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**What has Happened to Monetarism?
An Investigation into the Keynesian Roots of Milton Friedman's Monetary Thought and Its Apparent
Monetarist Legacies**

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INTRODUCTION

A widespread perception is that today's conventional monetary wisdom, and common practice of monetary policy based thereupon, is essentially "monetarist" by nature, if not by name. In this vein, De Long (2000, 92) proclaims that although the monetarist label may be unpopular, "the extent to which [important monetarist insights] are simply part of the air that modern macroeconomists today believe is a good index of their intellectual hegemony." One objective of this essay is to assess whether monetarism has really had such a lasting impact on the theory and practice of monetary policy. The focus will be on Milton Friedman, the founder of monetarism and figurehead of the monetarist counter-revolution.

Another objective is to scrutinize the key dividing lines between Friedman's monetary thought and that of John Maynard Keynes. This comparison is of great interest as Friedman's monetary thought is held to have important roots in Cambridge quantity theoretic traditions, including Keynes's monetary works. With apparently much theoretical common ground between them, it is even more intriguing that Keynes and Friedman became the founding fathers of opposing schools of thought that recommended drastically different policies, with Keynesian "fine tuning" ambitions--allegedly--having long outlived their time.

As regards theory, our main finding is that the theory of interest is the key issue: Friedman remained attached to ("classical") loanable funds theories of interest considered flawed by Keynes. The interest rate issue is also at the root of differences in approach to money demand and liquidity preference. Similarities are more pronounced with respect to the supply of money and monetary policy control issues, except that Friedman, in a way, turned Keynes upside down. Whereas Keynes favored a stabilized wage unit combined with a flexible central bank that steers interest rates and aggregate demand. Friedman favored a stabilized central bank combined with free interest rate and employment determination in financial and labor markets respectively.

Additional differences arise at the practical and empirical levels, concerning the dynamics of adjustment processes and expectation formation on the one hand, and the relative efficiency and riskiness of market-driven versus government-guided adjustments on the other. Friedman put his faith firmly on market adjustments and designed a policy regime in which the central bank owns zero discretion and merely anchors competitive market processes. Contrary to appearance and today's dominant market enthusiastic ideology, Friedman's idea of delegation *not* to independent central bankers, but to the markets enjoys remarkable *little* popularity.

The analysis proceeds as follows. Section 2 investigates the vision and theoretical core of Friedman's monetarism, while section 3 analyses his policy proposals. Section 4 then scrutinizes the supposed working of the interest rate mechanism. Friedman's relative stability hypothesis is the subject of section 5, while section 6 questions whether his monetary thought has really left a distinct mark on today's conventional monetary wisdom. Section 7 concludes.

THE VISION AND THEORETICAL CORE OF MONETARISM: MONEY MATTERS

Money matters became seen as the main message of Milton Friedman's monetarism. And as that his monetarism represented a frontal attack on the income-expenditure approach of John Maynard Keynes and American Keynesianism à la Alvin Hansen who--apparently--attributed only a minor role to monetary policy, while having more faith in the powers of fiscal policy.

The counter-revolutionary Milton Friedman was keen to emphasize that he sought to resurrect an older tradition, the quantity theory of money, as a tool for theoretical and empirical research that viewed money as the root source of major economic calamities, chief driving factor behind cyclical instabilities, and the determinant of the secular trend in prices. The quantity theory tradition had fallen into disrepute, Friedman observed, in the context of the Great Depression and explanations of that traumatic event which characterized monetary policy as a passive factor in bringing it about and an impotent cure once it had arisen.

To an important extent, the formation of Friedman's own "money matters" view of the world was inspired by the empirical studies undertaken since 1948 for the National Bureau for Economic Research on monetary factors in business cycles in collaboration with Anna J. Schwartz, particularly their re-examination of the evidence for the "Great Contraction" which they attributed to serious mistakes by the Federal Reserve (Friedman and Schwartz 1963b).⁽¹⁾

Another related empirical motivation for Friedman's attack on Keynesianism stemmed from research on consumption. Friedman's published Ph. D. dissertation "Income From Independent Professional Practice" was co-authored by Simon Kuznets whose research yielded evidence that seemed to contradict Keynes's consumption theory (Kuznets 1954). And Friedman's (1957) "permanent income hypothesis" describes consumption as a function of wealth rather than current income. Friedman saw important common roots and connections between the theories of consumption and money demand.

Bearing these empirical origins of Friedman's monetarism in mind, we will now focus on matters of theory. Friedman's (1956) "Restatement of the quantity theory of money" provided the first statement of the theoretical core of monetarism and first key avalanche in the monetarist counter-revolution. The quantity theory is presented there as a "general approach" and "way of looking at things" that inspired Friedman's money matters vision:

the quantity theory of money is a term evocative of a general approach rather than a label for a well-defined theory. ... [Particularly] the Chicago tradition was not a rigid system, an unchangeable orthodoxy, but a way of looking at things. It was a theoretical approach that insisted that money does matter--that any interpretation of short-term movements in economic activity is likely to be seriously at fault if it neglects monetary changes and repercussions and if it leaves unexplained why people are willing to hold the particular nominal quantity of money in existence (Friedman 1956, 3).

Friedman's reference to a "Chicago [School oral] tradition" that had even survived through the dark decades of the quantity theory's general demise over the 1930s and 40s gave rise to a lengthy controversy on the existence of such a tradition and Friedman's claimed pedigree to it.⁽²⁾ One result of this controversy was that Friedman's "restatement" (or, monetarism) has rather strong roots in the Cambridge cash balance tradition as developed by Marshall ([1923] 1960), Pigou (1917-8), and Keynes (1923), but also borrowed important insights from Keynes's (1930, 1936) liquidity preference theory. Friedman himself made the "Cambridge connection" more and more explicit in his later writings, claiming that Keynes himself had remained to some extent a quantity theorist even in *The General Theory*.

Recall Keynes's (1936) main message in *The General Theory*: his denial of the *stability postulate* concerning the natural working of market economies. According to Keynes, the "classics" held that market economies would be constituted with an inherent tendency toward some unique long-run equilibrium at full employment, believing that certain automatic market mechanisms would coordinate decentralized decision making in a miraculously efficient way--like an "invisible hand." Importantly, Keynes did not deny the efficacy and efficiency of market institutions and relative prices as looking after the allocation problem. What he denied was that the invisible hand would also automatically channel "market forces" in a way that ensured macroeconomic stability *at full employment*. Keynes concluded in *The General Theory* that the very market mechanisms believed to ensure the inherent tendency toward full employment, namely, the wage and interest rate mechanisms could not be relied upon to do the trick.

As regards the wage/price mechanism, Keynes identified a "fallacy of composition": correct microeconomic reasoning on *relative* wage and price adjustments leads to erroneous inferences when applied at the macroeconomic plane. General wage reductions make a country more competitive vis-à-vis the rest of the world, similarly to exchange devaluation. But internally this merely results in a tendency of generally falling costs and prices, involving arbitrary relative price changes and re-distributive effects. By causing uncertainties of this kind, *aggregate* wage and price flexibility is likely to not reduce but add instability to the system as a whole.

As regards interest rate determination, the supposed interest rate mechanism was even found non-existent. Keynes argued that the "saving-finance-investment" vision of capital accumulation was out of touch with the reality of monetary production economies. Capitalist accumulation was dependent not on prior saving, but on the liquidity of, and provided by, the financial system. Loanable funds extensions of the corn economy vision merely added credit creation and hoarding to it, but suggested that market forces would tend toward the equilibrium as determined by productivity and thrift. Keynes proposed his liquidity

preference theory of interest to fill the vacuum left by the flawed savings theory of interest (Bibow 2000b, 2001).

Keynes recommended the design and deliberate management of fiscal and monetary policies as the "central controls" of the system that would actually produce the tendency toward aggregate stability at full employment which the "classics" merely postulated, together with institutions that would ensure a stable "wage unit" as the fulcrum of general price stability and structure of relative prices.⁽³⁾ As Keynes's vision included the possibility that money could *lastingly* constrain real activity, he was truly a "money matters" man par excellence.

How did Friedman arrive at counterrevolutionary policy prescriptions starting from a theoretical position that is, apparently, not too different from Keynes's? Textbook presentations that he (simply) re-asserted the classical dichotomy and neutrality postulate do *not* get us very far. To Friedman money matters not because it might be neutral in some abstract long run, but because it has strong real effects in the short run--even though one might not be able to deliberately use this powerful tool to manage the economy and should thus design policies for the long run. An essential part in the story is empirical: Friedman's own empirical work and reading of monetary history, namely as a history of money supply driving nominal GDP. But there are also vital theoretical issues that need clarification, particularly the real balance effect which is widely held to have proved Keynes theoretically wrong. The remainder of this section will review Friedman's three most significant attempts to communicate his monetarist vision in quantity-theoretic (1956), Wicksellian (1968), and neo-Walrasian (1974) terms to his critical audience.

Milton Friedman's (1956) "Restatement" of the Quantity Theory of Money

According to Friedman (1956, 16), a quantity theorist is to be seen as someone who:

- (i) "accepts the empirical hypothesis that the demand for money is highly stable--more stable than functions such as the consumption function that are offered as alternative key relationships,"
- (ii) "regards [the demand function for money] as playing a vital role in determining variables that he regards as of great importance for the analysis of the economy as a whole, such as the level of money income or of prices" (16),
- (iii) "holds that there are important factors affecting the supply of money that do not affect the demand for money" (16),
- (iv) denies the relevance of the Keynesian underemployment cum liquidity trap scenario where the demand for money becomes infinitely interest elastic at some low rate of interest and changes in the real supply of money ineffective in moving the system toward full employment.

Starting with the first qualifying characteristic, the *stability postulate* concerning the demand for money function raises a number of issues. On the one hand, Friedman's emphasis on the demand for money and his claim that "the quantity theory is in the first instance a theory of the demand for money" (4) undeniably reflects his association with the Cambridge cash balance (quantity-theoretic) tradition. On the other hand, however, it is noteworthy that this very tradition regarded the demand for money as rather unstable.

The Cambridge tradition emphasized uncertainty and confidence as causing instability in the demand for money, and--potentially--in economic activity too (cf. Bridel 1987). Increased uncertainty about future prospects and diminished confidence in expectations would tend to raise the demand for money--and *vice versa*. Keynes's monetary writings from the *Tract* to *The General Theory* feature this systematic relationship. Already in the *Tract*, Keynes recommended a stabilization policy that required the central bank to aim at accommodating fluctuations in the demand for money by corresponding variations in the supply of money (cf. Keynes 1923, 69).

Following the Cambridge tradition in *The General Theory* too, Keynes made some important refinements to it. His liquidity preference theory features the familiar relationship between confidence and liquidity preference in general. But the focus is on the role of uncertainty about future interest rates in particular. Money is not seen as being on a par with goods and assets in general. Money is "*par excellence* 'liquid'," Keynes (1936, 234) argued, and reserved chapter 17 for investigating the peculiarities of money and the money-rate of interest at the core of the asset price structure (Minsky 1975).

Keynes's analysis of portfolio decisions and interest rate determination specifically focuses on financial assets, emphasizing that "the banking system and the monetary authority are dealers in money and debts and not in assets and consumables" (Keynes 1936, 205). The supposed linkage between (variations in) money and (variations in) expenditures on goods in general, often related to some concept of hoarding, is found to be more indirect in nature. On the one hand, changes in liquidity preference affect, in the first instance, financial asset prices (i.e. interest rates), with possible repercussions on borrowing and spending decisions and hence prices in general. On the other hand, changes in propensities to spend have no direct and immediate effects on interest rates (the loanable funds theme).

However, the Cambridge quantity-theoretic tradition was not unique in viewing the demand for money as unstable and a

potential source of instability in the economy. Chicago economists like Frank Knight, Henry Simons and Jacob Viner too held that velocity was unstable and, similarly, recommended that monetary policy should be geared at compensating such instability (Patinkin 1969). Friedman's *stability postulate* concerning the demand function for money is rather distinctive. Strongly rejecting the idea that velocity might be some "natural constant," an overstatement of the quantity theory which had contributed to its downfall, Friedman (1956, 21) refers to the "extraordinary empirical stability and regularity" of income velocity--when properly specified as a *stable function* of certain variables.

Friedman followed Keynes's more specific analysis of the variables affecting money demand along Cambridge traditional lines. But his analysis employs a broader concept of wealth and asset choice, including durable goods and even human capital. The peculiarities of money and motives to liquidity preference are of no concern to him, as the theory of demand and general principle of the diminishing marginal rate of substitution between goods in consumption is seen as applicable to money too. Friedman de-emphasizes the role of interest rates and interest rate uncertainty as variables affecting the demand for money, while singling out inflation expectations as a key influence on [variations in] velocity (see Laidler 1969).⁽⁴⁾

The "vital role" of the demand function for money in macroeconomic analysis arises from Friedman's (1956) assertion that his microeconomic analysis of the demand for money should be interpreted--by way of apparently straight-forward aggregation--as yielding an essentially equivalent macroeconomic demand function for money. He frankly admits, however, that some crucial assumptions are required to regard the supposedly stable macroeconomic money demand function as playing the supposed vital role in determining the level of money income or of prices.

Crucially, Friedman assumes that interest rates are determined independently "by productivity, thrift, and the like" (15), which contrasts with Keynes's conclusion that interest rates are determined within the financial system (on whatever basis, but lacking any direct and immediate anchoring from the real forces of productivity and thrift meant to be out there in the real economy). With interest rates determined along liquidity preference lines as one key determinant of economic activity, real income (and employment) too are not given by other factors independent of money, contrasting with another of Friedman's critical assumptions. Nevertheless, to conclude here that Friedman simply re-asserted the traditional postulate of money neutrality would be rash. As Friedman fully confirms Keynes's conclusion that it is fundamentally wrong to make the common proportionality inference about money and prices under conditions other than full employment (i.e. Keynes's special case of "true inflation"):

Even under the most favorable conditions, for example, that the demand for money is quite inelastic with respect to the variables in v , [my version of the quantity equation] gives at most a theory of money income: it then says that changes in money income mirror changes in the nominal quantity of money. But it tells nothing about how much of any change in Y is reflected in real output and how much in prices. To infer this requires bringing in outside information, as, for example, that real output is at its feasible maximum, in which case any increase in money would produce the same or a larger percentage increase in prices ... (Friedman 1956, 15).

On the third qualifying characteristic, we only note here at this stage that Friedman did not deny the possibility of common influences on the demand and supply of money which *would* make the latter "endogenous" along real bills lines. Rather, his point seems to be that policy operating procedures *could* and *should* be so designed as to securely bring the supply of money under the monetary authorities' proper control, that is, to shut off any influences of the demand for money on the size of the nominal money stock. Friedman's specific policy proposals are thus of great interest and will be discussed below.

On the fourth qualifying characteristic, Friedman (1956) distinguishes two versions of the Keynesian attack on the quantity theory. The first is the famous liquidity trap, a situation when "changes in the real supply of money, whether produced by changes in prices or in the nominal stock of money, have no effect on anything" (17). It is in this version that the "real balance effect" comes to the fore. However, Friedman refers to the second as the "more complex version" in which the "only role of the stock of money and the demand for money is to determine the interest rate" (17). As this more properly describes Keynes's (1936) liquidity preference theory of interest, it will be crucial to scrutinize how this issue relates to Friedman's reinstatement of productivity and thrift as the determinants of interest. The Wicksellian expression of his monetarism, to which we now turn, offers some valuable insights.

As Monetarism Takes off: Friedman on "The Role of Monetary Policy"

When Friedman gave his very influential AEA Presidential Address in 1967, both inflation and monetarism had already risen well above their low-points. His empirical re-assessment of "the Great Contraction [as] tragic testimony to the power of monetary policy" (Friedman 1968, 3) had left its mark; an increasing disillusionment with the practical and political feasibility of 'fine tuning' the economy by fiscal policy had set in; and victory could be attested in matters of pure theory. The real balance effect "did undermine Keynes' key theoretical proposition, namely, that even in a world of flexible prices, a position of equilibrium at full employment might not exist. Henceforth, unemployment had again to be explained by rigidities or imperfections, not as the natural outcome of a fully operative market process" (3).

It is noteworthy, however, that Friedman does *not* invoke the real balance effect in his less abstract and more practically

oriented discussion of the role of monetary policy. And there is a profound reason for this. Patinkin's (1948, 1957) influential interpretation of the real balance effect follows Keynes's (1930, 1936) hypothesis that wage deflation would tend to cause general price deflation. Because of general deflation, the real balance effect is believed to rescue the situation even when the system gets stuck in a liquidity trap scenario; that is, when wage and price deflation fail to bring about relief through falling interest rates. To someone who set out to re-establish the quantity theory presumption that prices are anchored by the money stock, this is clearly not the way to go. In fact, if monetary policy is so directed as to secure price stability, as Friedman (and before him Wicksell, Fisher, Simons, Keynes etc.) recommended it should, the real balance effect cannot play any role whatever. It is clear, then, that Friedman had to rely on adjustments in market rates of interest and wages to secure the system's long-run equilibrium at full employment. *Not* the real balance effect but the proper working of *these* market mechanisms would have to falsify Keynes's conclusions *in practice*.⁽⁵⁾

This is clearly revealed by Friedman's use of the Wicksellian conception of "natural" prices, which he applies both in his financial and labor market analyses, and the use of which is explained as an attempt to "separate the real forces from monetary forces" (9). His translation of the effects of changes in the quantity of money on interest rates into (Fisher-augmented) Wicksellian terms describes monetary policy as capable of provoking a *temporary* gap between the market (or nominal) rate and natural rates of interest, by inflation or deflation. Similarly, with respect to labor markets, Friedman asserts that:

at any moment of time, there is some level of unemployment which has the property that it is consistent with equilibrium in the structure of *real* wage rates. At that level of unemployment, real wage rates are tending on the average to rise at a 'normal' secular rate, i.e., at a rate that can be indefinitely maintained so long as capital formation, technological improvements, etc., remain on their long-run trends (8).⁽⁶⁾

Recall Keynes's (1936, 13) concerns that "there may exist no expedient by which labour as a whole can reduce its *real* wage to a given figure by making revised money bargains with the entrepreneurs," fearing that generally falling money wages (due to pressures of unemployment) might, by provoking even faster falling prices, might fail to reduce real wages, but enhance instability instead. Friedman simply states that higher than 'natural' unemployment would produce downward pressure on *real* wages. He seems to rule out falling prices and the risk of instability, so that labor--under such conditions--would have the power to reduce its real wage.

Hence the key implicit assumption is that prices are *somehow* prevented from falling. Of course, this might be the case if monetary policy became more expansionary as unemployment rises and wage growth slows below the "natural" secular rate. Keynes's analysis does *not* deny this possibility *if* the monetary authorities were willing and capable of deliberately bringing about the required interest rate adjustments in time. The problem is: this route of adjustment would hardly qualify as an automatic market mechanism, *if interest rates were set by monetary policy*.

In fact, a key issue here is that the authorities might not understand what they are doing in the first place, as Keynes (1936, 204) feared that the rate of interest:

may fluctuate for decades about a level which is chronically too high for full employment;--particularly if it is the prevailing opinion that the rate of interest is self-adjusting, so that the level established by convention is thought to be rooted in objective grounds much stronger than convention, the failure of employment to attain an optimum level being in no way associated, in the minds either of the public or of authority, with the prevalence of an inappropriate range of rate of interest.

Note that Keynes does not refer here to any liquidity trap though, but to beliefs in a flawed theory of interest as providing mis-guidance to policy. Liquidity traps represent the additional issue whether the authorities would actually succeed with the right policies. Particularly, whether the monetary authorities can not only convince themselves of doing the right thing, but also the markets so as to effectively guide market expectations in line with policy intentions in a sufficiently forward-looking and speedy way. The possibility that interest rates might fall to some absolute floor level before policy manages to produce the required expansionary stimuli through general interest rate easing emerges here as a policy failure.

Partly due to his reading of monetary history as a history of monetary policy mistakes and disasters, presumably, and partly due to his view of an insufficiency of knowledge, Friedman recommends in his Presidential Address that the authorities should *not* even try to fine tune the economy. In particular, they should not try to manipulate interest rates at all. Instead, the policy focus should be on the growth rate of some monetary aggregate. As this policy prescription would thus appear to play a vital role in Friedman's revival of the idea that market forces (downward pressures on real wages arising from unemployment) would provide that inherent tendency toward full employment underlying the classical stability postulate, it will be scrutinized further below. Before that we first need to turn to Friedman's "theoretical framework."

Monetarism Running High: "A Theoretical Framework for Monetary Analysis"

In a series of articles, conferences, comments and responses between 1970 and 1972, Friedman presented his monetary thought in Hicksian IS-LM terms: "to document [his] belief that the basic differences among economists are empirical, not theoretical" (Friedman 1974, 61); attempting to convey his monetarist vision in neo-Walrasian terms.

Friedman's elaboration on his earlier claims of a Chicago oral tradition clarify his reading of Keynes's liquidity preference theory of *The General Theory* as part of the quantity theory tradition and how, in his view, that was related to his restatement of the quantity theory as--primarily--a theory of the demand for money. In Friedman's (1974, 168-9) view,

Keynes's discussion of the demand curve for money in the *General Theory* is for the most part a continuation of earlier quantity theory approaches, improved and refined but not basically modified. ... There is one respect--and I believe only one--in which the discussion of the demand for money in the *General Theory* is distinctively Keynesian and that is the importance attached to 'absolute liquidity preference' or a high-interest elasticity of the demand for money. ... One consequence of my rereading large parts of the *General Theory* ... has been to reinforce my view that absolute liquidity preference plays a key role. Time and again when Keynes must face up to precisely what it is that prevents a full-employment equilibrium, his final line of defense is absolute liquidity preference.

This highlights that Friedman attributed a key role to "absolute liquidity preference" as the foundation of Keynes's denial of the classical stability postulate. On this occasion, however, he distinguished between purely theoretical as opposed to empirical issues and between the reasons for absolute liquidity preference in the long run and the short run respectively.

On the theoretical long-run issue, the existence and stability of a full employment equilibrium in a system of perfectly flexible prices, Friedman again reiterates that the real balance effect had proven Keynes wrong. Expressed in (Wicksellian) terms of a possible conflict between the "market" and the "equilibrium" rate of interest, Friedman even concedes here that liquidity preference might set a floor to the market rate. But observes that "the fallacy in this argument is that the introduction of money not only introduces a floor to the 'market rate'; it also sets a floor to the 'equilibrium rate.' And, in the long run, the two floors are identical. This is the essence of the so-called Pigou effect" (Friedman 1974, 25).

In my view, Friedman's emphasis on the real balance effect is foremost a brilliant polemic, addressed to the neo-Walrasian theorists who glorify "abstractness, generality, and mathematical elegance ... as ends in themselves, criteria by which to judge economic theory" (164; see also Friedman 1955). If an argument helps to convince the ever-more dominant neo-Walrasians that Keynes got things wrong as a theorist, this was bound to very effectively undermine the Keynesian revolution no matter what. By contrast, within Friedman's own system downward pressures on wages due to unemployment are presumed to be effective in raising employment other than through deflation and the real balance effect. Friedman's presumption is that the market rate of interest adjusts to the equilibrium rate before reaching the trap of absolute liquidity preference--at all times and, presumably, by some *market* mechanism.⁽⁷⁾

While I am not aware that Friedman specifically contributed to the liquidity preference versus loanable funds debate, it is quite clear from his monetary writings generally that he sides with the latter camp. In his "Restatement," Friedman referred to productivity and thrift as the determinants of interest. In his "Theoretical Framework," Friedman (1974, 53-4) elaborates on the determination of interest rates in long-run equilibrium and on the adjustment process:

Given that interest rates enter into the demand function for money .. and also, presumably, into the supply function, a complete model must specify the factors determining them. Our long-run model determines their permanent values. So what is needed is an analysis of the adjustment process for interest rates comparable with that for prices and nominal income discussed above--provided, as seems reasonable, that measured as well as permanent values of interest rates enter into the money demand and supply functions. The monetary theory of nominal income incorporates one possible adjustment process--via the anticipated rate of price change. We have not worked out the formal theory of a more sophisticated adjustment process in any detail. The one aspect we have considered is the effect of changes in M^s on interest rates. In that analysis, we have in effect regarded *interest rates as adjusting very rapidly to clear the market for loanable funds, the supply of loanable funds as being possibly linked to changes in M^s , and the demand for and supply of loanable funds expressed as a function of the nominal interest rate as depending on Y and $[(1/P) (dP / dt)]^*$ along with other variables.* [my italics]

This vision of rapidly adjusting interest rates contrasts with Friedman's interpretation of absolute liquidity preference in the short run. Following Leijonhufvud's (1968) reading of the role of short-run price rigidities in Keynes's analysis, reversing Marshall's ordering, he suggests that Keynes treated the rate of interest in the same manner as goods prices: "the main variable [k] depends on is the interest rate. This too is a price. Hence, it was natural for Keynes to regard it as slow to adjust, and to take, as the variable which responds, the real quantity of money people desire to hold" (Friedman 1974, 20). As a result, absolute liquidity preference appears as the normal short run state of affairs, changes in the supply of money are simply mirrored by changes in k , with no affect on either output or prices *and at an unchanged rate of interest too*. Friedman then refers to "Keynes's special twist": the assumption that the liquidity preference schedule would be highly interest-elastic at the point where the current market rate is equal to the expected rate, $r = r^*$. If expectations were not only firmly held but highly homogenous too, he infers, "the monetary authorities would find it impossible to change the interest rate because speculators holding these firm expectations would frustrate them" (24).

However, in my view, this is *not* Keynes's position on the matter at all. In fact, a situation of $r = r^*$ is exactly the case where the speculative motive for money demand is ineffective. It only becomes effective once the authorities drive the market rate

below r^* , i.e. the *current convention* of the "fairly safe rate." In Keynes's view, open market operations *are* generally effective in reducing the rate of interest. Interest rates *do* fall. The point is that market participants may increasingly desire to reduce their bond market exposures the further the market rate deviates from the safe rate. A liquidity trap arises when the deviation between the two encourages desired reductions in bond market exposures which completely compensate the authorities' measures. Not the possible equality between the two rates is the problem, as Friedman suggests, but the possible limit to their deviation. To avoid this problem, Keynes argued, the authorities need to successfully steer interest rate expectations in line with falling interest rates. This required skillful policy communication directed at interest rate expectations, in addition to deliberate open market policies designed to manipulate interest rates directly.

To conclude, Friedman's restatement of the quantity theory may well have strong roots in the Cambridge tradition, and his analysis of money demand may have been inspired by Keynes's liquidity preference theory too. But the theory of liquidity preference of *The General Theory* is in the first instance a theory of interest, proposed by Keynes as a substitute for what he saw as the flawed "classical" savings theory of interest. Keynes firmly denied that changes in productivity and thrift would have any *direct and immediate* effect on interest rates. And his analysis denied the very existence of the so-called "loanable funds mechanism" (Leijonhufvud 1981). His concern was that interest rates might not be sufficiently adjustable *by deliberate policy*. By contrast, Friedman's vision includes a market mechanism - apparently along loanable funds lines - to do the trick. So there clearly is a crucial dividing issue involved which, at the level of pure theory, allows no scope for reconciliation.

Does this finding settle the whole case of Keynes versus Friedman, or Keynesianism versus monetarism, and in whose favour? I concluded elsewhere that loanable funds theory is, indeed, fatally flawed while Keynes's liquidity [preference] theory of interest is logically correct. Moreover, it provides a valuable theoretical framework that depicts interest rates - *somehow* determined *within* the financial system - as setting the pace of economic activity; rather than vice versa. Truly, in this sense, Keynes was a monetarist *par excellence*. Nonetheless, I propose to take a closer look at the policy dimension of Friedman's monetarism - as this will, among other things, further illuminate the interest rate issue.

FRIEDMAN'S MONETARISM IN PRACTICE: POLICY PROPOSALS FOR ECONOMIC STABILITY

Friedman's scepticism about "active" or "discretionary" stabilization policies, his pronounced pessimism on the prospects of success of "fine tuning" the economy through deliberate State intervention, has many roots. The perceived lack of *necessity* of stabilization policies on theoretical grounds is only one dimension of his monetarism (Modigliani 1977). Keynes and Friedman entertained distinctly different "political visions" (Dostaler 1998). The latter's scepticism as to the *feasibility* of state intervention also roots in his social philosophy and public choice theoretical views of elected officials and civil servants in general and central bankers in particular. Friedman's ([1989] 1997, 21) biographical essay on Keynes, his discussion of Keynes's response to Hayek's *The Road to Serfdom* in particular, illuminates this issue:

Keynes believed that economists (and others) could best contribute to the improvement of society by investigating how to manipulate the levers actually or potentially under control of the political authorities so as to achieve desirable ends, and then persuading benevolent civil servants and elected officials to follow their advice. The role of voters is to elect persons with the right moral values to office and then let them run the country.

From an alternative point of view, economists (and others) can best contribute to the improvement of society by investigating the framework of political institutions that will best assure that an individual government employee or elected official who, in Adam Smith's words, 'intends only his own gain ... is ... led by an invisible hand to promote an end that was no part of his intention,' and then persuading the voters that it is in their self-interest to adopt such a framework. The task, that is, is to do for the political market what Adam Smith so largely did for the economic market.

... An approach that takes for granted that government employees and officials are acting as benevolent dictators to promote in a disinterested way what they regard as the public's conception of the 'general interest' is bound to contribute to an expansion in governmental intervention in the economy--regardless of the economic theory employed. A monetarist no less than a Keynesian interpretation of economic fluctuations can lead to a fine-tuning approach to economic policy.

... benevolent dictatorship is likely sooner or later to lead to a totalitarian society.

Although Friedman's policy prescriptions evolved over time, there is a consistent theme running through them--inspired by the "alternative point in view."

Friedman's Early Plan: A Monetary and Fiscal Framework for Economic Stability

As all subsequent ones, Friedman's first proposal starts from the proposition that it is a vital government task to provide a monetary framework, but that this framework should operate under the "rule of law" rather than the discretionary authority of administrators. Friedman's favour for *legislated rules* is in line with earlier "Chicago plans" (Friedman 1967, Laidler 1999, Simons 1936). Already Friedman's (1948) earliest plan featured legislated *instrument* rules.

"A monetary and fiscal framework for economic stability" involves four main elements only one of which concerns the reform of the monetary and banking system. The banking reform part of the proposal echoes "100 percent reserve banking" proposals made by Henry Simons and Irving Fisher. The idea is to establish a, supposedly, water-tight separation between money and credit, with a view of making the monetary core of the system "100 percent safe." The monetary reform part amounts to directly linking monetary to fiscal policies, with "monetary policy" being, effectively, conducted by the Treasury. It reads:

A reform of the monetary and banking system to eliminate both the private creation or destruction of money and discretionary control of the quantity of money by central-bank authority . -- The private creation of money can perhaps best be eliminated by adopting the 100 per cent reserve proposal, thereby separating the depositary from the lending functions of the banking system [A footnote reference to H. C. Simons appears here]. The adoption of 100 per cent reserves would also reduce the discretionary powers of the reserve system by eliminating rediscounting and existing powers over reserve requirements. To complete the elimination of the major weapons of discretionary authority, the existing powers to engage in open-market operations and the existing direct controls over stock market and consumer credit should be abolished (Friedman 1948, 135-6).

The Treasury's conduct, in turn, is bound by the other three elements in the framework. Briefly, the threefold rules concern government expenditures on goods and services, transfers, and the tax system. A "stable budget" is calculated to, roughly, balance at some hypothetical "full employment" level of income (or, show a deficit of sufficient size to provide for a secular rise in the stock of money). The actual budget could deviate from this balanced stable budget, but only due to its built-in flexibility, never due to discretionary measures. There would be no public debt issuance. Instead, any budget deficit (surplus) gets fully (de-)monetised. Monetary policy would thus *indirectly* pursue a *strict rule*, with countercyclical movements in the stock of money as part of this entirely automatic stabilization scheme.⁽⁸⁾ According to Friedman (139):

The essence of this fourfold proposal is that it uses automatic adaptations in the government contribution to the current income stream to offset, at least in part, changes in other segments of aggregate demand and to change appropriately the supply of money. It eliminates discretionary action in response to cyclical movements as well as some extraneous or perverse reactions of our present monetary and fiscal structure. Discretionary action is limited to the determination of the hypothetical level of income underlying the stable budget ... errors in the income goal tend to be automatically neutralized and do not require a redetermination of the goal. Under the proposal, government expenditures would be financed entirely by either tax revenues or the creation of money, that is, the issue of noninterest-bearing securities. Government would not issue interest-bearing securities to the public; the Federal Reserve System would not operate in the open market.

Friedman's (144-5) observation on the risk of destabilizing government intervention features another recurrent theme, namely the role of "long and variable" lags:

The lag between the creation of a government deficit and its effects on the behavior of consumers and producers could conceivably be so long and variable that the stimulating effects of the deficit were often operative only after other factors had already brought about a recovery rather than when the initial decline was in progress. Despite intuitive feelings to the contrary, I do not believe we know enough to rule out completely this possibility. If it were realized, the proposed framework could intensify rather than mitigate cyclical fluctuations; that is, long and variable lags could convert the fluctuations in the government contribution to the income stream into equivalent of an additional random disturbance. [A reference appears here to "Lerner on the Economics of Control"]. About all one can say about this possibility is that the completely automatic proposal outlined above seems likely to do less harm under the circumstances envisaged than alternative proposals which provide for discretionary action in addition to automatic reactions. There is a strong presumption that these discretionary actions will in general be subject to longer lags than the automatic reactions and hence will be destabilizing even more frequently.

There is some use of Keynesian language, and fiscal and monetary policies are neatly tied together in this framework; yielding a rule-based, coordinated, and fully automatic stabilization policy mix. There is no mention of interest rate adjustments.

The Essential Friedman: The Friedmanian k (-Percent Rule)

Friedman's second proposal centres upon monetary policy directly. Most of the technical details and their underlying economic rationale are worked out in *A Program for Monetary Stability*. Friedman (1960, 90) explained his favour for the new scheme over the older one:

I have become increasingly persuaded that the [earlier] proposal is more sophisticated and complex than is necessary, that a much simpler rule would also produce highly satisfactory results and would have two great advantages: first, its simplicity would facilitate the public understanding and backing that is necessary if the rule is to provide an effective barrier to opportunistic 'tinkering'; second, it would largely separate the monetary problem from the fiscal and hence would require less far-reaching reform over a narrower area. The simpler

rule is that the stock of money be increased at a fixed rate year-in and year-out without any variation in the rate of increase to meet cyclical needs. This rule could be adopted by the Reserve System itself. Alternatively, Congress could instruct the Reserve System to follow it.

The *k-percent* rule is not merely "simple." It is also rather effective in achieving its primary aim: minimizing the authorities' scope for discretion and stopping them from manipulating interest rates. Policy implementation, i.e. the central bank's precise operating procedures, is critical. The rule is to be implemented *directly* as a quantitative *base rule*, not *indirectly* via interest rates.

The advice to "let all interest rates be determined by the market" is central to Friedman's policy proposal, underscoring my argument as to the theoretical views (implicitly) underlying it. In fact, *Friedman totally abhorred the idea of manipulating interest rates*. In Friedman's view, indirect implementation via interest rate setting is in conflict with the requirement "that the monetary authority should guide itself by magnitudes that it can control, not by ones that it cannot control" (Friedman, 1968, 14). Echoing another Wicksellian theme, Friedman stresses the risk of cumulative mistakes in one direction or the other; for instance, in his 1975 attack on the Fed for producing "highly erratic" monetary growth:

The Fed currently attempts to control the money supply indirectly, by controlling a particular interest rate (the federal-funds rate). That procedure is an anachronistic survival of an earlier day when the Fed regarded the control of interest rates, rather than of the money supply, as its primary objective. Its persistence is a tribute to bureaucratic inertia. The Fed can control the federal-funds rate ... The trouble is that any error tends to cumulate and be self-reinforcing. .. *The alternative procedure is to let all interest rates be determined by the market* --as they already mostly are--and instead control the money supply by controlling the amount of reserves available to the banking system. *The Fed can control the amount of reserves*, and the growth in reserves is more predictably related to the growth in the money supply than is the federal-funds rate. The alternative procedure would not enable the Fed to hit its target on the nose. There would still be sizable errors from week to week or even month to month. But the errors would tend to cancel out over time, rather than be self-reinforcing, as they now are (Friedman, 1975, 235-6, emphasis added; cf. also Friedman, 1981, 1983, 1984).

Accordingly, Friedman's recommendations on technical details in his *Proposal* and later writings concentrate on the issues of making the base *directly* controllable by the central bank via open market operations, streamlining the (supply-side) link between the base and "the" stock of money, and shoring off any influences on the money stock arising from the demand for money. In particular, Friedman recommends that re-discounting and variations in reserve requirements should be abolished and open-market operations become the sole instrument of monetary (base) control.⁽⁹⁾ If the (long-run) step towards 100 percent reserve banking is not taken, reserve requirements (in a fractional-reserve banking system) must at least be such as to eliminate repercussions of nonbanks' portfolio re-shuffles on bank's (required) reserves. In any case, interest should be paid on bank reserves and--through competition--on bank deposits so as to eliminate the incentive to evade reserve requirements or shifts to near-monies, respectively. Furthermore, debt management should be organized in a way that avoids distorting interest rate determination. Preferably, debt management should be handed over to the Federal Reserve to be conducted in tandem with its open-market operations. Otherwise, the Treasury should at least follow some pre-announced plan of periodical auctions in short and long-term issues, and avoid government balances at the Federal Reserve from disturbing the Fed's monetary base control.⁽¹⁰⁾

Already in the *Tract* (1923), Keynes recommended open market operations as the most effective monetary policy tool and suggested their close coordination with the Treasury's debt management policies. With the central bank's degree of control over the behaviour of the banks and - at one remove - the market rate of interest as his key concern, Keynes returned to this issue in more technical detail in the *Treatise* (1930). He proposed that the central bank should squarely rely on open market operations both for adjusting the banks' liquidity in ways that makes the discount (or, "bank") rate effective in the market without any borrowing at the banks' initiative at that rate actually forthcoming, and for influencing longer-term rates directly through the monetary authorities' deliberate dealing in bonds as well. Finally, in *The General Theory* (1936), he ventured that the authorities might even use open market operations to the point that interest rates across the board (rather than just at the short end) are made effective in the markets, while the liquidity of the system is allowed to adjust endogenously to the markets' need.

And still, Friedman easily tops Keynes in terms of the radicalism of his proposals. Subscribing to the Chicago plan for securing absolute control over the banks as providers of money (as distinct from other services), on the use of open market operations for monetary control purposes, he turns Keynes upside down: Friedman's primary aim is to get central bankers' discretion securely under control and let interest rates adjust along the markets' needs. In fact, *Friedman's proposal amounts to leaving interest rate determination entirely to the markets; while, at the same time, taking away discretion from the authorities completely*.

The traditional monetary policy guessing game would thus change fundamentally, as there would be no monetary policy intentions that the markets might want to guess about. Instead, the markets would have to view financial asset prices solely as the outcome of their own aggregate behaviour, undistorted by policy interventions. The markets' game would be about what

the outcomes of their collective behaviour might be in the future. Perfect competition in money markets is one key presumption in Friedman's scheme. Nothing would be gained from having competitive market forces disrupted by a dominant private market player "cornering the market," rather than the authorities. Another key presumption is that competitive markets automatically tend to keep the "market" and the "natural" rates allied - a conclusion that is in line with our findings on theory in the previous section.

The central bankers' game too would change fundamentally, their conduct being fully transparent, and effective accountability for performance most easily established. Having their hands virtually "tied in chains," central bankers would no longer have to worry about the current and prospective states of the economy and the best way for policy to respond to them. There would be no more to "monetary policy" than buying a certain volume of securities (growing at k percent) every week in the open market without disturbing interest rate determination.

If this seems radical, in a subsequent proposal along these lines Friedman (1984a) even proposed to effectively "freeze" the monetary base, that is, to have a k of zero. This would amount to locking up the central bank and throwing away the key. The rationale for reducing central bankers' discretion virtually to zero was neatly expressed in "The case for a monetary rule," which leads us on to the issue of central bank independence:

An independent Fed may at times be too insulated from political pressures--as it was in the early 1930s--and yet at other times unduly affected by political pressures. ... A monetary rule would insulate monetary policy both from the arbitrary power of a small group of men not subject to control by the electorate and from the short-run pressures of partisan politics (Friedman 1972, 227).

Friedman's Case Against Central Bank Independence: Authorities Rather than Rules

In "Should there be an independent monetary authority?," Friedman (1962, 178) mentions that central bank independence "embodies the very appealing idea that it is essential to prevent monetary policy from being a day-to-day plaything at the mercy of every whim of the current political authorities." But his analysis then concentrates on what he perceives to be the flip-side of the matter. Politically, he rejects the concentration of vast powers "in a body free from any kind of direct, effective political control" (188). Economically, his key concerns are, first, the dispersal of responsibilities for monetary and fiscal policies and the lack of overall accountability this would involve, second, that the rule of men rather than law makes policy extraordinarily dependent upon *personalities*, risking "accidents of personality," and, third, that independent central bankers might be too susceptible to the "point of view of bankers."

Returning to this question two decades later, his views on the importance of personalities in central banking have altered somewhat in the light of the new experiences. But overall his rejection of the independence idea has not become any less pronounced. Dealing with the objection to eliminating the Fed's independence that this would make monetary policy a plaything of politics, he now judges that his "own examination of monetary history indicates that this judgement is correct, but that it is an argument for, not against, eliminating the central bank's independence" (Friedman 1984a, 44).

The internal logic and consistency of Friedman's arguments are compelling: if protection from monetary abuse requires *taking away discretion* from the authorities, independence is the wrong way to go. It amounts to very much the opposite. In fact, such *partial* protection may even increase society's exposure to risks located within the independent central bank (not exposed to any effective political control). For Friedman independence is essentially a synonym for largely unrestricted discretionary scope. He defines an independent central bank as a coordinate constitutionally established, separate organization ... [not] subject to direct control by the legislature (Friedman 1962, 180), [explaining that he has] been describing an independent central bank as if it could or would be given a good deal of separate power, as clearly is currently the case. Of course, the whole notion of independence could be rendered merely a matter of words if in fact the constitutional provision setting up the bank established the limits of its authority very narrowly and controlled very closely the policies that it could follow (183).

Rather than merely "insulating" money from politicians, Friedman's rationale is to "neutralize" the (unelected) central bank (politicians) as well--by a proper legislated rule.

Neutralizing the central bank offers a low-risk strategy: not many, if any, chances of successful stabilization would be foregone, while losses due to de-stabilizing attempts at unwarranted stabilization policies would be insured against. Stabilization policies are not only unnecessary, on his view, but doomed to failure anyway. Moreover, the authorities' discretionary powers themselves represent a key source of uncertainty, whereas precommitment to steady monetary growth would - in itself - promote public confidence. Hence a monetary rule was *not* the same as "the discretionary adoption of precisely the same policy [actions] on a series of separate occasions" (192; cf. also Friedman 1972, 226-7).

Friedman on some Alternatives

While his favor for *legislated* rules is in line with Chicago traditions, Friedman promoted instrument rules. A legislated price stability [target] rule was not the proper way to go.

It is the wrong kind of rule because the objectives it specifies are ones that the monetary authorities do not have the clear and direct power to achieve by their own actions. It consequently raises the earlier problem of dispersing responsibilities and leaving the authorities too much leeway. There is unquestionably a close connection between monetary actions and the price level. But the connection is not so close, so invariable, or so direct that the objective of achieving a stable price level is an appropriate guide to the day-to-day activities of the authorities (Friedman 1962, 193; cf. also Friedman 1960, 84-88; 1992a, 229).

Essentially, targeting the price level would allow the authorities far too much discretion, in his view. Such a "rule" allows the central bank to set its instrument in terms of a reaction function featuring feed-back from variables judged as useful guide-posts concerning the (future) state of the economy. Hence this approach involves a continuous need to (re-) assess the state of the economy and prospective developments. And it involves a continuous (two-way) policy-anticipation process, with the markets trying to outguess the authorities (and the latter being aware of that). By contrast, placing a binding legal constraint on the discretionary use of the policy instrument effectively checks the risks of such "fine tuning" ambitions, and withdraws the basis for related strategic policy anticipations.

On one occasion, however, Friedman (1992a, 227-9) discusses approvingly a proposal due to Robert Hetzel (1991) for a legislated policy rule featuring an important feedback element. Hetzel's proposal centers on a "yield gap" measure between standard government bonds and inflation-indexed ones. Friedman comments that this measure would be of twofold use. First, as a market measure of expected inflation, making it thereby possible "to monitor the [central banks'] behavior currently and to hold it accountable." Secondly, as a measure that provides the central bank itself "with information to guide its course that it now lacks." Friedman's extensions of this proposal are illuminating, amounting to a legislated partial delegation to the markets, as the authorities are required to take their guidance from the markets, combined with effective political accountability on policy conduct:

An extension of Hetzel's proposal would be the enactment of legislation to require the Federal Reserve to keep the difference between the two interest rates less than a specified amount, say, 3 percentage points. That would provide a congressional guide for monetary policy far more specific than anything in the current law. ... Any such requirement should be accompanied by definite sanctions--such as removal from office or a reduction in compensation--for failure to conform (Friedman 1992a, 229).

To conclude, the analysis of Friedman's policy proposals confirms the finding of the previous section on Friedman's monetary theory: interest rate adjustments are key to his resurrection of the classical stability postulate, clarifying that Friedman put his faith firmly on interest rate adjustments *through market forces*. Even if the particular k -percent rule Friedman favored were found impracticable for institutional or other reasons (see e.g. Goodhart 1994), this would not invalidate the essential rationale for his proposal(s). One part of his rationale is to neutralize the central bank and take away discretion over money from anyone, by law. The counterpart of his rationale is delegation to the markets. This vision deserves further scrutiny.

THE INTEREST RATE MECHANISM UNDER SCRUTINY

I have rejected Friedman's claim that "the basic differences among economists are empirical, not theoretical." Clearly there is a deeper theoretical issue at stake: the theory of interest. Leaving this key theoretical question on one side, however, the analysis now turns to scrutinize the more practical and empirical issues involved. As Hammond (1996) shows, Friedman's views on money are deeply entrenched in his reading of monetary history, succinctly summarized in his Henry Simons Lecture. This lecture is of great interest as it repeatedly refers to common elements in Simons's and Keynes's works. In Friedman's view, the key monetary facts are that:

the rate of growth of the quantity of money has systematically tapered off well before the economy in general slows down, and has speeded up well before the economy speeds up. The movements in velocity--which Simons took as an independent source of instability--come later than the movements in the quantity of money and are mild when the movements in the quantity of money are mild. They have been sharp only when there have been sharp movements in the quantity of money. There is no evidence to support Simons' fear that a fixed quantity of money might involve 'the danger of sharp changes on the velocity side.' On the contrary, the evidence is precisely the reverse--that it would lessen the danger of sharp changes in velocity (Friedman 1967, 12).

If this interpretation of the empirical evidence were accepted, the k -percent rule (and associated changes in institutions and practices) would seem to not only effectively check the true source of instability arising from unsteadiness in monetary policy and the money-supply process. In addition, the regime change would also enhance the money demand function's stability. The new regime would precondition economic stability too, it seems. *Stability at full employment?*

As seen above, Friedman's rehabilitation of the classical stability postulate is based on the presumption that unemployment leads to lower nominal *and real* wages. If price inflation slows too, it would at least have to slow by less than wage inflation for instability not to arise. Some aggregate demand stimulus from the monetary side is required to secure this outcome and the

envisaged link between falling real wages and rising employment. Essentially, Friedman's analysis appears to involve a mechanism that generates the sought-after tendency of falling interest rates along twofold lines: first, falling aggregate demand and rising unemployment are held to be associated with a falling demand for loanable funds, while, second, due to that "possible link between the supply of loanable funds and changes in money supply" envisaged by Friedman, the supply of loanable funds would not fall off concurrently.

In other words, *if* monetary growth remained steady, an automatic monetary easing process would arise along these lines, seemingly driven by competitive market forces alone, but steered by monetary policy in a steady(11) and totally non-discretionary way. One key empirical ingredient in this adjustment process is that Friedman supposes money demand to be fairly interest inelastic, so that interest rates could fall significantly without raising liquidity preference by too much. Put in quantity-theoretic terms, "velocity" would remain fairly stable; or, in loanable funds terms, "hoarding" would not block the natural working of the loanable funds mechanism (cf. Bibow 2000b, 2001). Another key empirical ingredient to securing the sought-after tendency toward stability hinges on the interest elasticity of expenditures.

But further implicit assumptions underlie this automatic interest rate adjustment process along loanable funds lines that should better be made explicit. First, any negative (perverse) linkages between falling aggregate demand and the demand for loanable funds must be small in magnitude. For instance, no large scale distress borrowing by corporations to finance unplanned inventories or losses arises (which presumes sufficient foresight rather than adaptive expectations in this respect). Increased public borrowing due to rising unemployment would also work against the falling off in the demand for loanable funds; but stabilize the demand for goods more directly.

Second, the presumed absence of any marked rise in liquidity preference requires that interest rate *expectations* fall broadly in line with current yields. Otherwise falling interest rates would involve a greater perceived risk of subsequent interest rate rises in addition to a reduced remuneration to bear this risk. In short, not only interest rates must adjust "very rapidly to clear the market for loanable funds," interest rate expectations must be equally amenable. Not effective policy communication is supposed to bring this about. The markets do it all by themselves. For this to arise the markets must be neither much backward looking and impressed by historical norms, nor too much forward looking in anticipating the successfulness of their own "policy."

Third, not only do interest rates have to fall steeply enough to stimulate interest sensitive expenditure categories sufficiently. They also have to come about rapidly enough to boost aggregate demand *before absolute liquidity preference might ever become empirically relevant*. Given those long and variable lags that would hamper any *policy-determined* interest rate moves, the market-driven interest rate adjustment process has to be appropriately forward looking.

Finally, another crucial presumption is that the banks do not get into trouble themselves. That is, the level and structure of interest rates also has to adjust in a way that is compatible with the banks' ongoing profitability. No disruptions in the money supply process due to the banks' changing liquidity preferences and/or damaged capital base and, hence, no disruptions in credit availability hinder the adjustment, it is presumed. As the banks' balance sheets are supposed to grow in line with the steady growth of the monetary base.

These are rather important empirical issues. Conceptually, the interest rate mechanism envisaged by Friedman is driven by a varying strength of the demand for loanable funds *relative* to a steady supply of loanable funds (at least with respect to the steady money growth, its supposed link). The standard neoclassical trade-off between the degrees of price flexibility and output stability then arises here: more flexible prices allow for more stability in output. However, this also requires that Keynes's perceptions of expectation formation in financial and product markets are turned on their head. Interest rate expectations have to be rather amenable, while product price (inflation) expectations (i.e. a key variable in the demand function for money) have to be of a rigid, long-term variety. Keynes's concerns about the potentially destabilizing forces of general price flexibility on production and spending decisions then appear unfounded. Would the *k-percent* rule provide an anchor to expectations as credible as appears to be presumed here?

Interestingly, Keynes's analysis too features an interest rate mechanism, a mechanism that might even bear some family resemblance to Friedman's idea of the driving force behind the loanable funds mechanism. In Keynes's case, a falling off in aggregate demand will tend to be associated with a falling off in both the demand for business loans as well as liquidity preference due to the transactions motive. Banks tend to respond to such developments, in Keynes's view, by expanding their activities in other directions. For instance, as their loan business falls off, led by the profit motive, banks might decide to take a larger volume of the existing stock of assets off the market. This tends to drive up asset prices (including bond prices), lowering their yields.

What I have elsewhere dubbed the "Keynes mechanism" (Bibow 2000a) would thus tend to move interest rates in the right direction. The Keynes mechanism is driven by bank behavior and may occur at any given - policy-determined - level of short-term interest rates. Of course, reductions in policy-determined rates would tend to support the adjustment, as would the banks' *anticipation* of such policy moves.

At the level of theory, strictly speaking, no reconciliation of views on the interest rate issue is possible. In practice, however, the interest rate mechanism one might expect to arise within Friedman's vision of a *k*-percent monetary policy regime would run along lines that are somewhat similar to the Keynes mechanism. Keynes's (1936) analysis is carried out on the assumption of a constant money stock, focusing on the level of output. Friedman refers to a money stock that is growing at a constant rate, but with explicit reference to a growing economy.⁽¹²⁾ Under certain conditions the presumption might be correct that market forces (more precisely, the banks' profit motive) will tend to move the whole level of interest rates *in the right direction*, even as interest rates are determined entirely by the markets (i.e. "undistorted" by the authorities' deliberate guidance). This equilibrating tendency would *not* arise along loanable funds lines though, as Friedman assumed, but Keynesian liquidity preference lines. Under certain institutional arrangements, the *k* -percent base rule regime would tend to automatically stimulate or constrain, as conditions might require, aggregate demand through steering the banks' profit motive in the right direction. This tendency to move interest rates in the right direction might be seen as an organized but automatic market mechanism; a mechanism that is merely anchored by the central bank, and in a totally non-discretionary way.

FRIEDMAN'S *RELATIVE* STABILITY HYPOTHESIS

An interesting similarity, but this is where it ends. In order to restore the "classical" stability postulate, more is asked of an (implanted) automatic market mechanism than encouraging some movement of interest rates in the right direction. The issue is whether market forces - if left all by themselves - would grind out the equilibrium rate and keep the market and equilibrium rates of interest roughly allied at all times; or, whether significant and persistent misalignments might not arise and prove destabilizing. Keynes did not doubt that the financial system would always come up with *some* interest rate (convention). His point was that there is no real (productivity and thrift) anchor out there in the real economy to provide a reliable center of gravity that might guide the financial system in any *direct and immediate* way. Indeterminacy of the interest rate convention and the related risk of instability of the real economy are the issues.

The analysis of the interest rate adjustment process in the previous section has highlighted a number of possible complications. These led Keynes to inquire the potential usefulness and efficacy of "deliberate action" at this front, designed to support the speed and magnitude of interest rate adjustments - in addition to whatever "automatic relief" might be forthcoming thanks to the banks' profit motive driving the Keynes mechanism. Up to a point, Keynes was quite optimistic about what might be achieved by deliberate action on the part of monetary policy. At least, if the authorities were willing to abolish their flawed views on interest rate theory and deliberately applied open-market operations to manage interest rates as the situation might require. Yet, Keynes was also very aware of the intricacies of monetary policy, particularly possible limitations to deliberately *steering* market expectations in line with diagnosed policy requirements. In the end, Keynes remained rather doubtful as to the feasibility of fine tuning the economy by monetary policy alone, and concluded that support from fiscal policy would be needed in any effective stabilization policy framework.⁽¹³⁾

Of course, Friedman was even more doubtful as to the feasibility of fine tuning the economy by either monetary and/or fiscal policies. In his view, the whole problem is exactly to stabilize policy. It is rather intriguing that Friedman's monetarist counterrevolution and apparent resuscitation of the "classical" stability postulate ran along those very lines that Keynes himself had suggested as the classics' only possible line of defense:

It is .. on the effect of a falling wage- and price-level on the demand for money that those who believe in the self-adjusting quality of the economic system must rest their weight of their argument; though I am not aware that they have done so. If the quantity of money is itself a function of the wage- and price-level, there is indeed, nothing to hope in this direction. But if the quantity of money is virtually fixed, it is evident that its quantity in terms of wage-units can be indefinitely increased by a sufficient reduction in money-wages; and that its quantity in proportion to incomes generally can be largely increased, the limit to this increase depending on the proportion of wage-cost to marginal prime cost and on the response of other elements of marginal prime cost to the falling wage-unit.

We can, therefore, theoretically at least, produce precisely the same effects on the rate of interest by reducing wages, whilst leaving the quantity of money unchanged, that we can produce by increasing the quantity of money whilst leaving the level of wages unchanged. It follows that wage reductions, as a method of securing full employment, are also subject to the same limitations as the method of increasing the quantity of money. The same reasons as those mentioned above, which limit the efficacy of increases in the quantity of money as a means of increasing investment to the optimum figure, apply *mutatis mutandis* to wage reductions. Just as a moderate increase in the quantity of money may exert an inadequate influence over the long-term rate of interest, whilst an immoderate increase may offset its other advantages by its disturbing effect on confidence; so a moderate reduction in money-wages may prove inadequate, whilst an immoderate reduction might shatter confidence even if it were practicable.

There is, therefore, no ground for the belief that a flexible wage policy is capable of maintaining a state of continuous full employment;--any more than for the belief that an open-market monetary policy is capable, unaided, of achieving this result. The economic system cannot be made self-adjusting along these lines (Keynes 1936, 266-7).

We can also see here that more than delegation of interest rate decisions to financial markets is involved. Effectively, from

Keynes's perspective, Friedman's scheme amounts to delegating monetary policy to labor markets: neutralizing the central bank is one part in the scheme, a flexible wage unit that automatically adjusts monetary stance in line with labor market conditions the other. As unemployment develops, labor as a whole is supposed to have an expedient at hand that can set the Keynes mechanism in motion. If labor refrains from using this expedient, unemployment must be at the "natural rate," from Friedman's perspective. Note here: it is neither at the authorities' discretion to decide what the level of the natural rate of interest nor what the natural rate of unemployment might be.

Essentially, whereas Keynes recommended to stabilize the wage unit and make active use of monetary policy to deliberately steer aggregate demand and employment to its full potential. Friedman recommended to stabilize monetary policy and leave it to labor markets to determine the degree of monetary easing as unemployment arises. At the level of theory, securing economic stability through flexibility of aggregate money wages faces the same limitations as active monetary policy. In Keynes's view, it would also involve the risk of enhancing instability and diminishing the effectiveness of monetary policy - the relevant empirical issues concerning the dynamics of adjustment were highlighted above.

Importantly, Friedman's claims about the self-adjusting qualities of the economic system must not be confused with either classical or modern claims of that sort. Friedman did not simply revert to the classical stability postulate. When it comes to policy, Friedman not only parts company with Keynes, but also with the "classics," old and new. Ultimately, Friedman's position amounts to a "relative stability hypothesis." Keynes often (jokingly) observed that the "classics" were deeply attached to their stability postulate in theory, but often quite pragmatic on policy issues; a policy pragmatism for which he thought any sound basis was lacking in their theory. In fact, in Keynes's times economists at both Cambridge (e.g. Pigou and Robertson) and Chicago (e.g. Knight, Simons, Viner) were quite willing to recommend "discretionary" (ad hoc) policy measures when they thought that market forces needed some support, some speeding up of the inherent tendency toward stability. By contrast, Friedman has categorically rejected the wisdom of such policy pragmatism, arguing that it was bound to do more harm than any good.

Friedman's position amounts to the claim that if interest rate decisions were left entirely to the markets and the authorities robbed of any discretionary powers, the economy left all by itself might well attain a *higher degree* of stability than in the case of deliberate government intervention, manipulation of interest rates in particular. Admittedly, it is one thing that the level of interest - as quite arbitrarily fixed by the markets - might not be the right one; as Keynes would argue. It is another that the authorities might not know the right level of interest either; as Friedman would probably respond. In Friedman's view, the main task of policy design is to prevent those major crises which could only arise from monetary instability caused by discretionary government intervention in the first place. Minor instabilities in the real economy could then safely be left to look after themselves. It should not even be attempted to deal with them pragmatically, as monetary discretion would do more harm than any good:

The central [monetary design] problem is not to construct a highly sensitive instrument that can continuously offset instability introduced by other factors, but rather to prevent monetary arrangements from themselves becoming a primary source of instability. What we need is not a skilled monetary driver of the economic vehicle continuously turning the steering wheel to adjust to the unexpected irregularities of the route, but some means of keeping the monetary passenger who is in the back seat as ballast from occasionally leaning over and giving the steering wheel a jerk that threatens to send the car off the road (Friedman 1960, 23). [And] experience suggests that eliminating the danger of instability and uncertainty of policy is far more urgent than preserving 'flexibility' (86).

It is quite clear then that Keynes's and Friedman's respective views on the feasibility of competent government intervention and their respective views on the efficiency of markets are, in each case, like two sides of one coin. Keynes thought that the markets could not be relied upon to generate the right level of interest but would tend to produce excess volatility in asset prices - unless market expectations were effectively *anchored* by the monetary authorities (a view most vividly expressed in chapter 12 of *The General Theory*). By contrast, Friedman (1953) had no sympathy for the notion of destabilizing speculation and thought that markets were more reliable to perform satisfactorily if undisturbed by government intervention.

To conclude, one may side with Keynes on the theory of interest (and against the absolute stability postulate), but still see the point in Friedman's relative stability hypothesis. On *a priori* grounds the possibility cannot be denied that the markets might end up doing less bad a job than poor central bankers. After all, evidence of gigantic real damages caused by central bankers inspired both Keynes's and Friedman's work. Keynes might argue that poor policies are largely due to central bankers' adherence to flawed economic theories, and he would be right in that. In a Friedmanian spirit, one might also conclude that *exactly for this very reason* it might be safer not to let them meddle with the economy in the first place - if that were possible.

In any case, Friedman designed a "monetary policy" regime that is remarkably consistent with his underlying theoretical propositions (and ideological presuppositions). His proposed *k* -percent regime would rob the authorities of *any* discretion, delegate interest rate decisions to financial markets, and merely anchor the competitive adjustment process running, in effect, along bank-driven Keynes mechanism lines. Effectively, in his scheme, labor markets would be in charge of monetary policy, and thereby determine the level of employment. Alas, a policy regime of interest rate determination entirely left to the markets

would be afflicted by the very same difficulties that Friedman argued made interest rate determination by the authorities such a complicated and risky business (those long and variable lags etc).

Tobin (1974, 80) is therefore right to reject Friedman's attempt to "saddle his opponents and critics with an extreme assumption and to claim the entire middle ground for himself," Friedman's interpretation of the Keynesian problem as the case of absolute liquidity preference, theoretically flawed and empirically irrelevant. But Friedman (1974) may also be right to deny that his own case depends on the opposite special polar case. Apart from the theory of interest, the difference between Keynes and Friedman is far more intricate than that. It primarily concerns the dynamics of adjustment rather than the shape of some static *LM* curve. And it also concerns the relative efficacy and riskiness of market versus government-driven adjustment processes.

While looking rather simple at first sight, Friedman's favored avenue of taking monetary policy out of central bankers' hands is actually rather intricate. This avenue of policy design requires institutions and practices that effectively delegate "policy" to the markets, with the intention to let market forces guide the system toward full employment at stable prices. Can financial market expectations be *somehow* focused on evolving "monetary policy" requirements, can private interests be *somehow* fully aligned with public interests in this sphere?⁽¹⁴⁾ To his credit, Friedman consistently took this approach to heart. But does this approach enjoy much popularity in today's conventional monetary wisdom?

IS ANYTHING LEFT OF FRIEDMAN'S MONETARISM IN TODAY'S CONVENTIONAL WISDOM?

The short but correct answer is: no. Of course, it is a grand illusion to view policy concern with price stability as a triumph of monetarism. To begin with, there is no principle disagreement on this issue. Keynes's point was that monetary policy cannot affect prices other than through controlling the economy, that this requires policy coordination, and cannot ignore those wider effects on the economy - by miraculously focusing on prices only. Neither did Friedman suffer from any illusion concerning the real effects of monetary policy. Rather, his point was that we should not be under any illusion concerning the possibilities of deliberate control of the economy: neither economic stability nor long-term price stability should be expected from granting central bankers discretion to control the economy. Accordingly, he devised a scheme that would completely deprive central bankers of any powers to manipulate the economy. Inspired by his empirical evidence and quantity-theoretic presuppositions, the proposed regime was intended to both tie the authorities and completely free market forces - believed to deliver *relatively* steadier nominal GDP growth, that is, stabilize prices and real activity in line with market forces. There is no ranking of goals here. And there is no scope for independent central bankers's value judgements on whatever any such ranking might require, in their view, under any conditions.

Perhaps there is more talk about price stability today than in the sixties, and some central bankers may even entertain a penchant for referring to price stability as their sole objective. Such changes in rhetoric may be deceptive and create an illusion of a substantial monetarist regime change. Actual central bank practices, though, have not changed in any fundamental way. The practice of monetary policy around the world still consists of deliberate manipulations of short-term interest rates by central banks, and today's mainstream theorists argue unabashed that they should do just that. Interest rate settings are linked to more or less explicitly stated policy goals by some more or less transparent reaction function, featuring more or less systematic feedback rules, and often in the absence of any effective accountability.

The two most popular examples of this general reaction-function approach to monetary policy are "inflation targeting" and the "Taylor rule." They both require the authorities to stabilize the economy at its full employment potential and some target rate of inflation. Assigning monetary policy the objective of maintaining price stability may be monetarist in appearance, particularly as the vital (Keynesian) role of the "wage unit" and policy coordination are not always made explicit. What is clear, however, is that in either case maintaining price stability is supposed to work through controlling the economy - and how else could it be. Not just in practice, but in theory too, today's conventional monetary wisdom is essentially Keynesian "fine tuning" in spirit and in nature of approach. In fact, monetary policy is today widely seen as all-powerful in its discretionary control of the economy and inflation; especially if discretion is exercised by independent central bankers. Clearly, if anything, today's orthodoxy belies the wisdom of Friedman's monetary thought even more so than that of Keynes.

Without much ado, (explicit) money demand functions have largely been written out of the play and the foremost monetarist variable money supply is now widely seen as endogenous. If the mainstream has become thoroughly Wicksellian-Keynesian in approach, and even if central banking rhetoric may sound "monetarist," this does still *not* mean though that the policies actually pursued are either Keynesian or monetarist. Instead, policies are whatever independent central bankers choose their policies to be. (And no doubt some are more apt at fine tuning the economy than others.) Most importantly, the idea that the "classical" stability postulate has been restored is apparent rather than real. For the real presumption is that the authorities "make it true," namely by fine tuning the economy. In short, the modern stability postulate is based on an amazing trust in successful government intervention rather than market forces. There is fine tuning everywhere - but no enthusiasm for "delegation to the markets" anywhere.

How did we get here? Initially, New Classical macroeconomics was seen as an extension of Friedman's monetarism and even dubbed "monetarism mark II" (Tobin 1981). This may have been true to the point actually emphasized by Tobin: policy

prescriptions against government intervention. But more generally, Laidler (1981) is correct in linking the New Classicals to the Austrian School rather than to monetarism proper. Interestingly, Friedman (1974) sided firmly with Keynes on the required policy response to the Great Depression as opposed to Austrian-style ideas prevalent at the London School of Economics at the time (e.g. Hayek).

In actual fact, New Classical macroeconomics seems largely responsible for the demise of monetarism. The lasting effect of Lucas's (1974) money mis-perception story was to drastically downplay the real and systematic effects of monetary policy. Such a vision was unlikely to foster much interest in a "money matters" project. The money mis-perception story has meanwhile fallen into oblivion, and even Lucas (1987) seems to have turned into a real business cycle proponent. The real business cycle approach, however, is the "money does *not* matter" approach par excellence; endogenous money, if money at all, certainly of no real relevance whatever. Rather tellingly, De Long (2000) views today's New Classical macroeconomics as a synonym for the real business cycle research program - a truly remarkable evolution of a project that was once dubbed monetarism mark II. In seeking a home for current interest in the "money matters" view of the world, De Long (2000) thus turns to "New Keynesianism," proposing to replace that label by "New monetarism."

This is not the occasion to discuss in detail whether New Keynesianism/New monetarism might be further away from Keynes or from Friedman. What is probably the most paradoxical aspect of today's conventional monetary wisdom is the current fashion for central bank independence. This fashion roots in Kydland and Prescott's (1977) seminal paper on time inconsistency, which De Long (2000) credits for transmitting important ideas of "classical monetarism" *à la* Friedman. De Long similarly praises today's emphasis on policy rules. But he fails to mention that the policy "rules" currently en vogue are of the very nature rejected by Friedman as fine tuning. Granting central bankers unbounded discretion (i.e. independence) to fine tune the economy at their whim is hard to rationalize along monetarist lines. In fact, the fiction of benevolent monetary dictators is anathema to Friedman's monetarism.

CONCLUSIONS

Friedman's monetarism (or, his version of the quantity theory of money) may have strong roots in Cambridge traditions, including Keynes's liquidity preference theory of *The General Theory*. But the similarities and differences between him and Keynes are not merely empirical in nature. As to the demand for money, where other writers tend to see the most far-reaching similarities, this study concludes that Friedman did *not* follow Keynes's (1930, 1936) approach of viewing the role of liquidity preference, in the first instance, as located *within* the financial system and in the context of interest rate determination; with *indirect* effects on the real economy (spending, output, and prices in general) following from there. Instead, Friedman viewed money as having *direct* effects all round over assets and prices in the broadest sense. Underlying this view is Friedman's attachment to the "classical" theory of interest that stresses "productivity, thrift, and the like" as determining the real rate of interest, and independently of money.

As to the supply of money, this study finds similarities that hitherto seem to have escaped notice. Similarities are more subtle though than apparently similar views on "exogenous" money

Rather, they relate to emphasizing open market operations in monetary control and the interest rate mechanism(s) one might expect to move interest rates in the right direction. Despite these similarities, however, the differences in this respect too are stark, as Friedman, in a sense, turned Keynes's position on its head. Rather than combining a stabilized wage unit with a flexible central bank that actively steers interest rates and aggregate demand, Friedman proposed to stabilize the central bank and let interest rates and the level of employment be determined by financial and labor markets respectively. In Friedman's view, the loanable funds mechanism would grind out the natural rates of interest and unemployment. In Keynes's view, the Keynes mechanism (as anchored by Friedman's proposed k -percent rule) might well work in the right direction, but the equilibrium levels of interest rates and employment remained indeterminate.

The theory of interest is thus the key theoretical issue. But there are numerous important empirical issues involved too, issues that run far deeper than the static LM curve makes them appear. Neither is Keynes's position properly described by a horizontal LM curve and absolute liquidity preference as the normal state of affairs. Nor is Friedman's monetarism reducible to a vertical LM curve. Instead, the dynamics of adjustment processes and expectation formation are at issue. In addition, at a practical level, the feasibility of stabilization policies, the relative efficiency and riskiness of market versus government driven adjustments, is key. Friedman put his faith firmly on market-determined interest rate adjustments. Accordingly, he designed a regime in which the central bank enjoys *zero discretion*, passively anchoring the market process.

Today's practice of monetary policy around the world, and conventional monetary wisdom held to rationalize this approach, seems to be not even vaguely related to Friedman's monetarism; particularly the idea that *unbounded discretion* of independent central bankers might enhance welfare. Those with a strong faith in market forces seem to prefer to ignore the fact that today's conventional monetary wisdom is remarkably inconsistent with that faith.⁽¹⁵⁾ They should search for inspiration in Friedman's monetary writings. Those who do not share this faith may nevertheless be impressed by the coherence of Friedman's endeavors.

The upshot is that we may currently be in the worst of all worlds. Today, central bankers enjoy far more discretion than Keynes would have ever dreamed of granting them, while the risks associated with discretion as emphasized by Friedman are completely ignored. As a result, at least some central bankers appear to be faced with distorted incentives that encourage an asymmetric and inflation obsessed approach to monetary policy, based on some fiction that whatever they might be doing can at worst have negative real effects that are minor and very short-lived as long as general prices remain stable.⁽¹⁶⁾ We have traveled a rather long way given that Friedman's starting point was that monetary policy causes strong and rather long-lasting disturbances in the real economy, and who concluded that discretion should therefore better be taken away *completely* from central bankers. Today, instead of delegating policy to the markets, politically unchecked monetary dictators determine economic welfare in modern democracies - at their apparently benevolent whim. Certainly not a triumph of Keynesianism either, this is truly irreconcilable with monetarism. Neither Friedman nor Keynes can be blamed for this absurdity.

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NOTES

1. According to Friedman (1968, 3) "The revival of belief in the potency of monetary policy was fostered also by a re-evaluation of the role money played from 1929 to 1933. ... The Great Contraction is tragic testimony to the power of monetary policy--not, as Keynes and so many of his contemporaries believed, evidence of its impotence." However, Friedman may be wrong to attribute the same relevance of this event to Keynes (see Hayek on this issue quoted in Friedman 1967, fn. 7). High unemployment *persisted* in Britain since the early 20s, worsening with the return to gold in 1925. The "Economic Consequences of Mr. Churchill" (1925) marks the beginning of Keynes's investigation of this phenomenon. Britain did not experience any collapse in production and employment nearly as catastrophic as the US in the early 1930s, particularly no banking crises and monetary contraction. Hammond (1996) provides a thorough account of Friedman's keen interest in empirical research and his roots in NBER traditions, particularly the influence of Wesley Mitchell and Arthur Burns (cf. Mitchell 1913, Burns and Mitchell 1946). Friedman's recent statement is very revealing: "I believe that one reason the work had whatever effect it has had is because it did have an empirical base. I believe that I can honestly say that I never reached a judgment about monetary or fiscal policy because of my beliefs in free markets. I believe that the empirical work is independent and honest in that sense." (Taylor 2001, 120)

2. This is not the occasion to revisit this controversy in any matter of detail. Participants included e.g. Don Patinkin (1969, 1981), Harry Johnson (1971), David Laidler (1993), Thomas Humphrey (1971) and George Tavlas (1997, 1998). A forthcoming 2 volume set edited by Robert Leeson (2003) covers this controversy in full. Leeson (2002) established an interesting link "from Keynes to Friedman via Mints" arguing that Friedman's lecture notes of Mints' 1932 Graduate Study of Money and Banking course "indicate that Friedman *was* exposed to a version of the quantity theory which stressed the importance of the demand for money. Moreover, this version of the quantity theory was stated to be part of a (Cambridge) oral tradition. In 1932 Mints placed great stress on Keynes' *Treatise on Money* (1930) and to a lesser extent on Keynes' *Tract on Monetary Reform* in which this Marshallian oral tradition was discussed."

3. I focus here on Keynes's core theoretical attack on the stability postulate. The "secular stagnation theme" also featuring in *The General Theory* is not part of that theory, but an application of his framework to a particular situation considered possible to arise at some point in the future.

4. Friedman (1956, 19) favored the distinction between permanent and measured incomes as providing an explanation of cyclicity in velocity, but acknowledged that Selden's (1956) distinction between long-term and short-term bonds offered a "way to take into account expectations about changes in interest rates." Leeson (1997) cites evidence that indicates that Friedman's adaptive expectations hypothesis was profoundly influenced by Bill Phillips's analysis of inflation expectations - which via this route influenced Cagan's (1956) hyperinflation analysis. Cf. also Leeson 2000.

5. Empirically, Friedman ([1989] 1997, 16) frankly admitted that the real balance effect would be of "minor" significance. It is also not irrelevant in this context that Friedman (with Schwartz 1963b) much emphasized the importance of bank failures in the Great Depression. In fact, given "the consequences to the banks of the collapse of money values" (Keynes 1931), the real balance effect looks much worse than an academic curiosity. Greenwald and Stiglitz (1993, 36) acutely observes that "the enormous attention that the real balance effect has received over the years hardly speaks well for the profession. Quantitatively, it is surely an n th order effect; one calculation put it that, even at the fastest rate at which prices fell in the Great Depression, it would take more than two centuries to restore the economy at full employment." Of course, financial innovations like electronic money tend to further squeeze currency off private balance sheets and hence might eventually dissipate the real balance effect completely. Already in 1944 Keynes commented on the supposed 'effect' as "really too fantastic for words and scarcely worth discussing" (quoted in Patinkin 1982 and Dimand 1991; see also Rymes 1998 and Tobin 1980). Much to Don Patinkin's scorn, it is clear that Keynes and Friedman essentially agreed on the irrelevance of the real balance effect. Unfortunately, Friedman is somewhat ambiguous on the role of wealth (rather than the real balance effect) in Keynes's consumption theory.

6. Despite his Wicksellian approach on this occasion, Friedman's famous concept of the "natural rate of unemployment" is defined in terms of the Walrasian system of general equilibrium equations.

7. This is most evident in Friedman's (1974, 159-60) disputes with Don Patinkin: "A more fundamental reason for Patinkin's emphasis on long-run 'neutrality', the interest rate, and the real balance effect, and for his slighting the short-run context of most of my framework is that Patinkin ... is Walrasian, concerned with abstract completeness, rather than Marshallian, concerned with the construction of special tools for special problems."

8. Friedman (1948, 136) explains in a footnote: "The adoption of 100 per cent reserves is essential if the proposed framework is to be entirely automatic. It should be noted, however, that the same results could, in principle, be achieved in a fractional reserve system through discretionary authority," if the monetary authorities adopted the appropriate rule.

9. Friedman suggests that the discount rate (traditionally fixed below the Fed funds rate) should become a true penalty rate that might be tied automatically to a market rate, and "if the differential were sufficiently high, this would be equivalent to abolishing discounting" (Friedman 1960, 45).

10. Friedman's (1953) case for flexible exchange rates focusses monetary policy on internal price stability rather than exchange stability and shores off the base against the effects of foreign exchange interventions.

11. Recall here that Friedman's (1948) earlier "Framework" featured a far more aggressive counter-cyclical approach to monetary stabilization owing to the automatic monetization of deficits.

12. Desai's (1989, 149) observations on the *exogeneity* of money supply and apparent similarity between Friedman's monetarist theory and Keynes's General Theory ("The banking system is a passive agent in this view and given the cash base is always fully loaned up.") do not get to the heart of the matter though. Of course, to what extent it may be legitimate to interpret the empirical evidence as reflecting deliberate "exogenous" changes in money supply has been very controversial. See e.g. Kaldor 1970 and Tobin 1970.

13. His key concern was to stabilize fiscal policy, particularly public investment, and let automatic stabilizers do their natural work (cf. Clarke 1998). It has to be remembered that at the time the "sound finance" idea was still widely prevalent that it is always sound to attempt to balance the budget no matter how big a toll a recession might extract; confusions which were often closely related to loanable funds theories of interest.

14. My own research in this field has unearthed numerous occasions when, in the face of growth risks, financial markets were pushing for quick and drastic interest rate reductions, which were *resisted by the authorities* for reasons of their own biased concern about inflation risks only. Apparently, such inflation obsession can conflict with the markets "natural" (?) concern about growth (Bibow 2001a, 2002). Friedman's policy regime was explicitly designed to prevent such asymmetric policy orientation and let the markets' wisdom rule.

15. Somewhat ironically, Friedman has recently received much praise from such powerful conservative policymakers as Alan Greenspan and President George W. Bush (cf. Taylor 2001, Rosett 2002). The latter honored Friedman at a White House ceremony on 9 May 2002 as the most important economist of the 20th century while presiding over a massive shift in fiscal policy to boost the economy - considering that Friedman had always argued that discretionary fiscal policy had little effect. The former, largely famous for his liberal monetary policy of actively stimulating growth and responding flexibly and aggressively to growth risks, suggested that he would never have anything to worry about if the FOMC were staffed with Friedmans only - considering that Friedman had argued all his life for a regime that was not dependent on men but law. Accordingly, while judging Greenspan's policies since 1992 successful, Friedman seems to find it "hard to believe" that Greenspan might be a good "thermostat" compared to other Fed chairmen: "What I'm puzzled about is whether, and if so how, they suddenly learned how to regulate the economy. Does Alan Greenspan have an insight into the movements in the economy and the shocks that other people don't have?" (Friedman quoted in Taylor 2001, 105-6). Friedman explains there that a successful monetary policy (or, good thermostat) involves a zero correlation between the quantity of money and GDP; as achieved after 1992 through Greenspan's discretionary interest rate policies. The idea of Friedman's fixed base rule was to secure the zero correlation outcome without reliance on accident or luck (i.e. exceptionally competent central bankers, if that species exists), but deference to law and market forces only.

16. The European Central Bank (following Bundesbank traditions) is a case in point here (see fn. 14). Yet, it is quite wrong to view this kind of inflation obsession as monetarism in practice. Friedman's preferred k -percent regime does not grant central bankers any discretion to decide what interest rates and unemployment rates might be most suitable to maximize their own prestige and fool the public. It is very illuminating that Friedman (1984b, 1992b) severely attacked the Federal Reserve for, what he saw as, their *too restrictive* conduct in the context of the US recessions of the early 1980s and early 1990s. This would seem to prove that Friedman does not suffer from what is widely prevalent in today's theory and practice of central banking: money illusion.
