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September 30, 1977

Business & Financial Letter

Interest Rates: Expectations

In this, the first of two articles discussing the recent behavior of interest rates and the means of forecasting them, we analyze the theory that the "real" rate of interest is constant. This theory is based upon the idea that nominal interest rates may be usefully represented by the sum of two terms—the real rate of interest (the rate of return on the security in terms of goods and services) and the expected rate of inflation.

Part of the equipment available to any interest-rate forecaster is a variety of estimated statistical equations. With interest rates, there are two dominant relationships of this sort. From the recession trough in early 1975 until the beginning of 1977, the constant-real-rate thesis was a more successful forecaster than an alternative money-demand approach which will be discussed in the second article. This year, however, neither approach has met with success. Those in the economic forecasting trade will not be surprised, because educated judgment has usually proved a better forecasting tool than quantitative models over periods as long as 3-6 months. However, these models do provide insight into the *average* relationships among key variables, and when they fail to work it is useful to ask why.

The constant-real-rate approach is basically the result of the hypothesis that interest rates are essentially efficient forecasts of future rates of inflation. This notion is supported by a pillar and a toothpick. The sturdy pillar is the notion that market participants jointly establish a level of current interest rates that leaves no room for arbitrage profit, based upon efficient forecasts of the determinants of future interest rates. In other words, market interest rates reflect two phenomena: (1) the forecasting skill of market participants, (2) the ease with which they may immediately substitute assets for one another and alter savings and investment decisions so that the time patterns of expected yields on all riskless securities are identical. The toothpick is the idea that the real rate of interest is constant, so that nominal yields reflect only very efficient forecasts of the future rate of inflation. To readers familiar with the various factors alleged to affect interest rates in weekly newsletters of sophisticated financial-market participants, this latter proposition requires a leap of faith.

Forecasts' impact on rates

Securities are constantly traded, and prices reflecting their current values are readily available to market participants. Such markets are called auction markets. Despite extensive reseach, economists have never been able to find an auction market that predictably presents an opportunity to make a trading profit; that is, to make more than (or less than) the prevailing average return on alternative investments. The key word is predictable.

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Above-normal profits do occur but they could not have been predicted ahead of time.

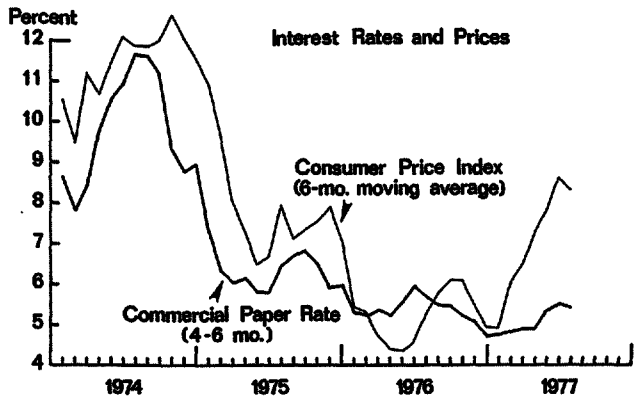
In particular, like assets tend to earn equal returns. This leads to the interesting conclusion that current interest rates on essentially riskless (default free) assets, such as short-term Treasury securities, are basically affected by forecasts of future interest rates on the same security. To see why, suppose that some force, such as increased Treasury borrowing, will increase the supply of these short-term securities six months from today. Other market participants will then anticipate the increased Treasury activity and will adjust their behavior to take advantage of the new situation. Borrowers will be anxious to obtain long-term credit now, in view of the relatively light current Treasury demand, but lenders will be hesitant to save, knowing future rates will be higher.

The combination of increased supplies of long-term securities today as borrowers avoid the higher interest costs they anticipate in six months' time, and temporarily decreased lending as savers attempt to position themselves to earn higher rates in the future, will put upward pressure on current interest rates. From the credit standpoint, both the higher current demand and the lower current supply will work to raise interest rates now, in anticipation of higher rates in six months' time. If we assume that all suppliers and users of credit are profit maximizers or interest-cost minimizers, how much would the current rate rise? On balance, it would tend to rise to the same level as the rate anticipated in six months' time.

The interest-rate problem is similar to the problem of determining the effect of an early freeze that reduces the future supply of oranges. In this latter case, holders of orange inventories will not be willing to sell until the present price of oranges rises enough to make selling oranges now and storing them for later sale equally profitable propositions. In other words, the current price of oranges must rise to the point where storage is no longer an attractive option. Since the storage cost of financial assets is negligible, the cost of buying money now for future use must be the same as the price people expect to pay in the future for the same money. Given our basic assumption about the psychology of market participants, the rate of return on present short-term securities, measured in terms of purchasing power, would be identical to the expected future return on these rates. As a result, in markets dominated by profit maximizers, an anticipation of higher future rates would tend to be reflected in higher present rates.

Non-profit maximizers

But interest rates may be affected by the fact that there is at least one important market participant, the Federal Reserve, that is not a profit maximizer. Suppose, for example, that the Federal Reserve, in the course of carrying out its monetary-policy responsibilities, decides that interest rates should be higher this month and lower next month. To bring this outcome to pass, the Fed would rapidly reduce its portion of



the supply of credit, inducing investors who need funds to bid up interest rates in the ensuing scramble for cash. A month later, the Fed would rapidly expand the supply of money available and surprised investors would get their funds cheaply.

The scenario might have a familiar ring to those who read the weekly publications of Fed-watchers. But a key aspect of the scenario requires a major leap of faith all its own. In order for the central bank to exert such dramatic effects upon interest rates, the Fed's plans to raise rates this month and lower them the next would have to come as a surprise to other market participants. Otherwise borrowers would have waited a month and lenders would have jumped in the first month, bringing rates in the two months into equality and blocking the Fed's policy actions. For the Fed to affect interest rates on its own, private financial-market participants must find it difficult to predict the Fed's intentions or expensive to adjust their own borrowing and lending intentions. Those who accept the constant-real-rate approach to interest-rate determination reject one or both of these two propositions, since otherwise the Fed *could* alter the real rate of interest.

What does affect rates?

What then makes interest rates change, if we assume that market participants are sufficiently nimble—or alternatively that the Government's financial agents are sufficiently predictable—so that interest rates are unaffected by *any* individual market participant?

There are two possible answers: There must either be an economy-wide change in the value of the capital being purchased through borrowing (a change in the real return on investment) or a change in the expected value of the future means of repayment of the debt certificate (a change in the value of money). According to the constant-real-rate approach, the first hypothesis can be disregarded because changes in the capital stock are either too small or too unpredictable to affect rates. Thus, changes in inflation expectations alone determine the patterns of interest rates.

Whatever the reasons, a quarter-century's run of data suggests that the market has done a good job, if we assume that the sole factor determining interest rates on riskless securities has been the estimate of the relevant rate of inflation. (For example, the interest rate on 90-119 day prime commercial paper represents the market's best guess of the direction of consumer prices in the ensuing three-month period.) In other words, highly trained economists have met with remarkably little success trying to find better forecasts of the rate of inflation than the one contained in the going rate of interest.

As the chart shows, this was true until the beginning of this year. In 1977, however, the real return has become substantially negative, quite to the surprise of the devotees of this theory. This suggests that we should consider an alternative approach, the money-demand approach, as we shall do next week.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT
(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 9/14/77	Change from 9/7/77	Change from year ago Dollar	Change from year ago Percent
Loans (gross, adjusted) and investments*	100,889	– 180	+ 10,721	+ 11.89
Loans (gross, adjusted)—total	77,918	– 531	+ 9,449	+ 13.80
Security loans	1,913	– 835	– 65	– 3.29
Commercial and industrial	23,761	+ 39	+ 1,792	+ 8.16
Real estate	25,430	+ 140	+ 4,710	+ 22.73
Consumer instalment	13,703	+ 43	+ 2,066	+ 17.75
U.S. Treasury securities	8,434	+ 87	– 749	– 8.16
Other securities	14,537	+ 264	+ 2,021	+ 16.15
Deposits (less cash items)—total*	99,286	+ 698	+ 9,960	+ 11.15
Demand deposits (adjusted)	28,730	+ 559	+ 3,061	+ 11.92
U.S. Government deposits	495	+ 84	– 130	– 20.80
Time deposits—total*	68,023	+ 42	+ 6,647	+ 10.83
States and political subdivisions	5,250	– 20	– 85	– 1.59
Savings deposits	31,649	– 64	+ 4,520	+ 16.66
Other time deposits‡	29,047	+ 88	+ 2,551	+ 9.63
Large negotiable CD's	11,386	+ 4	+ 640	+ 5.96

Weekly Averages of Daily Figures	Week ended 9/14/77	Week ended 9/7/77	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves (+)/Deficiency (–)	+ 51	+ 91	+ 26
Borrowings	10	35	3
Net free(+)/Net borrowed (–)	+ 41	+ 56	+ 23
Federal Funds—Seven Large Banks			
Interbank Federal fund transactions			
Net purchases (+)/Net sales (–)	+ 686	– 52	+ 280
Transactions with U.S. security dealers			
Net loans (+)/Net borrowings (–)	+ 358	+ 359	+ 1,255

*Includes items not shown separately. ‡Individuals, partnerships and corporations.

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