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REJOINDER

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Professors Friedman and Meiselman utilize econometric research. I do not agree with a familiar and distinctive methodology in their them that “. . . the same model can accom-

moderate various empirical judgments." A model embodies a unique set of judgments. Apart from this disagreement which is basic to our exchange, a number of their points deserve comment.

I confined my elementary objection to Friedman and Meiselman's test for autonomy to a footnote; I thought the point too obvious for controversy.¹ Suppose there exist two doubtful components of autonomous expenditure, G and H . Somehow I is known to be autonomous. Then Friedman and Meiselman argue that a necessary condition for G to be autonomous is that $r_{C.(I+G)} > r_{C.I}$ and $r_{C.G}$. Suppose in fact G is autonomous. Assume H is also autonomous and negatively correlated with G , but independent of I . In this case, $r_{C.I}$ may exceed $r_{C.(I+G)}$ and G will be erroneously rejected as autonomous. Their test is sensitive to the variances and covariances of I , G , and H . The Friedman-Meiselman test is ill-suited for its task; components of autonomous expenditure will not be reliably selected by their procedure. Theory or "intuition" is necessary to specify components of autonomous expenditure.

The theory reported in my comment is hardly original. It is an attempted duplication of the textbook theory which Friedman and Meiselman criticize. That theory purports to explain how the level of GNP or NNP is determined, not how the level of Friedman and Meiselman's Y or consumption is explained. I represented the theory non-stochastically in conformity to textbook discussions.

In translating the theory to an econometric model it is necessary to introduce stochastic terms, and apparently, I should have done this explicitly. However, introducing stochastic terms in every equation would have produced

needless complexity. The autonomous expenditure theory states that time series of Y' and L should be highly correlated. The implicit assumptions then in my model are that equation (15) has a stochastic term and that r_{CT} is essentially unity. In the model as expanded here, r_{CL} need not equal either r_{CA} or unity.

Data in my comment were drawn solely from the period 1929–1958 for a variety of reasons: (1) greater reliability of the data; (2) greater relevance of the data to the current environment owing to similarity of institutions; and (3) ease of acquisition. The correlations between first differences of consumption and either measure of autonomous expenditure, A or L , exceed the correlation between first differences of consumption and money in both the prewar (1930–1939) and the postwar (1949–1957) periods. Using Friedman and Meiselman's own measures of A , M , and C the reader may plainly see in table 2 that the quantity theory fared relatively poorly during peacetime years in the past three decades.

The issue about what determines the supply of money will not be resolved in this rejoinder. The supply function of money has not been successfully estimated elsewhere. Professor Friedman has alleged that changes in the money supply lead national income. This lead however provides no basis for ignoring the supply function. Solow and Karaken have reported that the lead is an arithmetic artifact which ". . . has no causal significance at all."²

Finally, someone might have construed the Friedman-Meiselman paper as saying something about the relative usefulness of the autonomous expenditure and quantity theories. I have shown that their results are inconclusive. Given the oversimplified representations of the two theories, this is all one could expect to demonstrate.

¹ Milton Friedman and David Meiselman, "The Relative Stability of Monetary Velocity and the Investment Multiplier in the United States, 1897–1958," *Stabilization Policies*, A Series of Research Studies prepared for the Commission on Money and Credit (Prentice-Hall: Englewood Cliffs, 1963), 180–185.

² Robert M. Solow, et al., "Lags in Fiscal and Monetary Policy," *Stabilization Policies*, A Series of Research Studies prepared for the Commission on Money and Credit (Prentice-Hall: Englewood Cliffs, 1963), 24.