

BUSINESS REVIEW

ISSN 0007-7011

Federal Reserve Bank of Philadelphia

177

LIBRARY

JUN 3 1977

FEDERAL RESERVE BANK OF PHILADELPHIA

MAY·JUNE 1977

%%%%%%%% **A** %%%%%%%%%
%%%%%%%% **Case** %%%%%%%%%
%%%%%%%% **For** %%%%%%%%%
%%%%%%%% **Market** %%%%%%%%%
%%%%%%%% **Interest** %%%%%%%%%
%%%%%%%% **Rates** %%%%%%%%%

and
THE UNEMPLOYMENT RATE:
TIME TO GIVE IT A REST?

MAY/JUNE 1977

BUSINESS REVIEW

Federal Reserve Bank of Philadelphia
100 North Sixth Street
(on Independence Mall)
Philadelphia, Pennsylvania 19106

A CASE FOR MARKET INTEREST RATES

James M. O'Brien

... When attempts to control interest rates run afoul of market forces, the results usually aren't as planned. The author explains why.

THE UNEMPLOYMENT RATE: TIME TO GIVE IT A REST?

Stewart Schwab and John J. Seater

... The unemployment rate—a single statistic—is used to measure both economic health and social welfare, and it falls short in both cases. A separate measure for each is proposed.

The BUSINESS REVIEW is published by the Department of Research every other month. It is edited by John J. Mulhern, and artwork is directed by Ronald B. Williams. The REVIEW is available without charge.

Please send subscription orders, changes of address, and requests for additional copies to the Department of Public Services at the above address or telephone (215) 574-6115. Editorial communications should be sent to the Department of Research at the same address, or telephone (215) 574-6418.

* * * * *

The Federal Reserve Bank of Philadelphia is part of the Federal Reserve System—a System which includes twelve regional

banks located throughout the nation as well as the Board of Governors in Washington. The Federal Reserve System was established by Congress in 1913 primarily to manage the nation's monetary affairs. Supporting functions include clearing checks, providing coin and currency to the banking system, acting as banker for the Federal government, supervising commercial banks, and enforcing consumer credit protection laws. In keeping with the Federal Reserve Act, the System is an agency of the Congress, independent administratively of the Executive Branch, and insulated from partisan political pressures. The Federal Reserve is self-supporting and regularly makes payments to the United States Treasury from its operating surpluses.

A Case For Market Interest Rates

By James M. O'Brien*

For thousands of years, people have been lending goods and money to their friends and neighbors, and on occasion they've asked for something extra in return. That something extra is interest—the price of a loan.

Borrowers appear to have a stake in keeping the amount of interest they pay as near to zero as possible. Thus, over the centuries, they have sought to negotiate low interest rates or, failing that, to have their governments hold down the price of borrowing. And they have been supported in this effort both by capitalists who want to encourage investment and by socialists who deplore lending at a profit on humanitarian grounds. As a result, governments now intervene by giving tax breaks to encourage investment, by imposing interest-

rate ceilings for consumer and mortgage loans, and in other ways.

But a case can be made for the view that market forces should be allowed to play the main role in setting interest rates. Government intervention to promote investment may not produce the benefits commonly supposed. And programs to hold down the price of borrowing may backfire, hurting the people that they're designed to help. In short, it may not be true that the only good interest rate is a low interest rate. To see why, however, it's necessary to understand how interest rates are set in the first place.

WHAT DETERMINES INTEREST RATES?

Interest rates are prices. Unlike other prices, they usually are expressed as percentages of the value of the item loaned rather than as amounts of money. But, like other prices, they are determined by supply and demand. In a monetary economy (where money is the medium of exchange), interest rates depend on the supply of and the

*Dr. O'Brien, formerly Research Adviser at the Federal Reserve Bank of Philadelphia, now is an Economist at the Board of Governors of the Federal Reserve System. This article was written while the author was associated with the Philadelphia Fed.

demand for loanable funds, which in turn depend on productivity and thrift. Productivity and thrift, however, do not determine interest rates all by themselves. Risk—especially the risk of default—affects interest rates, as does the fear that inflation will reduce the purchasing power of money that's loaned.

Productivity and Thrift. How productivity and thrift account for interest rates is easiest to see in a nonmonetary example.

Suppose that somewhere there's an island where people stay alive by picking and consuming coconuts. Every day the workers go into the forest, search for 10 coconuts apiece, and carry them home. At some point, one of the brighter islanders notices that more coconuts could be collected if the workers could climb the palm trees. But the island doesn't have a hardware store, and so, if ladders are to be had at all, they'll have to be built.

A ladder would increase the yield by, say, 100 coconuts—from 10 to 110 per man/day—and that is an important productivity increase. But building ladders isn't costless. Somebody has to take a day out of foraging to make a ladder, and each ladder lasts only one day. Thus the cost of making a ladder is 10 coconuts—one forager's daily quota. Without the ladder, 20 coconuts could be gathered in two days; with the ladder, a forager can gather 110. Thus the net gain over two days would be 90 coconuts.

That's a lot of coconuts. But will anyone forego Monday's 10 coconuts in order to get 110 on Tuesday? Is the rate of return high enough to get an islander to postpone consumption in favor of an investment in productivity? That depends on how thrifty he is. Most people are willing to postpone a little consumption for the sake of some future reward—an interest payment. Interest is a payment for abstaining from present consumption. And while a low interest rate may coax the first increment of postponed consumption out of people, postponing further increments will require larger and

larger rewards.

In this coconut paradise, people begin postponing consumption because they recognize that benefits (more coconuts) will flow from increased productivity. But how much they postpone depends on how much return they expect to get. As the return they require for more saving goes up, and as the productivity of more investment goes down (because fewer foragers are available to man the ladders, for example), the point will be reached at which postponing consumption no longer pays off in a return high enough to compensate for any further postponement. At this point the actual return barely covers the interest people require as payment for postponing consumption.

Thus the interest rate settles where the return people require matches the return they actually can get from saving and investing. And when it does settle here, it allocates resources over time in a way that fits people's inclinations toward present and future consumption.

Risks and Rates. The coconut example is oversimplified because it assumes away risk. There's always a chance that postponing consumption will go unrewarded. It's a fact of life that some loans are not repaid, and those who lend regularly have to hedge against occasional nonrepayment. They can do this by averaging. Lenders figure out what the interest rate would be if there were no risk of default, estimate how much they are likely to lose on bad loans, and then adjust interest rates upward to give themselves an average return equal to what they would get in the absence of risk. If a lender expects to collect interest charges on only half of his loans, he'll have to double the interest rate to come out even; if he wants a 5-percent average return, he'll have to charge 10 percent. And since the lender is likely to have an aversion to risk, he'll tack on something extra as payment for risk-bearing, thereby pushing up the interest rate still further.

Uncertainty about repayment also helps to explain why in real life we find not just

one interest rate but many. The safest borrower gets the lowest rate. Uncle Sam usually pays less interest when he borrows because lenders don't expect him to default; and corporations may pay less than individuals because lenders believe that corporations are more likely to repay. Lenders assess a higher risk of default and thus a bigger risk premium when the borrower has relatively small income and wealth and has little to put up as collateral. Interest rates change with lenders' perceptions of risk.¹

Thus uncertainty about repayment is a third important determinant of interest rates, along with dispositions toward thrift and anticipations of productivity gains from investment. In most modern economies there's a fourth such determinant—expectations about changes in the purchasing power of money.

Fear of Inflation. A dollar that bought a whole coconut today may be worth only half a coconut tomorrow if prices go up. Lenders know this and try to compensate by raising their interest rates to approxi-

¹Different interest rates for different kinds of loans have causes not mentioned in our simple illustration. One such cause is that the lender may make a loan with an eye to selling it before it matures; a lender who does this has to face uncertainty about the loan's resale value. The resale values of loans that have a resale market—and some don't—are not constant. Some values are more volatile than others, and the interest rate required on securities whose values are more volatile may be higher than the rate on others to compensate the holder for bearing the risk of price fluctuations. On this basis, economists sometimes suggest that long-term interest rates will tend to exceed short-term rates, *ceteris paribus*, because asset holders are less likely to hold long-term instruments until maturity.

A second cause of there being different interest rates has to do with expectations about future rate levels. If lenders expect a rise in interest rates, they will try to shift their portfolios from long-term lending to short-term lending. This shift will enable them to reinvest at a higher yield as well as to avoid selling securities when their value has dropped off. But as investors overhaul their portfolios, the interest rate on long-term instruments tends to rise with respect to the rate on short-term instruments until it gives a return that matches the return that a sequence of short-term securities would give over the same holding period.

mate the expected inflation. The percentage added to the interest rate because of expected inflation is the inflation premium.

Borrowers who want money for capital investment are willing to pay the inflation premium because they know that the selling price of the things they produce will keep pace with inflation. Thus expected inflation need not change the amount of investment. It changes the yardstick that measures the price of everything, but it doesn't affect the price of one thing with respect to another—its relative price.

Enter Government. Left alone, these four market fundamentals—the outlook on inflation along with perceptions of risk, productivity, and thrift—would set interest rates where they reflect individual propensities to consume and to invest. But interest rates may be affected by governmental attempts to alter the market-determined rate structure.

While such attempts may be well intentioned, they seldom work out as planned. The reason is that those who do the planning often do not appreciate how market forces operate to set interest rates; nor do they appreciate what interest rates do, once they're in place, to allocate resources over time in productive economies. Governmental intervention, when it occurs, does not operate in a vacuum. Instead, it acts along with the market forces. It's this complex of forces, not one force alone, that produces results when government intervenes. And these results rarely are quite what the planners expect, whether the aim is to encourage investment or to insure equity.

ENCOURAGING INVESTMENT?

Businesses need money in order to grow, and they get it by borrowing—for example, by selling bonds. Publicly owned corporations use other people's money to finance production, and they pay interest for this use. It's easier on a corporation's budget to borrow at lower rates, and so many business people favor subsidies and other mechanisms that would reduce their borrowing

costs below market levels.

What's good for business often may be good for the country. But depressing interest rates artificially may be less beneficial than letting them be set by market forces. Subsidizing interest rates, for example, may help some people, but only at the expense of others.

Interest Subsidies. Take the case of an economy where interest rates are set by market forces at 10 percent. Suppose now that government officials want to boost capital investment. They might do so by subsidizing lenders who make industrial loans at below market rates. Lenders would be encouraged to make more loans by the prospect of a higher return (counting the subsidy). Borrowers typically would find that they were able to get cheaper loan rates and thus would want to undertake invest-

ments whose return wouldn't have been enough to cover the market interest rate. Wouldn't this be beneficial all around?

No, it wouldn't. While the lenders in this example require more than the market interest rate to repay them for more lending, the borrowers' new investments are paying less than that rate. And the difference must be made up somehow. When the lenders actually are getting a higher return, someone else must be subsidizing them, through higher taxes. If the lenders themselves are taxed to pay part of the subsidy, then their net return is not what they think it is but something less. Either way, someone must be worse off: either taxpayers at large are having their after-tax income reduced, or lenders actually are getting less than they require to postpone consumption (see Box).

Because interest subsidies produce high-

MARKET IMPERFECTIONS AND GOVERNMENT INTERVENTIONS

Critics of unregulated markets often speak of market imperfections as justification for government intervention. It is true, of course, that markets never will work without friction. The reason is that there are costs to setting up and conducting trade. Borrowers, for example, may find it too time-consuming to understand precisely all the terms of a loan contract or inquire judiciously about the lending charges of each and every lender. Lenders may desire to establish customer relationships even if this means giving certain borrowers a preferential loan rate rather than continuously beating the bushes for new customers. But whether these or other features of real-world markets justify government intervention depends on whether government has the power to correct them—and to correct them at a cost less than that posed by these frictions themselves.

Because of its size and authority, government does have some advantages over private citizens. It can prevent or limit monopoly or collusive behavior. It may be better able to bear risk. But even where Uncle Sam does have advantages, there are limits and costs that may outrun gains. Loan guarantee programs, for example, easily may be overused and result in a lot of nonproductive investments.

Furthermore, other types of imperfections are not easily amenable to regulation. There may be little government can do to correct for the effects of borrower ignorance on the exact loan rate implied in consumer loan or mortgage loan contracts. Truth-in-lending laws which involve little cost on the part of government or private lenders and borrowers may be worth a try. But detailed regulation of the loan markets easily could result in much greater costs than the distortions created by incomplete information. And interest rate ceilings are no more likely to establish an appropriate interest rate than is haggling under incomplete information. Similarly, curbing bankers' attempts to establish long-term customer relationships may increase the cost of maintaining loan markets by more than the cost that customer relationships themselves impose.

In all, the argument for regulated markets is not confirmed by the mere presence of market frictions, since these frictions may be less costly than government intervention.

ly visible taxes, some people favor what may seem to be cheaper programs. Two such programs are popular—loan guarantees and easy money. But it's not clear that either one gets around the difficulties that direct subsidies present.

Loan Guarantees Not Costless. One way to bring down the price of a loan for the borrower is to reduce the risk of nonrepayment to the lender. If the lender has less fear of default, he won't charge as high a risk premium, and the effective rate on his loan will drop. The Federal government currently reduces risk to the lender by guaranteeing loans of many kinds—undertaking to repay them if the borrower defaults.

Guarantee programs of this kind need generate only administrative costs at the outset—if they are not funded to meet statistical default rates. And it's to be said in their favor that they may make financing easier to obtain and reduce the price of loans to borrowers. But are they cheaper overall?

Whether governments, because of their size, are better able than private lenders to absorb the risk of failure, is hard to say.² But to the extent that governments must pick up the tab for bad debts without compensation (and many guarantee programs work this way), loan guarantees are just hidden subsidies that raise everybody's taxes and help some people at the expense of others. Thus guarantees may be viewed as alternative forms of subsidies, whose elusive costs, just like the costs of straightforward subsidies, should be balanced against the benefits that are expected to come from helping select groups of borrowers.

Easy Money. While subsidy programs are targeted at borrowers, and frequently at borrowers with certain distinctive charac-

teristics, easy money policies are directed at the economy as a whole. The theory is that increasing the supply of money keeps interest rates low and that low interest rates encourage investment. It would follow that the monetary authorities should stand ready to speed up the growth of the money supply whenever interest rates show a tendency to rise.

History shows, though, that while easy money may produce short-run benefits as advertised, sustained increases in monetary growth eventually bring on increases in all prices.³ Lenders adjust their inflation premiums to reflect higher expected inflation. Thus ever faster monetary growth ultimately produces higher, not lower, interest rates. It's doubtful that investment receives much encouragement from prolonged expansive monetary policies.⁴

In short, governmental attempts to step up investment by driving interest rates down may be counterproductive. But higher investment is not the only argument for low interest rates; there is also the equity argument.

INSURING EQUITY?

Some are critical of market interest rates out of social concern. These critics urge that lower rates would promote equity in the

²It has been argued recently that raising the rate of money growth may not drive down interest rates even in the short run, because lenders adjust their inflation premiums in response to expansive monetary policies. See Donald J. Mullineaux, "Money Growth, Jobs, and Expectations: Does a Little Learning Ruin Everything?" (*Business Review*, Federal Reserve Bank of Philadelphia, November/December 1976, pp. 3-10) for the impact of policy on inflation expectations.

³In fact, expansive monetary policies may discourage investment. Inflation can have distorting effects on interest rates, and thus on borrowing costs, because of income taxes. Most of an interest rate's inflation premium is designed to cover the amount that price increases take away from the purchasing power of the principal of the loan. The income tax, because it taxes nominal interest as a form of income, taxes the inflation premium and thus the real value of the principal. Lenders will try to pass some of this real tax cost along to borrowers, raising the real cost of capital to investors.

⁴For two views on this question see K. J. Arrow and R. C. Lind, "Uncertainty and the Evaluation of Public Investment Decisions," *American Economic Review* 60 (1970), pp. 364-378; and J. Hirshleifer, "Investment Decisions Under Uncertainty: Applications of the State-Preference Approach," *Quarterly Journal of Economics* 80 (1966), pp. 252-277.

distribution of goods. Once again, though, there may be insufficient appreciation of the fundamental forces that determine interest rates.

Capitalist Exploitation. According to Marxian socialists, interest can and should be done away with in the society they envisage as the best—a classless society composed entirely of workers. Their claim is that interest represents the exploitation of labor by capitalists. They argue that since labor makes the capital goods—the means of production—any increase in revenue that these capital goods engender ought to go entirely to labor in wages and not to capitalists as interest.

But this approach misses the point that abstinence also is required to make capital goods, even in the classless society, so that some form of incentive still is likely to be paid—in job promotions, political preference, special privileges, or the like. The incentive mechanism—whether interest or something else—is not payment to a class but payment for a productive input.

Usury. Many people may have humanitarian motives for wanting to reduce interest rates below market levels. From very ancient times, protecting the unwary from unscrupulous lenders has been regarded as a matter for political leadership. And the ultimate weapon for keeping rates down has been the usury law, which limits the interest that lenders can charge. Even now most states in this country have usury laws on the books for consumer and other loans. These laws often are evaded—by pawn-brokerage, black marketing, paying interest indirectly, and other devices. But even insofar as they are observed, they come into conflict with the fundamental determinants of interest rates and produce a mixed bag of results.

If usury curbs were right in step with the movement of market rates, they would be redundant. As soon as they get out of step with market rates, they affect the availability of funds to borrowers. The lender who sees market conditions setting the interest

rate at 12 percent for some loans and finds ceilings that limit the rate to 9 percent for other loans with similar characteristics hardly will want to make these other loans; and he won't unless he's forced to.

In practice, usury ceilings hit hardest at the high-risk borrower, since his interest rate includes a relatively high risk premium. Granted, ceilings may deter the occasional unscrupulous lender; but they do so at the cost of making the high-risk borrower ineligible for a loan. And it's the low-income or otherwise unfortunate individual—the very one the laws are supposed to be protecting—who is most likely to find that these laws keep him from borrowing. This effect of interest ceilings has been especially clear in the mortgage market.

If the aim of usury laws is to protect the borrower, there may be a better way to achieve that aim. Some economists and policymakers favor income subsidies that would help borrowers pay going rates and might even make it less important for them to borrow at all. At any rate, usury laws probably don't provide the best way of addressing equity issues.

Thus, although proposals to lower interest rates below market-set levels may be appealing, they aren't likely to work out very well. And there is a clear reason why—namely, that when government programs operate alongside market forces, they don't produce the results they would if they were operating in a vacuum.

RESTING THE CASE

To claim that unregulated credit markets work perfectly would be to overstate the case for market interest rates. Not all financial markets are perfectly competitive. Small local markets, for example, may be subject to arrangements that border on monopoly. And policymakers may wish to consider improving these markets—if possible, by promoting competition. In the main, however, credit markets are competi-

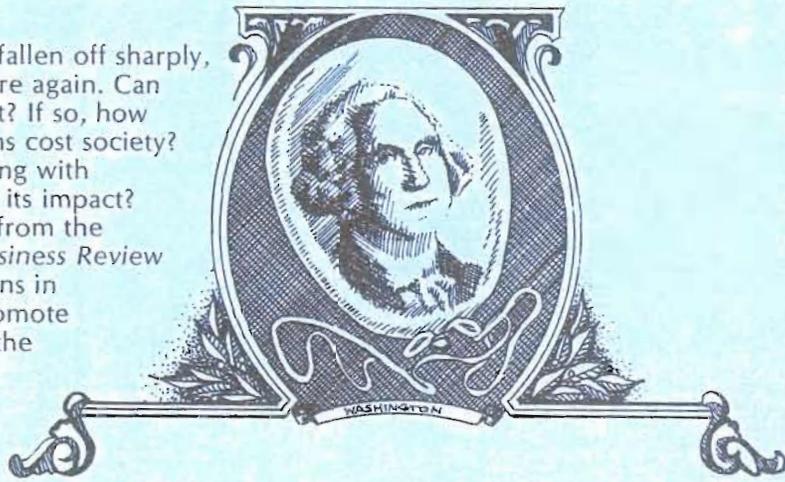
tive. In the absence of regulation, this competition would be so intense that fundamental market forces would play the main role in setting interest rates and in providing for efficient flows of saving and investment.

Even where the market doesn't work perfectly, however, the effectiveness of government intervention may be limited by the costs it imposes. Government action has

its own imperfections. Marrying these imperfections to those of the market may produce some benefits, but it is likely also to exact some costs. The fundamental determinants of interest rates are so ingrained that attempts by government to control or influence interest rates often produce perverse results. The case for market interest rates rests on the strength of these determinants.

ECONOMICS of INFLATION

Though inflation has fallen off sharply, it could become severe again. Can policymakers curtail it? If so, how much will their actions cost society? Are there ways of living with inflation that cushion its impact? Six articles reprinted from the Philadelphia Fed's *Business Review* address these questions in detail and seek to promote an understanding of the problem among both policymakers and the general public.



Copies are available free of charge. Please address all requests to the Department of Public Services, Federal Reserve Bank of Philadelphia, Philadelphia, Pennsylvania 19106.

THE FUTURE OF AMERICAN

THOMAS BRADLEY

ANTHONY DOWNS

MARTIN MEYERSON

ANITA SUMMERS

DONALD RAIFF

LENNOX MOAK

CARLA HILLS



Last October, as part of the Philadelphia Fed's Bicentennial celebration, these seven authorities on urban economics and finance gathered here to discuss the future of American cities. The proceedings of that conference now are available.

To get your free copy of *The Future of American Cities*, write to the Department of Public Services, Federal Reserve Bank of Philadelphia, Philadelphia, Pennsylvania 19106.