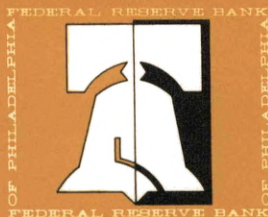


september



Money and Output: Keynes and Friedman
In Historical Perspective

Sharing the Credit: A Quarter Century of
Change

Variable-Rate Mortgages: Boon or Bane?

The Fed In Print

FEDERAL RESERVE BANK of PHILADELPHIA

business review



**Money and Output:
Keynes and Friedman in Historical
Perspective**

. . . The views of Keynes and Friedman regarding the effectiveness of monetary as opposed to fiscal policy can be traced to differences in approach as well as circumstances rather than any basic theoretical disagreements over the role of money in the economy.

**Sharing the Credit?
A Quarter Century of Change**

. . . Business and household borrowers now account for bigger chunks of the total credit picture while Uncle Sam's share has steadily declined.

**Variable-Rate Mortgages:
Boon or Bane?**

. . . New-style home mortgages with fluctuating interest rates may help reduce the stresses and strains on mortgage-lending institutions as well as benefit borrowers.

On our cover: At Fifth and Arch streets, just a short walk from Independence Hall, is the United States Mint. Its modern pink granite structure covers three city blocks and houses the most modern coinage equipment in the world. The Mint's history dates back to the Presidency of George Washington and to the time Philadelphia was the nation's capital. The Mint was the first public building erected by the United States Government. It has grown from a small cluster of brick buildings dating from 1792, located at Seventh and Market streets, to the present location. The Philadelphia Mint is part of a nationwide Treasury agency known as the Bureau of the Mint, headquartered in Washington, D. C.

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Money and Output: Keynes and Friedman In Historical Perspective

By J. H. Wood*

The continuing debate among policymakers and economists on the role of money in the economy has been confined until a few years ago to technical journals. Recently, however, the business press has introduced the debate to the general public. The article presented here is in keeping with this trend. It provides a fresh look at the historical underpinnings of the current monetarist-fiscalist debate.

It's not quite the Montagues and the Capulets, even the Hatfields and the McCoys, again, but a long-time feud has been raging between two prominent "families" of economists.

* John Wood was the recipient of a fellowship from the Federal Reserve Bank of Philadelphia in 1968-69 and was a visiting economist at the Bank during the summer of 1971. He is currently a Professor of Investment at the University of Birmingham (England).

This article is adapted from an inaugural lecture delivered at the University of Birmingham, March 21, 1972. The author wishes to express his deep appreciation to the Esmée Fairbairn Charitable Trust, whose generosity made possible the research leading to this lecture, and to Douglas Vickers for encouragement and helpful discussions in the early stages of that research.

Money—its quantity, importance, and efficacy—is the root of the squabble. Each camp, armed with logic, statistics, and other essential academic trappings, has dug in for a long and running battle—or debate—over the effectiveness of governmental monetary and fiscal policies as means of influencing economic activity.

One clan—the Keynesians, self-styled followers (or disciples) of John Maynard Keynes—argues that money and monetary policy have little or no impact on income and employment, particularly during severe economic downturns; and that government taxation and spending are the most effective remedies for inflation and unemployment, especially the latter.

The other group—the Monetarists, largely rallying around Milton Friedman of the University of Chicago—emphasizes money's role in the economic process. Spurning the notion that fiscal policy is paramount, they argue that a rule which requires the monetary authorities to cause the stock of money to increase at some constant rate, say 3 percent annually, would effectively reduce fluctuations in prices, output, and employment.

It is curious that when the dust settles on this debate, the problems that have interested Keynes and Friedman, the policy tools each has used and the principal results each has obtained resemble not only each other but those of eighteenth-century

British economists as well. In short—and this may jolt some economists and non-economists—*there are no fundamental theoretical differences between Keynes and Friedman*. As with such controversies, the differences between Keynes and Friedman on the employment of fiscal and monetary policies to achieve economic stability hinge on differences in economic conditions existing at the times that each economist wrote and from dissimilar political philosophies rather than from any theoretical differences over money's influence on output. Moreover, the genesis of most of these “differences” can be found in the positions taken by many British economists of previous centuries.

WHO'S WHO

RICHARD CANTILLON (1697-1734), Irish-born French economist, became a prosperous financier in Paris and London and wrote the authoritative *Essai sur la nature du commerce en général* (1755), which in many respects anticipated Adam Smith and Thomas Malthus.

MILTON FRIEDMAN (1912-) is Paul S. Russell Distinguished Professor of Economics at the University of Chicago, where he began his academic career forty years ago. He has been a member of the research staff of the National Bureau of Economic Research since 1937. He was recently president of the American Economic Association.

DAVID HUME (1711-1776), Scottish philosopher and historian, is one of the great British empiricists. His *Treatise of Human Nature* argued skeptically against the claims of metaphysicians that there are innate ideals and of theologians that we can know the ultimate reasons for anything. His arguments challenged the “natural law” and “social contract” theories of Thomas Hobbes, Richard Hooker, John Locke, and later Jean-Jacques Rousseau. In 1748 he published a simplified version of the *Treatise* entitled *Enquiry concerning Human Understanding*. His *Political Discourses* (1752) gave him a greater reputation as an economist in his lifetime than his contemporary, Adam Smith.

JOHN MAYNARD KEYNES (1883-1946) pioneered the “New Economics” of employment and output. During both world wars he was an adviser to the British Treasury, which he represented at the Versailles Peace Conference but resigned in opposition to the terms of the draft treaty, inspiring his *Economic Consequences of the Peace*. The unemployment crises in England and Europe inspired his two great works, *A Treatise on Money* and the *General Theory of Employment, Interest and Money*. In 1943 he played a leading part in formulating the Bretton Woods agreements, thereby establishing the International Monetary Fund.

JOHN LAW (1671-1729) made a study of the credit operations of the bank at Amsterdam but his proposals for a paper currency were unfavorably received by the Scottish Parliament. In Paris he and his brother William established a private bank. This was so prosperous that in 1718 the Regent Orleans adopted Law's plan of a national bank. The next year Law originated a joint-stock company for reclaiming and settling lands in the Mississippi Valley (called the Mississippi scheme) and in 1720 he became comptroller-general of finances. When the bubble burst he became an object of popular hatred, left France, lived in England for a while, then died forgotten in Venice.

JOHN LOCKE (1632-1704) was the principal founder of philosophical Liberalism and, with Francis Bacon, of British empiricism. His *Treatises on Government*, considered his most important work in political philosophy, were a reply to the divine right theory and political philosophy of Thomas Hobbes. In economic theory Locke adopted many mercantilist principles.

JOHN STUART MILL (1806-1873) wrote *Principles of Political Economy* (1848) which foreshadowed the marginal utility theory. Also his *System of Logic* with its four celebrated canons of induction influenced economists such as Jevons and Keynes. But Mill is best remembered for his essay "On Liberty" (1859), in which he argued not only for political freedom but for social freedom, not only against the "tyranny of the majority" but also against the "social tyranny" of the prevailing conventions and opinions.

DAVID RICARDO (1772-1823) wrote *The High Price of Bullion: a Proof of the Depreciation of Bank-Notes* (1809), in which he argued for a metallic basis to the money supply. His *Principles of Political Economy and Taxation* (1817) set forth his views on value, wages, and rent.

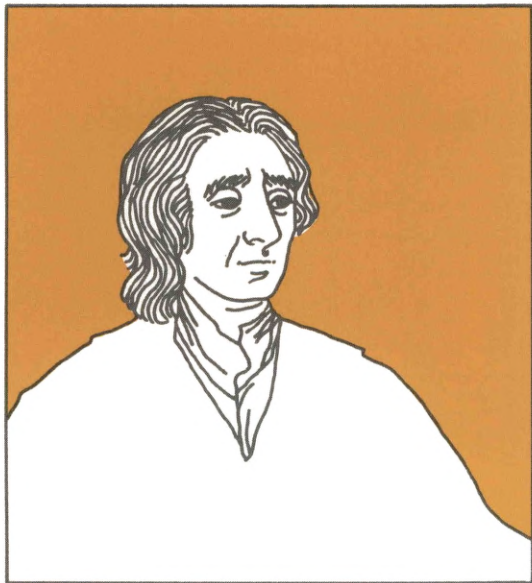
HENRY THORNTON (1760-1815), banker, economist, and member of Parliament, became known as an astute financier, this reputation being confirmed by his *An Enquiry into the Nature and Effects of the Paper Credit of Great Britain*.

LOCKE AND LAW

Close examination of the views of eighteenth- and nineteenth-century economists regarding the circumstances under which money does or does not influence economic activity reveals the connections between Keynes and Friedman.

In the late seventeenth and early eighteenth centuries, years of fluctuating prices and recurrent unemployment and depressed trade, there developed a substantial body of thought concerning the connection between

money and output. The most celebrated contributors to these discussions were John Locke and John Law. The superstructure supporting their view has the majestic simplicity of a great idea. They began with the obvious. Total monetary payments must equal total monetary receipts; or, what amounts to the same thing, the number of dollars in circulation multiplied by the average number of times each dollar is paid out (total monetary payments) must equal the number of units of output multiplied by the average price of each sale (total monetary receipts).



John Locke

Now anyone knows that an increase in total monetary payments must be matched by an increase in total monetary receipts. As we shall see, however, there can be great disagreement of far-reaching implications as to whether total monetary receipts go up because prices rise or because output rises. Locke and Law contended that increases in the quantity of money and in the velocity of circulation (that is, the rapidity with which money changes hands during a given period of time) not only raised prices but expanded output and employment. They proposed measures for increasing the supply and velocity of money, including the standard mercantilist policy of inducing inflows of money from abroad by means of a favorable balance of trade.

CANTILLON, HUME, THORNTON

Richard Cantillon agreed with Locke and Law that increases in either the money stock or its velocity caused both *prices* and *output* to rise, but he criticized the static nature of

the analyses of his predecessors. In his view, they tended to look at only two periods and to compare the state of prices and trade before the change in the money stock or its velocity with that state existing after the impact of a monetary disturbance had worked its way through the system (this type of analysis is labeled comparative statics).

Cantillon's discussion of the processes by which variations in the quantity of money lead to variations in prices and in the direction and volume of production focused on *dynamic* monetary processes. His work was perhaps the most sophisticated *dynamic* analysis until the appearance of Keynes's *Treatise on Money* 200 years later.

Toying with the possibilities of how an increased money supply could result (such as domestic gold discoveries, a favorable trade balance, and foreign borrowing), Cantillon concluded that in general more money causes "a corresponding increase of consumption which gradually brings about increased prices." But in general a doubling of the money supply does not correspondingly lead to a doubling of prices. So, some of the increases in monetary payments lead to increases in output.

Cantillon also recognized what many economists would later point out. First, the increased quantity of money is beneficial to trade only during the period in which money is *actually* increasing. Once a new equilibrium is reached, output would return to its original or "normal" level, and only the price level would be higher. Second, the inflationary process cannot last forever, even with continued monetary expansion, because the increase in prices and incomes leads to an adverse balance of payments and an outflow of money. The trick is to keep the inflationary process going so as to gain the attendant benefits to output and employment, and yet harness it sufficiently to maintain a favorable balance of trade.

Next we come to David Hume whose essay "On Money" (1752) stands as the watershed between the dynamic analysis of



David Hume

inflationists such as Cantillon and the emphasis on comparative statics of the nineteenth-century followers of David Ricardo. Like Cantillon, Hume tried to follow the economy's dynamic course during and after a disturbance. But he also anticipated later thinkers by comparing in detail the state of the economy before a disturbance with its state after the disturbance had completely run its course. He recognized the different roles played by money in the two types of analyses.

To account, then, for this phenomenon, we must consider, that though the high price of commodities be a necessary consequence of the increase of gold and silver, yet it follows not immediately upon that increase; but some time is required before the money circulates through the whole state, and makes its effect be felt on all ranks of people. At first, no alteration is perceived; by degrees the price rises, first of one commodity, then of another; till the whole at last reaches a just

proportion with the new quantity of specie which is in the kingdom. In my opinion, it is only in this interval or intermediate situation, between the acquisition of money and rise of prices, that the increasing quantity of gold and silver is favorable to industry.¹

The implication for monetary policy that Hume draws from his analysis is identical to Cantillon's—rising money or velocity affects output only as the economy adjusts from one equilibrium to another. Like Cantillon, however, Hume had little confidence that it would be possible to continue such a policy for long because of balance-of-payments constraints.

Henry Thornton agreed with Hume that an increased quantity of money at first induces increases in output and employment. And, even more than Hume, he emphasized the transient nature of the beneficial effects of monetary expansions. According to Thornton, price increases which follow an increase in money would occur very rapidly and greatly exceed any increases in output.

We see in Cantillon, Hume, and Thornton a progression toward the view that money does *not* matter in the sense that *output is independent of money*. Movement toward this view developed as economists shifted from a focus by persons like Cantillon on periods of transition to Hume, who dealt with both transitions and comparative equilibria but emphasized the former, to Thornton, who emphasized the latter. The next step is David Ricardo, who dealt almost exclusively with comparative statics.

RICARDO AND MILL

The shift in emphasis from transition periods to comparative statics was probably the result of events more than changes in academic fashions or even advances in eco-

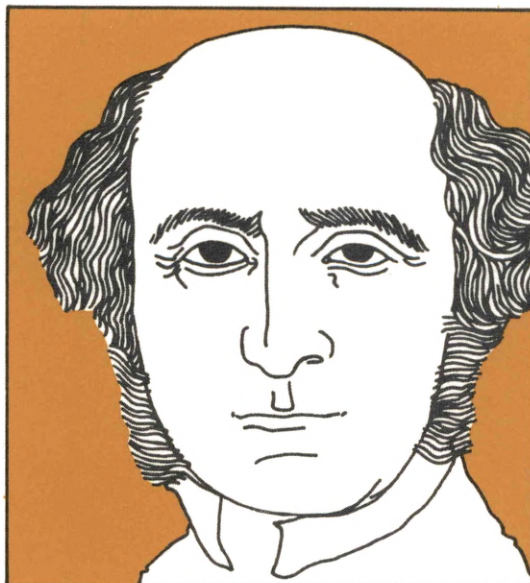
¹ David Hume, "Of Money," Eugene Rotwein, ed., *David Hume: Writings on Economics* (Madison: University of Wisconsin Press, 1970), pp. 37-38.



David Ricardo

conomic theory. Perhaps because of the breakdown of medieval price and wage regulations, advances in transportation and the communication of information, and the growth of financial markets, Ricardo's model—that is, output is independent of the quantity of money (see Box)—really was the one most appropriate to the nineteenth century; whereas, Cantillon's approach had been the one most applicable to the previous century. This view is not too far-fetched if one really believes that there was such a thing as the Industrial Revolution—not only in methods of production but in the costs and speed with which materials and people could be transported and in the development of facilities for moving money and credit from one part of the country to another.

Remember, too, that Thornton and Ricardo lived during a period of rising prices, especially a wartime inflation from 1797 to 1813 of nearly 4 percent per year. More acutely aware of the evils of inflation than Locke and Cantillon, they were less



John Stuart Mill

inclined to recommend monetary expansion as a means of curing unemployment.

The most explicit "classical" statements of money processes are contained in John Stuart Mill's *Principles of Political Economy* (1848). In this work, he was not prepared to admit that changes in the quantity of money affected output, employment, and relative prices even during the transition from one price level to another. Blasting as unrealistic the policy of ever-increasing money and ever-rising prices suggested by Cantillon and Hume, he pointed out that people observe increases in money, foresee the effect on prices and make their plans, and draw up their contracts accordingly. A price rise that is expected by all parties has no impact on employment or output. In sum:

... there cannot, in short, be intrinsically a more insignificant thing in the economy of society than money; except in the character of a contrivance for sparing time and labor. It is a machine for doing quickly and commodiously,

WHY MONEY DOESN'T MATTER . . . A LOOK AT RICARDO'S MODEL

In the model developed by Ricardo and his successors, an increase in the quantity of money is associated with a fall in interest rates. This induces an increase in the demand for investment goods on the one hand and a decline in saving on the other; thus, the increased supply of money is matched by an increased demand for commodities. Upward pressures are exerted on prices, with the increased demand for commodities being financed by the increased quantity of money. As prices rise, people need more money for their transactions and the initial decline in interest rates is reversed. The rise in prices and interest rates continues until both the commodity and money markets are in balance at the original rate of interest. The inflation also will have disturbed the labor market since commodity prices will have risen relative to wage rates. Since labor is now cheap relative to the price of commodities, firms compete for labor, bidding wages up until the original wage-price ratio is reestablished. In this way, a doubling of the money supply leads to a doubling of both wages and prices with no long-run effect on interest rates or any other part of the system—except for an unfair redistribution of wealth from creditors to debtors. Such was the nineteenth-century quantity theory of “the classical economists.”

Even changes in productive techniques or the public's thriftiness, while influencing the direction of production and the rate of growth of the economy, will not cause unemployment. For example, if people decide to save more of their incomes, more money is made available at lower rates to firms that will use those funds to increase their productive capacity and benefit society in the long run. Abstinence and thrift directly increase the wealth of society no less than that of individuals. Relative prices, output, employment, interest rates, saving, investment, and consumption are determined by the state of knowledge of productive techniques, by institutional arrangements and by the attitudes of the population toward work and leisure, consumption, and thrift. Money, although useful in carrying out transactions, changes none of these underlying forces.

what would be done, though less quickly and commodiously, without it; and like many other kinds of machinery, it only exerts a distinct and independent influence of its own when it gets out of order.²

But, argued the nineteenth-century critics of Ricardo and Mill, this is no mean exception and it begs the whole question of trade cycles and other periods of monetary disturbance. Rapid changes in the quantity of money are impossible without the “machinery getting out of order.” And it is this

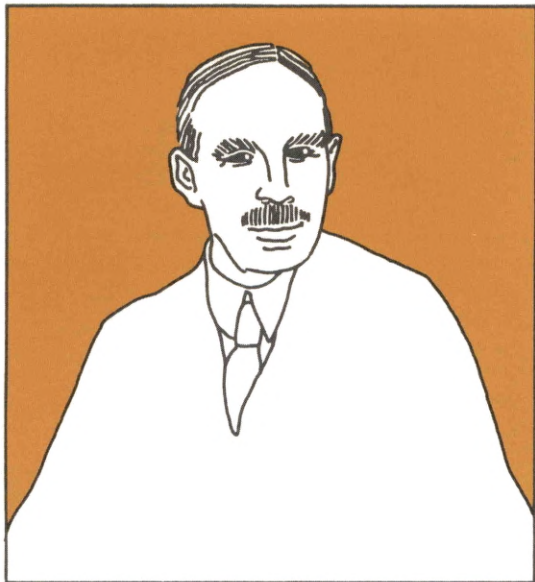
argument that Keynes and Friedman stressed in the twentieth century.

ENTER KEYNES

In his *Tract on Monetary Reform* (1923), Keynes was highly critical of the pre-1914 theory of Ricardo, Mill, and others.

Now “in the long run” this theory is probably true. If, after the American Civil War, the dollar had been stabilized and defined by law at 10 percent below its present value, it would be safe to assume that M [money] and P [prices] would now be just 10 percent greater than they actually are and that the present values of V [velocity] and T [volume of transactions] would be en-

² John Stuart Mill, *Principles of Political Economy*, ed. W. J. Ashley (London: Longmans, Green and Company, 1909), p. 488.



John Maynard Keynes

tirely unaffected. But this *long run* is a misleading guide to current affairs. *In the long run* we are all dead. Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again.³

But things were different after 1914. Keynes began his *Tract* in the same way that he had begun the *Economic Consequences of the Peace* (1919), discussing what he believed had been the extremely delicate, short-lived, and essentially unstable economic system existing before 1914:

For a hundred years the system worked throughout Europe with an extraordinary success and facilitated the growth of wealth on an unprecedented scale. To save and to invest became at once the duty and the delight of a large class.⁴

Keynes wrote during a time of extraordinary upheaval. Between 1914 and 1920

prices tripled, then dropped by nearly one-half by 1922. He pointed out that the arrangements of the nineteenth century could not work properly if money, the assumed standard, is not dependable.

Unemployment, the precarious life of the worker, the disappointment of expectation, the sudden loss of savings, the excessive windfalls to individuals, the speculator, the profiteer—all proceed, in large measure, from the instability of the standard of value.⁵

If businessmen are to develop their productive capacity and if the savings of households are to be converted into investment projects, then businessmen must be able to foresee with a reasonable degree of assurance the prices of the products coming out of their new plants and the costs of the inputs from which those products will be made.

To Keynes, the overriding determinant of investment is price expectations. Expectations of price increases encourage investment; expected deflation discourages investment. Uncertainty is the worst offender. If rapid monetary changes have occurred in the past and are expected to be repeated in the future—in which direction no one knows—businessmen will refuse to bear the risk of investment.

The problems that Keynes considered as well as the remedies proposed in his *Treatise on Money* (1930) were the same as those analyzed and advanced in the *Tract*. Only his methodology had changed; it had become more sophisticated. He traced in detail the effects of changes in the quantity of money on the level and composition of output. Some passages in the *Treatise* echo Cantillon. Like the latter, Keynes always

³ John Maynard Keynes, *The Collected Writings of Keynes* (London: Macmillan Ltd., 1971), p. 6.

⁴ *Ibid.*, p. xiv.

⁵ *Ibid.*

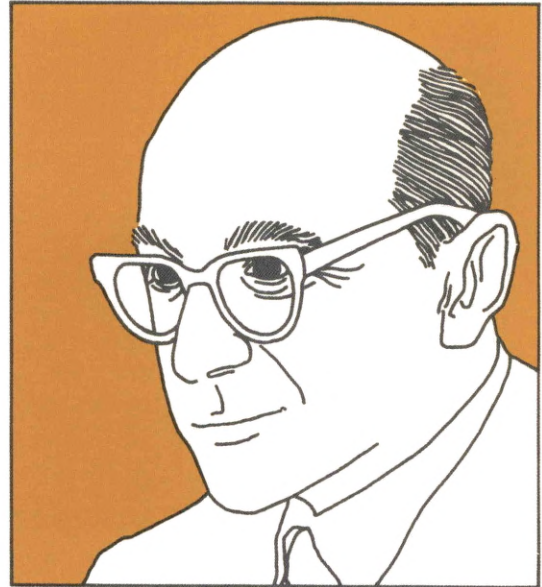
carefully specified the source of an assumed monetary disturbance before discussing its effects. For him, most increases in money resulted from increases in bank loans to businessmen. He stressed that the failure of different prices to move together is the essence of short-period fluctuations and that an easier monetary policy that leads to low interest rates and rising prices results in higher profits and increases investment.

The processes through which monetary disturbances lead to variations in output in the first instance are the same in the *General Theory of Employment, Interest and Money* as in the *Tract* and the *Treatise*: namely, through price changes and their influence on expectations of future prices. He argued that the relation between current and future prices influences investment decisions most.

Keynes came to the conclusion that in a world of rapidly fluctuating prices uncertainty on the part of businessmen would be so great that the state would have to undertake the investment necessary for growth and economic stability. Since 1924 he had advocated public works in a supporting role to monetary policy as an antideflationary device. But, from the behavior of the Bank of England—from its determination to accept and enforce whatever price fluctuations were consistent, first with the return to gold at the prewar par and then with the maintenance of the gold standard at a fixed rate—Keynes became convinced that the nation would have to rely on means other than monetary policy to stabilize prices and output.

. . . THEN FRIEDMAN

Reading Milton Friedman and Anna Jacobson Schwartz's *A Monetary History of the United States* is a frustrating experience. On the one hand, the authors present a wealth of highly suggestive and expertly handled historical data. But, on the other hand, just as they seem to be on the verge of explaining causal relationships (that is, of giving an ex-



Milton Friedman

PLICIT statement of the processes through which, in their view, money affects economic activity), they descend into a quagmire of algebraic manipulations. But, if we carefully examine the way in which Friedman handles the data in this and other historical discussions, we can get an inkling of how, in his view, money matters.

In comparing the two periods 1865-1879 and 1879-1897 as well as other lengthy intervals, Friedman and Schwartz conclude that over long periods “generally declining or generally rising prices had little impact on the rate of growth [of output], but the period of great monetary uncertainty in the early nineties produced sharp deviations from the long-term trend.”

They make this point again and again, concluding:

Apparently, the forces determining the long-run rate of growth of real income are largely independent of the long-run rate of growth of the stock of money, so long as both proceed fairly smoothly. But marked instability of

money is accompanied by instability of economic growth.⁶

Surprise is the key word in all this. To the extent that changes in money and prices proceed smoothly and are foreseen, money does not influence economic activity. But sudden and unforeseen monetary disturbances produce fluctuations in output.

There is a close connection here and elsewhere between Friedman's descriptions of historical periods and Mill's argument that changes in the money supply that people expect and upon which they can plan allow employment, output, and other economic variables to be determined by nonmonetary forces.

PARALLEL IN THEORY BUT PARTING IN PRESCRIPTION

Both Keynes and Friedman, therefore, fear monetary instability. They both desire a stable growth rate in the money supply as a way of minimizing fluctuations in prices,

⁶ Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States, 1867-1960* (Princeton: Princeton University Press, 1963), p. 678.

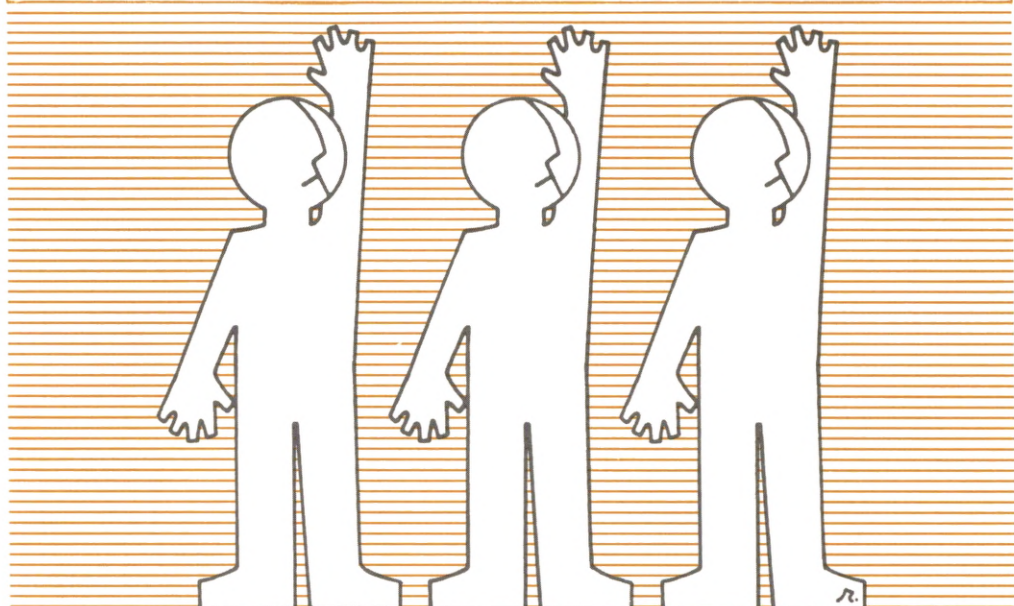
output, and employment. But they part ways in approach and emphasis on how to achieve the benefits of monetary stability.

Keynes, on the one hand, was pragmatic. He was a man of a thousand plans. If one was impractical, he would try another. To him monetary policy was important but not the "be-all and end-all." And so he moved from a reliance on monetary to fiscal policy when he thought it unrealistic on political or other grounds to expect a stable growth in the money supply.

Friedman, on the other hand, has less confidence than Keynes in the willingness or ability of the authorities—monetary or fiscal—to make the economy work smoothly. That is why Friedman wants to tie both the monetary and fiscal authorities to certain specific rules—not because the people who would make the rules are more intelligent than those who formulate and implement discretionary policies, but because, whatever the rule, it will be known. People can formulate plans on the basis of what they can expect the future money supply and price level to be. In such a way, Friedman hopes, as Keynes did with fiscal policy, that money *CAN BE MADE* not to matter. ■

SHARING THE CREDIT: A QUARTER CENTURY OF CHANGE

by josephine polomski



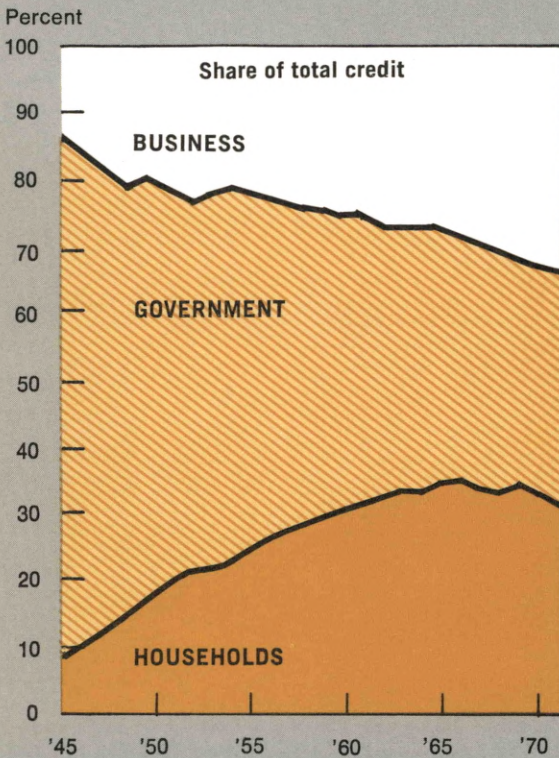
BUSINESS

HOUSING

GOVERNMENT

CHART 1

BUSINESS AND HOUSEHOLD BORROWERS PICKED UP THE SLACK AS GOVERNMENT'S PORTION OF TOTAL CREDIT HAS SHRUNK SINCE WORLD WAR II



Source: Board of Governors, Federal Reserve System

CHART 2

AND WITHIN THE GOVERNMENT SECTOR, UNCLE SAM'S SHARE HAS TRENDED DOWNWARD

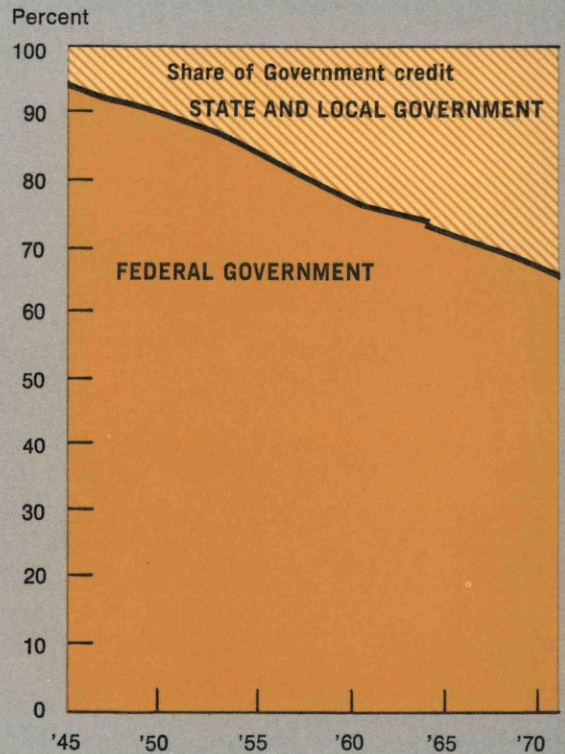


CHART 3

ALTHOUGH HOUSEHOLDS HAVE ACCOUNTED FOR A BIGGER PIECE OF TOTAL CREDIT, THE SLICES GOING TO CONSUMER DEBT AND MORTGAGES HAVE CHANGED LITTLE

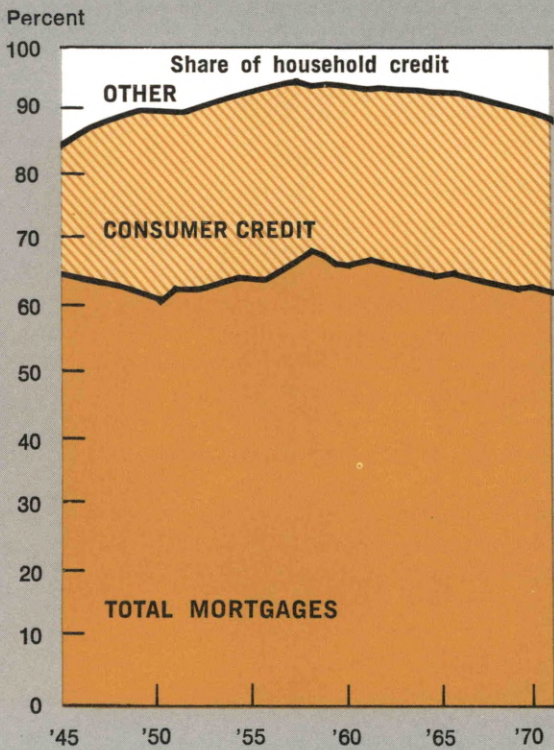
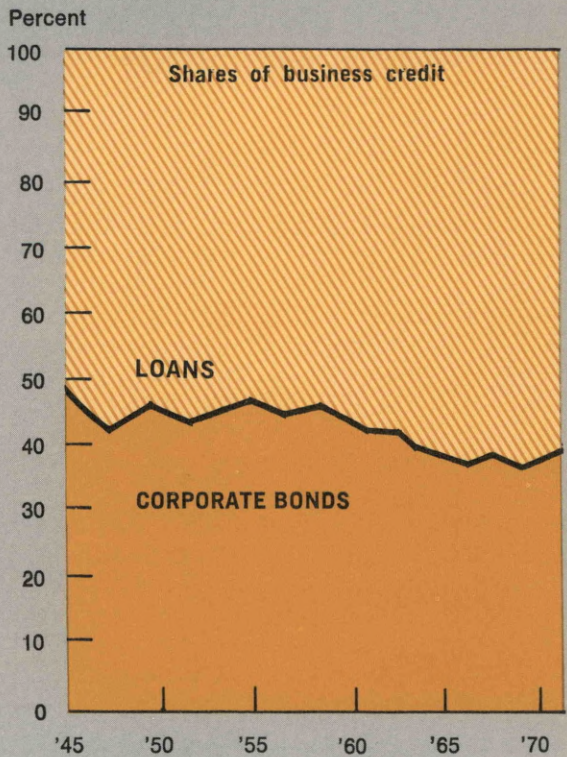


CHART 4

AND BUSINESS BORROWERS HAVE RELIED SOMEWHAT LESS ON CORPORATE BONDS AS THEY UPPED THEIR USE OF OTHER CREDIT MARKET INSTRUMENTS



Variable-Rate Mortgages: Boon or Bane?

By Alan J. Krupnick

A prospective homebuyer applies for a mortgage and gets only excuses. An account holder in a thrift institution occasionally finds his return well below that of the going market rate. An officer of a savings and loan association (S&L) or mutual savings bank sometimes has difficulty turning a profit. Troubling these three is the mortgage scene.

Earlier this year the Hunt Commission (the President's Commission on Financial Structure and Regulation) suggested many reforms which might aid all parties. One suggestion favored by the Federal Home Loan Bank Board—widespread use of variable-rate mortgages (VRMs)—may help alleviate the stresses and strains on the mortgage market every time that credit tightens.

THRIFT INSTITUTIONS IN A BIND

The problem starts when, quite reasonably, sophisticated savers expect their thrift institutions (such as S&Ls) to match rises in market interest rates. If S&Ls can't do it, savers may withdraw their deposits. The S&Ls' ability to meet savers' demands comes

from their earnings on mortgages, most of which carry a fixed rate and which were contracted in the past. As rising market rates push savers' demands upward, earnings on most S&L mortgages lag behind. And this is exactly when thrift institutions get pinched.

Suppose Sunnyside Savings and Loan Association offers 4 percent interest on its savings deposits at a time when market rates are generally low. Savers attracted to this investment supply the S&L with plenty of funds for lending. Market-determined rates on fixed-rate mortgages (FRMs) hover around 6 percent. The 2-percent difference goes toward covering Sunnyside's cost of doing business and return to its investors. This situation remains fairly stable unless market rates drift upward. In order to keep old savers and draw new ones, Sunnyside must offer higher rates. But, here the problem begins. Although Sunnyside can get a full 8 percent on its new mortgages, it still has all the old ones, contracted at 6 percent or lower, to worry about. Since most of Sunnyside's portfolio is made up of "old" mortgages its earnings limp while the rates

paid on its savings deposits climb. If Sunnyside were permitted to raise deposit rates heedless of its poor earnings picture, it could eventually fold. Yet, if it doesn't raise rates, savers may withdraw their funds. Without funds, Sunnyside can't make loans and may face insolvency.

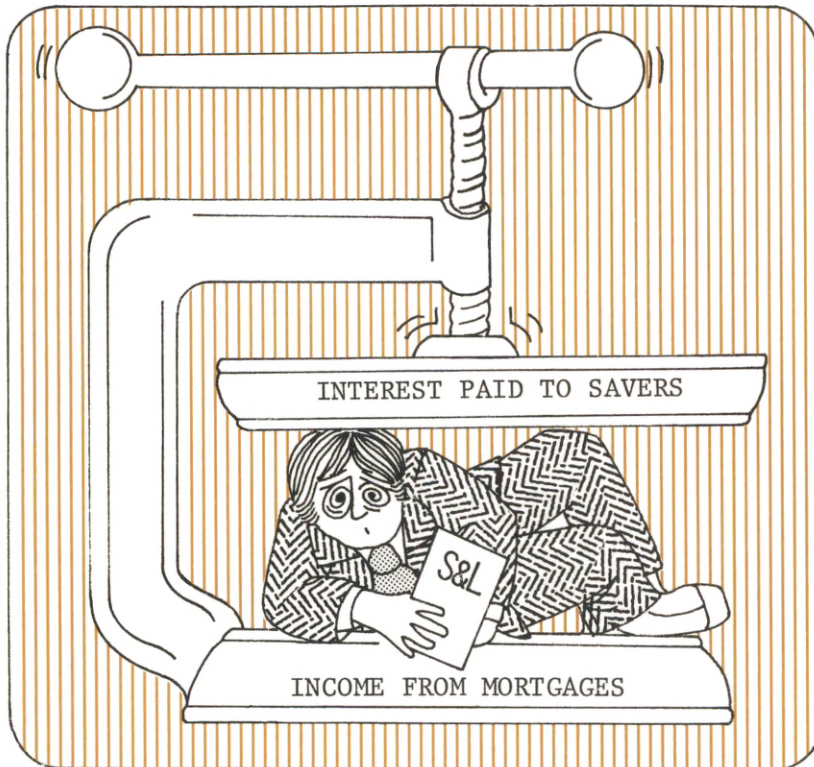
WAYS OUT

Policymakers have long been aware of the mortgage lender's "plight." Initially, the Federal Home Loan Bank Board and the Federal National Mortgage Association (Fannie Mae) stepped in with cash for thrift institutions wanting it in a hurry, thereby establishing a secondary market for home mortgages (see Box). Most critics agree that these agencies have taken some pressure

off lenders by providing a source of funds during tight periods. But, by dipping into the capital markets for their funds, they have helped perpetuate the credit squeezes causing the trouble.

In 1966, ceilings on savings deposit rates at thrift institutions were imposed to help assume the heavy load. The ceilings were intended to end competition among these institutions for savers' funds which could send deposit rates soaring and profits plummeting every time market rates rose. Upward pressure on rates could be relieved and the squeeze on profits could be reduced—or so the argument went.

Of course, savers weren't too happy about this turn of events. In effect, policymakers forced them to accept a low return on their savings deposits so that S&Ls could maintain



OPERATORS IN THE SECONDARY MARKET

The *Federal National Mortgage Association* (Fannie Mae), a government-created “private” company, is the world’s largest mortgage bank.* Fannie Mae’s purpose is providing lenders and builders with mortgage money for housing when such funds are hard to get from S&Ls, banks, and insurance companies—conventional loans not backed by the Federal Housing Administration or the Veterans Administration.

The *Federal Home Loan Mortgage Corporation* (Freddie Mac), a branch of the *Federal Home Loan Bank Board*—which supervises and lends S&Ls money that is raised in much the way Fannie Mae raises hers—is a competitor.

Ending Fannie Mae’s virtual monopoly in the secondary market is a newcomer from Milwaukee—the *MGIC Mortgage Corporation* (Maggie Mae), a wholly private enterprise. A subsidiary of the *MGIC Investment Corporation*, Maggie Mae can deal with privately insured, conventional 95 percent home mortgages that S&Ls make. Fannie Mae is refrained by law to 90 percent conventional loans. But Fannie Mae has an edge over Maggie Mae in that, as a government operation, she enjoys a privileged borrowing status, while her rival must pay a higher rate for borrowed funds.

Another operator is the *Government National Mortgage Association* (Ginny Mae), a new agency created by Congress, which took over Fannie Mae’s job of making mortgage loans with Treasury money for HUD’s array of subsidized housing programs.

These operators and others vie to reshape the residential-mortgage business by creating a market in conventional loans.

* For a lively account of the activities of Fannie Mae and others in the secondary market, see George Breckenfeld, “Nobody Pours It Like Fannie Mae,” *Fortune* 85 (June 1972): 86-89, 136, 140, 145-147.

the flow of mortgage funds to borrowers at more favorable rates than would have otherwise been possible. Many savers didn’t like the one-sided deal. During the next tight money period, many withdrew their funds for more profitable uses. The squeeze left many S&Ls with depleted savings deposits and unable to make many loans to borrowers. Now, it was the borrowers’ turn to be unhappy. With thrift institutions short on funds to lend, many potential borrowers were frozen out of the mortgage market.

VRMs TO THE RESCUE

Variable-rate mortgages (VRMs) may help to thaw the mortgage market. The VRM plan receiving the most attention is that

tying the mortgage interest rate to some market “reference rate” (see Box).¹ The mortgage interest rate would move up or down periodically to reflect changes in credit conditions. A borrower, rather than signing up to pay, say, 6 percent for 25 years, would

¹ Last August the Federal Home Loan Bank Board endorsed just this proposal. Under its proposal the VRM would be tied to some nationally used interest rates. Good candidates for this are: the yield on three- to five-year Treasury securities, the average of the yield on these securities and the yield on long-term utility bonds or high-grade corporate bonds, or the weighted-average cost of savings, borrowing and FHLBB advances for S&Ls in the system.

Also, for examples of other types of VRMs, see *New England Economic Review*, March/April 1970.

SETTING IT UP

We can go a long way toward insuring the VRM plan's smooth operation if we weigh the diverse interests of borrowers, S&Ls, and savers with an eye toward compromise and equity. Such issues as the choice of "reference rate," the proper number of rate changes per year, the means to adjust the borrowers' payments schedule to changing mortgage costs, figure crucially in a workable formula.

Reference Rate. The choice of "reference rate" lies at the heart of the plan. The rate must be well known, easily understood, and reported in the press so that the public can keep informed of its movements. To protect the lender from charges of collusion or conflict of interest that might arise after a sharp boost in rates, the indicator should fall clearly outside the banking community's influence.

It should be a stable indicator of credit and monetary trends, pliable enough to give the S&Ls' mortgage rate adequate flexibility while averaging out extraneous factors.

Some experts feel the three-to-five-year Treasury-security rate best meets these qualifications. Others, fearful that any reference rate may suddenly send borrowers' mortgage costs soaring, favor legislation limiting the number of times per year the mortgage rate could be raised. California already has such a law. Another approach, though limited in scope, suggests ceilings on variable-rate movements to prevent a runaway market from crippling borrowers.

Compromise may be difficult on how and when to adjust the borrower's payments to the change in his interest rate. Current literature suggests two basic options—a variable-payment plan where a borrower's monthly payments would vary with interest rates but his number of payments would remain the same, or a variable-maturity plan where the length of his mortgage obligation would vary but his monthly payments would be constant. Although some borrowers would view either variable-rate plan indifferently, most would probably prefer the variable-maturity plan. The typical borrower probably attaches relatively little value to a dollar that won't come due for 10 or 20 years—the prospect of a few monthly payments far into the future does not seem so terrible.* In contrast, he dislikes frequent changes in his monthly payments, because they make short-term financial planning difficult and can have a devastating impact on a family with a tight budget.

* However, if interest rates rise quickly enough while monthly payments remain constant, all of the monthly payment may be needed to cover the interest cost, leaving none for the principal. The borrower, at this point, could never make enough payments. To guard against this occurrence, provision would have to be made to increase monthly payments temporarily until rates fall.

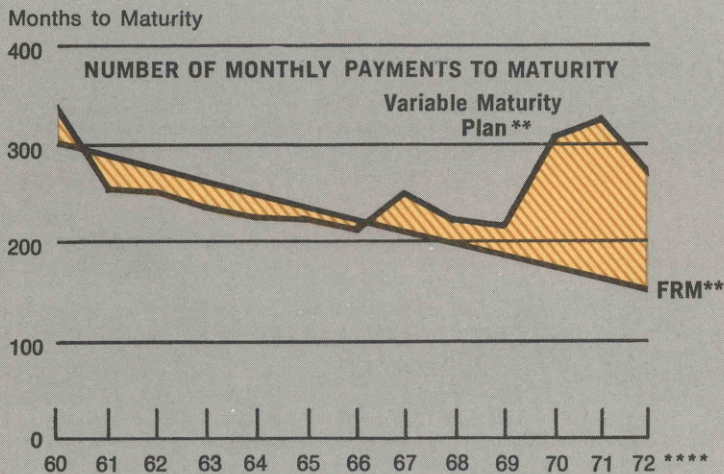
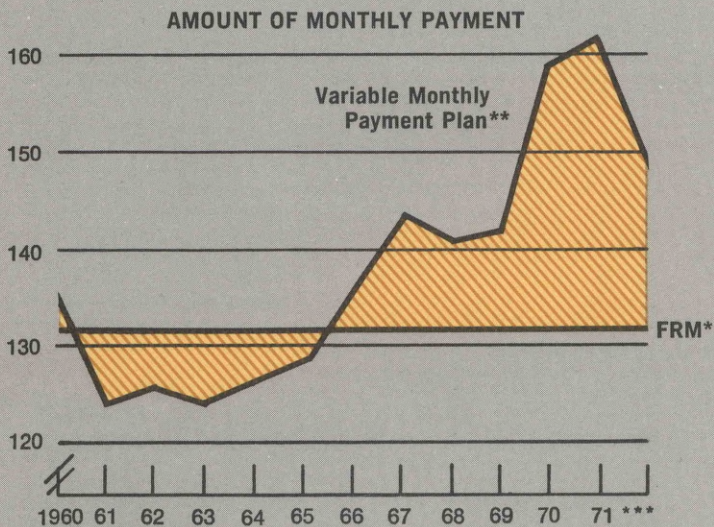
agree to pay the *going* rate, whatever it may be. For the borrower, a rise in the reference rate would mean higher monthly payments, longer maturities with less equity buildup, or a combination of both (see Box). The lender would realize higher earnings and, possibly, large cash flows. If interest rates fall, the reverse would occur.

With their earnings flexible and moving

with market rates, S&Ls could meet market demand for higher, competitive rates on savings deposits without fear of financial strain or need of regulatory intervention. With savers content to leave their funds alone, "tight" credit conditions would be less likely to compel S&Ls to curtail their mortgage lending. So, savers would receive more competitive returns on their funds,

DEPENDING ON THE COURSE OF THE REFERENCE RATE FRMs AND VRMs EFFECT BORROWERS IN RADICALLY DIFFERENT WAYS

Monthly Payment, Dollars



* Based on contract rate of 6¼ percent, which was the average rate of FHA mortgages in the fourth quarter of 1959, and an original maturity of 25 years.

** Based on a rate of 200 basis points above the 3- to 5-year Treasury securities yield two quarters before and an original maturity of 25 years.

*** Based on a rate of 200 basis points above the 3- to 5-year Treasury securities yield two quarters before and a fixed monthly payment of \$6.60.

**** Principal and months to maturity refer to the beginning of each quarter.

S&Ls would become full partners in the credit market, and borrowers would face less severe cutbacks in available mortgages when money tightens. In the process, the complicated, sometimes clumsy, set of ceilings meant to protect S&Ls from competition could be removed along with the plugs to stop savers from seeking higher returns elsewhere.

OPPOSITION TO VRMs

Yet such a sweeping proposal for change in the way S&Ls and borrowers do business was bound to generate much opposition.² Many question its feasibility, fairness to borrowers, and impact on lenders.

Little Protection for Borrowers. Since the 1960s, fixed-rate mortgages (FRMs) have cushioned most mortgage borrowers against the shocks of rising market rates. And, even if rates had fallen, borrowers would have been relatively safe. In most cases, these borrowers could take out a new mortgage at the lower market rate and use it to pay off the old, higher-rate mortgage. Prepaying a mortgage may be relatively expensive, but it provides the borrower with a way out of a high-rate mortgage when market rates drop significantly.

Compulsory VRMs would deprive borrowers of any protection against sudden rate rises. Compare, for example, the two types of VRM plans with the FRM plan held by most homeowners through the 1960s (see Chart). Our mythical VRM borrowers and their FRM counterparts take out a 6¼ per-

cent, \$20,000 mortgage in 1960 to be repaid in 1985. By 1971 our FRM borrower's monthly payments are far less than those of the variable-payment plan borrower and the variable-maturity plan borrower (at the moment) makes twice the number of payments as the FRM borrower (see Chart).

Yet, the drastic effect on borrowers when interest rates rise would become a bonanza should rates fall. Falling mortgage rates would either push down monthly payments or hasten the mortgage's maturity. Notice the first five years on the chart. Because interest rates generally remained low through the first half of the '60s, VRM holders were actually in a better position than their FRM counterparts.

Borrowers expecting falling market rates might not take, say, a 9 percent FRM, but a 9 percent VRM might look attractive. However, other borrowers, believing interest rates might rise, would select a VRM. If VRMs and FRMs were offered side by side, borrowers could choose their mortgage based on their preferences and their expectations of the future course of market rates.³ But, there's opposition to this idea.

Destabilizing Clashes. Some lenders believe that a "mixed system" could eventually stymie mortgage activity as borrowers would never want what the lenders have to sell and vice versa. They argue that during low interest periods borrowers might be understandably wary of entering into VRM contracts if they believe interest rates appear to be rising. But, this is the time when lenders would most favor VRM contracts. If interest rates are high and on their way down, borrowers will look more favorably on the VRM while lenders might prefer to "lock-in" to a fixed-rate mortgage to bolster their earnings.

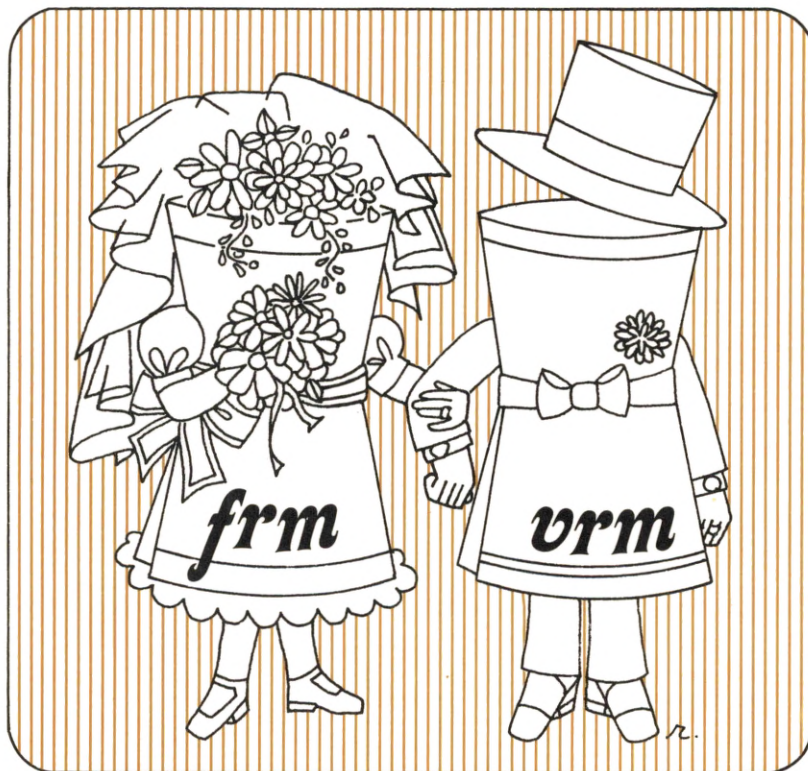
³ Many countries such as France, Germany, Italy, and Switzerland have VRMs and FRMs coexisting, but the use of VRMs is described as "limited." Unfortunately, limited information makes judging their performance difficult.

² Roadblocks abound on the path toward VRMs. Some states outlaw VRMs. Tied to this obstacle are those regulations establishing ceilings on mortgage rates—such as the 9 percent ceiling in Pennsylvania. For the mixed plan to work, VRMs should be legal in every state and both types of mortgages should be free of restrictions on their movements. Furthermore, regulations limiting rates paid on savings deposits likewise deserve attention.

Nothing is wrong with this reasoning except that it does not go far enough. The "clashing" forces would hardly bring the market to a halt. Rather, they would work to establish a rate differential between FRMs and VRMs. If lenders favor the VRM and borrowers the FRM, the rate on the VRM will fall below that of the FRM to lure reluctant borrowers. At widening rate differentials, more and more borrowers will be drawn to the VRM. During falling interest rate periods, when VRMs become attractive to borrowers, the rate differential may turn in favor of the FRM. There's really nothing mysterious about these movements. They occur daily in the nation's credit markets as the difference between long- and short-term

rates fluctuate according to the preferences and expectations of sellers and buyers.

We can even say something about the direction of this differential. A "typical" borrower probably would rather protect himself against financial misfortune than gamble on riches or ruin. The fixed-rate mortgage commitment allows him this protection, regardless of interest rate movements. "Typical" S&Ls have experienced the bind inherent in fixed-rate mortgage commitments financed through short-term savings deposits. The flexibility which VRMs can offer them should be welcome. Therefore, if most borrowers favor FRMs and most lenders prefer VRMs, then the latter should go for a lower basic rate than the compa-



"Allowing VRMs and FRMs to coexist provides borrowers and lenders with another means of dealing with the uncertain course of interest rates."

rable FRM, although other factors may widen or narrow the difference.

In fact, at times either type of mortgage may be temporarily driven off the market because the differential gets too large. For instance, if borrowers are very nervous about taking a VRM, only a very low starting rate may quiet their fears. But, a mortgage lender may be unwilling to make a VRM contract at such a low rate. In this case, very little trading would take place in VRMs and the market resulting would be much like today's—with one important exception. At least an option would be present. Changes in conditions, preferences, or expectations could easily reverse the S&L's decision, and trading in both FRMs and VRMs could resume.

WHICH WAY?

Allowing VRMs and FRMs to coexist pro-

vides borrowers and lenders with another means of dealing with the uncertain course of interest rates. But it may promise more than that. By allowing S&Ls' long-term earnings to adjust to quick changes in their expenses, VRMs can enable them to compete aggressively for savers' funds. Savers naturally benefit by this courtship through higher rates on their savings deposits (assuming there are no ceilings). And, the faithful stream of savings into these institutions means mortgage money for the borrower even during tightest credit periods.

While we can't be sure that long-term mortgage borrowers and lenders will accept VRMs, there appears to be little cost in trying them. Should the VRM become an integral part of the mortgage market, it could go a long way toward reducing the stresses and strains on mortgage-lending institutions that depend on short-term liabilities for making long-term loans. ■

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*Business Review Topics,
Second Quarter 1972,
Selected by Doris Zimmermann*

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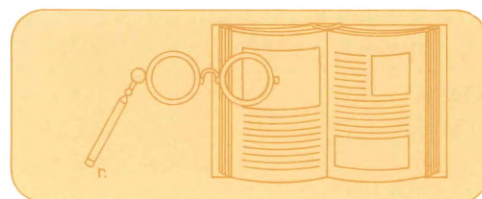
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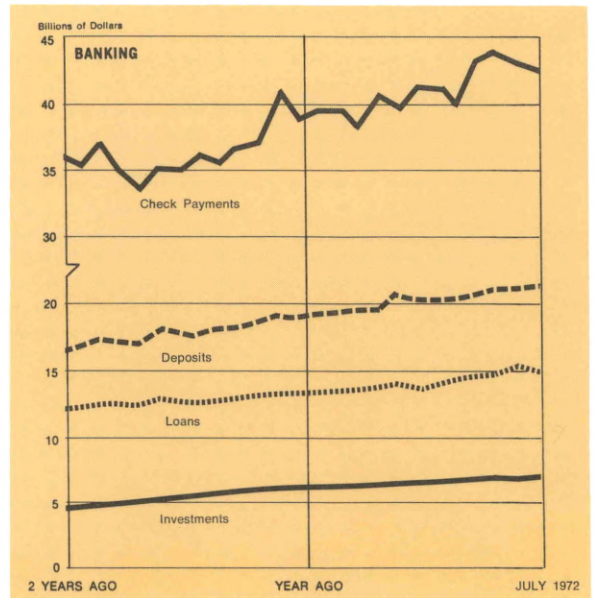
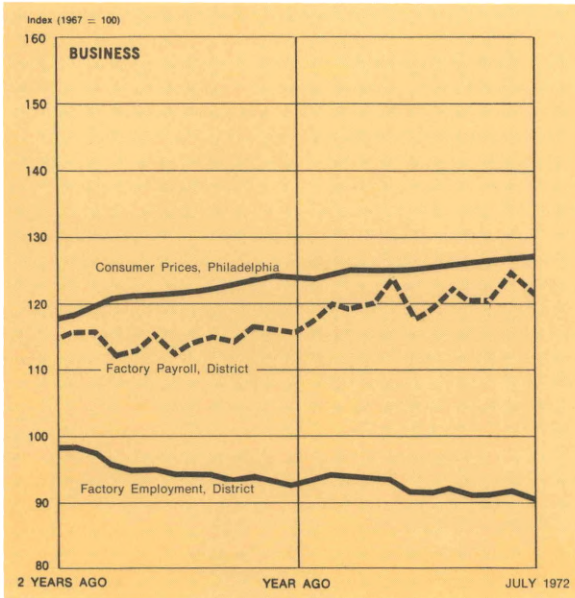
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FOR THE RECORD...



SUMMARY	Third Federal Reserve District			United States		
	Percent change			Percent change		
	July 1972 from		7 mos. 1972 from	July 1972 from		7 mos. 1972 from
	mo. ago	year ago	year ago	mo. ago	year ago	year ago
MANUFACTURING						
Production.....				- 7	+ 6	+ 6
Electric power consumed	- 6	- 2	+ 2			
Man-hours, total*.....	- 3	- 2	- 2			
Employment, total.....	- 2	- 3	- 3			
Wage income*.....	- 3	+ 4	+ 4			
CONSTRUCTION**	+12	+15	-24	- 5	+ 6	+13
COAL PRODUCTION	-16	-21	- 6	-17	+ 4	- 5
BANKING (All member banks)						
Deposits.....	0	+12	+13	+ 1	+10	+10
Loans.....	0	+15	+13	+ 1	+15	+12
Investments.....	0	+10	+14	0	+ 7	+10
U.S. Govt. securities.....	- 1	- 2	0	- 1	0	+ 1
Other.....	+ 1	+16	+22	0	+11	+15
Check payments***.....	- 1†	+12†	+13†	- 2	+11	+14
PRICES						
Wholesale.....				+ 1	+ 4	+ 4
Consumer.....	0‡	+ 3‡	+ 3‡	0	+ 3	+ 3

*Production workers only
 **Value of contracts
 ***Adjusted for seasonal variation

†15 SMSA's
 ‡Philadelphia

LOCAL CHANGES Standard Metropolitan Statistical Areas*	Manufacturing				Banking			
	Employment		Payrolls		Check Payments**		Total Deposits***	
	Percent change July 1972 from		Percent change July 1972 from		Percent change July 1972 from		Percent change July 1972 from	
	month ago	year ago	month ago	year ago	month ago	year ago	month ago	year ago
Wilmington.....	0	0	+ 1	+20	-10	- 5	- 3	- 1
Atlantic City.....	0	0	+ 2	+15	- 6	+16	+ 4	+21
Bridgeton.....	- 3	+ 3	N/A	N/A	N/A	N/A	+ 1	N/A
Trenton.....	- 2	- 1	- 4	+12	- 7	+11	+ 1	+10
Altoona.....	- 1	- 4	+ 1	+ 7	+ 8	+ 6	+ 2	+ 8
Harrisburg.....	- 2	- 2	+ 9	+ 9	- 4	+12	+ 3	+17
Johnstown.....	- 2	- 2	- 1	+11	0	+12	0	+ 7
Lancaster.....	0	+ 2	- 2	+12	- 5	+34	+ 2	+15
Lehigh Valley.....	- 6	- 2	- 3	+10	+ 4	+18	+ 2	+14
Philadelphia.....	- 1	- 2	- 2	+ 5	+ 1	+16	- 1	+13
Reading.....	- 3	- 2	- 4	+ 5	- 9	- 8	+ 1	+15
Scranton.....	- 3	+ 1	- 3	+ 1	+ 6	+ 4	+ 1	+12
Wilkes-Barre.....	- 8	- 4	- 7	+ 5	+ 4	+22	+ 6	+29
Williamsport.....	N/A	N/A	N/A	N/A	+12	- 4	+ 2	N/A
York.....	- 1	+ 1	- 2	+ 8	+10	+35	0	+11

*Not restricted to corporate limits of cities but covers areas of one or more counties.
 **All commercial banks. Adjusted for seasonal variation.
 ***Member banks only. Last Wednesday of the month.