Research Department
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Interest Rate Illusions

Market watchers have commented frequently about the seeming failure of interest rates to display their usual cyclical behavior during the present economic recovery. Normally, rates turn upward several months after the cyclical trough. But on this occasion they have trended significantly downward, with the 4-6 month commercial-paper rate falling about 100 basis points (a full percentage point), and the 3-month Treasury-bill rate falling about 60 basis points, from the first-quarter 1975 cyclical trough.

Every observer has his own favorite explanation for this phenomenon—the sluggishness of business-loan demand, the gradual nature of the recovery, the flush liquidity situation of both financial and nonfinancial corporations, and so on. Yet none of these explanations contains the full story. Indeed, if we take into account the influence of inflation, we could argue that *real* interest rates have not fallen over the past year or so, but have actually risen significantly in line with normal cyclical behavior.

Interest rate = relative price

One of the basic tenets of microeconomics is that consumers and business firms respond in their market decisions to "relative prices"—the prices of individual goods relative to the prices of other goods—rather than to the absolute levels of specific prices. An interest rate is a relative price, but one with a special feature which varies depending on the maturity of the debt contract. In other words, an interest rate can be thought of as the relative price of exchanging money for goods at different points in time, while the typical exchange is between money and goods at a given point in time. Both borrower and lender compare the current value of exchanging money for goods with the value of such an exchange at some future time.

The crucial point is this: the debt contract incorporates the fact that the rate of exchange between money and goods may change through time—that is, inflation may occur. Therefore, in the case of an anticipated rise in prices, the borrower is willing to pay a premium—and the lender will demand a premium—proportional to the rate of inflation. Borrowers and lenders thus will adjust for anticipated inflation, and market interest rates will move proportionately.

We cannot measure anticipated inflation in any exact way, but we can make some rough approximations. For example, in the short-term market, the actual rate of inflation of the past twelve months can be a useful measure of the inflation rate expected over a comparable period in the future. By subtracting this inflation premium from the market interest rate, we get what can be called the *real* interest rate.

Real vs. nominal rates

When we make this adjustment, we see a substantial difference between the behavior of *nominal*

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short-term interest rates and *real* short-term rates. Nominal rates, despite some fluctuations, trended sharply downward in the five quarters following the cyclical trough of early 1975. Real rates, in contrast, rose sharply during that period, in the sense that they moved from a large minus value to a much smaller minus value.

In first-quarter 1975, an 11½-percent annual rate of growth of consumer prices greatly overshadowed a 6½-percent nominal commercial-paper rate, while in second-quarter 1976, a 6-percent inflation rate narrowly exceeded a 5½-percent commercial-paper rate. The real rate on commercial paper thus rose about 4½ percentage points in the five quarters following the trough, offsetting in the process most of the sharp decline in the real rate that had occurred in the preceding recession. Moreover, this 4½-percent increase amounted to more than twice the average increase in the real rate of the four preceding cyclical recoveries. Thus, despite the decline in nominal market rates, short-term lenders actually accrued substantial real gains over the past five quarters from the rise in the real short-term rate of interest.

Real short-term rates display certain cyclical patterns, being normally higher at peaks than at troughs. In the four preceding cycles, the real commercial-paper rate ranged, on the average, from about 2 percent at the peak to less than ½ percent at the trough. In this latest cycle, however, the peak rate was only about 1 percent, while the rate at the trough was a negative 5 percent. And despite the sharp rise from the trough, the real rate has remained in minus territory to date this year.

This sharp difference in rate behavior reflected an unusual shift in inflation patterns. In earlier cycles, there was very little cyclical price sensitivity, since the CPI inflation rate (on the average) remained steady between peak and trough. In the last recession, however, the inflation rate rose more than 3½ percentage points between peak and trough, wiping out any real gains that lenders hoped to accrue through short-term investment.

The long-term market responded to this inflationary experience in somewhat more stable fashion than the short-term market, indicative perhaps of the much greater error rates found in short-term inflation forecasts. Indeed, the real long-term rate hardly declined at all between peak and trough, in contrast to the normal cyclical drop in that rate—and in striking contrast to the sharp fall in real short-term rates during the recession period.

Treasury as beneficiary

Some market participants actually benefited from that sharp decline in real short-term rates—those who sold debt at low or negative real yields. The U.S. Treasury was an obvious beneficiary of this development, because it sharply increased its sale of short-term marketable debt, at least partly because of cer-

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tain legislative restrictions on its issuance of long-term securities. Between the cyclical peak and the cyclical trough, the Treasury increased the amount of marketable debt by $38 billion, and the bulk of that increase ($29 billion) was composed of issues maturing within one year.

More recently, the Treasury has also scored successes in longer-term markets. The Treasury's August offering of 8 percent 10-year notes was a resounding success, with the public tendering subscriptions of $24 billion for the $4-6 billion originally available. This development reflected the Treasury's ability to exploit a long-term portion of the maturity spectrum where borrowing previously had been limited, but also reflected the market's perception of continued relatively low short-term rates. Despite the sharp upturn in real rates since the recession trough, they still remain in minus territory, with the 5¼-percent Treasury bill rate lagging behind the CPI inflation rate during the second quarter.

While investors may not quote real interest rates in shop-talk about Treasury issues, their actions indicate that they actually respond to changes in such rates, especially in view of the recent divergence between long- and short-term patterns. With a 5-6 percent inflation rate generally expected over the year ahead, the public may continue to respond enthusiastically to high-priced long-term issues.

Joseph Bisignano

Western Economic Indicators. The mailing list is being revised for this bimonthly publication, which includes income, employment, production and financial data for the nine Western states. New subscribers, or old subscribers who have not yet returned subscription reply cards, can be added to the new mailing list by writing the Mail Department, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco CA 94120.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 9/29/76	Change from 9/22/76	Change from year ago Dollar	Change from year ago Percent
Loans (gross, adjusted) and investments*	89,890	+ 143	+ 3,139	+ 3.62
Loans (gross, adjusted)—total	68,213	+ 191	+ 3,239	+ 4.99
Security loans	1,461	– 73	+ 438	+ 42.82
Commercial and industrial	22,085	+ 52	– 1,055	– 4.56
Real estate	20,799	+ 39	+ 1,163	+ 5.92
Consumer instalment	11,507	+ 53	+ 1,240	+ 12.08
U.S. Treasury securities	9,141	– 78	+ 95	+ 1.05
Other securities	12,536	+ 30	– 195	– 1.53
Deposits (less cash items)—total*	89,459	+ 716	+ 2,407	+ 2.77
Demand deposits (adjusted)	24,985	– 140	+ 827	+ 3.42
U.S. Government deposits	552	+ 66	+ 324	+142.11
Time deposits—total*	62,378	+ 572	+ 1,352	+ 2.22
States and political subdivisions	5,293	+ 3	– 494	– 8.54
Savings deposits	27,525	+ 300	+ 6,427	+ 30.46
Other time deposits‡	27,097	+ 275	– 3,185	– 10.52
Large negotiable CD's	11,275	+ 148	– 5,156	– 31.38

Weekly Averages of Daily Figures	Week ended 9/29/76	Week ended 9/22/76	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves	16	– 15	128
Borrowings	0	0	134
Net free(+)/Net borrowed (–)	+ 16	– 15	– 6
Federal Funds—Seven Large Banks			
Interbank Federal fund transactions			
Net purchases (+)/Net sales (–)	– 1,570	+ 297	+ 129
Transactions of U.S. security dealers			
Net loans (+)/Net borrowings (–)	+ 127	+ 405	+ 439

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

Editorial comments may be addressed to the editor (William Burke) or to the author. . . . Information on this and other publications can be obtained by calling or writing the Public Information Section, Federal Reserve Bank of San Francisco, P.O. Box 7702, San Francisco 94120. Phone (415) 544-2184.

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