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Essays on Interest Rates

VOLUME I

Edited by

JACK M. GUTTENTAG & PHILLIP CAGAN

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Essays on Interest Rates

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* W. A. Clarke was a member of the Committee until his death on February 8, 1965.

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They also wish to thank the members of the National Bureau Board Reading Committee: R. A. Gordon, Lester V. Chandler and Robert V. Roosa.

Introduction and Summary

The six essays in this volume, as well as those planned for a second volume, arise out of the Bureau's study of interest rates and reflect the general orientation of the project. A major decision was made at the outset to eschew further theorizing on determinants of "the" interest rate and to concentrate on specific rates on well-defined capital market instruments. This decision implied considerable diversity in approach, method, and proximate objectives of the several studies—diversity which is characteristic of the six essays included here.[1]

Two essays on the mortgage market—Shipp's on the nonresidential market and mine on the residential market—are drawn from larger studies that will be forthcoming at a later date. Both are based on new statistical series covering mortgage rates and terms of loans authorized by large life insurance companies. Shipp's study can be viewed as an introduction to the structure of the nonresidential market, about which few systematic studies have been made. It examines loan, property and borrower characteristics during four quarterly periods (the first in 1954, the last in 1965). Shipp discloses that loan terms such as contract rate, maturity, loan-value ratio, service fee, and amortization provisions vary markedly between large and small loans, and also between loans on different types of properties (apartment houses, motels, stores, etc.). In general, loans that are viewed as less risky obtain more liberal terms. The "capitalization rate" appears to be a good statistical proxy for lenders' over-all judgment regarding risk. These

[1] Other studies in the project, published or in preparation, include Joseph W. Conard, *The Behavior of Interest Rates: A Progress Report,* 1965; Reuben A. Kessel, *The Cyclical Behavior of the Term Structure of Interest Rates,* 1965; Phillip Cagan, *Changes in the Cyclical Behavior of Interest Rates,* 1966; Avery Cohan, *Yields on Corporate Debt Directly Placed,* 1967, and "New Series on Residential Mortgage Yields Since 1951" by Jack Guttentag and Morris Beck.

and other insights into institutional practices in this market will lay a foundation for future studies of the interrelationship between this and other markets.

My own paper deals with the operations of the residential mortgage market and its interrelationship with other markets, examining comparative behavior of various yield series over the period 1951–66. Although not the first analysis of this type, it is the first to make use of rate series that are essentially comparable. (A forthcoming volume will provide the technical foundations of the new mortgage series, the data themselves, and a more extensive analysis of their behavior.) These new data confirm the general view that mortgage yields tend to lag behind bond yields over the cycle. Furthermore, for the period up to 1961, cyclical fluctuations in mortgage yields were milder than fluctuations in bond yields—probably because mortgages originate in negotiated rather than in dealer markets. The behavior of mortgage yields since 1961, however, reflects a sharp break with past patterns. The prolonged 1961–65 decline in mortgage yields, and the marked rise in 1966, were as sharp as the corresponding movements in bond yields. The changing position of commerical bank portfolios over that period may have been responsible for this shift in yield patterns. Heavy mortgage acquisitions by banks during 1961–65, associated with marked increases in time deposits, intensified the downward pressure on mortgage yields, while in 1966 the banks attracted an unprecedented volume of funds from savings institutions which were forced, as a result, to sharply curtail their own mortgage acquisitions.

The Conard-Frankena paper undertakes to examine the *prima facie* puzzling fact that new corporate bond issues often carry a yield above that of similar outstanding issues. The authors show that higher coupon rates on new issues accounted on the average for roughly half of the yield differential during the period since 1952. Bonds with high coupon rates carry high yields because of the greater danger that they will be called for refunding should prices rise in the future, and because of the smaller likelihood of capital gains. The balance of the yield spread not explained by coupon rates evidently is due to imperfections in the market for outstanding issues, and to the sometimes cautious policies of underwriters in pricing new issues in weak markets.

Before his untimely death in 1965, Conard had completed and circulated a preliminary draft of this study, as well as a summary which appeared later as a chapter in his progress report on the project as a whole. He was never able to revise the manuscript. Fortunately, Frankena, who was Conard's research assistant during the summer of 1964 and knew the problems as well as the data, undertook to revise

the draft with some help from me. Although the revisions were extensive and often based on additional statistical tests performed by Frankena, we did not attempt to break new ground beyond what Conard had marked out. Ordinarily we would have hesitated to take such liberties in the absence of the senior author, but we were confident that he would have wanted us to do so. Respect for evidence and doggedness in digging further when others would have stopped were characteristic of the man. Moreover, the basic results of Conard's initial work have stood the test of further analysis, although Frankena points out that some of the findings must be interpreted cautiously because of shortcomings in the statistical procedures.

The three essays by Cagan are products of his study of the cyclical behavior of interest rates. In the first, he develops a statistical procedure for separating the effects of interest rates on business activity from the reverse effect of activity on rates. The test relates the timing of cycles in bond yields to the duration of business cycles. Bond yields over a long history have typically, though not always, reached cyclical peaks and troughs some months after the corresponding peaks and troughs in business activity. If, as we expect, interest rates influence investment expenditures and thus aggregate activity, a rise in interest rates early in a business expansion should restrain aggregate expenditures and shorten the duration of the expansion. Cagan's test compares the length of the lag in the turning points of rates to the duration of the accompanying cyclical phase in business activity. One advantage of this procedure is that the data allow coverage of an unusually long period, beginning in 1856. The results indicate that the timing of cyclical changes in bond yields does affect the duration of business cycles.

Cagan's second essay was suggested by the results of Kessel's earlier study of liquidity premiums (NBER Occasional Paper 91). Kessel found that liquidity premiums on Treasury bills fluctuate with the level of interest rates, thus exhibiting positive conformity to the business cycle. To explain this result, Kessel presented a theory of liquidity premiums based on treating Treasury bills as partial substitutes for money balances. Cagan elaborates this theory and compares it with an alternative that has been presented in the literature. He then tests both theories, using data on Federal securities at the short end of the yield curve—as Kessel did—and, more relevant to the practical application of the theories, at the long end as well. Measuring liquidity premiums at the long end encounters certain statistical difficulties, which the essay discusses. Although tentative, the findings support Kessel's explanation. Besides developing new evidence on the behavior of liquidity premiums, the essay describes certain implications

of the theory for changes in the relative supply of securities of different maturity.

Cagan's third essay deals with the well-known inverse association between short-term rates and bank reserve ratios. Until the mid-1930's the association was cited as evidence of the effect of monetary policy on market rates, but since then it has been attributed to the opposite effect, that of market rates on reserve ratios. The latter effect is usually explained by short-run profit incentives to banks: When market rates are high, banks lend excess reserves and borrow from Federal Reserve Banks at the (usually) lower discount rate, and conversely when market rates are low in relation to the discount rate. Cagan reexamines the association in the light of the two theories and finds that most of it reflects common cyclical fluctuations in the variables rather than a direct causal relationship. He attributes cycles in bank reserve ratios mainly to cyclical variation in the demand for bank loans. Since the pattern of bank loan demand over the cycle is similar to that of interest rates, this creates the appearance of an inverse association of reserve ratios with interest rates.

While the various parts of the interest rate study diverge greatly in approach, method, and proximate goals, they tend to converge on ultimate objectives. One objective, of course, is to illuminate the effect of financial variables on economic activity. Our contribution to this comes at several levels. For one thing, our studies of the structure of rates and other transaction characteristics of specific instruments have illuminated the problems involved in properly measuring financial influences on specific types of real output. We have examined the problem of recording lags in rate series, of changes in composition of the instruments underlying rate series that affect their homogeneity, of nonrate dimensions of loan transactions that may be used to "ration" credit, and of the needed degree of disaggregation in series on financial variables. In the process, we have invested in the collection of new data on rates and other transaction characteristics in cases where the available data were badly deficient. New time series have been developed that can be used in studies of the influence of financial variables on activity.

As an illustration, consider the contribution of Shipp's work to the study of financial influences on multifamily residential construction. His tabulations strongly suggest that rates and other terms on mortgage loans secured by multifamily properties differ considerably from those on other income-producing properties, and that some characteristics have changed over time quite differently among the various property types. This implies that studies of multifamily construction should use financial series covering multifamily properties and not proxy series

that cover corporate bonds, or FHA mortgages, or mortgages on all types of income-producing properties. In a forthcoming study Shipp will provide, for the first time, series on multifamily properties. The series will cover not only rates but other important transaction characteristics and will pertain to the time when funds are committed rather than when disbursed, which was the basis on which all prior series on nonresidential loans had been constructed. It will be possible, through cross-section analyses of yields and transaction characteristics, to determine the homogeneity of the series and improve them in this respect. The technical aspects of such adjustments were pioneered by Avery Cohan in his study of *Yields on Corporate Debt Directly Placed,* (NBER, 1967).

In addition, we have examined a number of approaches toward assessing the effect of financial variables on the real sector which help avoid some of the shortcomings that have plagued earlier investigations. Cagan's imaginative essay on the relationship of the longevity of business cycles to prior rate behavior is in this spirit.

A second objective on which our studies converge, closely related to the first, is to help illuminate the channels through which monetary policy influences the economy, and the extent and effectiveness of this influence. Almost all the essays in this volume have something to say about this. Thus Cagan's paper on interest rates and the business cycle suggests that the monetary authorities can affect the duration of business cycle expansions by the speed at which they shift gears from monetary ease to restraint after the preceding cyclical trough. The long upswing beginning in 1961, while not examined thoroughly but noted in his paper, fits in neatly with this hypothesis. The Conard-Frankena paper indicates that, owing to imperfections in the market for seasoned corporate bonds, monetary policy has its most immediate and direct effect on the new issue market. My own paper suggests a lag in the transmission of market changes from bonds, which receive the first impact of open market operations, to residential mortgages. Except for this lag, the residential sector would be much more sensitive to monetary policy. Cagan's paper on interest rates and bank reserve ratios suggests that the Federal Reserve's control over the money supply is not significantly weakened by bank action to alter free reserves in response to changes in market interest rates. On the other hand, variations in customer loan demands do affect free reserves and therefore the money stock, and this may require substantial offsetting by the Federal Reserve. These selective remarks are meant only to be suggestive of the types of monetary policy questions on which the papers in this volume may help shed some light.

A third problem to which we hope to contribute some understanding

is the economic efficiency of major financial markets. Work is just beginning on this very difficult area and only scattered and highly tentative inferences come out of the essays in this volume. Yet progress depends on the gradual accumulation of knowledge of how the major financial markets work, one study building on the enlarging the scope of others. The studies reported here move us a notch forward on this front.

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