A COMMENT ON HESTER'S PAPER, *by Allan H. Meltzer**

Donald Hester correctly points out that the term "intermediation" is imprecise, so I prefer to avoid the term and to discuss the subject using the more familiar terms substitution and wealth or income effect. The wealth effect is relatively more important if intermediation is introduced as a part of the discussion of inside and outside money, particularly if money is defined broadly, and relatively less important if the discussion is about the comparative growth rates of bank and non-bank financial institutions.

Shifting emphasis between wealth and substitution effects in the analysis of intermediation is much older than the term. Fisher [4] predicted about fifty years ago that with rising productivity and real wealth, the ratio of currency to total deposits would decline, as it did. In the language of the new view, this change would be described, I suppose, as a secular change in the ratio of inside to outside money. A century before Fisher, Henry Thornton [9] correctly analyzed the effects on economic activity of an internal drain brought about by the substitution of what we would now call currency or outside money for bank deposits or inside money, and 70 years later Bagehot [1] made an important contribution to the theory of central banking by stating clearly some rules to guide central bankers faced with substitution of one type of money for another. Other economists, Hawtrey [6], Keynes [7], and Fisher analyzed the effect of substitution on financial markets and economic conditions and assigned great importance to the differences in the effects of income or changes in income on currency and deposits during business cycles.

This brief guide to the literature makes clear that the main cyclical and secular changes in inside and outside money (or in the ratio of the two) induced by wealth, income or substitution effects were well-known as much as fifty years ago. Methods for dealing with such changes had become part of the training—but not always the practice—of central bankers in leading countries.

By 1914 the monetary consequences of a shift from deposits into currency (or as we might now say from inside to outside money) were sufficiently well known that the Federal Reserve Act gave the newly-established System clear and definite responsibility for offsetting the consequences. The main reason that the System subsequently failed to carry out its responsibility in times of panic is that like most other central banks, the Federal Reserve uses short-term

* As always, I have benefitted from years of discussion and joint work with Karl Brunner and from the financial support of the National Science Foundation.

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market interest rates as the principal indicator of monetary policy. Although the System is aware of the differential effects of income or expenditure on the demand for currency and for deposits, they are misled by their interpretation of interest rate changes and fail to offset the effects of such changes on money.[1]

Hester's discussion of intermediation ignores the effect of cyclical changes in income or expenditure on currency and demand deposits, and, by doing so, overlooks one of the most regular features of cycles in money.[2] In fact, the only mention of changes in the public's demand for currency comes early in the paper when Hester recognizes that an increase in the interest rates paid on deposits relative to other rates leads to a substitution of deposits for currency and an expansion of money. Although Hester recognizes that such changes are expansionary—I presume he means with respect to money, income and prices—he seems anxious to deny any importance to changes in money or in the monetary base and does not pursue this part of the analysis. Elsewhere in his paper he neglects the effect of changes in the monetary base and in money on the basis of rather casual empiricism.

Hester also dismisses as unimportant most of the changes in money and in financial assets that occurred between 1964 and 1968. By doing so, he is able to ignore the differences in the cyclical effect of income on currency and deposits mentioned above as well as the effects of relative prices and wealth or income on the allocation of deposits between time and demand accounts at commercial banks. Eventually, he concludes that government securities and interest-bearing deposits at non-bank savings institutions are substitutes in the portfolios of households so that when market interest rates rose relatively more than the regulated rates at savings institutions, the growth rate of deposits at savings institutions slowed. Somehow Hester is also able to reach the startling conclusion that: "Open market operations are likely to be especially effective in diminishing flows through savings institutions when interest rates on savings deposits fall behind rates of return on government securities as they did during this period [ending in mid-1966]."

The proposition just quoted would be true if open market sales had been responsible for the rise in market interest rates relative to the rates paid at regulated savings institutions in 1965 and the first half of 1966. Since there were substantial open market purchases instead of the open market sales required by Hester's proposition, his proposition is false and this is important because his later analysis is based on this foundation. The direction of monetary policy during the period ending in mid-1966 was no different than the direction during most other periods of expansion and inflation in this century.

[1] I have discussed this point more fully in Meltzer [8] and argued that the proffered explanation is consistent with the asymmetrical behavior of the Federal Reserve and particularly with the fact that the Federal Reserve persistently offsets a larger portion of the effect of currency changes on money near the peak in economic activity than near the trough.

[2] Brunner and Meltzer [2] show that the Federal Reserve fails to offset the effects of cyclical changes in currency. Cagan [3] finds that cyclical changes in the ratio of currency to money are the most regular features of the cycle in money.

Misled by rising market interest rates, the Federal Reserve believed policy had become more restrictive, purchased securities and added to the inflation.

A more complete analysis of the extent to which various assets are substitutes in households' portfolios and of the effects of changes in market interest rates on various types of assets is found in a study by Hamburger (1968) who estimated demand equations for several financial assets—time deposits, savings and loan accounts, marketable bonds. Hamburger's regressions show the effects on the various financial assets of wealth, own rates, rates on alternative forms of savings deposits, rates on bonds, and returns on common stock, and suggest that households regard savings and loan shares and commercial bank time deposits as relatively close substitutes. Estimated own rate and cross elasticities are of reasonably similar size and, in addition, the point estimates of the effect of a change in bond rates on time deposits and saving and loan shares are almost identical. Hamburger also finds, however, that marketable bonds are close substitutes in household portfolios for equities as well as for time and savings deposits, but he finds hardly any effect of equity yields on the demand for time and savings deposits.

Hamburger's results suggest that changes in market interest rates set off a process of substitution that involves a much wider range of financial institutions and financial and real assets than those Hester considers. With rates on time and savings and loan accounts controlled and unchanged, a rise in market interest rates induces virtually no shift between commercial bank time deposits and saving and loan shares but induces a relatively large shift from equities and from both types of saving accounts to marketable bonds. Although Hamburger's estimates are based on data for 1952–62, they offer a reliable explanation of some of the substitutions that took place during 1966 that concern Hester. For example, when interest rates rose in the first half of 1966, households sold equities and reduced the rate at which they acquired time and savings deposits. Later, when market rates fell, households acquired equities and increased the rate of increase in deposits at saving and loan associations, as Hester's data show. Neither Hamburger's findings nor the data provide much support for Hester's contention that the housing industry bore most of the burden of the defense buildup.

Hester's main attempt at explanation of the effects of recent U.S. monetary policy is based on a denial of some comparatively well-established propositions in economics and on error about or misinterpretation of recent work on the term structure of interest rates. A main effect of rising interest rates is to shift resources from longer-lived to shorter-lived projects. The fact that the demand for long-lived assets such as housing declined relatively more than the demand for current consumables during a period of rising interest rates provides *prima facie* support for existing theory. Hester disregards the theory, ignores the effect of changes in expectations of price change and instead suggests that we should reject all recent work on the term structure of interest

rates because it does not recognize what he calls the "inherent endogeneity of intermediary liabilities." This conclusion is based on evidence that is admittedly weak, a comparison of average interest rates for a few securities with different maturities during a brief period. Hester finds that rates on new mortgage loans declined until mid-1965, despite a rise in interest rates on government securities with both longer- and shorter-term to maturity.

Both the decline in mortgage rates and the rise in rates on long-term government securities were small during 1964 and early 1965. Judging from the chart presented in the paper, neither changed by more than a few basis points. The slightly larger change in rates on 3- to 5-year securities is entirely consistent with an expectation that monetary policy had become—but would not permanently remain—more inflationary. Needless to say, there are a number of possible explanations of these small discrepancies, such as changes in maturity or changes in relative risk, that do not require us to reject prevailing theories of the term structure. The various expectations theories of the term structure may all be as inadequate as Hester claims, but one should be cautious about rejecting a theory of default-free interest rates and given maturity structure without checking for possible changes in default-risk and maturity or more importantly changes in expected default rates.[3] Moreover, during the period in which home building and mortgage lending declined, the years 1966–67 that are Hester's main concern, the changes in rates on mortgages and government securities are in the same direction and do not appear to be inconsistent with most versions of the expectations theory.

The discussion of term structure is puzzling not only because the main conclusions depend on casual empiricism but because I find nothing in the paper that requires Hester to reject the expectations theory. I find no conflict between explanations of the effects of rising interest rates on savings and loan associations during 1966–67 based on theories of the term structure and explanations based on the notion that households prefer higher to lower asset yields. Economists do not have to deny one of the ways in which substitution works in order to affirm another.

In his discussion of policy, Hester raises some questions about the wisdom and desirability of allowing interest rate increases to have a larger effect on the housing industry than on other sectors and makes some vague references to neutrality. Discussion of the issues he raises require more space than I have available, and I will make only four comments. First, even if we accept Hester's findings, the statement about the effect of monetary policy on the housing industry confuses initial effects with ultimate effects. The neutrality of

[3] Footnote 7 of Hester's paper suggests a few additional reasons for skepticism about the reliability of the series for mortgage rates. In addition, the mortgage rate series is affected by regional changes in the demand for housing, since reported rates vary between sections of the country. Reported rates differ also because of differences in term to maturity and size of down payment, and of reporting and recording errors. The actual maturity of new mortgages changes considerably from month to month and I expect that many of the factors affecting actual maturity affect expected maturity also.

monetary policy is a proposition about long-run effects that cannot be contradicted by observing the impact of current changes. Second, even casual empiricism permits us to reject Hester's claim that the main effect of the monetary policy of 1965–68 was borne by the housing sector. The price level rose more than appears to have been anticipated, so it is reasonable to expect that debtors gained and creditors lost; the balance of trade has since declined, as should have been expected. Strikes by city employees, public school teachers and large unions call to our attention that many employees sign long-term contracts and suffer a loss of real wages because, like other creditors, they fail to anticipate the inflation. Only those who equate the term "effect of monetary policy" with "changes in market interest rates" and deny the pervasive effects of substitution are likely to conclude that the entire effect of monetary policy was borne by the housing sector. Third, I believe that 1965–68 provides useful evidence on the effect of monetary policy and of changes in market interest rates, even if it does not support the conclusions Hester reaches. The very large portfolio changes in 1966 were the result of very large and sudden *changes* in monetary policy, shifts from a highly expansive policy to a contractive policy within a very short time period. The effects of the very large change in policy were aggravated by the numerous regulations on time deposits and savings and loan shares that prevented adjustments in the stated coupon rates on these assets. But the main difficulties can be explained, I believe, as a result of over-reaction by the Federal Reserve to the inflationary consequences of its overly expansive policy. Fourth, the housing industry is a relatively labor-intensive industry with a relatively slow rate of productivity increase. Given the very large adjustments that public policy—fiscal and monetary—forced on the private sector, it is hard to think of another industry that could release so many skilled laborers at such low social cost.

I draw very different conclusions about monetary policy from those that Hester reached. By the spring of 1965, at the latest, it was clear to many observers that monetary policy was overly expansive. Although Chairman Martin spoke of the danger of inflation in his much-discussed speech at Columbia University in June 1965, the Federal Reserve maintained a high rate of increase in the monetary base for about a year after his speech. Because interest rates rose, the System believed that monetary policy had become tighter and, fearing the consequences of higher rates on the savings and loan associations, failed to reduce the rate of monetary expansion and, therefore, failed to stop the inflation. An important change in policy came in July 1966 when the Federal Reserve—after granting emergency borrowing privileges to the saving and loan associations—raised reserve requirements and reduced the monetary base.

Two consequences of the policy should not be overlooked. The System's policy did not stop the inflation and did not avoid the higher interest rates that the System tried so hard to prevent.

Literature Cited

1. Bagehot, Walter. *Lombard Street.* New York: Scribner, Armstrong & Co., 1873.
2. Brunner, Karl and Allan H. Meltzer. *An Alternative Approach to the Monetary Mechanism,* Washington: House Committee on Banking and Currency, 1964.
3. Cagan, Phillip. *Determinants and Effects of Changes in the Stock of Money, 1875–1960,* Princeton, N. J.: Princeton University Press (for the National Bureau of Economic Research), 1965.
4. Fisher, Irving. *The Purchasing Power of Money,* New York: Macmillan Company, 2nd rev. ed., 1920.
5. Hamburger, Michael J. "Household Demand for Financial Assets," *Econometrica,* 36 (1968), 97–118.
6. Hawtrey, Ralph, *Currency and Credit.* London: Longmans, Green & Co., Ltd., 3rd. ed., 1927.
7. Keynes, John M. *A Tract on Monetary Reform.* New York: Harcourt, Brace and Co. 1924.
8. Meltzer, Allan H. "Money Supply Revisited: A Review Article," *Journal of Political Economy,* 75 (1967), 169–82.
9. Thornton, Henry. *An Enquiry Into the Nature and Effects of the Paper Credit of Great Britain.* London, 1802; New York: Rinehart & Co., 1939.

Minutes of Session VI: How Did the New Economics and the New View of Monetary Institutions Fare in the Light of 1966 and 1967 Experience?

When money flows into the market jungle
To what part of the forest does it go?
Perhaps the reason why we sometimes bungle
Is that we really do not know.

Though lots of cash, for each man very nice is,
He goes to market and says, "buy, buy, buy!"
But this inflates—we don't know quite what *prices,*
Although we think we do know why.

Bankers are terrified of price inflation:
That's odd; for them it pays off fairly well.
Economists, in less protected station,
Don't care so much, or else don't tell.

Who pays for war, apart from those who fight it?
Savings and Loan, and those who might have built?
When fruit is sour, whose teeth have got to bite it?
On whose establishment the guilt?

One answer lies in intermediation—
Which means, who gets crunched when there is a crunch.
So, having solved the problems of inflation
*We cheerfully adjourn for lunch.**

**Poetic license—we actually adjourned for coffee.*