat currency managed by the central banking system of a still incomplete multi-national political entity, rather than of an individual nation state. And as a corollary, the Deutschmark, perhaps the most successful currency of the post-war era, was eliminated in what, at first sight, resembles the kind of currency reform that usually follows monetary failure; but the resemblance here is far from complete, for in this currency reform, the new monetary order mimicked, and indeed tried to improve upon, many features of the old, in a self-conscious attempt to borrow credibility from it.

In particular, where the Bundesbank's mandate and autonomy had rested on an act of the legislature, and were continuously under a degree of political pressure, those of the ECB were guaranteed by an international treaty which sought to insulate it entirely from national political processes. Thus, though the ECB's political legitimacy, and that of its price stability mandate in particular, were (and are) beyond question (as Otmar Issing has often stressed - see eg, 2004) its ongoing accountability for the ways in which it defines and pursues that mandate is less obviously well established. The European Council's scope for intervention in monetary decisions appears to be limited to the international sphere, and the ECB otherwise reports on its activities only to the European Parliament, a body whose limited powers surely contribute to the lack of interest in its activities displayed by most of its constituents. National governments, however, remain

[30]Such an account, accompanied by much penetrating analysis of the mechanics of the ERM, and of financial crises more generally, is to be found in Willem Buiter, Giancarlo Corsetti and Paolo Pesenti (1998)

responsible for fiscal policy, but they have been relieved by these arrangements of any obligation to consider the monetary consequences of their decisions, and, given the weakness of the Growth and Stability Pact that was supposed constrain them, it is not clear how the politics of this all important interface will be managed if and when it comes under stress. The possibility that a central bank can have too much legal independence for its own good when it comes to setting policy goals can never quite be discounted, and Charles Goodhart's (2006) observation that "It is one of the misfortunes of the ECB that it did not allow the political authorities . . . to help determine the precise choice of inflation target" might just turn out to have been prescient.

Inflation Targeting

The European monetary order over which the ECB currently presides is nevertheless the most carefully designed such entity since the Bretton Woods system, and the launch of the Euro was a technical triumph which surprised many skeptics who had doubted the power of a change in legal restrictions to amend so drastically a set of social institutions as pervasive as a monetary system.[31] In stark contrast, the other major monetary innovation of the 1990s, the setting of specific quantitative goals for the inflation rate (either by the central bank, or the elected government, or by agreement between them) and their systematic pursuit (usually by the central bank exercising operational independence), which, according to Andrew Rose (2006) is now in place in no fewer than 24 countries, was largely the outcome of un-coordinated improvisation on the part of national policy-makers. Nevertheless, the success of such formal inflation targeting to date has been remarkable. As Rose (2006) points out, the only countries which have given it up, Finland and Spain, did so as part of a prior plan to adopt the Euro. Unlike money growth targeting, it has nowhere been abandoned as unworkable.

Inflation targeting began in New Zealand, as part of a more general program designed to restore the health of an economy crippled by pervasive *dirigisme*. A systematic effort was made to identify the purposes of public sector agencies and programs, and, where these could be found, to bind those in charge to pursue them with appropriately designed contracts. The origins of the Reserve Bank of New Zealand's celebrated contract with the government thus lay, as Michael Reddell (1999) has argued, at least as much in principle-agent theory as in the theory of money. The fact that the Bank's contract was stated in terms of inflation outcomes, moreover, rather than, say, money growth, was a direct consequence of another feature of the local landscape, namely that wholesale deregulation of the financial sector had rendered the behaviour of any money or credit aggregate totally uninformative. But to state a quantitative goal for monetary policy in terms of the inflation rate was nevertheless a leap in the dark. After all, it was conventional wisdom that a long and variable lag between the implementation of monetary policy and its effects on inflation made aiming it directly at such a distant goal a risky business. But for New Zealand, there seemed to be no alternative but to try.

Canada came next. At the end of the 1980s, inflation there began to drift upwards, and the Bank of Canada's governor responded by announcing that policy would pursue a rather unspecific "price stability" goal. In early 1990, this policy encountered serious credibility problems in foreign exchange markets that were met by significant monetary tightening - as in 1980, narrow money actually contracted - and the onset of a recession almost as serious as that of

[31]And that order can also claim deep roots in a well established academic literature on the economics of common currencies, to which Robert Mundell's (1961) contribution is the best known, though, as Cesarano (2006b) has shown, it has earlier origins than this.

a decade earlier began later in that year. At this very time, however, Canadian politicians had to become concerned about the credibility of monetary policy because a value added tax that would give a significant boost to the Consumer Price Index was about to be implemented, and trade-unions were preparing to seek compensating money-wage increases, thus threatening to turn a one time price level increase into ongoing inflation. Out of this situation, there emerged in February 1991, an agreement between the Minister of Finance and the Bank of Canada on "inflation reduction targets" that specified a time path for consumer price inflation that would take it down to 2 per cent by 1995, and promised "further progress to price stability" (left undefined pending further study, however, beyond entailing an inflation rate of clearly less than 2 per cent) thereafter. Two and a half years later, a change of government (and of central bank governor) was marked by what has turned out to be the indefinite postponement of the latter promise, and 2 per cent inflation (plus or minus 1 percentage point) has become an essentially permanent policy goal.[32]

Similar stories of improvisation driven by local necessity mark the subsequent adoption of inflation targets elsewhere. In the UK, they were seized upon as a new anchor for monetary policy in the wake of sterling's exit from the ERM, and they were also adopted in Finland and Sweden as means of stabilizing their domestic monetary systems in the wake of the EMS crisis, and then kept in place in preparation for the adoption of the Euro. It was only later second thoughts on the part the Swedish electorate that changed them there from a temporary to a seemingly permanent feature of the local monetary order. Australia is generally reckoned to be a targeter too, but ambiguously enough that there seems to be some doubt about the date of the regime's adoption. And so on – the spread of inflation targeting among emerging economies should also be noted here, though the details of this process are beyond the scope of this paper. Among advanced economies, setting aside the ECB, which, having given quantitative content to its price stability mandate by making an inflation rate below but close to 2 per cent its policy goal, looks like a targeter to many observers, the most conspicuous absentees from the roster of formal inflation targeters are now Japan, still awaiting the secure return its inflation rate to positive territory as its slow recovery from the 1990s continues, and the US, where the adjective *formal* is of some significance, since the Fed. is well known to have a "comfort zone" for inflation, which might play a larger role in the rhetoric of monetary policy were it not for the so-called "dual mandate" specified in its governing legislation.

The intriguing question about inflation targeting is why it has worked so well, particularly when its success seems to fly in the face of earlier conventional wisdom about the feasibility of stabilizing a variable which monetary policy affects with long and variable lag, and when there seems to be no evidence that such a program anywhere has had a direct effect on expectations. Inflation targeting central banks have earned their credibility over time by bringing inflation down and keeping it there, as indeed has the Fed. without the support of a formally announced program. Nor, does it seem plausible to attribute success to the alleged benign influence of globalization on the strength of inflationary pressures in the world economy in the 1990s. Increased trade with low wage countries should lower the *relative prices* of labour intensive

[32]However, this episode differed from the Coyne affair inasmuch as, rather than being forced into resignation, Governor John Crow decided not to seek re-appointment at the normal end of his term, apparently because he could not reach agreement with the new government about the retention of a long run price stability goal. Crow himself (2002) discusses this episode. For an overview of the evolution of inflation targeting in Canada, see Laidler and William Robson (2004)

goods, not the *rate of change of the nominal prices* of everything, and arguments to the contrary bear too much resemblance for comfort to old stories about cost-push inflation with the appropriate signs reversed.[33] And, given political upheavals, wars, terrorist attacks, a string of international financial crises, not to mention huge swings in commodity prices, it is far from clear that the last fifteen years or so really have been any more devoid of potentially destabilizing shocks than were the 1970s and '80s. Let me nevertheless suggest the following explanation of inflation targeting's success.

To begin with, obvious but still worth explicitly stating, inflation is, after all, a consequence of monetary policy, and this particular piece of economic understanding, so painfully regained in the two preceding decades, formed the very foundation for inflation targeting. At this most basic level, therefore, such a program provides a sound basis for a new monetary order in a way that, for example, direct intervention in labour and goods markets with wage and price guideposts or controls never could. Inflation targeting was, moreover, introduced almost everywhere in circumstances that required inflation to be stabilized and usually to be reduced as well, and, in stark contrast to money growth targeting, this worked in its favour. It is technically easy to stabilize inflation, particularly when it must also be reduced: a sufficiently sustained tightening of monetary policy (whether measured by a reduction in money growth or an increase in short-term nominal interest rates is barely relevant) will do the trick. Furthermore, and crucially, the well-established non-linearity of the short-run Phillips curve helps ensure that initial policy errors will have their most obvious consequences in an earlier than forecast arrival at whatever goal has been set (where inflation needs reducing), followed by a relatively "small" target undershoot, and in a tendency for any residual instability to be more visible in output than in inflation. When the first task of inflation targeting is to stabilize and/or reduce inflation, that is to say, it is output and employment that take the strain of policy miscalculations, but so long as such effects prove politically supportable, policy can err systematically on the tight side for long enough for even the most mechanically formulated inflation expectations to adjust to experience and begin to generate credibility for the regime.[34]

Such credibility, once established, is then self-re-enforcing in a number of ways. First, it promotes continuing clarity in monetary policy by keeping discussions among those in charge of it focused on an agreed goal. Second, to the extent that the costs of servicing public debt can create monetary stress, credible low inflation helps keep nominal interest rates down, and hence

[33]Nor am I yet convinced that national inflationary processes have changed by the fact that there seems to be important place for world output gap measures in domestic Phillips curves. (See for example Borio and Andrew Fitardo 2007) In the 1970s, we already knew that there was an important place for world inflation measures in such relationships, and indeed that it was possible to estimate them using "world" aggregate data (See, for example, a number of the essays included in Parkin and George Zis eds. 1976). Given the inevitably strong degrees of correlation among the relevant variables, we need some work to show that new work is not just rediscovering old results that still hold. Of particular interest here is the role of exchange rate regimes in helping to generate such results. Though formal pegging is much less common than it was, "fear of floating" could still help to produce cross country correlations in output and inflation fluctuations.

[34] Note that the foregoing discussion deals with what any inflation targeter has to achieve when the regime is introduced, and not with any special extra tasks imposed by a period of targeted disinflation at the outset. I am grateful to Charles Freedman for drawing my attention to this distinction Of the fifteen countries pursuing stable inflation targets studied by Scott Roger and Mark Stone (2005), seven had adopted such stable targets from the outset and eight had begun with formal disinflation targets, as had a further five countries included in their study that were still in a disinflation phase at the time of its completion.

reduces those costs. Even more important, that same credibility helps to prevent the short run consequences of exogenous shocks, and even of monetary policy miscalculations, from feeding through to subsequent price and wage setting decisions.[35] Successful inflation targeting, in short, contributes to a policy climate and a state of economic understanding that supports its own continued operation, as much among those for whom this understanding is merely a matter of rules of thumb that seem to work, as among those who resort to formal economic models to inform their decision making.[36] Finally, as the Bundesbank knew even in the 1950s, there is political constituency for low and stable inflation. Ordinary voters understand what inflation is, and most of them don't like it, so policy explicitly targeted at it can command political support of a kind that money growth targets, so remote from everyday experience, could never hope to attract. Perhaps the greatest strength of formal inflation targets is thus that they help to shield the central bank from the day to day pressures of politics. A minister of finance who might consider ordering a money-growth targeting central bank, or one without any clearly defined goal, to ease its policy in the interests of pursuing some other end, would have to think hard about explicitly and publicly ordering it to increase inflation, however worthy that other end might be.

Looking Back and Looking Forward

It is arguable that the first monetary policy success of the post-world-war-2 years was the survival of the Bretton Woods system for almost a quarter century. The international gold standard certainly lasted longer – about 35 years, from around 1880 until 1914 - and worked more smoothly too, but a fairer standard of comparison is surely the 20 years after the First World War, when successive failures to re-establish any kind of functioning international monetary order made their own contribution to the outbreak of the second. Even so, it must quickly be added that the Bretton Woods system's eventual collapse was also the first major failure of the period, while the eventual and (almost) world-wide restoration of a reasonable degree of monetary stability since the early 1990s, the second major success since the Second World War, has been the outcome of a series of piecemeal local policy initiatives, many of them associated with inflation targeting, rather than a distinctively international event; and this current stability might just be fragile.

Some Lessons from the Last Fifty Years

The Bretton Woods system was self-consciously designed as an international monetary order suitable for its times, and it worked for a while because its policy concerns were clearly defined, and its institutions configured so that these could be addressed. The system, however, was intended to contribute to the post-war evolution of a wider international economic order that would, with the passage of time, come to rely increasingly on market forces, and we have seen that as these came to play a greater role in economic life, the misunderstandings about how they worked, based on faulty diagnoses of inter-war experience, that had informed the system's design

[35]Indeed, once established, the credibility of low inflation even reduces the risks of "probing" the economy's capacity to absorb expansionary impulses. Awkwardly for those who stress the importance of the formal inflation target itself for the regime's success, the best example of this effect is surely the Fed's success in the 1990s.

[36]This is in contrast to exchange rate pegging for example, whose vulnerability to balance of payments shocks does not seem to diminish with the passage of time.

inevitably began to take their toll on its performance. In particular, the architects of the Bretton Woods system underestimated the extent to which the control of inflation would become the world's primary monetary policy issue, and in their concern with other goals, paid insufficient attention to insulating their system against it. .

The onset of inflation destroyed that system, but that very experience in due course re-established widespread understanding of the monetary nature of the phenomenon, the capacity of fiscal policy to undermine monetary stability, and of pegged exchange rates to transmit these effects internationally. And, the experience of such countries as Germany and Switzerland provided early confirmation that the more single-mindedly do domestic authorities concentrate on maintaining their currency's internal value when the anchor for its external value begins to drag, the greater is their success likely to be. These lessons are, of course, platitudes, but even after the experience of the 1970s should have confirmed them as such among policy makers everywhere, the Louvre accord had adverse monetary consequences for Japan because this had not happened; while even today there are still countries anchoring their currencies to the US dollar during a new period of serious fiscal imbalance there. Perhaps, therefore, these platitudes still bear repeating.

Money growth targeting from the mid-1970s onwards yielded salutary lessons about the dangers of over-confidence when academic ideas are transferred to the policy arena. Institutional change within monetary systems did not begin in the mid-1970s, it was bound to matter for the way such policies would work, and yet it was largely ignored in their design and the difficulties they encountered therefore came as a much bigger surprise than they should have done. Perhaps that is why they produced an intellectual over-reaction whose influence continues to be all too widespread for comfort in much of the academic monetary economics that is now influencing day to day policy. Specifically, the fact that demand for money functions proved insufficiently stable over monthly or even quarterly intervals to provide a basis for regular monetary policy decisions, does not imply that the only variables of any significance for monetary policy under any circumstances are the short interest rates that central banks use as their instruments, but it seems to be widely believed nowadays that this is the case. The above-mentioned lessons about the dangers of applying academic ideas to policy without due caution, that is to say, have not yet quite sunk in.

Over-exclusive emphasis on the role of interest-rates in monetary policy has already done damage, having, in the 1990s, led the Bank of Japan into thinking that, once short interest rates reach zero, it had exhausted its options, and hence into not tackling promptly and vigorously the credit deadlock which followed the collapse of the "bubble economy". This erroneous view of the limits of monetary policy is but one implication of what has now evolved into a standard model of the implementation of monetary policy through an interest rate instrument, which, though its day-to-day usefulness is not in question, is inconsistent with the empirical evidence generated by the monetary history discussed in earlier in this paper. To put matters simply, this model has the quantity of money responding passively to variations in the arguments of its demand function and to that function's error term, and hence implies that fluctuations in the quantity of money should *lag behind* those in interest rates, real income and prices, and not feed back into the system in any important way. But over the last fifty years, whenever such fluctuations have been significant, money has *systematically led* output, which in turn has *led* inflation. From the late 1960s onwards, the onset of inflation everywhere was preceded by increases in money growth, while the sometimes severe recessions that accompanied efforts to control it were preceded by the collapse

of money growth.[37] It was the very pervasiveness of such evidence that undermined the intellectual consensus in favor of the cost-push ideas that had permitted the great inflation to get under way in the first place, and the view that the quantity of money is irrelevant for monetary policy is a curious legacy indeed to have been left by an inflation that was so clearly created by this variable's misbehaviour.

Useful or not then, as has been argued at greater length in Laidler (2002), there is something important missing from today's standard monetary policy model, and it is a disturbing feature of many inflation targeting regimes that, as Charles Freedman (2006) has documented, they seem to be becoming more and more heavily dependent on it as time passes.[38] There is still much to be said for deploying a reference value for money growth as a formal backstop within these regimes, or at least for according this variable a prominent informal role among the data that are routinely consulted as policy is made and monitored

Prospects for a New Monetary Order

Rose (2006) has recently suggested that the spread of inflation targeting heralds the development of a new international monetary order that stands Bretton Woods on its head by giving pride of place to domestic policy goals in the countries that make it up, while leaving it to foreign exchange markets to deal with domestic policy's consequences for the international monetary system. This way of looking at things is intriguing, and inflation targeting supported by market determined exchange rates certainly eliminates the problems that have arisen so often in the last fifty years when monetary policy has tried to pursue domestic goals while simultaneously setting exchange rate targets. But it is worth recalling that another pervasive feature of the experience surveyed in this paper has been the destructive power of divergences between beliefs about how monetary mechanisms work and the facts, and simply to devote monetary policy to domestic ends does nothing to eliminate such divergences. They remain dangerous, therefore, particularly should the embryonic monetary order envisaged by Rose come under stress, and there is considerable potential for such stress to arise nowadays.

First, though the Fed seems to conduct its day to day policies "as if" it were an inflation targeter, it lacks the extra degree of protection against political pressures to relax its policies in times of fiscal difficulty that formal targeting would give it. And this is surely becoming just such

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[37] Even so, the proposition that significant rises in inflation are always preceded by increases in money growth should not be reversed. The early 1980s saw bursts of money growth in a number of economies as increases in the demand for money caused by falls in the opportunity cost of holding it were accommodated. Milton Friedman's (1984) all too well known prediction of an imminent inflationary threat in the US thus did not follow from his own monetary theory, and he should not have made it. It was, as he noted in a 2006 private communication to this author, "a major blooper". Edward Nelson (2007) pp. 162- 166, discusses this episode in some detail, and places it in the broader context of Friedman's role in US monetary policy debates.

[38] This model relies exclusively on a direct effect of the interest rate set by the monetary authorities on aggregate demand. Though such an effect surely exists, agents typically do not interact with the banking system simply to vary their holdings of cash balances, but to change their levels of indebtedness, and, when the interest rate is varied, this interaction has consequences for the behaviour of the money supply whose subsequent interaction with the demand for money is also an important component of monetary policy's transmission mechanism. See Laidler (1999) for a discussion of the contrast between the "passive" and this "active" view of money's role, and for references to the literature dealing with these ideas. Michael Woodford's (2006) recent demonstration of the irrelevance of money to the conduct of monetary policy is contingent upon a passive-money model, and hence does not counter the arguments advanced here, and Charles Goodhart's (2007) caution about his results is well taken.

a time. Second, though the ECB does recognize a policy role for monetary aggregates, and does pursue a quantitative inflation goal as well, this goal is of its own choosing, and elected governments are not implicated in it, beyond their ongoing commitment to the Maastricht Treaty, a fact which, it has already been suggested, might imply that the ECB is too well insulated from day to day political pressures for its own long run good. The Growth and Stability Pact notwithstanding, it is simply not clear whether the institutional structure through which the tensions among central bankers and elected politicians that growing divergences among national fiscal policies with the Euro zone threaten to create is up to the job, and a monetary order that cannot cope with such pressures might prove brittle.

So the future stability of neither of the world's two main internationally used currencies is quite secure at present, while Japan, the source of a third, is likely to find the public debt levels inherited from the 1990s hard to cope with when emerges from deflation. Meanwhile, fear of the floating exchange rates that are so necessary for inflation targeting's adoption still seems to be rather widespread elsewhere in the world - China in particular comes to mind here as a place where policy makers might do well to study the lessons yielded by Japanese experience of the late 1980s about the dangers of pursuing incompatible exchange rate and inflation goals in circumstances where asset markets can get out of hand.

If, then, Rose's attractive vision of inflation targeting's future role as the basis of a new international monetary order is to come to fruition, that regime needs to spread more widely than it has as yet. And if it is to be robust in the face of the shocks that might hit the international monetary system in the meanwhile, it would do well to avoid becoming too reliant on a model of monetary policy that cannot explain the salient facts about money growth's temporal relationship to inflation rates that the world's monetary systems generated the last time they went out of control. In short, though inflation in the world economy is now lower and more stable than anyone would have predicted even as recently as the beginning of the 1990s, and though we may be closer to a coherent international monetary order now than at any time since the late 1960s, the way forward is not yet risk-free.

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