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Abstract: Specific ideas about the Fisher relation between real and nominal interest rates and more general ideas about the nature of the central bank's duty to support the financial system in times of crisis were important to the Monetarist re-assessment of the causes of the Great Depression and what this event implied about the inherent stability of the market economy. Aspects of the evolution of these ideas since the Depression and the role that they have played in recent debates about the Great Recession are discussed, and some tentative conclusions about the validity of Monetarist ideas are drawn.

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Introduction

The Great Depression began in 1929, and what we are now learning to call the Great Recession began in 2007. In the interim, and leaving out many details, macroeconomics saw a failed Austrian revolution, a successful-for-while Keynesian one, which softened into a Neo-classical synthesis and then succumbed to a Monetarist counter-revolution, which in turn spawned New-classical economics, whose encounters with empirical evidence provoked New-Keynesian and Real-business-cycle reactions, a new-New-classical synthesis, and so on . . . and on.

So to what extent if any did developments in economics between these two crises influence events and commentary on them? And what effect did the events themselves have on that commentary? These questions are complicated not just because of the sheer number of interacting ideas that are potentially relevant to them, but also because the development of those ideas between our two crises has not been linear. Over the years, specific hypotheses and broad themes alike have appeared, faded into the background, sometimes to re-emerge in more refined and careful formulations, and sometimes not.

But we have to start somewhere, and despite all the above-mentioned revolutions, counter-revolutions, syntheses and what-not, a number of ideas already around in the late 1920s are still in circulation, and have both influenced and been influenced by events. In this essay I shall focus on two of these: a specific hypothesis - that there is an inflation-related relationship - usually known as the Fisher relation - between real and nominal interest rates; and a broader theme - the notion that the central bank has a special responsibility for promoting or at least maintaining the stability of the monetary and financial system.

The two ideas' significance for the one question

These two particular ideas are especially interesting, because in the 1960s and '70s, between our two crises, they featured prominently in the Monetarist reassessment of the Great Depression, which helped to establish the dominance in macroeconomic thought of the view that, far from being a manifestation of deep flaws in the very structure of the market economy, as it had at first been taken to be, this crisis was the consequence of serious

policy errors visited upon an otherwise robustly self-stabilizing system. The crisis that began in 2007 has re-opened this question¹ .

At some risk of over-simplification, the basis for the Monetarist view, notably as it is expounded by Allan Meltzer (2003), can be put as follows: had the Fed's policy makers been fully aware of the real-nominal interest rate distinction in the years of the Great Depression, they would have been more likely to understand that, as a falling price level began to take hold of the US economy, even though policy interest rates were cut, monetary policy was becoming tighter, not more expansionary. They would then have supplied liquidity to the banking system and therefore to the economy more promptly, not to say vigorously and consistently, in order to stabilize both. Had they done so, 1929 would have marked the beginning of a run-of-the-mill cyclical down-turn, not of a catastrophe that changed the world's history. The Great Depression, that is to say, was the unnecessary consequence of policy errors, not an inevitable manifestation of the inherent instability of capitalism.

On this reading of the history of macroeconomic thought, Fed. policy before and during the Great Recession of recent years might then be interpreted as a series of welcome, if sometimes clumsy, efforts by Chairman Bernanke to keep his famous 90th birthday promise to Milton Friedman on behalf of the Fed that, in the light of what it had learned from him and Anna Schwartz (1963) about its responsibility for the Great Depression, it would not "do it again". But recent Fed policy has not been interpreted this way by many of the economists who nowadays seem to display the most faith in the market economy's inherent stability, among them some of the very above-mentioned scholars who were responsible for the Monetarist re-interpretation of the Great Depression in the first place. The sometimes angry dissent from recent policy in which they have joined thus presents, at least at first sight, an intriguing puzzle, which goes to the very heart of debates about the nature of the market economy, and thus provides the fundamental motivation for this paper's focus. In what follows, I shall first of all discuss the role of the Fisher effect in these events and debates, and then take up the broader issue of the responsibilities of the central bank.

¹ This narrow choice of topics is of course also a response to limitations of time and space. Inter-war debates about the stabilizing possibilities of counter-cyclical government expenditures, for example, or about the policy constraints imposed by the then recently re-established gold standard, also find many echoes today, and could easily provide the basis for studies similar to this. Related questions about the lessons of recent experience for viability of what is sometimes called the "social market economy" model have also been raised by recent experience in the European Union. .

The Fisher Relation

The Fisher relation plays a central part in today's work-horse models of monetary policy and it had been making appearances in monetary debates long before the Great Depression began, indeed long before Irving Fisher himself discussed it with such skill and thoroughness in (1896) that his name became firmly and perpetually attached to it.² The phrase in fact covers more than one idea. Nowadays, it is routinely used to denote a systematic tendency for variations in the expected inflation rate to be reflected – fully, it is usually assumed - in the difference between market rates of return on real and nominal assets, expressed in a simple equation

$$r = R + p(e)$$

Here, r is the nominal interest rate in question, R its real counterpart and $p(e)$ the expected rate of price inflation. This specific tendency, however, is more helpfully labeled the Fisher effect, whose analysis incorporates a less complicated idea, also sometimes referred to as the Fisher relation, but which would be better called the Fisher distinction between nominal and real interest rates.³ In what follows, I shall try to be clear about these semantic matters, and use the phrase Fisher relation only when distinction and effect are both in play.

The Fisher relation during the Great Depression

It is at first sight curious that even the Fisher distinction, let alone the Fisher effect itself, seems to have played no significant part in the monetary policy discussions of 1929-1933, even though both were already firmly established in the literature by then. Meltzer (2003) sums the matter up as follows

"The minutes [of meetings of the Federal Reserve Board] of the period, statements by Federal Reserve officials, and outside commentary by economists and others do not distinguish between real and nominal interest rates. Surprisingly, even Irving Fisher did not insist on this distinction. Although Fisher pointed to the decline in demand deposits in conversation with [Governor Eugene] Meyer, his preferred explanation of the prolonged decline was the asymmetric effect of deflation on debtors" (pp. 412-413)

² Robert Dimand and Rebesa Gomez Betancourt (forthcoming) survey this early history, and the later roles played by Fisher's ideas in the evolution of macroeconomics.

³ Though it is really Marshall's (1887), including the vocabulary of real and nominal, as Fisher himself acknowledged

Everyone at the time, that is to say, knew that prices were falling, ought to have known that this implied that real interest rates were high, but no-one seems to have put matters this way, or perhaps even to have put two and two together.

I conjecture that this was because, by the late 1920s, explicit deployment of the Fisher distinction was largely confined to discussions of the Fisher effect itself, and that the place of the latter in the literature of the time was that of an hypothesis about the secular relationships among price level variations and interest rates, whose relevance by then had become subject to many doubts and qualifications, mainly empirical, which Fisher himself shared.⁴ By this time also, such leading authorities as John Maynard Keynes and Ralph Hawtrey had already either, in the first case - see (1923, p .20) - expressed explicit doubts about the practical significance of the effect because it failed to take account of variations in the degree of confidence with which expectations were held, or, in the second case – compare (1919) with (1913) - had simply stopped deploying it. And neither distinction nor effect figured systematically at this time in the then emerging and novel Austrian theory of the cycle which nevertheless focused on the interaction of bank lending rates and the expected rate of return on capital,.

Fisher himself, furthermore, had never claimed more than marginal relevance for the effect – as opposed to the distinction - for cyclical phenomena, concluding in (1930) that, in this context "the money rate of interest and still more the real rate of interest, is more affected by the instability of money than by those more fundamental and more normal causes connected with income impatience, and opportunity"; and by the late 1920s, discussions of monetary policy, his own included, had in any event been conditioned by a prior six or seven years of price-level stability which had rendered even the distinction redundant, at least temporarily. In short, the Fisher effect was absent from the discussions during our first crisis because it did not seem to anyone to be particularly relevant to questions about counter-cyclical monetary policy, and the Fisher distinction had fallen into disuse along with it.

⁴ Fisher's original (1896) empirical investigation had found evidence of only a weak and partial adjustment of nominal interest rates to falling prices, and his subsequent updating and broadening of the scope of the experience he examined, reported in (1930, Ch 19)), did no more than confirm and generalize this conclusion. As he summed up the evidence it "since forethought is imperfect, the effects are smaller than the theory requires and lag behind price movements, in some periods, very greatly" (p.491 [451]); to be specific the effects in question, always partial, appeared to be spread over more than two decades in some cases.

The discussions in question would certainly have been clearer, particularly to later readers in whose intellectual equipment the Fisher distinction occupies a central place, had it been deployed more often during the Depression years. But whether this want of clarity was decisive for the quality of decision making is another matter. The distinction was not in fact needed by anyone familiar with then common ways of thinking about monetary policy in order to assess the significance of the behavior of interest rates under Fed control. These ways of thinking taught, among other things, that policy's tightness or looseness could be assessed by comparing the level of interest rates to expectations about what Henry Thornton (1802) had long before called the "rate of mercantile profit", and such a comparison could of course be made in either nominal or real terms, so long as consistency was observed.

This is why Hawtrey (1919), for example, had been able to drop the Fisher distinction from his analytic armory without any loss of substance, and write only about nominal interest rates, why it made only occasional appearances in Knut Wicksell's later discussions (1915), and also perhaps why even Fisher himself did not insist on its importance. Furthermore, ample data, not least those related to the shrinking money supply, were available to judge the stance of policy along then conventional lines. Many of the Fed's contemporary critics, including Hawtrey (e.g. 1932) and his sometime assistant Lauchlin Currie (1934), derived appropriate – from a Monetarist standpoint - policy advice about the need to bring about vigorous money growth without referring to the real-nominal interest rate distinction. Perhaps then, the Fed's own neglect of it should not be listed high among the reasons for its failure to heed such advice.

The Fisher relation between the crises

Only when monetary policy analysis is extended, as of course it long since has been, to incorporate an explicit theory of the rate of mercantile profit's relationship to the underlying micro-structure of the economy do the distinction between real and nominal interest rates and a theory to explain the relationship between them become vital elements in the analysis of monetary policy. With hindsight, we can now see that, even by 1929, a number of economists, including Fisher himself, but also those who belonged to what Axel Leijonhufvud (1981) called the *Wicksell Connection*, were working towards just such a theory, but even some of the questions that were going to need answers if it was to be constructed, let alone the answers themselves, had barely been formulated.

Matters are now very different. Micro-foundations, though not those that Leijonhufvud, let alone Wicksell and his followers, envisaged, are a *sine qua non* of mainstream macroeconomics. As a result, not just the Fisher distinction, but the Fisher effect too, have had much more prominent places in economists' commentaries on the second of our crises, despite the fact that, already neglected in 1929, these ideas disappeared almost completely for a while during the Keynesian ascendancy that followed the Great Depression..

Keynes himself, who had already expressed doubts about the Fisher effect in (1923), set the dominant tone for much subsequent discussion in the *General Theory*, (1936). There he denied a direct effect of expected inflation on nominal interest rates, arguing that any links here were indirect, running through the influence of rising prices on the nominal value of the marginal efficiency of capital (see 1936, pp. 141-143). His disciple Sir Roy Harrod, one of the two authorities – the other being Sir John Hicks – who in 1959 informed the Radcliffe Committee that the long run equilibrium value of the long rate of interest was three per cent, was sticking firmly to this line as late as (1971, pp. 179-80) and indeed took it further, denying the very logical possibility of expected inflation affecting the yield on bonds, on the ground that, like money itself, these were nominal assets. And though Hicks did not follow Harrod into this particular analytic error, he still wrote as follows as late as 1989⁵.

"it is commonly thought that these high rates of interest [since 1950] are a consequence of inflation: that if prices are rising at 4 per cent per annum, a nominal rate of interest of 8 per cent per annum is equivalent to a *real* rate of 4. It is true that inflation makes these high rates of interest bearable, so that their consequences are not so desperate as they would have been in the past. But to make these consequences into causes surely takes things the wrong way round." (1989, p.79)

Even so, this quotation tells us that by the 1980s, the Fisher effect was back in play and "commonly thought" to be true; and it also hints, surely accurately, that this was in part the result of the so-called Great Inflation of

⁵ It is an unexplained puzzle in the Keynesian literature that the *Radcliffe Report* itself (Committee on the Working of the Monetary System 1959) of all documents, provided an exception to the general tenor of Keynesian discussions of these matters, by suggesting (p. 211) that sustained inflation in the two per cent range might create expectations that would raise the above-mentioned normal value of the long-run rate of interest from 3 to 5 percent.

that time and, by inference, of the Monetarist counter-revolution whose success this episode helped to promote.

But the idea's revival was nevertheless not quite straightforward. To be sure, it was embodied explicitly in eq. (9) (p. 9) of that counter-revolution's opening manifesto, Friedman's (1956) "The Quantity Theory of Money, a Restatement", but with no citation of Fisher himself, and accompanied by the warning that "differences of opinion [about expected inflation] cannot be neglected, so we cannot suppose (9) to hold; indeed, one of the most consistent features of inflation seems to be that it does not" (pp.9-10).⁶ What Friedman had to say about the Fisher effect in this seminal essay thus implied doubts about its empirical relevance that could have been, and indeed had been, expressed, in the 1920s, not least by Keynes (1923) as we have already noted.

Twelve years later, in his famous AEA Presidential address (1968), Friedman's treatment of the Fisher distinction and of the Fisher effect was less hesitant when he cited them as the inspiration for his introduction of inflation expectations into the Phillips curve and he expressed no doubts there about the effect's empirical significant or policy-relevance. The main burden of Friedman's address was to promulgate the "natural unemployment rate" hypothesis, whose validity required full adjustment of wage-inflation to expectations about price inflation, so even though he pointed out that experience showed the adjustment of nominal interest rates to inflation to be "slow to develop and slow to disappear" (p. 101) and left the explicit question of its completeness unexamined, it was all too easy for his readers unthinkingly to apply the hypothesis of full adjustment when analyzing the behaviour of interest rates as well.

This is what seems to have happened, particularly when formal treatments of Monetarist ideas evolved into New-classical models. It was, after all, very difficult to write down a model of an economy in which money-wage inflation responded fully to inflation expectations but nominal interest rates did not, particularly when the idea of rational expectations had become the foundation for modeling the formation of those expectations and their influence across all markets.⁷ Thus, though Friedman's (1968) paper,

⁶ That Friedman took this warning seriously is confirmed by the fact that the rate of return on bonds and the expected rate of inflation figured as separate variables in that essay's equation (11) which restated the quantity theory as a theory of the demand for money.

⁷ Even before 1968 moreover, Martin J Bailey (1962) and Robert Mundell (1963) had shown that, within the then ubiquitous IS-LM framework, a fully realized Fisher effect could be reconciled with an apparent failure of nominal interest rates to adapt fully to inflation, because its effects would be shared between

not to mention Edmund Phelps' (1967) parallel piece, had appeared in advance of the empirical experience of inflation that established their relevance, by the end of the 1970s, real-nominal wage and interest rate distinctions and the importance of expected inflation in the Phillips curve, were both firmly established in macroeconomics.

The specific policy measure that Monetarism brought with it into the policy sphere - money growth targeting - proved much less widely attractive, let alone durable. This scheme arguably served as a useful cover for the Volcker disinflation of the early 1980s, but was otherwise soon judged impractical in the U.S. and in other places too. On the policy front, and also in academic discourse about it, what then emerged was a sort of “Monetarism without money”, which retained low and stable inflation as a policy target and an overall emphasis on the importance of inflation- expectations in models of how to attain it, but replaced money growth with a nominal interest rate as the central bank’s key instrument. The formal models that supported this approach to policy were well entrenched in central banks by the turn of the millennium and dominated policy making and much of the debate about it in the run up the crisis that began in 2007.

The Fisher relation and the onset of the Great Recession

Only the briefest reminder of these models' generic form is needed here. They have three components: an expectations augmented Phillips curve, which determines inflation as a deviation from expected inflation that is positively related to an “output gap”, the deviation of aggregate output from some long-run “normal” level; a misnamed – here we shall let this pass - IS curve, whereby this output gap is inversely related to the real rate of interest, which in turn has a “normal” “neutral” or “natural” value at which the output gap is zero, unemployment is at its natural rate, and inflation is therefore constant at its expected rate; and a policy reaction function, these days typically an explicit “Taylor rule”, according to which the central bank sets the *nominal* interest rate, and hence, through the Fisher effect, a *real* rate, so as to influence the output gap and keep inflation on some predetermined low and steady time path.

The Fisher relation is thus completely central to “Monetarism without money”, and to the policy discussions that this approach has continued to frame even after 2007. Specifically, the relation: has provided the basis for criticisms that the Fed's policy rate was set “too low” in the years before

nominal and real rates, and this so called non-super-neutrality of money result proved easy to reproduce in a variety of models too wide to cite here.

2007, and therefore contributed to - in some versions, notably that of John Taylor (2011) caused – the crisis; has been fundamental to discussions of the so-called *zero lower bound problem* posed by the possibility of the economy encountering some shock in response to which a mechanical application of the Taylor rule would prescribe an impossible to achieve negative value for the nominal interest rate; and has also figured in arguments about the extent to which, as the crisis gathered momentum, additional "unorthodox" measures might, or might not, be needed to supplement what by then had become "orthodox" interest rate based monetary policy. .

There is a strong parallel here between these criticisms of Fed policy in the years that preceded the Great Recession and some that were advanced with respect to the Great Depression. In each case it has been argued that interest rates were kept too low for too long and fuelled speculative bubbles - in the housing market before 2007 and the stock market before 1929 – whose collapse ushered in serious and cumulative dislocations of the financial system. The reasons given for these mistakes however, if mistakes indeed they were, differ between the episodes. In the late 1920s the Fed's alleged error was put down to its desire to help other countries, and particularly the UK, to cope with the stresses of returning to the gold standard at parities that in some cases were, to say the least, optimistic. More recently, the charge has been that the Taylor rule was ignored in the interests of sustaining the economy's recovery from the collapse of the preceding dot-com bubble. In the late 1920s, Fed policy unambiguously did not lead to any general upsurge in inflation, so the Fisher relation is irrelevant to judging its appropriateness. In the mid 2000s, however, judgments about whether or not the Taylor rule, to which the Fisher relation is central, was violated seem to depend, in part at least, upon how inflation is measured.⁸

To be more specific, between 2002 and 2008 CPI inflation in the US rose from a little under 2 per cent to over 4 percent, and as Taylor's work (e.g. 2011) has clearly shown, a policy model using this index would have called for a higher interest rate long before 2006, but over the same period, the Fed's preferred measure, core PCE inflation, remained firmly in a "comfort zone" around 2 per cent per annum, and on this criterion, policy was about right. This is not a debate to be settled here, but permit me the luxury of quoting my own pre-crisis (early 2006) view of this matter⁹:

⁸Here we have an interesting example of the way in which the achievement of extra clarity in thinking about one matter, instead of settling an issue, simply reveals the need for clarity about a further question.

⁹ Core inflation often is a good predictor of longer run trends, and on this ground is arguably the right measure to pay attention to in assessing expected inflation when calibrating a Taylor rule with respect to the Fisher effect. On the other hand, food and energy prices are excluded from core indices, people do

"Local experts know more about how strong a case can be made for the existence of a housing market bubble, and about how much of it can be attributed to monetary policy as opposed to other features of the US scene . . .but even so, perhaps a Fed constrained by, say, a 2 per cent inflation target for the CPI (as opposed to some measure of core inflation) would not have responded to the "dot com" collapse quite so vigorously and for quite so long, while still managing to maintain financial stability in its wake" Laidler (Feb. 2006)

Let me add, however, that though I obviously think that there is something to be said for Taylor's case against the Fed, I don't believe that his can be the whole story of the causes of the subsequent crisis. Monetary policy in all likelihood was too expansionary before 2007, and it did then tighten up. This turnaround was likely to lead to a slowdown in the economy or even a recession, but there was nothing in the relevant data on the stance of monetary policy, whether indicated by the behaviour of short interest rates or indeed of money growth, that foreshadowed the violence of the economic dislocation that followed. In this respect, the onset of the Great Recession also resembles that of the Great Depression. I have elsewhere (e.g Laidler 2011) suggested that the collapse of the US housing bubble (and similar bubbles elsewhere in Spain, Ireland and the UK) has a rather Austrian, perhaps better Robertsonian, appearance to it, implying a pre-crisis dislocation in the inter-temporal allocation of resources that Monetarism, with or without money, simply does not encompass. Again, perhaps there is a parallel here with the arrival of the Great Depression

Recent applications of the Fisher relation

The Taylor rule in general, and recent debates in particular about how it should have been applied, make most sense when cast in terms of a model in which private sector agents form their inflation expectations by observing, among other variables, the actual inflation rate, and then use this information, along with their understanding of the economy's structure in making spending decisions. This idea underlies the requirement that, in implementing the Taylor rule, the monetary authorities should always raise (lower) their policy rate by more than any observed change in the rate of inflation, in order to ensure that their response results in a stabilizing increase (fall) in the real rate of interest that figures in the IS curve. But the same class of model can yield very different policy implications if a more

consume these products, and their prices are conspicuous, so perhaps what happens to them does indeed affect the public's perceptions and therefore expectations about inflation and hence their behaviour too.

radically rational view of the formation of inflation expectations is embedded in the system alongside the assumption that the central bank is a completely credible inflation targeter.

In such a system, provided also that the real rate of interest is uniquely determined independently of monetary policy by the fundamentals of productivity and thrift and is constant, or at least very slow to move over time, and provided that markets work so as to keep the decisions of individual agents fully coordinated,— not assumptions that I would want to defend, but widely deployed nevertheless - the way for the central bank to lower (raise) the inflation rate is to lower (raise) the nominal interest rate. This is because, in such a world, interest rate policy is interpreted by rational agents as embodying credible announcements on the central bank's part of its intentions concerning the future inflation rate, and these then play a dominant role in the evolution of the equilibrium time path, and hence also the actual time path, of inflation. Given the premises, the conclusion follows. As Minneapolis Fed President Narayam Kocherlakota has recently been quoted as saying, "Most of our monetary models tell us that, if the Fed maintains a constant nominal interest rate for ever, that will essentially determine the inflation rate, by way of the Fisher relation" ¹⁰

More specifically relevant to current circumstances, these premises also imply that an economy can escape from stagnation accompanied by an essentially zero level of short term nominal interest rates such as the US experienced after 2008, and the zero lower bound policy problems that go along with it, by having the central bank pre-announce a strategy of *raising* those rates. Stephanie Schmitt-Grohe and Martin Uribe (2010) have put the point as follows:

"Perhaps the most problematic aspect of the analyzed exit strategy in regard to credibility is the need to communicate to the public that the increase in nominal interest rates is intended to raise inflationary expectationsWe believe that after observing falling inflation with near zero interest rates for a sufficiently large number of quarters the public will come to intuitively internalize the notion that the Fisher effect has become dominant and accept the monetary authority's argument of raising interest rates to fight deflationary pressures" Schmitt-Grohe and Uribe (2010)

In the light of such analysis, whose logical coherence is not in question, but whose empirical relevance depends critically on the extremely

¹⁰ This quotation was attributed to Kocherlakota by Steven Williamson, and caused Nicholas Rowe (2010) to "lose it" - in Paul Krugman's (2010) well-chosen phrase. See Williamson, as quoted by Rowe, as quoted by Paul Krugman Aug 25th 2010

implausible assumption that the economy always remains exactly on its equilibrium time path, as Peter Howitt (1992) demonstrated some time ago, it is hard to avoid the conclusion that, although the absence of the Fisher effect and even the Fisher distinction from policy discussions during the Great Depression rendered these unnecessarily opaque to modern readers, the Fisher effect's role in the debate about the Great Recession has sometimes led to a little too much clarity for comfort.¹¹

The Central Bank's Responsibility for Financial Stability

There are deeper lessons here too, namely that the Fisher effect's natural habitat is the theory of inflation in an otherwise smoothly functioning economy, and I have argued elsewhere (Laidler 2010, 2011) that modern models of such an economy have little if anything useful to say about monetary policy during and in the wake of financial crises, when markets are dislocated and inflation is not the central issue.

What has been referred to above as “Monetarism without money” was developed in the 1990s as a by-product of a view that made the central bank’s primary responsibility – indeed apparently its sole responsibility in some academic versions of the doctrine – the achievement and maintenance low and stable inflation. As Howitt (2011) has recently noted, the promotion and maintenance of financial stability thus largely disappeared from monetary policy’s agenda in the 1990s, as did explicit analysis of the monetary and financial system from the models that supported it.¹² Today's models therefore provide no help at all with problems posed for monetary policy by the asset market dislocations experienced since 2007, which is why we must, along with policy makers, turn for guidance to earlier ways of thinking about the central bank's role in promoting the stability of the monetary and financial system, even if and as it targets the inflation rate.

The Fed before the Great Depression

The central bank's responsibility for financial system stability has been a topic of discussion, at some times the primary one, in the monetary policy literature, for a very long time. It was Henry Thornton (1802) who first systematically analyzed the Bank of England's position in the British financial system, the responsibilities that went with it, and the ways in which

¹¹ Specifically, Howitt showed that the equilibrium time paths along which today's interest rate settings determine the future time path of inflation are unstable, in the sense that any disturbance to them, including of course an unanticipated change in the interest rate itself, would set up dynamics that take the economy away from, rather than back towards, its equilibrium path..

¹² The definitive account of this approach, Michael Woodford’s (2003) *Interest and Prices: the Theory of Monetary Policy* seems to contain, if its index is to be believed, only one mention of financial markets.

the Bank should exercise these. The core of his views on these matters, adapted to the very different economic circumstances and institutional arrangements of the 1870s, were in due course codified by Walter Bagehot in his famous book *Lombard Street* (1873).¹³ Though Bagehot himself thought of his policy analysis as applying only to Britain and the Bank of England, they would in due course become a source of guidance elsewhere, not least in the US.

By the time of the Fed's founding in 1913, Bagehot's precepts, gathered together under the "lender of last resort" label, were understood – accurately or not is a separate question that space does not permit us to discuss here - to require the central bank to play an essentially passive role in financial markets during tranquil times, but to be ready to lend freely in times of crisis, albeit at a penalty rate of interest, to any and all commercial banks facing liquidity problems, though not to outright insolvent institutions.¹⁴ The primary aim here was said to be the preservation of solvent banks so that they could continue to meet their obligations to depositors and other commercial banks, thereby preventing any incipient run on the system gathering enough momentum to impair its capacity to serve the economy as its principal provider of means of exchange; or, to put matters more concretely: in the case of the newly founded Fed, to avoid any further repeats of the upheavals that had regularly bedeviled the National Banking system down to and including 1907 (see Oliver Sprague 1910). But there was a secondary aim here as well: namely, by isolating the insolvent and allowing them to fail, to avoid the creation moral hazard that could contribute to future instability.

But where for Bagehot the central bank's responsibilities began and ended with the maintenance of gold convertibility and its lender of last resort role, the founders and early leaders of the Fed, not to mention many of the economists who commented on its operations, were more ambitious. Some of these expected the Fed to maintain an "elastic" currency that would meet the "needs of trade" not just during crises, but as a matter of routine at all

¹³ Thornton, who was one of the first to draw attention (though on only a single occasion in an 1811 Parliamentary speech) to what would become known as the Fisher relation, was writing about a monetary system based on temporarily inconvertible paper, Bagehot about the gold standard. In Thornton's time commercial bank liabilities were mainly notes, in Bagehot's deposits were the norm, and this is not to mention the changes wrought on the British monetary system by the 1844 Bank Charter Act.

¹⁴ This is the view of Bagehot that Thomas Humphrey (e.g. 2010, 2012) espouses. Though widely held, it is open to challenge on two points: namely, whether Bagehot primarily thought of high interest rates as a means of imposing a penalty on borrowers at times of crisis, or more as a means of generating a capital inflow and hence supporting gold convertibility, and whether he really did make a sharp distinction between illiquid and insolvent would-be borrowers. These matters are discussed in Laidler (2003) and (2004)

times, in the expectation that if this were achieved, financial stability would, in any event be maintained; while others argued that it should self-consciously promote price level stability by taking a more active approach to what came to be called "credit control", this in the expectation that stability of the real economy would also then be assured. After what seemed for a while to be a successful period of learning by doing on the Fed's part in the 1920s, the hopes and expectations of all sides would be disappointed by the onset of the Great Depression. A stock market boom developed as the decade progressed, though price inflation didn't, and when the Fed finally began to raise interest rates to discourage it, the real economy turned down in the summer of 1929, and the Great Depression was at hand.

The Fed's response to the Great Depression

The downturn was quickly followed by a stock market collapse in whose wake the demand for precautionary balances of money on the part of an increasingly nervous public began to build up, and growing fears among that public about the stability of the banking system greatly amplified this effect by causing a shift in the composition of its demand for money towards cash, thus draining reserves from the banks. A simultaneous and persistent failure on the part of the Fed to provide sufficient cash to meet this drain, and an increasing demand for excess reserves on the part of the banks themselves, made matters even worse. The Depression thus evolved in a recursive spiral of falling demand for goods and services, falling prices, rising demand for money, and falling supply, accompanied by successive waves of bank failures and a continuing hesitancy on the part of the Fed to expand its own monetary liabilities in significant amounts – though these did grow at about 3 per cent per annum between 1929 and 1933.

The facts here were and are not in question, but their explanation and the appropriate policy response to them have been from the outset. Adherents of the needs of trade doctrine and an elastic currency, who were well represented within the Fed itself, argued that active money creation in advance of a real recovery would be inflationary and opted for letting events, about whose origins they were often unclear, take their course. In this last recommendation, they were joined by local adherents of the then novel Austrian business cycle theory, with whom they otherwise had little in common.¹⁵ Others – among them several erstwhile advocates of credit

¹⁵ See for example the contributions of Henry Parker Willis and Gottfried von Haberler to the celebrated 1932 Harris Foundation conference held at the University of Chicago (Quincey Wright (ed) 1932). Given his strong (1910) endorsement of a central bank's lender of last resort role, it is interesting to note that Oliver Sprague was a prominent supporter of the Fed's passive attitude in the early years of the Depression.

control aimed at price stability – identified the Fed's failure to act promptly and vigorously as a lender of last resort as crucial in letting the crisis get out of hand in 1930-31 and called for monetary expansion to deal with the contraction, followed by monetary stabilization to prevent a repetition.

Changing views of the central bank's role between the crises

But, especially after the end of the Fed's short-lived experiment with open market operations in 1932, which outside of the last-mentioned group was widely believed to have shown the futility of such measures, and the expansion set in motion by the 1933 revaluation of gold notwithstanding, a body of opinion, with under-consumptionist and institutionalist connections, that interpreted the Depression as symptomatic of deeper flaws in the market economy against which the Fed would have been powerless regardless of the scale of its efforts, became increasingly influential in the U.S.. This tendency gathered momentum after the arrival of the Keynesian revolution in the late 1930s, and in the wake of the severe downturn of 1937-38, though its orderly development was interrupted by the onset of war.

As peacetime conditions returned in the wake of World War 2, the resumption of the growing dominance of what came to be called Keynesian economics was by no-means confined to the US, and thinking about macroeconomic policy everywhere came to emphasize an essentially continuous need for fiscal measures to ensure macroeconomic stability, assigning monetary policy the role, at most, of supporting these by maintaining low interest rates, or, at least, of not getting at cross purposes with them should problems arise with respect to balance of payments issues or incipient inflationary pressures that might call for monetary treatment. And underpinning all this on the international institutional front was the US dollar dominated Bretton Woods system of pegged exchange rates. Even as monetary policy's role began to expand again in the 1950s it nevertheless retained a secondary place in the overall policy framework, and questions about the extent of the central bank's responsibilities for macroeconomic stability attracted relatively little attention

So matters would stand for a while, and the majority of economists seem to have taken it for granted that the experience of the 1930s justified all this, until Friedman and Schwartz (1963, ch. 7) following up the by then largely forgotten work of Lauchlin Currie (1934) and Clark Warburton (1946), revived and painstakingly documented the case for believing that, had the Fed made enough cash available by way of lender of last resort activities early in the day, it might have prevented the economy's downward spiral after 1930 gathering momentum in the first place, or failing this, had it

later persevered with sufficiently vigorous open market operations, it might have reversed its course in 1932-33.

This interpretation of the Depression, albeit with certain variations in detail, would receive further support from, among others, Richard Timberlake (1978), Karl Brunner and Meltzer and their collaborators (1981), and more recently Meltzer (2003) and Robert Hetzel (2008); and from the late 1960s onwards the respectability among economists of the view that the market economy is, after all, inherently stable if not subjected to ill-conceived policies was slowly but surely re-established, a development that provided critical intellectual support for a movement back to reliance on market mechanisms on a broader policy front as well, particularly in the wake of the great inflation that had, in the view of many, been the product of misconceived “Keynesian” measures and among other things had also destroyed the Bretton Woods system.

In due course, after the fits and starts of the 1980s that followed the abandonment of money growth targeting, "Monetarism without money", whose principal characteristics have already been outlined earlier, would emerge as the dominant approach to monetary policy among central banks, not least the Fed, and indeed to macroeconomic policy thinking more generally, and it was underpinned by beliefs in the inherent stability of markets that had become at least as widely and unquestioningly accepted as beliefs about their instability had been three decades or so earlier. Just as rapid real expansion accompanied by price level stability for which confident central bankers could apparently take some credit had set the scene in the US for a Great Depression which very few commentators had foreseen, so did the ensuing “Great Moderation”, experienced far beyond US borders, set the scene for the equally unexpected Great Recession¹⁶

The Great Recession and the Fed's reaction

The Great Recession has not been a carbon copy of its predecessor. The years that preceded both events saw an asset market boom to be sure - in the stock market in the first case and the housing market in the second - and both booms were supported by innovations in financial markets too – income trusts and the like in the late 1920s, and securitized mortgages, credit default swaps, and what have you in the 2000s. And in each case, these

¹⁶ But some did have forebodings of trouble, in both instances. In the case of the Depression, see e.g. the remarks of Dennis Robertson (1928) on the developing U.S. situation, and Lionel Robbins (1934) for retrospective reflections on the concerns of the Austrians. More recently, the research department of the BIS was a source of frequent warnings of trouble ahead – see e.g. Borio and Lowe (2002)

booms eventually prompted monetary tightening that brought them to abrupt ends that were quickly followed by violent real economic downturns.

In 2007-08, as in 1929-31, moreover, the Fed's its actions were at first hesitant, even inconsistent at times, and created much confusion. Even so, the reinterpretation of the Great Depression that the 1960s and '70s had seen had not been entirely forgotten apparently, not surprisingly, perhaps, given Chairman Bernanke's own important contributions to the literature dealing with the 1930s (e.g. 1983), and the failure of Lehmann Brothers in September 2008 was not only the first, but also and crucially the last, major institutional collapse it permitted, rather than the first of a sequence as the 1930 closing of the Bank of the United States had been. Furthermore, the subsequent rescue of the insurance company AIG among other things very likely prevented a repeat performance in Europe of the kind of crisis associated with the 1931 failure of Credit-Anstalt.

Furthermore, as the real economy went into the sharpest down-turn of the post-war years, the Fed, having quickly cut its policy interest rate essentially to zero, departed vigourously from the example it had set in the early 1930s and entered financial markets on a massive scale in two programs of so-called "quantitative easing", simply a new name for open market operations very similar to those that it had then been so hesitant to deploy in this earlier episode. Money growth fell close to zero for a while, and inflation fell too – the precise figures in each case depend on which aggregate and price index are specified – but there was no actual downward spiral of money and prices such as marked the Great Depression; nor was there a complete collapse of the real economy, which is not to belittle the seriousness of the stagnation of output and employment that the last four years have seen in the US. At the time of writing, moreover, money growth, on most conventional measures at least, has begun to pick up, and a very hesitant recovery seems to be under way.

Much more than monetary stimulus was at work in the US after 2007, of course. The prevention of further major failures after Lehmann Brothers saw the Fed working in close but often improvised collaboration with the Treasury as the Federal government became a major shareholder in large banks and mortgage providers, not to mention the automobile industry. Fiscal stimulus too was applied on a scale that Herbert Hoover could only have dreamed of in 1930-31¹⁷. As with the overall policy response to the

¹⁷ We sometimes need to remind ourselves that, in the US, the case for fiscal stimulus as a counter-cyclical measure was widely canvassed in the 1920s, not least by Wesley C. Mitchell and his associates (See e.g. Mitchell et al (1923), prepared and published under the patronage of Secretary of Commerce Herbert

Great Depression, so in the case of the Great Recession, historians will long debate which measures helped recovery, which harmed its prospects, and what their longer term consequences for the US economy and body-politic might be. But here we have quite enough to discuss if we confine ourselves to the Fed's behaviour, and in particular to the criticism it has provoked from a number of prominent Monetarists and certain others who share their strong commitment to rule-guided monetary policy.¹⁸

Some criticisms of Fed policy since 2007

These critics' bill of particulars against the Fed includes the following: that it has exceeded the bounds of its responsibilities as lender of last resort by rescuing insolvent investment banks and insurance companies rather than limiting itself to providing liquidity to solvent commercial banks; that by cooperating with the Treasury in many of these activities it has surrendered its policy making independence, and that the massive increase in its cash liabilities that has resulted from these policies and subsequent quantitative easing, carries with it a serious inflationary threat.

There can be no doubt that since 2008, as Humphrey (2010) (2012) in particular stresses, the Fed has exceeded the boundaries of the Bagehotian rules for a lender of last resort referred to earlier by at least as much as it fell short of them after 1929. But, as I argued in Laidler (2004) behind any specific version of these rules, there has always lain a much more general, albeit less precisely formulated, principle which has informed the theory of central banking since Thornton: namely, that the central bank, the entity whose liabilities are used to meet what Hyman Minsky (1982) usefully labeled "survival constraints" among the institutions making up the monetary and financial system, has a public obligation to do whatever is necessary to keep that system functioning.

This more general principle has always created room for other kinds of intervention than lending to sound borrowers and engaging in open

Hoover.) The story of how Hoover's faltering efforts to deploy such policy in the early years of the depression came to nothing is told by William Barber (1985).

¹⁸In this group, with which I would usually expect to find myself in agreement, I include in particular Allan Meltzer, the late Anna Schwartz, and John Taylor, though the latter does not have quite the same track record as a monetarist as the other two. Note that I would on this occasion exclude such commentators as Timothy Congdon (2011), Robert Hetzel (2012) and that group of bloggers known as the "marker monetarists", which includes Lars Christensen, Scott Sumner, Nicholas Rowe and Hetzel – See Christensen (2011) for a survey of their work. These have all consistently advocated measures designed to increase money growth in recent years, and have sounded many themes similar to those explored here in their work. Thomas Humphrey's (2010) (2012) papers on the Fed's behaviour as a lender of last resort, especially the first of them, seem to me to place his work in an intermediate position between these two branches of monetarist commentary, as I hope emerges clearly from the following discussion, which owes a debt to correspondence with Humphrey..

market operations, and its implementation has often involved co-operation with the relevant political authorities as well. The specific Bagehotian rules summarized earlier evolved from precepts that has been developed with the mid-19th century Bank of England in mind, whose prime goal was the maintenance of gold convertibility in a financial system where the distinction between liquidity and solvency was, to say the least, blurred by the absence of limited liability arrangements for the owners of and/or shareholders in banks. Whether these rules should have been expected to provide adequate guidance for the early 21st century Fed, operating in a very different institutional environment was surely an open question in 2007, and the fact that they were frequently violated in the years that followed ought not, in and of itself, be grounds for criticism.

To be more specific: Lehmann Brothers was not a commercial bank, and its liabilities did not form part of the money supply, but its failure caused interbank credit markets (in Europe as well as the US) to seize up and threatened to paralyze much of the world's commercial banking system too, just as the failure of LTCM – a hedge fund - would have done in 1998, or for that matter, though perhaps on a more local scale, the failure of Baring Brothers – a merchant bank – might have done as long ago as 1890; and critics of the rescue of AIG – an insurance company to be sure - need to explain, in the light of the international composition of its counterparty list and the magnitudes of its obligations, why its failure would not have led to a banking system collapse in Europe, like that of the early 1930s already mentioned above, which, as Barry Eichengreen (1992) tells us, was precipitated by a sudden withdrawal of US lenders from European markets, and which, on some interpretations marked a decisively destructive turning point in the Continent's political fortunes..

The contemporary relevance or otherwise of Bagehot's rules is in any case not a question to be settled definitively by reference to anecdotes about recent events. That monetary economics needs to evolve along with the institutions of the monetary economy is not a new idea. I have already noted that Bagehot's development of Thornton's ideas about the appropriate role of the central bank was heavily conditioned by institutional changes that had occurred in Britain between 1802 and 1873, and, as I noted in (2004), to this example may be added that of a similar evolution of ideas between 1873 and 1932 when Hawtrey's *Art of Central Banking* appeared. Any assessment of recent monetary policy in the US likewise needs to be explicitly informed by the fact that today's financial system is very different from and far more complex than the one for which Bagehot's principles, even in any of the

early 20th century versions that informed Hawtrey's analysis and with which the Fed's founders were familiar, were designed.

Some of the Fed's recent critics (e.g. , the late Anna Schwartz - see Brian Carney 2008, or on this particular matter, Humphrey 2010) have argued that such time-honoured principles would have proved adequate in recent circumstances; but Robert Hetzel (2012) seems less sure of this. Furthermore, the only systematic study of which I am aware of the place occupied by the Fed in today's financial system, and what this might imply about its responsibilities, Perry Mehrling's *New Lombard Street: How the Fed became the Dealer of Last Resort* (2011) argues explicitly - as its title implies - that institutional developments have rendered the traditional rules, though not the broad principle lying behind them, hopelessly outdated. Mehrling argues that the growth of the Fed's balance sheet since 2008 is an outcome of its having been conscious of this fact and acted accordingly as it sought to maintain the monetary and financial system in working order, and Hetzel (2012) reaches a similar conclusion by a more traditional monetarist route.

It should go without saying that it will take more than these two studies to settle so multi-faceted and complicated an issue, but those who dispute their conclusions surely need to argue the point with explicit reference to the nature of today's financial system and with the same attention to detail as their authors have displayed. In the interim, it might also be noted explicitly that the policy environment after the collapse of Lehmann Brothers left no-one with the time to await the outcome of such an academic debate. Fed and Treasury policies after 2008 were improvised because they had to be.

The charge that the Fed has surrendered independence by co-operating with the US Treasury during the recent crisis, to which both Meltzer and Schwartz have given particular attention, also needs to be discussed in historical and institutional context, because such co-operation in one form or another has often been seen in the past. In the British crisis of 1793, which first prompted Henry Thornton – not to mention Francis Baring - to write about the Bank of England's place in the monetary system, it was the Exchequer that acted as lender of last resort, not the Bank; and in 1797, when the Bank did better, its suspension of convertibility required legislative sanction; the well-known relaxations of the Bank Charter Act's provisions regarding the Bank of England's gold reserves in 1847, 1857 and 1866, which did so much to stabilize the financial system during the crises of those years, also needed political action; Chancellor of the Exchequer Viscount

Goschen was a prominent actor in the often confused but ultimately successful, resolution of the 1890 Baring Crisis; and so on.

Closer to the present time, certainly the Fed's policies in the early 1930s, when the Secretary of the Treasury was a member of the Board, were no model for that institution's future behaviour, but the reforms of 1935, though they broke this particular link, were largely aimed at clarifying lines of responsibility within the system and improving its capacity to make decisions, not at enabling it to deploy that capacity independently of the rest of government. Indeed, even after the famous Accord of 1951 when the Fed's primacy in matters of monetary policy was finally established, it has always styled itself, in the words of its then Chairman, William McChesney Martin, "independent *within* [not *of*] government", a description that surely signifies a willingness - even perhaps an obligation - to co-operate with other agencies.

Quantitative easing, money and credit

Since 2009, the monetary liabilities created as direct by-products of the Fed's "dealer of last resort" activities have been supplemented by quantitative easing on a massive scale. The explicitly stated purpose of these recent "open market operations a outrance" - as Keynes called such measures when he advocated them for the US in (1930) - was to drive down long-term interest rates, also the goal of the later "operation twist". As Humphrey (2010) and Hetzel (2011) have both correctly pointed out, the case for quantitative easing has thus been based not upon a view of the transmission mechanism of monetary policy which stresses the role of money growth and which played a central role in the Monetarist re-evaluation of the Great Depression, but rather on one that figures prominently in Chairman Bernanke's own academic work (e.g. (1983) and Bernanke and Gertler 1995) and emphasizes credit market effects in general, and the long rate of interest in particular, an emphasis also very reminiscent of Keynes' (1930) first reactions to the Great Depression.

As the Depression took its course, Keynes himself would begin to doubt the effectiveness of such measures, because he had come to believe that a positive floor to the value of the long interest rate was inherent in the functioning of financial market mechanisms and created a fundamental barrier both to the economy's capacity for self-stabilization and to monetary policy's ability to overcome it. It is quite understandable therefore, that anyone wishing to defend claims about the market economy's inherent stability as the current crisis has evolved would also wish to maintain a decent intellectual distance from Fed thinking about the role of interest rates

in general, and the long rate in particular. And any worries in this regard can only have been enhanced by Paul Krugman's frequent and surely influential invocation of related ideas - though his notion of a liquidity trap has short term interest rates at a zero minimum, not long rates at a low minimum - as he has made his case for relying on fiscal as opposed to monetary stimulus as the cure for today's stagnation.¹⁹

The intellectual, not to say political, stakes here are very high, because Krugman has deployed such ideas not just to attack current Fed policy, but also to attack the Monetarist re-interpretation of the Great Depression, which he rightly sees as a major obstacle to the reinstatement of his preferred answer to the fundamental question underlying this essay, namely that the market economy is indeed inherently unstable and therefore in need of continuous government management. Krugman has returned time and again to these themes. As long ago as 2008, even before the dust created by the Lehmann Brothers failure had settled, he was already asking, "Has anyone noticed that the current crisis sheds light on one of the great controversies of economic history?", and, after summarizing Friedman and Schwartz's (1963) conclusions about the Fed's policy failures in the Great Depression, he continued

"Here we are, facing a new crisis reminiscent of the 1930s. and this time the Fed has been spectacularly aggressive about expanding the monetary base: and guess what – it doesn't seem to be working. I think the thesis of the *Monetary History* has just taken a hit." (Nov. 28, 2008),

More recently, he has argued as follows.

Now, what monetary policy ordinarily involves is open market operations: the central bank increases the supply of money by purchasing and removing from the market non-money assets. And this has traction because money is different from those other assets. In a liquidity trap, however, money isn't different: at the margin an open market operation just exchanges one store of value for another, with no economic effect" (Sept. 13 2011)

It will be interesting to see what Krugman will make of the noticeable upturn in money growth (on most conventional measures) that was already in

¹⁹ On the historical and analytic importance of these differences, to which Krugman appears to be oblivious, See Roger Sandilands (2010). It should be made clear that Krugman does not so much oppose quantitative easing as expect little from it. To the extent that it is effective in holding down long interest rates, and hence ensuring that monetary policy does not blunt the effectiveness of fiscal policy, he approves of it. See Krugman (2012). A particularly forceful critic of fiscal stimulus from the outset has been Robert J. Barro, who has nevertheless sometimes taken a tolerant view of the Fed's efforts to stabilize the financial system. See Barro (2009)

progress in the US as he wrote this last passage, and of the still tentative recovery of economic activity that seems to be following it.

My own conjecture about the current state of play in the US is that we may now be seeing the beginnings of a vindication of Ralph Hawtrey's (1932) view of the purpose and likely effects of open market operations, which was both simpler and more optimistic than Keynes's

"there must a limit to the amount of money that sellers [of securities] will hold idle, and it follows that by this process [open market operations] the vicious circle of deflation can always be broken, however great the stagnation of business and the reluctance of borrowers might be." (1932, pp. 173-4)

Perhaps hope would be a better word to use here than conjecture, however. Hetzel (2012) for one does not share my optimism about monetary policy's recent course, and it is indeed far from clear that further expansion of the monetary base will not be needed to keep the current incipient expansion going; nor am I enthusiastic about the likely effects of yet another application of "operation twist" aimed explicitly at maintaining downward pressure on the long interest rate. Even so, if my hope is after all fulfilled, then the Fed, perhaps inadvertently because the promotion of money growth has been notable absent from its case for quantitative easing, might after all be now getting on track to keep that birthday promise to Friedman mentioned earlier.²⁰

Explaining the critics' discomfort

All this brings us face to face with a key puzzle posed by the reactions to the Fed's recent policies of some of its Monetarist critics, who since 2008 have not only questioned the Fed's views on how its policies are supposed to work, but the policies themselves, even though these have been remarkably similar to what some of them recommended with hindsight for the US in the early 1930s and for Japan in the 1990s too, when that economy's lost decade was actually in progress. Meltzer occupies a prominent place in this group, and he offered the following explanation for his position in (Nov. 4th, 2010):

"Would Milton Friedman have endorsed the Federal Reserve's plan to make large scale purchases of Treasury bonds? . . . I am certain he would not.

²⁰ Since this passage was written, we have of course seen the introduction of "QE3" by the Fed., which indicates that it shared Hetzel's more pessimistic view of the state of play. It should be clear from what has already been written that I am not in the least disturbed at having my own optimism corrected in this was. I am an enthusiastic supporter of these recent measures in as much as they involve inducing further increases in the monetary base, but remain uncomfortable with the specific emphasis laid on accompanying commitments to hold the long interest rate down.

Friedman's main message for central banks was to maintain a monetary rule that kept the growth of the money supply constant. In his Newsweek column "Inflation and Jobs" (Nov. 12, 1979) for example, Friedman emphasized that 'unemployment is. . . a side effect of the cure for inflation' so that if a central bank 'cured' unemployment by inflating, it 'will have unemployment later'. In other words don't try it

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Friedman made an exception to his rule about steady state monetary policy in case of deflation. When prices fell, as they had in the Great Depression or in Japan in the 1990s, he urged the central bank to increase money growth. I served as one of two honorary advisors to the Bank of Japan in the 1990s. With short term rates close to zero, I gave the same advice, urging the bank several times to buy long-term bonds or foreign exchange to increase money growth until deflation ended.

All this is not relevant now, since there is no sign of deflation in the United States. The Fed's claim that there is a risk of deflation should embarrass it".

Let us leave arguments about whether or not these really would have been Friedman's views in 2010 for some other occasion. What matters here is the substance of the argument, which is that monetary policy should adhere to long-run rules except in conditions of outright deflation. Though Meltzer's chosen rule – stable money growth – differs from John Taylor's, which involves manipulating short term interest rates in order to maintain low and stable inflation, the emphasis laid by both Meltzer and Taylor (e.g. 2011) on the critical importance of maintaining rule guided monetary policy geared to long term goals even under current circumstances is the same, and so are their conclusion about what this implies about the wisdom (or rather recklessness) of quantitative easing at a time when low nominal interest rates are not being turned into high real rates by deflation and the Fisher effect.

This view of today's policies deserves to be taken seriously, because it is not quite so far removed from that espoused by some prominent advocates of monetary expansion during the early years of the Great Depression as it might seem to be at first sight. Irving Fisher, for example, was a tireless advocate of such policies by almost any means in the early 1930s, but he saw the aim of monetary expansion as the restoration of the price level to its pre-depression level, at which, once achieved, it should thereafter be stabilized. And by (1936) Henry Simons, one of the leaders of the Chicago group who had also advocated vigorous monetary expansion earlier in the

decade, was once again famously taking up Fisher's old arguments for a price stability rule for monetary policy which he saw as a vital adjunct to the *Positive Program for Laissez-Faire* that he had laid out in (1934). This time around, as Meltzer explicitly notes, there has been no deflation to speak of – if indeed any at all - and hence no case to be made along such lines as these for monetary expansion either, leaving only the rule guided stabilization element in the Fisher-Simons agenda as relevant to current conditions.

This same line of argument should also have led its exponents to warn that the Fed's recent policies have risked generating price inflation, and of course it did. A major concern expressed by Thomas Humphrey about the consequences of the Fed's violating Bagehotian rules in (2010) was that such policy was "a probable prelude to inflation and future crises dwarfing the current one" – though he did not repeat this message in (2012) - while the very title of a (2009) *New York Times* column by Allan Meltzer - "Inflation Nation" - speaks for itself. Though these predictions and others like them were carefully hedged by suggestions that such effects were not going to be immediate, it is hard to avoid concluding that the behaviour of the US price level - not to mention that of all reasonable measures of the money supply - over the last four years has shown them to be at least exaggerated, and perhaps outright misplaced. A more plausible view of the effects of the explosion of the Fed's monetary liabilities since 2008 might be that it prevented a collapse of the money supply such as took place between 1929 and 1933 along with all the destructive real consequences that would have followed on from it, but was not on a large enough scale to promote recovery.

Perhaps also, however, the way in which these recent awkward facts seem to contradict the dire predictions of some of the Fed's critics reflects further problems with the analysis which yielded them. Anyone who follows the theoretical lead of such contemporary commentators on the Great Depression as Hawtrey (1932) or Currie (1934), rather than, say Fisher, and regards a falling price level as a by-product of real contraction, rather than as its principal cause, would also argue, along with Humphrey (2012) be it noted, that, once the central bank's immediate obligations to stabilize the financial system in the wake of a crisis have been met, monetary policy's task is not over, but that it must then be deployed to stimulating the real economy, a goal that could have been pursued at little risk of igniting inflation in the circumstances that prevailed after 1929, and, as I have just remarked, could have been safely pursued more vigorously than it has been after 2008 as well.

Concluding Comment

This brings the argument back to our earlier discussions of the Fisher effect. Meltzer's and Taylor's concerns about maintaining rule guided monetary policy in today's economy make perfect sense in the context of the theory of monetary policy in which this effect plays a central role, and is based on the axiom that the market economy is indeed inherently stable, absent major policy mistakes that create serious disturbances to the behaviour of the price level.²¹ This is hardly the place to begin a systematic critique of this way of thinking, which I have, in any case, mounted in earlier work (2010, 2011). Suffice it to say, then, that those of us who are out of sympathy with it, and therefore out of sympathy with much of the response to monetary policy during the Great Recession discussed above, perhaps also need to rethink our acceptance of the Monetarist re-evaluation of the lessons of the Great Depression for macroeconomics more generally.

More specifically, and to take up explicitly the question that motivated this paper, though we may not need to question what this re-evaluation had to say about the failure of policy *after* 1929, because the very different policies pursued since 2008 and the very different course subsequently taken by the economy on the whole seem to imply that here it was largely correct – *pace* Krugman (2008) - we surely ought to pay much more attention to what went wrong *in the run up to* both crises, and to what these failures subsequently entailed for the capacity of the market economy to right itself and continue functioning in their wake without a great deal of help from the central bank. In each case, the violence of the collapse, and the extent of the measures needed to cope with it, were of a magnitude much bigger than it seems plausible to attribute - *pace* Taylor (2011) – to the effects of applying a rather modest if belated degree of monetary contraction to an otherwise well functioning system. It seems more likely that in the cases of both the Great Depression and the Great Recession, much of the damage to the real economy that revealed itself in the wake of the crises themselves, and proved so difficult to repair, had been inflicted before they struck, under circumstances where monetarist indicators were giving no warning signals of major trouble.

systematically increase the monetary base

²¹ It was precisely this intellectual framework in which, as argued earlier, the Fisher effect also finds its natural habitat, that, at the beginning of the Great Recession in 2008 prompted 628 economists to oppose the *TARP* legislation because, among other things, they believed that the then widely evident disruption of the financial system was a "temporary" phenomenon that did not call for intervention on the scale that this legislation proposed, and it has informed much professional opposition to activist policies ever since.

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