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THE MONETARIST COUNTER-REVOLUTION TODAY – AN APPRAISAL

The oft-quoted concluding note of Keynes' *General Theory* sings of the power of 'the ideas of economists and political philosophers, both when they are right and when they are wrong'. 'Practical men', 'madmen in authority', 'civil servants and politicians and even agitators' – all are unconscious 'slaves of some defunct economist' or 'academic scribbler of a few years back'. The power of his own ideas fulfilled his prophecy, and he was right too that 'the gradual encroachment of ideas' 'came not immediately', but 'after a certain interval'. The monetarist counter to his own revolution is another confirmation. But the transmission of ideas to the world of affairs has speeded up, like so many communications in modern society. The insatiable appetite of the media for novelty assures an audience for intellectual revolutionaries who can convey their ideas in plausible and homely language. The monetarist economists and 'scribblers' whose theories are coming to rule the world are by no means defunct.

Another giant of a generation past, Joseph Schumpeter, reassured our profession about its inevitable compound of 'Science and Ideology'.[1] 'Vision or Intuition' guides the observations and interests that motivate our work, and is inherently ideological. Though the economist cannot purge his own scientific work of the ideological bias stemming from his initial vision, Schumpeter was optimistic that the collective intercourse of scientists gradually cumulates the durable truths distilled from successive waves of ideologically contaminated inquiries. He concludes, 'That prescientific cognitive act which is the source of our ideologies is also the prerequisite of our scientific work. No new departure in any science is possible without it. Through it we acquire new material for our scientific endeavours and something to formulate, to defend, to attack. Our stock of facts and tools grows and rejuvenates itself in the process. And so – though we proceed slowly because of our ideologies, we might not proceed at all without them'. Schumpeter's address takes Smith, Marx and Keynes as examples. Following his precedent, I intend nothing pejorative in stressing that monetarism is both science and ideology.

That point was made with characteristic eloquence and perception by Harry Johnson ten years ago in his Ely Lecture to the American Economic Association.[2] He observed that the Keynesian revolution and the monetarist counter-revolution shared characteristics essential for the success of revolutionary theory: a vulnerable orthodoxy to attack and to blame for contemporary economic reverses and policy failures; novel socially relevant conclusions

[1] The title of his 1948 Presidential address to the American Economic Association, *American Economic Review* (March 1949), pp. 345–59.

[2] The Keynesian revolution and the monetarist counter-revolution, *American Economic Review* (May 1971), pp. 1–14.

reached by professionally respectable techniques; focus on the salient economic evil of the era; intellectual and methodological excitement for the most talented young scientists and plenty of applied work for the journeymen. The forms these conditions took in the two cases are pretty obvious: I will not repeat or update Johnson's descriptions.

Johnson's 1970 prediction that monetarism will 'peter out' – the same words as Schumpeter's 1948 judgement of Keynesianism – was premature at best. Today it is interesting to see why. He gave two reasons. One was that the monetarists' Evil, inflation, 'is far less a serious problem than mass unemployment', the Evil of Keynesian ideology. But in the 1970s prevailing professional and lay opinion has not rendered this verdict.

Johnson's second reason was 'that monetarism is seriously inadequate as an approach to monetary theory, judged by prevailing standards of academic economics, and in the course of repairing its intellectual fences and achieving full scientific respectability it will have to compromise irretrievably with its Keynesian opposition'. His indictment made two specific charges. One was 'the abnegation of the restated quantity theory of money from the responsibility of providing a theory of the determination of prices and of output,' i.e. 'for analysing the supply response of the economy to monetary impulses, ... whether monetary changes affected prices or quantities.' The second was 'reliance on the methodology of positive economics', i.e. the appeal to simple reduced-form statistical correlations that do not contradict the theory, without specification of the structural mechanisms that could have produced them. Johnson predicted that to maintain academic respectability, and therefore ultimately public influence, monetarists would have to grapple with hard theoretical and empirical questions, losing in the process their sharp differentiation from mainstream Keynesians and eclectics.

The flaws Johnson detected have not yet proved fatal. The problems remain, but the failure to solve them has never been an embarrassment. To the contrary, it has become a virtue. In the ten-year interim monetarists, instead of being absorbed into a bland and messy synthesis, have pulled the centre of gravity of the profession toward their positions and their methodology. The credit goes to a second wave of monetarism, a second counter-revolution that has absorbed and breathed new life into the first, a movement both more reactionary and more revolutionary than its precursor. I shall return to this development, the new classical macroeconomics, later in my talk. It is very much an academic and intellectual development, and first I want to review the triumphs and trials of monetarism in the public arena since Harry Johnson's lecture.

I. MONETARISM, POLICY, AND PERFORMANCE IN THE 1970S

It is not surprising that the central banking fraternity embraced monetarism. Central bankers feel the need of an orthodoxy to which they can appeal in defence against the pressures of Presidents and Prime Ministers, Congresses and Parliaments. With the gold standard long gone and Bretton Woods mori-

bund, money stock targets – their legitimacy and necessity scientifically attested – became the vehicles of discipline.

In the United States, the Federal Reserve began formulating its policies in these terms in 1970. The monetary oversight Committees in both Houses of Congress, influenced by monetarist staff, insisted on targets for monetary aggregates. These Committees examine the 'Fed' Chairman quarterly and grade him on his marksmanship. Elsewhere in the Capitol other Committees struggle, along with the President's agents, with the budget. The operations are

Table 1

U.S. Monetary Aggregates and Measures of Macroeconomic Performance 1951–1979 Means and Standard Deviations for Selected Periods

	Quarterly Changes of Seasonally Adjusted Series at Annual Percentage Rate					
	Monetary aggregates			Macroeconomic outcomes		
	Base	M1	M1B	Real GNP (1972 dollars)	GNP price Deflator	Unemployment rate quarterly average Percentage of Labour Force)
Means						
(1) 1951:1 to 1960:4	1·71	2·20	n.a.	2·81	2·24	4·55
(2) 1961:1 to 1969:4	5·10	4·14	4·10	4·32	2·79	4·69
(3) 1970:1 to 1979:4	7·97	6·06	6·40	2·94	6·63	6·19
(4) 1951:1 to 1979:4	4·92	4·13	n.a.	3·33	3·92	5·16
Standard deviations						
(5) 1951:1 to 1960:4	1·80	2·27	n.a.	4·76	2·32	1·28
(6) 1961:1 to 1969:4	1·66	2·40	2·42	2·57	1·68	1·09
(7) 1970:1 to 1979:4	1·36	2·31	2·14	4·50	2·35	1·17
(8) 1951:1 to 1979:4 from grand means, row 4	3·07	2·82	n.a.	4.13	2·91	1·40
(9) 1951:1 to 1979:4 from decade means, rows 1–3	1·62	2·33	n.a.	4.11	2.15	1·19

Note: 1961:1 and 1970:1 were chosen as beginnings of periods with explicitly different macroeconomic policies

disjoint, in keeping with monetarist premises. That monetary policy should be different with different budgets, that fiscal and monetary policies should be concerted for common macro-economic objectives – these ideas are not effectively entertained.

What have been the results of the monetarist turn in U.S. demand-management policies? Following the reduced-form methodology to which Johnson alluded, we may seek proof of the pudding in the eating. As we all know, real outcomes have been less satisfactory on average than in the two previous decades and less stable than in the 1960s. Inflation has accelerated and its variance has

risen too. After a decade without recession, we have suffered three in the last ten years, including the one now in progress. The two most recent recessions are the most severe of post-war history. All three recessions were deliberate acts of policy, especially monetary policy. As Table 1 indicates, there was somewhat greater stability in monetary growth rates in the 1970s, but considerably less stability in the macro variables of real importance. The decade of activist policy, the 1960s, looks better than the years before or after.[1]

Monetarists complain, of course, that the players on the field did not faithfully follow their coaches' game plan. True enough, and quite normal. Neither did Lyndon Johnson follow his 'Keynesian' coaches' game plan when he escalated the Vietnam war without raising taxes in 1966, but the 'New Economics' of the period has not thereby escaped blame for the resulting inflation. The Federal Reserve has not been wholly monetarist since the 1970 conversion. The 'Fed' moved its short-run money growth targets with eyes on national and international economic variables, actual and projected, and did not completely abandon its old strategy of 'leaning against the wind' but not too hard.

The 'Fed's' imperfect marksmanship did not prevent strong swings in demands for money and credit from showing up in money supplies. Sometimes these were 'IS' shocks whose accommodation intensified boom or recession. Sometimes they were 'LM' shocks that, according to William Poole's paradigm[2], should be accommodated. By the same principles, the Fed's corrective responses to errors of marksmanship were sometimes stabilising and sometimes not. Lacking any levers at its operations desk marked M_1 or M_2, the 'Fed' has to control these quantities indirectly, by reference to a related variable it can control. Until recently, this was the market interest rate on overnight interbank loans, 'Federal Funds'. Every month, sometimes more frequently, the Federal Open Market Committee reconsidered its Funds rate target and moved it up or down as thought necessary to return money stocks to the desired track or keep them there.

Monetarists criticised this procedure – pegging nominal interest rates! – for allowing excessive swings in money supplies. The Federal Open Market Committee, the critics said, adjusted the instrumental Funds rate target too little and too late. In October 1979 the Fed surrendered, announcing that henceforth its week-to-week operations would be guided by quantitative targets for bank reserves, subject to broad and adjustable interest rate limits. Unfortunately the short run relation of Ms and MVs to reserve stocks is, as subsequent events illustrate, no tighter than their relation to the Federal Funds rate.

More basic practical difficulties of single-minded monetarism were exemplified in the summer of 1980 by the dilemma of the American central bank. Demand for new bank credit had dwindled, and for the time being the 'Fed's' money growth targets seemed unattainable without short-term rates so low compared to those

[1] See also M. N. Baily, 'Stabilisation policy and private economic behaviour,' *Brookings Papers on Economic Activity* (1: 1978), pp. 11–50.

[2] W. Poole, 'Optimal choice of monetary policy instruments in a simple stochastic macro model,' *Quarterly Journal of Economics* (May 1970), pp. 197–216.

on this side of the Atlantic that the dollar would plummet once again. Apparently this pragmatic consideration prevailed over faithful pursuit of the targets.

Though not purely monetarist, demand management policies in the 1970s have been increasingly influenced by monetarist principles and sensitive to monetarist criticisms. Real outcomes have not been good, and might well have been worse if the authorities had followed less compensatory and accommodative policies. The 1970s were tough for demand management of any brand. But monetarists are in a poor position to shift blame to the inflationary legacy of the 1960s, or to OPEC, or to fiscal policies. Their own doctrines – stressing sharp dichotomies between real and monetary shocks, between relative and absolute prices, and between past trends and future expectations – disqualify as vulgar fallacies these popular explanations of inflation and stagflation.

The dismal record has not yet appreciably diminished the appeal of monetarism to central bankers, statesmen, and influential citizens. The doctrine has survived recent economic reverses much better than the so-called New Economics of the early 1960s weathered the failures for which it was, rightly or wrongly, held responsible at the end of that decade. The claim that current travails are the fault of the old orthodoxy, indeed further proof of its errors and dangers, has not lost credibility. Monetarism gains still from poor economic performance. Moreover, the inevitable short-run pro-cyclical elasticity of money supplies gives ready alibis to those monetarists who are not actually running central banks. Having defined policy by stochastic endogenous variables rather than by operationally controllable instruments, monetarist critics can always complain that 'policy' has been too unstable and accommodative. The more wilful deviations of practical central bankers, previously noted, add to the credence of these criticisms.

But there are signs that the honeymoon is coming to an end. The redefinition of monetary aggregates to catch up to financial innovations and substitutions, the persistence of endogenous swings in the aggregates after the authorities abandoned even temporary stabilisation of overnight interest rates, and recent gyrations of other interest rates inspire critical questions even within the naturally loyal financial constituencies of the central bank. As Johnson observed intellectual and operational responses to such questions are bound to impair the appealing simplicity of monetarist doctrine and policy.

II. MONETARISM AS CONSERVATIVE IDEOLOGY

In public political and economic debate, monetarism has become a central part of conservative, that is to say nineteenth-century liberal, ideology. These days the other principal elements are most easily summarised as oppositions to Government: to public operation or regulation of economic activities, to redistributions of income and wealth, to collective consumption and investment, and to budget deficits. 'Supply-side economics' is a more positive theme of contemporary right-wing ideology, stressing tax reductions and deregulation as incentives for work, saving, enterprise and efficiency.

The logical connections of the monetarism of the 1960s to its ideological partners remain obscure. Their unity was less in logic than in the person of Milton Friedman, the powerful and persuasive protagonist of the several ideas. In principle a monetarist could favour big and active government, advocate public interventions to correct market failures, or – like Friedman's Chicago precursor Henry Simons – urge redistribution by progressive taxation.

In principle monetarism provides no support for the traditional and ever-popular conservative warning that deficit spending is inflationary. Monetarist doctrine says that deficits increase aggregate nominal spending only as they lead to increases of money supply. In countries with underdeveloped financial systems, printing money may be the only feasible way to finance deficits. But in countries like the United States and United Kingdom, any linkage must be political choice rather than technical necessity. The allegation that political pressure forces the central bank to monetise deficits has dubious empirical foundation, especially in recent years. Some non-causal correlation between base money growth and deficits will be observed when both move counter-cyclically, money for policy reasons, deficits endogenously.

Monetarists frequently charge deficit spending with 'crowding out' productive private investment. Popular versions of this charge are particularly disingenuous in failing to distinguish cases in which real output is supply-constrained from those in which it is merely money-constrained. In the former cases, any new draft on resources, however financed, is bound to crowd out other uses. Allocational priorities are an important consideration in the mix of monetary and fiscal policies, but judgement about them is not a specifically monetarist issue. In cases of the second kind, to crowd out or not to crowd out is a choice of monetary policy. With employable resources available, deficit-financed demands could be accommodated by money supply to the degree they are not naturally accommodated by velocity.

Professional debate on the macro-economic efficacies of fiscal and monetary policies contains, after all, little ideological excitement. First principles of free enterprise do not say which will be the more effective or useful or hazardous. Both public finance and monetary management are embarrassing exceptions to the ideological rule that competitive pursuit of private interests will handle all society's economic problems. For just that reason many conservatives find the unmanaged gold standard more congenial than the controlled fiat money of the monetarists.

Monetarism is more in tune with the wider ideology in its insistence on stability in macro-economic policy. Activist demand management, 'fine tuning' compensatory counter-cyclical policies – monetarists identify these as the sources of instability in overall economic performance. With stable policies, they say, the economy itself will be stable. Exogenous non-policy shocks, including entrepreneurial expectations and spirits, are assigned comparatively little empirical importance. To those shocks that do occur market adjustments are swift and convergent. Policy variations are more likely to amplify than to dampen natural fluctuations, misallocating resources in the process. The logic of this view applies to all policy instruments, fiscal as well as monetary. Fried-

man himself so applied it, before he became so exclusively monetarist, in his 'Fiscal and Monetary Framework for Economic Stability'.[1]

This is a more fundamental theme than the technical sovereignty of any monetary aggregate and it is more congenial to free enterprise ideology. It is also the theme of the second wave of the monetarist counter-revolution, the new classical macro-economics. The new doctrine has given a theroetical rationale for propositions that were previously matters of faith and empirical judgement. The grasp of the Invisible Hand is extended beyond micro-economic resource allocation to macro-economic optimality – market competition produces not just a tendency towards long-run optima but a continuous sequence of equilibria. Friedman himself is the link between the old monetarism and the new. The 1968 message of his 'natural rate of unemployment'[2] was that demand management policies can only temporarily alter real economic outcomes, that under stable policies the economy will reach equilibrium employment on its own.

Nevertheless I doubt that the new wave will establish a permanent place for monetarism in conservative ideology. The popular success of monetarism arose along with Inflation, the Evil that could be plausibly blamed on the errors and excesses of the reigning orthodoxy, the Evil for which monetarist rules of policy were the specific remedy. As ideology monetarism profited from the substantial real disappointments of the decade, notably OPEC shocks, because the public identified all personal, national, and worldwide reverses of economic fortune in the 1970s as ravages of Inflation. Professional economists of all schools know that such disappointments and reverses could not be avoided by less accommodative monetary policies, any more than their first-order costs could be escaped by more accommodative policies. Printing money does not produce oil, and neither does not printing it.

There has always been tension between ideological monetarism, which promises to rescue us from Inflation, and theoretical monetarism, which says that Inflation has little or no effect on the real performance of the economy. The tension is accentuated in monetarism mark II, which relies heavily on the neutrality of money, even on super-neutrality, and applies the 'classical dichotomy' to continuously moving equilibrium. The message of the new classical macro-economics is not so much that Keynesian policies do Evil as that they do Nothing. Not quite: an alleged evil is that capricious shifts in policy rules confuse private agents and cause allocational distortions. Whatever its intrinsic merit, this point is not the stuff of ideology; its lay appeal is as limited as that of the 'shoe-leather' costs of economising cash during anticipated inflations.

The tension is likely in time to become a telling weakness in monetarism as conservative ideology, if only because it attenuates the evangelical fervour of leading new classical theorists. In the face of monetarism II, some more old-fashioned conservative economists steadfastly maintain that deficits, debt, easy money, and inflation do serious positive harm.

Both wings can agree on macro-economic policies. It is therefore likely that

[1] *American Economic Review* (June 1948), pp. 265–74.
[2] 'The role of monetary policy', *American Economic Review* (March 1968), pp. 1–17.

the public focus of conservative political economy will shift away from macro concerns to the size of government, regulation, progressive taxation, the welfare state, and related 'supply-side' issues. Government is a currently popular Evil, and probably an easier target than Inflation.

III MONETARISM AS PROFESSIONAL ECONOMICS

I return now to the intellectual inadequacies that Harry Johnson detected in monetarism in 1970. Why have they not proved as damaging as he predicted? How have the monetarists, especially those riding the second wave, handled them? Where does the professional debate between the old Keynesian revolution and the counter-revolution stand today? Johnson mentioned two problems, which I paraphrase as the output-price responses of the economy to variations of monetary demand, and the structure of the process by which measures of monetary control are transmitted to aggregate demand. I shall discuss them in turn.

The 'missing equation': money, output, and prices. 'The supply response of the economy to monetary impulses' is still the central issue, for both theory and policy. A monetary impulse can be regarded as a change, however generated, in the nominal rate of spending on final goods and services – nominal GNP or M times V. The roles of monetary policies and aggregates, fiscal policies, and velocity shocks in determining the path of MV are separable and secondary questions, deferred to the second part of this section. The division of monetary impulses between prices and quantities is the crucial matter today in assessing the real consequences and counter-inflationary prospects of the restrictive macro-economic policies your government and mine are pursuing.

In his 'Theoretical Framework'[1] Friedman referred to this division as the 'missing equation' of short-run models. He claimed that both Keynes and the classics relied on arbitrarily assumed rigidities, at one pole the money wage and at the other aggregate supply. His own candidate, a short-run adjustment equation, was not different in spirit from the wage/price/output mechanisms of mainstream eclectic Keynesian theory and econometrics. These included Okun's Law and Phillips-type equations for money wages and mark-ups, along with competitive pricing in 'flex-price' sectors.

The salient proposition underlying this approach is that labour and product markets in the dominant 'fixprice' sectors are in disequilibrium most of the time. That is, they are characterised by excess supply or demand at existing wages and prices. A large share of short-run adjustment occurs via quantities rather than prices. Wages and prices are insufficiently flexible to keep markets continuously cleared.

The adjustment process itself has not, in general, been successfully described as optimising behaviour, the only paradigm that carries theoretical conviction in our profession. This failure, neither surprising nor discreditable in view of the

[1] 'A theoretical framework for monetary analysis', *Journal of Political Economy* (March/April 1970), pp. 193-238.

intrinsic difficulties of the task, is the root of the chronic crisis in macro-economics.

Monetarism II has not solved this problem, but has evaded it. The new classical macro-economists,[1] bolder than their pre-Keynesian forebears, just assume that product and labour markets are continuously in supply–demand equilibrium. They know and admit, of course, that this is not literally true. But the 'methodology of positive economics' protects them from empirical examination of their premises: let's see, they say in effect, if macroeconomic observations behave 'as if' generated by price-cleared markets.

They further assume, of course, that participants in those markets make future-oriented decisions on the basis of rational expectations of relevant variables, including government policies. The substantive thrust of this important assumption is to eliminate the inertia that adaptive expectations imparted to earlier models of wage and price adjustments. The implication is that real outcomes will be invariant to anticipated monetary policies, as indeed to any events that do not change real endowments, current and expected.

By defining away the problem of the 'missing equation', the monetarists have escaped the messy grubwork in which Johnson expected them to lose their identity. Thus liberated, Monetarism II mobilises the power of general equilibrium theory and the eager young talent its apparatus naturally attracts.

But the facts of business fluctuations remain, challenging the theorists to explain in their equilibrium terms the cyclical variability of real macro-economic variables. I find neither of the two lines of explanation so far advanced convincing. One is to attribute cyclical swings to basic real data: tastes, technologies, resource endowments. For example, swings in employment could reflect intertemporal choices between leisure and other consumption. Besides being an inherently implausible account of the variations of unemployment of labour and capital capacity since 1946, not to mention pre-war experience, this version of equilibrium theory omits monetary variables altogether.

The second approach attempts to explain the well-documented short-run positive association of nominal prices and real quantities. Superficially this correlation appears to refute the asserted neutrality of monetary policy. Robert Lucas's celebrated reconciliation[2] is that the correlated observations arise wholly from monetary surprises – for example, suppliers mistakenly interpret an economy-wide increase in absolute prices as a rise in their own relative prices. This theory invites two decisive objections. First, it requires, in addition

[1] The leading protagonists are Robert Lucas, Thomas Sargent, and Robert Barro. See, for example, Lucas and Sargent, 'After Keynesian macroeconomics', in *After the Phillips Curve* (Federal Reserve Bank of Boston Conference Series 19, June 1978); Lucas, 'Understanding business cycles', in Brunner and Meltzer, eds., *Stabilization of the Domestic and International Economy*, *Journal of Monetary Economics Supplement* (1977). T. Sargent and Neil Wallace, 'Rational Expectations, the optimal monetary instrument, and the optimal money supply rule,' *Journal of Political Economy* (April 1975), pp. 241–54. For a critique of these developments see my Jahnsson lectures: Tobin, *Asset Accumulation and Economic Activity: Reflections on Contemporary Macroeconomic Theory* (London: Blackwell, 1980) chapter 2; also, 'How dead is Keynes?', *Economic Inquiry* vol. XV, no. 4 (October 1977), pp. 459–68.

[2] Robert E. Lucas, Jr, 'Econometric testing of the natural rate hypothesis', in Otto Eckstein, ed., *The Econometrics of Price Determination Conference*, sponsored by the Board of Governors of the Federal Reserve System and the Social Science Research Council (Washington: Federal Reserve System, 1972).

to the basic assumptions of market-clearing and rational expectations, an arbitrary and empirically far-fetched specification of imperfections and asymmetries in the information available to various economic agents, for example sellers and buyers.

Second, the theory fails to account for many observed regularities of cyclical fluctuations. I do not have time to catalogue them here. My dear friend Arthur Okun, in a paper I heard him give only a couple of weeks before his tragic death, gave a thorough and admirable list[1]. These phenomena are quite consistent with the modern Keynesian view, and indeed the old monetarist view as well, that unemployment and idle capacity reflect excess supply in non-cleared markets. They are not consistent with the new classical view.

Inertia of wage and price paths could be attributed either to sluggishness in adaptation of expectations or to institutional rigidities. The rational expectations revolution, discrediting adaptive expectations, has focused the profession's attention on the second source of inertia. Contracts, explicit and implicit, are an obvious institutional rigidity. They are particularly important in United States labour relations, where collective bargaining contracts are made for as long as three years. Workers' concern for relative status is, as Keynes argued, another important factor, again especially in the United States, where collective bargaining is both decentralised and unsynchronised in time. Since contracts do not cover all contingencies, as they would if made by Arrow and Debreu, it is possible for compensatory policies following well-understood rules to be effective for good or ill by responding to macro-economic information that becomes available during the tenure of contracts.

The big policy debate today, certainly in our two countries, concerns the effectiveness and the side effects of a sustained and determined programme of monetary disinflation.[2] Will such a programme succeed in eliminating or significantly reducing our current inflations, and if so how fast? How much damage to real economic variables, employment, output, and investment, will occur in the process? How rapidly will local prices adjust downward if the monetary authorities resolutely refuse to accommodate OPEC boosts and other specific price shocks?

Past experience, including the previous recession and the current one, yields pessimistic answers. In the United States, up to 90 % of reductions in monetary spending for a year goes into output rather than prices. Two or three point-years of extra unemployment bring down the inertial core inflation by only one point.

Monetarists contend that the observations that generated these unpromising estimates of short-run trade-offs were coloured by the expectations of private agents – workers, unions, managements – that compensatory policies would relieve them of the necessity to lower money wages and prices to restore normal employment and sales volumes. Consequently, they contend, disin-

[1] A. M. Okun, 'Rational-expectations-with-misperceptions as a theory of the business cycle,' prepared for the American Enterprise Institute Seminar on Rational Expectations (February 1980).

[2] I have discussed the issues at more length in 'Stabilization policy ten years after', *Brookings Papers on Economic Activity* (1:1980), pp. 19–72.

flation will occur much more rapidly, and with much less real transitional damage, if the determination of the authorities to 'stay the course' this time is well advertised and well understood.[1]

This is a highly speculative prospect to bet on. Can such a threat really be credible in a democracy, where governments cannot bind their successors? Perhaps the chances of policy reversal are, and will be perceived to be, less in a Parliamentary system like your own than in our Congressional–Presidential structure. Even if the threat is credible, how will it be read by individual workers, unions, and enterprises? Each group might well prefer to let the rest of the economy do the disinflating, thus making sure that its relative status is protected whatever the other groups do. Unfortunately, monetarist propaganda has undermined the monetarist programme, by spreading the notions that inflation is wholly the responsibility of government and that disinflation can be achieved solely and costlessly by governmental financial reform while private agents conduct business as usual.

The main point is that the experiment is novel, the subjects are national and world economies, and the stakes are very high. For this reason, I personally think it would be only prudent to coordinate monetary disinflation with an incomes policy designed to disinflate nominal income claims at a pace consistent with the deceleration of aggregate monetary demand. A coordinated programme would combine threat with promise – promise that jobs and sales will be maintained and promise that no union or other interest will be going it alone. Given mutual consistency of the policies, wage/price controls would not be trying to hold the lid on a kettle boiling with excess demand. At the end of several transitional years, the inflationary legacy of existing contracts and status comparisons would have been overcome. Both expectations and policies would then support the continuation of less inflationary patterns without controls.

A coordinated programme of this kind presumes that the society enjoys or can reach rough basic consensus on division of the social product. If there is irreconcilable conflict, the society's maladies are deeper than their inflationary symptoms and certainly beyond the reach of any central bank. And it is gratuitously optimistic to think that fundamental distributional conflict can be resolved by shrinking the pie over which the parties are contesting.

Monetarists, of course, fervently oppose controls of any kind, even flexible varieties based on tax penalities or rewards or on the negotiable ration tickets devised by the ever-inventive Abba Lerner.[2] Monetarists commonly say that incomes policies are not sufficient, which is true; they must be accompanied by suitably disinflationary demand management. They commonly say that they were not necessary, which is a highly debatable assertion of faith. They always say they are allocationally inefficient, which is true as far as it goes. But these inefficiencies must be compared with the real costs of recession and stagflation

[1] William Fellner, *Towards a Reconstruction of Macroeconomics* (Washington: American Enterprise Institute, 1976).

[2] See Arthur M. Okun and George L. Perry (eds.), *Curing Chronic Inflation* (The Brookings Institution, 1978). For an elegant alternative with the same properties of flexibility, see Abba P. Lerner, 'A wage-increase permit plan to stop inflation,' *Brookings Papers on Economic Activity* (2:1978), pp. 491–505.

resulting from unassisted monetary disinflation. Ultimately, I suspect, monetarist objection to controls is based not on such cost-benefit analysis but on ideological preference for a 'free' economy however badly it may perform. But if the monetarist prescription exhausts the public's tolerance of real hardships without visible abatement of inflation, the reaction will damage not only the credibility of monetarism and the economy's freedom from controls but also some more important social values.

Structural modelling of money and monetary policy. The second scientific deficiency mentioned by Johnson in 1970 was the failure to provide structural models, either theoretical or econometric. Johnson attributed this failure to excessive reliance on the 'as if' methodology of positive economics.

For example, Friedman and other monetarists were impatient with requests to define conceptually the 'money' whose quantity was the alleged fulcrum of the economy. What properties of liabilities payable in the unit of account are essentially monetary? What characteristics matter? The identity of the debtor – government, commercial banks, other intermediaries? The term of the liability – demand, notice, term? The bearing of nominal interest – zero, otherwise fixed, market-determined? Transferability and acceptability in transactions? Safety and predictability of nominal value? Monetarists have preferred not to hear these questions but to reason in theoretical models 'as if' there were an unambiguous unique monetary store of value, and to identify as its real world counterpart whatever aggregate correlated best with nominal GNP. However persuasive the R^2s of these simple regressions were to laymen, Johnson was right that neither the theory nor the statistics satisfied the canons of the profession as of 1970.

On the theoretical side, it seemed to critics, myself included, that monetarists made quantum leaps from general asset preference theory to special monetarist propositions. However stable 'the' money demand function may be, equating it to money supply cannot describe the whole economy if the function contains more than one endogenous variable. How Friedman and Brunner–Meltzer[1] could turn multi-asset systems of equations into single equation monetarism remains a mystery I do not fathom. Nor did Friedman's 'Theoretical Framework', evidently written in belated response to complaints of this genre, provide a structural model supporting his strong propositions and policy recommendations. Certainly that work has not proved nearly so seminal and influential as his 'natural rate' Presidential address.

However, on this score too the second wave of the counter-revolution has saved monetarism from much of the embarrassment and absorption Johnson foresaw. For example, Barro's revival of the Ricardian theorem[2] of the equivalence of public borrowing and taxation has provided an intellectually tight, if

[1] For an exposition of their monetary theory, see K. Brunner and A. Meltzer, 'An aggregate theory for a closed economy', in J. Stein, ed., *Monetarism* (Amsterdam: North Holland, 1976), ch. 2. Benjamin Friedman points out that the model does not differ significantly in its structure from other macro models of asset stocks and flows: B. Friedman, 'The theoretical non-debate about monetarism', in T. Mayer, ed., *The Structure of Monetarism* (New York: Norton, 1978), pp. 94–112.

[2] Robert Barro, 'Are government bonds net wealth?', *Journal of Political Economy*, vol. 82 (November/December 1974), pp. 1095–117.

empirically implausible, rationale for monetarist dismissals of the macro-economic importance of fiscal policies. (At the same time, however, it exonerates government borrowing of the charge of crowding out private investment.) On the empirical front, Lucas's critique of econometric policy evaluation[1] has called existing structural models into question, on the ground that their behavioural equations will not be invariant to policy rules and regimes. Given the hazards of *a priori* classification of variables as exogenous or endogenous, Sims and others seek to infer causation from nonstructural systems.[2] So the pseudo-reduced-form empiricism of Monetarism I seems less illegitimate now than it did ten years ago. In any event, the question whether money causes income or income money or both is still undecided.

In some respects the new monetarism is as vulnerable to Johnson's objection as the old. Popular rational expectations macro-models, from which strong propositions about policy are derived, are underdeveloped on the financial side. They too neglect to describe the monetary transmission process. They assume a single sovereign M, unspecified as to concept, properties, and measure. They assume it to be directly controllable by the authorities; they do not explicitly relate it to instruments of monetary control, government budgets, or financial institutions and markets. They assume neutralities that would not survive in richer models, which would take account of such phenomena as rigidities of nominal interest rates on currency, deposits, and central bank discounts and as the different wealth and portfolio effects of monetisation of government deficits, central bank open-market operations, credit creation by financial intermediaries, and other money-supply processes. A related monetarist oversimplification is the common two-way classification of shocks as monetary or real, ignoring the monetary–real combination in a shock, for example, to the marginal efficiency of capital. These deficiencies are remediable as the new monetarism drops the primitive dogmas of the old, but as Johnson said, the process will involve some loss of distinctive identity.

The synthesis of revolution and counter-revolution that Harry Johnson expected in 1970 has not yet occurred. Instead the gulf has widened, as the advent of Monetarism II prolonged the life of the counter-revolution. I think nonetheless that the synthetic phase of the dialectic is beginning. The synthesis will not be, to the extent that Johnson predicted, the disappearance of monetarism into an eclectic neoclassical neo-Keynesian mainstream. The ideas of the second counter-revolution are too distinctive and too powerful to be lost in the shuffle. They are bound to shape whatever orthodoxy emerges. The durable ideas are more methodological than substantive – internally consistent derivation of rational expectations and rational behaviour, embodied in the structural equations of a general equilibrium macro-economic model. These ideas are already being mobilised not just to exalt the Invisible Hand but to explain the

[1] Robert E. Lucas, 'Econometric policy evaluation: a critique', in Karl Brunner and Allan H. Meltzer (eds.), *The Phillips Curve and Labor Markets*, Carnegie-Rochester Conference Series on Public Policy, vol. I (Amsterdam: North-Holland, 1976), pp. 19–46.

[2] Christopher Sims, 'Macroeconomics and reality', *Econometrica*, (January 1980), pp. 1–48.

causes and effects of informational imperfections, long-term contracts and other commitments, incompleteness of capital markets, liquidity constraints, and many other phenomena of common observation. As the process bears fruit, Keynesian problems will be interpreted in a new light but will not disappear or be dismissed as theoretical impossibilities. There will be plenty of room for compensatory demand management, both in theoretical models and in real economies, and improved understanding how to use it. As this scientific synthesis proceeds, monetarism will lose the polar simplicity essential to its ideological appeal, which will in any case be eroded by disillusionment with the results of policies identified with monetarism. If I am right in these guesses, Joseph Schumpeter's faith in the fruitful interaction of science and ideology will be once more vindicated.

Yale University JAMES TOBIN

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