

May 4, 1973

On the Yield Curve

The relative stability of long-term interest rates this year has puzzled many observers, especially when contrasted with the upsurge in short-term rates. Never at a loss for an explanation, economists have come up with "liquidity premium," "preferred market habitat," and other such phrases to describe the recent behavior of interest rates—more specifically, to describe the term structure of rates, or the relationship between the yields on financial assets and the length of time remaining until maturity.

The yields on short-term U.S. Governments are now greater than those on intermediate-term securities, thus giving rise to a hump-backed yield curve rather than the more normal positive-sloped curve. Corporate and Agency security markets, moreover, have shown a similar picture.

One major factor affecting the structure of rates is the sparse financing calendar of major long-term borrowers, compared with the heavy calendar in short-term markets, mostly generated by banks in their scramble for funds to meet phenomenal business-loan demands. Other factors have been at work also, but this supply factor may be the most relevant explanation of the relatively moderate movement of long-term rates.

Expectations

The shape of the yield curve is often explained in terms of investor expectations, with these expecta-

tions varying over the course of the business cycle. Thus, short-term rates are generally expected to rise during cyclical expansions and to fall during contractions. Long-term rates represent an average of expected short-term interest rates.

According to this view, investors in long-term securities demand a premium for holding less liquid assets, a "liquidity premium." For one thing, long-term bond prices tend to be more sensitive than those on shorter-term issues for any given change in market yield. For another, short-term securities are relatively good substitutes for money and thereby provide similar "nonpecuniary services" as money, so that the liquidity premium becomes equal to these nonpecuniary returns. Indeed, liquidity premiums have been shown to be greater the higher the level of interest rates.

Over a half-century ago, the Yale economist Irving Fisher stressed that the real return of a financial asset was its nominal yield less the anticipated rate of inflation. Expected nominal rates of interest thus include some premium for expected rates of inflation. With the GNP price index rising 6.0 percent in the first quarter and expected to continue high, this premium has been demanded at the short-term as well as the long-term end of the maturity spectrum, thereby affecting the shape of the yield curve.

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Federal Reserve Bank of San Francisco

Preferences

According to another view of the term structure of rates, investors have preferences for certain types of maturities, although not necessarily short-term maturities. Indeed, investors may pay a premium for a bond of a desired maturity over bonds with either shorter or longer maturities. Thus, the relative supply of maturities available during any time period influences the shape of the yield curve.

Generally speaking, little pressure developed in the capital markets during the first quarter of this year, with financing calendars being relatively light in the Treasury, corporate and municipal sectors. On the other hand, Agency financing increased during the quarter at a very rapid pace. Key issues included a Home Loan Bank sale of \$1.2 billion of two, four and ten-year bonds, and FNMA sales of \$650 million of 2½ year bonds and \$350 million of eight-year securities.

The Treasury's supply of new issues was relatively small, because of heavy sales of marketable and nonmarketable Treasury issues to foreign central banks during the international monetary turmoil of early 1973. The only sizeable long-term Treasury issue was a 20-year bond, with \$627 million currently outstanding. The quarterly offered two-year note expected at the end of March failed to materialize, and the supply of tax-anticipation bills was quite light.

Treasury balances

This recent dearth of sizeable offerings is understandable in light of the large size of Treasury balances at the Federal Reserve and (in the form of tax-and-loan accounts) at the commercial banks. Treasury balances at the Fed during mid-April averaged about \$3 billion—twice as much as in the year-ago period—while Treasury balances in commercial-bank T&L accounts exceeded \$7 billion during April.

The Treasury's near-term situation will depend on its success with a mid-May refunding. Maturing on May 15 are two note issues, of which approximately \$4.3 billion is in private hands. Because of its large balances, the Treasury should have an easy time absorbing any loss of funds due to those investors who choose not to exchange their maturing issues with a new Treasury offering. The refunding plans include an auction of about \$2 billion of 6⅞-percent seven-year notes and \$650 million in 7-percent, 25-year bonds. The balance of the privately held maturing debt will be repaid in cash. The 25-year bond offer represents the second time this year that the Treasury has ventured modestly into the long-term end of the capital market.

The first quarter also saw a decline in the new supply of corporate and municipal securities, compared with the amounts issued in the comparable periods of the two previous years. One important factor was the high levels of liquidity exhibited by corporations and

state and local governments. Corporate reliance on the commercial-paper market meanwhile declined, as short-term business financing demands were funneled increasingly through the commercial-banking system.

CD issuance

The shape of the yield curve was sharply affected, however, by the upward pressure on short-term rates resulting from commercial-bank issuance of substantial amounts of negotiable certificates of deposit. Because of this heavy bank demand for new money, the secondary market yield on 3-month CD's jumped 166 basis points, from 5.61 to 7.27 percent, between early January and mid-April. In contrast, the yield on 20-year Treasury bonds rose 80 basis points in the same period, mostly as a reflection of the Treasury's issuance of a bond of this maturity in January.

Additional pressure in the short-term market will depend on the future strength of bank business-loan demand, since this will determine how aggressively banks will bid for CD money. Since June 1970, interest-rate ceilings payable on CD's with maturities of 30 to 89 days have been suspended. Thus, short-term CD rates are limited only by the banks' calculation of the profitability of the funds they obtain through the issuance of CD's.

Foreign demand

Aside from any influence from anticipated rates of inflation, the

term structure of rates will continue to be affected by the prospective demand and supply of financial assets. One major factor will be the important role played by foreign demand, largely on the part of foreign central banks, in the market for new U.S. Treasury debt.

In 1972, foreigners purchased over half of the net increase in privately held U.S. Treasury debt. Heavy demand has continued this year, brought about by German and other central-bank purchases of dollars obtained through currency-support operations. These demands for Treasury securities tended to depress the Treasury bill rate for a short period. At the same time, they supplied the Government with sufficient cash to forestall any heavy Treasury pressures on the money and capital markets.

The short end of the spectrum will remain under the influence of business-loan demand and the consequent bidding by banks for CD money. Some analysts have described the first-quarter upsurge in bank lending to business in terms of a flight from the commercial-paper market. However, a tremendous \$6 billion net increase in bank lending occurred even after subtracting the decrease in the supply of commercial paper from the increase in banks' commercial and industrial loans. The extent to which this demand for bank credit continues will help determine whether the yield curve will regain its normal shape.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities	Amount Outstanding 4/18/73	Change from 4/11/73	Change from year ago	
			Dollar	Percent
Large Commercial Banks				
Loans adjusted and investments*	71,905	+313	+8,412	+13.25
Loans adjusted—total*	54,642	+533	+9,617	+21.36
Commercial and industrial	19,963	+234	+3,428	+20.73
Real estate	15,746	+ 56	+2,600	+19.78
Consumer instalment	8,100	+ 24	+1,407	+21.02
U.S. Treasury securities	6,020	—122	—1,059	—14.96
Other securities	11,243	— 98	— 146	— 1.28
Deposits (less cash items)—total*	70,486	+299	+8,492	+13.70
Demand deposits adjusted	21,396	—531	+1,449	+ 7.26
U.S. Government deposits	886	+383	— 39	— 4.22
Time deposits—total*	47,072	+562	+7,020	+17.53
Savings	17,917	—132	— 52	— 0.29
Other time I.P.C.	19,148	+ 65	+4,633	+31.92
State and political subdivisions	7,497	+664	+1,628	+27.74
(Large negotiable CD's)	8,610	+ 35	+3,732	+76.51
Weekly Averages of Daily Figures	Week ended 4/18/73	Week ended 4/11/73	Comparable year-ago period	
Member Bank Reserve Position				
Excess reserves	— 12	5	— 43	
Borrowings	117	108	4	
Net free (+) / Net borrowed (—)	—129	—103	— 47	
Federal Funds—Seven Large Banks				
Interbank Federal funds transactions				
Net purchases (+) / Net sales (—)	+359	+657	—398	
Transactions: U.S. securities dealers				
Net loans (+) / Net borrowings (—)	+ 71	+185	+167	

*Includes items not shown separately.

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