and hence the basis of competitive advantage in the international economy.

Given environmental-control-induced competitive shifts, which may be more or less abrupt, it is clear that policy countermeasures may be undertaken by national governments designed to soften or neutralize the potential impact on domestic exporting and import-competing industries. A number of techniques are discussed whereby this may be accomplished, emphasizing the possible trade-distortive effects of such devices. At the same time, it was indicated that a variety of exportable products and services may arise from E-C activities as well, and that this may to some extent offset competitive disadvantages encountered by suppliers in countries in the forefront of environmental control. Moreover, it was pointed out that E-C activities may also have an impact on international industrial location and hence on the pattern of inter-country capital flows.

Environmental control remains primarily a normative concept, subject to a great deal of engineering and economic uncertainty. What is a “clean” environment? How can it be achieved? How soon? And at what cost? No one knows the answers to these questions. It is certain, however, that the answers will differ materially between countries for a long period of time — even though the ultimate outcomes may be very similar — and that in the interim these differences will have a marked impact on international trade, investment, and economic policy.

Implications for the international economy will be reduced to the extent that the uncertainties can be mitigated at an early stage, and in accordance with the degree of international coordination and harmonization that occurs. It is of utmost importance that realistic standards and targets be established. Unachievable standards and time schedules will impose unnecessary burdens on producers. While there is a need for flexibility, haphazard policies and continuous revisions of regulations and standards will inevitably entail an element of uncertainty and make multinational business planning and investment extremely difficult.

New York

INGO WALTER

The Achilles’ Heel of Prof. Friedman’s Counter-Revolution

COMMENT

In a recent issue of this review,1 Professor Gambino takes issue with Milton Friedman’s advocacy of automatic increases in the money supply — by some steady and known amount in line with the growth rate of real income — as being an insufficient condition for price stabilization. Whilst one may readily endorse such a conclusion, or at least question the relevance of such simple mechanical rules of monetary authorities operating within an international trading environment, it is not so clear that Professor Gambino has effectively penetrated the weak link in Friedman’s armour — if indeed such a link exists.

In particular, it is suggested here that resort to the “fundamental equations” of Keynes “Treatise on Money” could equally well be invoked in defence of the Chicago School.

Professor Gambino’s essential point is that merely to increase the money supply at a predetermined rate is insufficient to ensure price stability because it ignores the savings-investment mechanism. In support of this contention, reference is made to Keynes’ famous equations for the general price level as it was portrayed in the “Treatise.” There, it will be recalled, the price level is given by

\[ \pi = \frac{E}{O} + \frac{1 - S}{O} \]

where \( E \) refers to the ratio of factor earnings to output and \( 1 - S \) is the ratio of investment minus savings to output. Of the two ratios, the latter is

1 ARONNO GAMBINO, “The Achilles’ Heel of Prof. Friedman’s Counter-Revolution”, this Review, December 1972.
2 Where the important variable may not be the quantity of money but rather the extent of domestic credit creation with the latter being the more difficult to control. CL D. KNEE, “The Implications of D.E.R.”, National Westminster Bank Quarterly Review, November 1976.
In describing the causal direction of change, Keynes insists that it is the excess of investment over savings which generates inflationary tendencies which may then be magnified by feedback effects upon the 

\[ \frac{E}{O} \]

ratio as employers bid up the prices of factor inputs. It is easy to see why such "fundamental equations" appeal to modern critics of the quantity theory. The equation outlined above does not contain money as an argument. However, it would be false to conclude that the price level is independent of the money stock. Changes in the monetary variable exert a very profound effect upon the all-important savings-investment relationship. In large measure Professor Gambino concedes this point but he then views the crux of the matter in terms of how current investment decisions are to be financed. Financing by the transfer of existing savings is held to be altogether different from financing by "self-generation." Moreover, current institutional developments and the growth of financial intermediaries have rendered the process of "self-generation" more and more important. In relation to the transfer of actual savings, clearly, Professor Gambino sees this as a major reason why savings and investment may diverge and why equal changes in the supply of money may generate differing disequilibria in the savings-investment mechanism. Accordingly, it is insufficient to "maintain the parallelism between growths of real income and growths of money, considering these growths solely from their quantity aspects" for "though they may meet the conditions of parallelism, as is inferred from the equation of exchange, they cannot meet the condition of equilibrium between savings and investments as inferred from the "fundamental equations" of the Treaty." This is surely an unusual view of the savings-investment process and one which may be judged inappropriate in the light of Keynes later work. An interpretation more in keeping with the General Theory would view the inflationary process as being the consequence of \( ex \) ante investment exceeding \( ex \) ante savings. In the context of the Treaty such a situation would occur when the market rate of interest falls below the natural rate — with the latter being defined as the rate of interest which equates savings and investment \( ex \) ante. If this is the case, the all important question which arises when

\[ P = \frac{E}{I - S} \]

where \( P \) is the price level and \( E \) represents the equilibrium level of income. Such a formulation highlights the overriding importance of the savings-investment process in initiating inflation.


5 Or as Keynes recognized in the General Theory, (when discussing the role of the natural rate in the Treaty) it is the rate of interest which maintains the status quo, analysing the inflationary process concerns the immediate cause of the divergence between natural and market interest rates. It follows that the precise channels through which the investment decision is actually financed and implemented becomes irrelevant to the issue of inflation. Once this viewpoint is conceded the monetary variable immediately regains the limelight. An excessive issue of the money stock will force the market rate of interest below the natural rate with planned inflationary investment expenditures occurring in consequence.

In Friedman's reformulation of the quantity theory it is fully allowed that variations in the money supply may influence the market rate of interest — as indeed it may influence any real variable — in the short-term. It is equally a tenet of the monetarist doctrine, however, that the market rate of interest will ultimately return to its long-run equilibrium level. Hence, Friedman's policy proposal is perfectly reconcilable with the underlying message of the Treaty. Fluctuations in the growth rate of the money supply are to be avoided because they generate disequilibria between planned savings and planned investment. Alternatively, a steady increase in the quantity of money in line with the growth of real output will further price stability by promoting the coincidence of market and natural rates of interest. Parallellism between the growth of real income and the money supply may thus be considered a normal precondition of maintaining the required equilibrium between savings and investment essential to price stability.

Keynes, of course, was perfectly aware that the market rate of interest could diverge from the natural rate for reasons other than variations in the money supply. In particular, the Treaty was noteworthy for the emphasis given to the importance of speculative activity on the stock exchange and its ability to influence bond prices and market yields. It is for this reason that one would agree with Professor Gambino's conclusion that conformity with the conditions of parallelism as inferred from the equation of exchange would be an insufficient guarantee for price stability. Nonetheless, one may persuasively argue that adoption of the simple rule to increase the money supply at a steady and known rate will generate far less speculative activity than frequent variations in the rate of monetary growth undertaken as a countercyclical device. And this is really the essence of the controversy for in the last analysis Friedman's proposal rests not upon the claim that it will guarantee perfect price stability but rather that it will result in a greater degree of price stability than discretionary variations in the rate of monetary growth. The resolution


of this conflict between the claims of passive automatic and active discretionary policy must ultimately be decided by reference to the available evidence. The issue is primarily one of empirical evidence and the Chicago School's position cannot be vitiated by appealing to the tautological equations of Keynes's "Treatise on Money."  

G. K. Shaw

REPLY

I am very pleased to read that Professor G. K. Shaw "would agree with... [my] conclusion that conformity with the conditions of parallelism as inferred from the equation of exchange would be an insufficient guarantee for price stability." And it seems to me superfluous to add that I am well aware:

(a) that "Friedman's proposal rests not upon the claim that it will guarantee perfect price stability..." as Friedman himself decidedly reaffirmed in his "conclusions" of the lecture to which I referred;

(b) that "the resolution of the conflict between the claims of passive automatic and active discretionary monetary policy must ultimately be decided by reference to the available evidence."

I would like in addition to emphasize that while the conflict between the opposing claims of monetary policy cannot be resolved "by appealing to the tautological equation of Keynes's "Treatise on Money," from which is derived the condition of equilibrium between savings and investment, least of all can it be resolved by appealing to the equally tautological condition of exchange from which is derived the condition of parallelism between the growth of real income and that of the quantity of money. My view is that if there is to be a tendency towards price stability, then both of these conditions must be met simultaneously. It is for this reason that I described as the "Achilles' heel of Professor Friedman's Counter-Revolution" his contention that inflation "... can be determined only by an increase in the quantity of money more rapid than that in production" (as stressed in section 4, footnote 17 of my article), for in this way he did not take into account the condition of equilibrium between savings and investment.

Amedeo Gambaro

Rome