

Research Department
Federal Reserve
Bank of
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Recession?—A Market View

Will there be a recession in 1979? The money market appears to think so, because it is forecasting a drop in short-term interest rates in mid-1979, of the type that usually accompanies a decline in business activity. But this assumed recession would be relatively brief and mild, and thus might have little effect on the imbedded inflation rate. For that matter, the market's belief doesn't mean that there will actually be a recession, because the actions taken by private and public decision makers in coming months could forestall that possibility — and because the market in some cases (as in 1974) has been a poor predictor of cyclical changes.

How can the market make such a prediction? First, it should be remembered that money-market professionals are in the business of forecasting future interest rates. The interest rate on six-month bills, for instance, should just equal the average of today's three-month rate and the market consensus on what the three-month rate will be three months from now — plus, perhaps, a premium to compensate investors for holding the bill with the higher maturity. By using a similar calculation for longer-dated securities, the market consensus on the expected level of the short-term rate at any point in the future can be found. This process can also be reversed, and the market consensus as to the shape of the yield curve at any point in the future can be calculated. (The yield curve relates the yield on various securities with the time they have left to maturity.)

The short-term end of the yield curve generally moves up and down with

the level of business activity. Thus, by matching what we know of these cyclical swings with what the market expects to happen — and by making certain assumptions about the cyclical movement of short-term interest rates — we can arrive at the market's consensus on the prospects for the real economy. Further, by comparing the currently expected swing in rates with those of past cycles, we can arrive at an estimate of the severity of the currently expected cycle. And finally, we may derive an estimate of the longer-term inflation premium imbedded in interest rates, and see whether the market expects the coming cycle to have much effect on that "permanent" rate of inflation. It should be noted that there is no conflict between the cyclical aspect of interest-rate movements, as described here, and the general notion that interest rates must fully reflect the expected rate of inflation. Rather, such short-period expectations follow the cycle — and there is also a cycle in short-term realized "real" interest rates.

In making this analysis, we used yield data, as of December 1, 1978, for a number of Federal-agency securities issued by the Federal Home Loan Banks, the Federal Land Banks, and the Federal National Mortgage Association. Treasury bills normally would be a more obvious choice, but these are not normal times in the T-bill market, because yields have been fluctuating wildly in response to heavy foreign buying and selling. The agency market is somewhat isolated from such pressures, and in addition is the only homogeneous market (other than the Treasury market) offering a broad

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range of maturity choice. Agency issues mature in at least eight months of every year through 1985.

Cyclical behavior of rates

Typically, the peak in short-term interest rates coincides with the peak in real GNP. During a recession, short rates fall sharply, and they continue to fall on average for three or four quarters after the recession ends at the trough in real GNP. This behavior reflects the fact that the period with the lowest *level* of real GNP relative to its trend continues until roughly five to six quarters after the trough. Thus the lowest short-term rates coincide with the lowest relative levels of GNP, though hardly with its lowest growth rates.

As expansions proceed further, short-term rates generally begin to rise. Steady increases continue throughout periods of mature recovery, when the level of output is high and increasing pressures develop on the supplies of labor and capital. Indeed, interest rates generally show a steady rise throughout the mature-expansion phase of the cycle, as does business' demand for capital goods. This strong positive association reflects the influence of the overall state of real aggregate demand on movements in both interest rates and the capital stock.

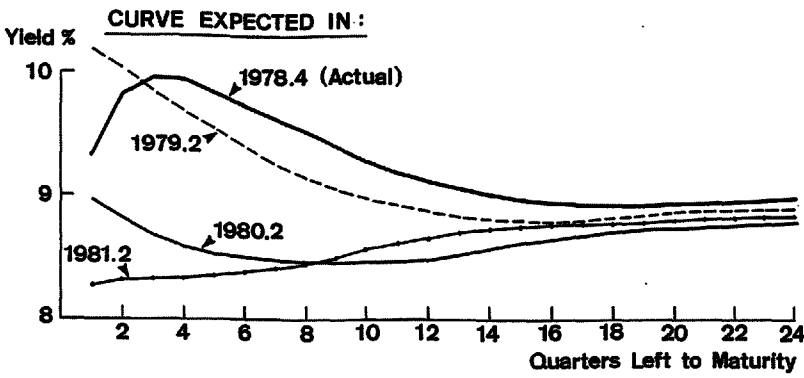
Yield-curve implications

Yield curves consist of averages of the market consensus on expected future short rates. For example, the twelve-month bill rate is an average of the current three-month rate and the three month rates expected to prevail three, six, and nine months from now. Thus,

we may use the *current* yield curve to estimate the market consensus on expected *future* yield curves, and use these as a basis for certain cyclical comparisons.

1. The actual yield curve (marked 1978.4 in chart) is a rarity, a *humpbacked* yield curve with its peak at a short maturity. This implies a continuation of mature expansion for the immediate future, and thus a further run-up in short-term interest rates. Although milder humpbacks have occurred from time to time, this precise shape occurred only in early 1973, prior to the advent of the sharp 1974-75 recession. Humpbacks occur when the market consensus expects short rates to continue rising for a time, and then to fall to a level below the yield-curve peak for a prolonged period. Mild humpbacks seem to occur during prolonged periods of mature expansion, when the market expects an eventual downturn but lacks a consensus about the date. Sharp humpbacks, of the early-1973 and late-1978 variety, seem to occur after sharp external shocks which market participants expect might trigger a downturn — such as the worldwide price upsurge of early 1973 or the policy-tightening moves adopted by U.S. policymakers in late 1978.

2. By mid-1979, the market expects short-term rates to peak, with the yield curve reaching the classic recessionary *inverted* shape (marked 1979.2 in chart). At this point, the market anticipates that all future expected short-term rates will be below the current short-term rate. Thus, almost all of the yield curve would have a negative slope. Short-term rates tend to



peak at the same time as real GNP, so in the market's view, the curve with the highest earliest-maturity peak (here 1979.2) would mark the business-cycle peak. The curve for 1979.3 (not shown) would be very similar, which suggests that the market consensus is for a recession to begin near mid-year.

3. As each recession proceeds, short rates tend to fall very rapidly, giving rise to a second rarity, the *U-shaped* yield curve (marked 1980.2 in chart). The market consensus in this case looks beyond the post-recession trough in short-term rates, towards the rising short-term rates which characterize recovery. The preceding quarter exhibits a similar shape to the U curve shown here for 1980.2, so that the market consensus tends to envision a recession of several quarters' duration, ending sometime in the first half of 1980.

4. Short-term interest rates generally continue to fall in early recovery, so that the yield curve assumes its *normal* upward-sloping shape (marked 1981.2 in chart) some time after the cyclical low in output. Hence, the market anticipates an expansion in business activity throughout 1980 and early 1981. We use "normal" to describe the yield curve associated with this movement, because recoveries tend to be much longer than recessions, which means that most actual yield curves will exhibit an upward slope.

Mild recession?

With a number of qualifications, the market seems to be anticipating a recession to begin in mid-1979, along the lines of the mild 1960 and 1970 recessions. As the chart indicates, short-

term agency yields are not expected to fall below 8 percent at any point — which would suggest a drop of no more than 2 percentage points from the cyclical peak. This modest decline would be in line with the 1-percent decline in real GNP achieved in the mild 1960 and 1970 recessions, in contrast to the steeper declines exhibited in other post-war recessions.

Finally, the market seems to suggest that a modest downturn would keep inflation from accelerating, but would make little progress against an "imbedded" 6-percent inflation rate. (The Administration, with its inflation-dampening program now in place, of course anticipates better results over time.) The chart displays a convergence of long-term yields to a level just below 9 percent — one which would be independent of the date of the expected yield curve, if it were carried out to ten years. On the basis of traditional patterns, the market might expect roughly a 3-percent "real" yield on highest-quality Treasury issues, which translates to perhaps 3.1 percent on agencies because of their usual premium over Treasuries. Actually, the market recently has been operating with negative "real" short-term rates. Still in line with more normal expectations, we would arrive at an imbedded long-term inflation premium of perhaps 5.9 percent (5.9 = 9.0 - 3.1 percent). This number may be regarded as the market's long-term forecast of the rate of inflation. Indeed, the chart shows an extremely flat yield curve for long-maturity issues, which might suggest a nearly constant inflation premium over any period from 5 to 20 years.

Larry Butler

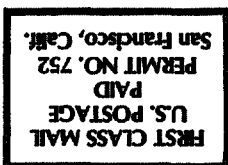
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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities	Amount Outstanding 11/29/78	Change from 11/22/78	Change from year ago	
			Dollar	Percent
Large Commercial Banks				
Loans (gross, adjusted) and investments*	122,040	- 155	+ 17,086	+ 16.28
Loans (gross, adjusted) — total	98,993	+ 126	+ 17,610	+ 21.64
Security loans	1,680	- 152	- 1,054	- 38.55
Commercial and industrial	28,960	+ 175	+ 4,240	+ 17.15
Real estate	34,593	+ 143	+ 7,764	+ 28.94
Consumer instalment	18,447	+ 140	+ 4,183	+ 29.33
U.S. Treasury securities	8,407	- 138	- 474	- 5.34
Other securities	14,640	- 143	- 50	- 0.34
Deposits (less cash items) — total*	115,485	+ 925	+ 13,767	+ 13.53
Demand deposits (adjusted)	31,167	+ 555	+ 1,779	+ 6.05
U.S. Government deposits	259	- 18	- 302	- 53.83
Time deposits — total*	82,171	+ 354	+ 12,309	+ 17.62
States and political subdivisions	6,826	- 1	+ 1,379	+ 25.32
Savings deposits	31,507	- 94	+ 9	+ 0.03
Other time deposits ‡	41,262	+ 521	+ 10,996	+ 36.33
Large negotiable CD's	19,763	+ 331	+ 6,956	+ 54.31
Weekly Averages of Daily Figures	Week ended 11/29/78	Week ended 11/22/78	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves(+)/Deficiency (-)	+ 30	- 8	+ 40	
Borrowings	36	51	92	
Net free(+)/Net borrowed (-)	- 6	- 59	- 51	
Federal Funds—Seven Large Banks				
Interbank Federal fund transactions				
Net purchases (+)/Net sales (-)	+ 989	+ 1,582	- 265	
Transactions with U.S. security dealers				
Net loans (+)/Net borrowings (-)	+ 357	+ 33	+ 681	

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

Editorial comments may be addressed to the editor (William Burke) or to the author. . . .

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