

# Testing for the Communicability of Economic Ideas via the FRB *Reviews*: A Learning Experiment

Jacob Cohen and Gary M. Marsh

## Introduction

The Federal Reserve Bank *Reviews* have come a long way since their humble beginnings as brief reports on "commercial" conditions in the Federal Reserve districts. Now they play a major role in helping their readers to catch up with the scholarly literature and keep up with recent economic developments.<sup>1</sup> To appraise their usefulness, ten graduate students from the Department of Economics volunteered for a learning experiment. In addition to being compensated by a flat honorarium, they were motivated to do well on the tests by the awarding of three cash prizes. The experiment attempted to measure the knowledge gained from reading selected *Review* articles as compared to reading the scholarly literature on which the *Review* articles were based.

A "cross-over" statistical design was deemed to suit the needs of the study best. This involved a two-stage reading and testing situation. One-half of the students first read the assigned articles from the *Reviews* while the other half read the corresponding scholarly literature. Subsequently the assignments were reversed and the same learning test repeated.

The time allowed for reading the material was one week. Two weeks after the pretest (which checked for homogeneity in prior knowledge of monetary economics) and one week after the distribution of reading materials, the ten students were administered a 100-question objective multiple-choice exam covering five topics in monetary economics. One week later the ten students took the test over again after reversing reading assignments. An analysis of variance was conducted with the probability of committing a type I error (rejection of a true hypothesis) equal to .05.

The amount of time spent reading the material and the testing times were also recorded. A lesser reading time spent on the *Reviews* would reinforce any communicability advantage. Whether students who took more time taking the test did better than faster students was a matter of secondary interest.

## The Learning Test

The 100 multiple-choice questions were first formulated on the basis of the scholarly literature, independently of the *Reviews*. Subsequently the questions were checked against the *Reviews* to see if they could be answered by reading the *Reviews* alone. The scholarly material

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and the Review articles are listed in Table 1. The statistical analysis involved testing the null hypothesis: no difference exists between the mean test scores derived from reading the two different sources of literature. A test of the null hypothesis was conducted on all five topics covered by the exam and the overall results.

Table 1

Student's No. 6

Please check

Learning Experiment

Wednesday July 16, 1975 Distribution

Wednesday July 23, 1975 Distribution

Federal Reserve Bank *Monthly Review* Material

Reading Time Recorded  
to Nearest 1/2 Hour

1. Demand for Money

- a. Thomas M. Humphrey, "Evolution of the Concept of the Demand for Money," *Monthly Review*, Federal Reserve Bank of Richmond (December 1973), 9-19.

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2. Exchange Rates and Internal and External Equilibrium

- a. Donald L. Kohn, "Interdependence, Exchange Rate Flexibility, and National Economies," *Monthly Review*, Federal Reserve Bank of Kansas City (April 1975), 3-10.

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3. Channels of Monetary Influence

- a. Roger W. Spencer, "Channels of Monetary Influence: A Survey," *Monthly Review*, Federal Reserve Bank of St. Louis (November 1974), 8-26.

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4. The Phillips Curve Debate

- a. John J. Seater, "A Perspective on Inflation," *Business Review*, Federal Reserve Bank of Philadelphia (May 1975), 19-31.

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5. The Money Supply Process

- a. J. A. Cacy, "The Differential Behavior of  $M_1$  and  $M_2$ ," *Monthly Review*, Federal Reserve Bank of Kansas City (July-August 1974), 3-9.

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- b. John D. Rea, "Behavior of the Monetary Aggregates and the Implications for Monetary Policy," *Monthly Review*, Federal Reserve Bank of Kansas City (September-October 1974), 3-10.

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Student's No. 6

Please check

Learning Experiment

Wednesday July 16, 1975 Distribution

Wednesday July 23, 1975 Distribution

Scholarly Material

Reading Time Recorded  
to Nearest 1/2 Hour

1. Demand for Money

- a. M. Friedman, "The Quantity Theory of Money—A Restatement," in *Studies in the Quantity Theory of Money* (Chicago, 1956), pp. 3-21.

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- b. J. R. Hicks, "A Suggestion for Simplifying the Theory of Money," *Readings in Monetary Theory*, F. A. Lutz and L. W. Mints, Editors (New York, 1951), pp. 13-32.

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- c. David E. W. Laidler, *The Demand for Money: Theories and Evidence* (Scranton, Pa., 1969), Chapter 5.

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2. Exchange Rates and Internal and External Equilibrium

- a. Robert A. Mundell, "Capital Mobility and Stabilization Policies Under Fixed and Flexible Exchange Rates," *International Economics* (New York, 1968), Chapter 18.

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### 3. Channels of Monetary Influence

- a. M. Friedman, "The Lag in Effect of Monetary Policy," *Journal of Political Economy*, 69 (1961), 461-463. \_\_\_\_\_
- b. Boris P. Pesek and Thomas R. Saving, *Money, Wealth and Economic Theory* (New York, 1967), Chapters 1 and 2. \_\_\_\_\_
- c. James Tobin, "A General Equilibrium Approach to Monetary Theory," *Journal of Money, Credit and Banking*, 1 (Feb. 1969), 15-29. \_\_\_\_\_

### 4. The Phillips Curve Debate

- a. Dale T. Mortensen, "A Theory of Wage and Employment Dynamics," *Microeconomic Foundations of Employment and Inflation Theory*, E. S. Phelps, Ed. (New York, 1970), pp. 167-211. \_\_\_\_\_

### 5. The Money Supply Process

- a. A. E. Burger, *The Money Supply Process* (Belmont, Cal., 1971), pp. 1-5; 45-83. \_\_\_\_\_

## Test Results

For each monetary topic, we cannot reject the null hypothesis that the two different sources of literature fail to explain differences in the test results. The closest the null hypothesis comes to being rejected is in the "money supply process" section of the test where the *Review* scores are significantly better than the scores based on the scholarly literature at the 10-percent probability level.

The analysis reveals two significant  $F$ -values for "period effects." Only for the "demand for money" literature were the scores for both the *Review*-scholarly literature and scholarly literature-*Review* sequences significantly higher in the second test period. For the "exchange rates" literature, the period II scores were—surprisingly—lower than those for period I! This topic involved only 13 questions.

The test design made it possible to isolate the effect of student differences on the scores. Although extreme individual differences did not show up in the pretest, individual differences (except for the demand for money literature) were the most important factor explaining differences in test scores. Rather than differences in their general knowledge of monetary economics (tested for in the pretest) differences in specialized knowledge seem to have been responsible for the disparities in test scores.

## Analysis of Reading and Testing Times

The average time spent reading the *Review* articles was about one-half of the time spent reading the scholarly literature. Those in the *Review*-scholarly literature sequence spent less time taking each test on the average (86 minutes) as compared with those in the scholarly literature-*Review* sequence (104 minutes). We tested for the possibility that the sequence might affect the six test scores but found that the order in which one read the two types of literature had no significant effect. This finding is consistent with the underlying rationale of the cross-over design.

The data on total testing time and reading time made it possible to regress test scores against these variables. For the *Review* scores the reading and testing times were better predictors of the test scores than for the journal articles. Here we have a significant  $F$ -value ( $P < .05$ ) for the overall regression and a significant negative relationship exists between testing time and test scores. The same negative relationship holds for total scores.

## Conclusion

The main conclusion of this study would seem to be that reading the *Reviews* is as good a way to keep up with the monetary literature as reading the scholarly literature—and in less time. Individual capacities are the major reason for differences in scores rather than the differences in

reading material.

Several qualifications to the study must be stated. Since the test was one of substitutability between the two reading sources, the test (multiple-choice questions) had to be homogenized. Many questions based on the scholarly literature had to be thrown out as being too rigorous for *Review* readers. On the other hand, the *Reviews* surveyed more than the assigned scholarly literature. So each has strengths not reflected in the test. The scholarly literature has the additional virtue of being available before the *Reviews* appear. The lead time between the scholarly literature and later discussion in the *Reviews* may be shortening. But for one who wants to be *au courant*, the scholarly literature is the logical choice.

The scholarly literature is more extensive in its discussion of methodology than the *Review* articles. If a student wants to make his own scholarly contribution, his apprenticeship requires reading the scholarly literature. One should not, however, ignore the possibly complementary nature of the two reading sources; reading both may accelerate a student's understanding.

One interpretation of the test results would be that no complementarity exists because the scores generally failed to improve on the second test. But a rationale of the testing was that students would forget what they had learned from the first reading before taking the second test, so that they could be considered independent of each other.

Perhaps the greatest usefulness of the *Reviews* is for the nonspecialist. But, as specialization accelerates, we are all getting to be nonspecialists in ever wider areas.

### Footnote

<sup>1</sup>A more general paper, "Catching Up and Keeping Up via the Federal Reserve Bank *Reviews*," was presented by the first-named author at the Eastern Economic Association meetings, April 1976.

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