Research Department
Federal Reserve
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FRBSF Weekly Letter

Bond Market in Turmoil

In the last two months, financial markets have gone through another wrenching adjustment —a new episode in a year-and-a-half long period of turmoil. Indeed, one can point to October 1979—the date of a major change in Federal Reserve operating procedures—as the beginning of this period of turmoil. At that time, the Fed began to place more emphasis on controlling the quantity of bank reserves than on tightly pegging the cost of those reserves (the Federal-funds rate).

It was neither surprising nor unusual that short-term interest rates exhibited much more variability in the wake of that watershed date. Both policymakers and economists have been surprised, however, by the sharply increased variability in long-term interest rates. As the new operating procedures were designed to improve the Federal Reserve's chances of achieving long-run money-supply targets, it would have been reasonable to expect lowered inflation expectations and, therefore, lowered long-term interest rates. But in reality, long-term rates have risen to higher levels and shown more variance since October 1979 than ever before.

Two components of yield

To understand the sources of this situation, one must determine which factor plays the major role—the bond yield's real component or its inflation-expectations component. Unfortunately, we have no direct evidence for the United States on the decomposition of long-term interest rates into their real and inflation components. Such evidence would require a bond with a value indexed to the price level, so that the current yield would not explicitly incorporate an inflation premium.

However, we do have available an indirect proxy for an index-linked security—the current yield on stocks. A holder of stock (equity) can expect to participate in a corporation's future profits and dividends, while a holder of a bond (debt) can expect to receive a contractually fixed dollar amount per year over the life of the security. The current stock yield—the dividend divided by the stock price—need not incorporate an inflation forecast. This is true because a rise in inflation expectations, with no other change in the real economy, would leave the current stock yield unaffected as stockholders raise their expectations of future dividend growth by an equal amount.*

It should also be noted that the risks in stock ownership are greater than in bond ownership, suggesting a higher average real return to stocks than bonds. However, a stable stock-market yield also suggests stability in the real rate of return. In that case, *changes* in the bond yield relative to the stock yield would provide an indirect measure of *changes* in inflation expectations.

Stock vs. bond yields

An analysis of relative changes in yields over the 1952-81 period suggests several conclusions about cyclical and secular movements in yields (Chart 1). First, stock and bond yields have tended to move in the same pattern over the business cycle. Both yields rise during the late expansion and early recession because of reduced liquidity and increased risk, and fall in the late recession and early expansion because of increased liquidity and decreased risk. Second, the bond yield—unlike the stock yield—has

*It is widely believed that tax distortions bias the current stock yield during periods of inflation. This occurs because of the valuation of capital stock at historic rather than replacement cost, and because of the overstatement of corporate profits. However, as the author has shown elsewhere (*Bell Journal of Economics*, Spring 1976), this source of bias is largely offset by the under-reporting of corporate profits that occurs because the real cost of bond debt declines with inflation. Only in the case of regulated utilities, which must pass on the inflation benefits of bond financing to their customers, have current stock yields risen proportionately with bond yields and the expected inflation rate.

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tended to rise with the inflation rate. This is not surprising since (as noted earlier) current stock yields need not incorporate explicitly an inflation-expectations component. Third, the secular trend of stock yields has varied with the risk and uncertainty in the economy. The average yield declined from 6 percent to under 4 percent in the mid-1950s, when it became apparent that the post-World War II economy would be more stable than the inter-war period of the 1920s and 1930s. But the yield then increased again, to almost 6 percent, following the unusual economic shocks experienced in the first half of the 1970s. The secular changes in stock yields were not paralleled in bond yields, however, because the latter are subject to less non-inflation risk.

An analysis of the last three years suggests one important lesson (Chart 2). During this period, the current yield on stocks has been unusually stable, fluctuating in a narrow range between 5 and 6 percent—but the current yield on bonds has varied considerably, especially since October 1979. This suggests that most of the bond-market variability has been due to revisions in long-run inflation expectations. Real shocks to the economy would have been mirrored in parallel movements in stock *and* bond-market yields.

Impact of expectations

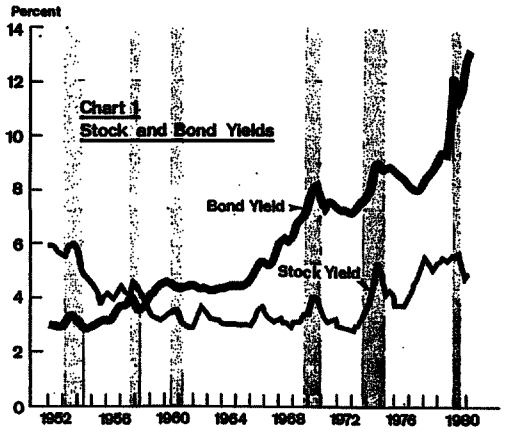
How have inflation expectations affected bond-market yields? First, long-run (5-to-7-year) inflation expectations are based mostly on expectations about the growth rate of the money supply, because financial-market participants place great weight on monetary developments in determining their long-run view of inflation.

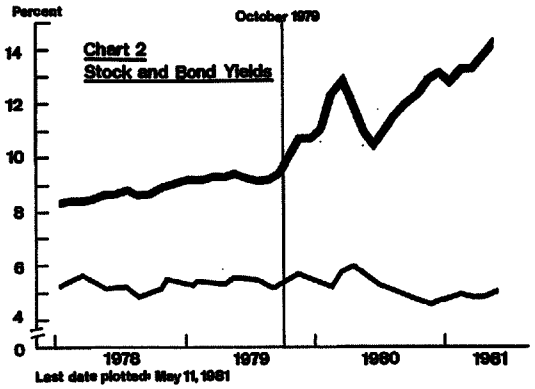
Second, the expected growth of Federal government debt is the major factor underlying the expected future growth of the U.S. money supply. In this country, unlike certain others, a close historic relationship has existed between the growth in national debt and money throughout most of the post-war period. (See our *Weekly Letters* of February 27 and April 24, 1981.)

Third, over the last year-and-a-half, the bond market has reacted negatively to first the Carter and later the Reagan budget programs. In January 1980, bond yields increased dramatically in the face of the last Carter budget, which incorporated a major increase in defense spending with no parallel cut in non-defense spending. By the same token, bond yields have also risen dramatically in the wake of the Reagan budget program, which many market participants interpreted as reducing taxes by a larger amount than the net reduction in government spending. One can interpret both of these episodes as representing market fears that an increase in government debt will adversely affect money growth and inflation, leading to higher long-term interest rates.

Recent rate fluctuations

While the link between the government debt and money growth may explain the high level of long-term rates, it fails to explain their unusual variations over the last eighteen months (Chart 2). Most of the downward movement in long-term rates occurred in the period from April to July 1980, which corresponded with the imposition and subsequent removal of the Federal Reserve Special Credit Control Program. While analysts have not sorted out all of the implications of that unique event, it clearly led to a major change in the behavior of households, temporarily (and dramatically) increasing their savings rate. Consumers may have believed, when this announcement was made, that it would lead to a major decline in the expected rate of inflation and (given current tax rates) create a major incentive to increase savings. The latter factor suggests a decline in the real interest rate—which apparently occurred, in view of the moderate decline in the current stock yield (lagged one month). Except for this period of the Credit Control Program and its immediate aftermath, long-term interest rates primarily have trended upward since October 1979.





How can investor expectations of rising debt (and rising inflation) be changed, to bring about a decline in long-term bond rates? This can be accomplished either by reducing the growth in the expected government debt or by breaking the link between the debt and money. Investors may change their expectations regarding the growth in the national debt in one of two ways. First, they may accept the supply-side theory behind the Reagan tax cut, which states that an increase in the tax base will be proportionate to the decrease in the tax rate. But it's unlikely that people will accept supply-side arguments in the future if they have not already done so. Second, investors may change their view about debt growth if they expect Congress to accept most of the Reagan spending-cut proposals but less of the tax-cut proposals. This is the more likely source of a diminished growth of the national debt.

Investors may also change their views regarding the link between the national debt and money supply. Historically, the only recent period of rising debt and slower money growth was 1974-75—a period encompassing the largest business-cycle contraction in the post-World War II period. This recession permitted financial markets to absorb a large increase in the national debt without putting upward pressure on interest rates—and therefore eased the pressure on the Federal Reserve to monetize the debt. This same 1974-75 period is now recognized as a time of reduced demand for money, primarily related to regulatory changes which permitted a major reduction in business and government holdings of money. This may have permitted a one-time substitution of money for bonds without corresponding upward pressures on interest rates.

Prospects for 1981-82

It is not likely that a similar episode will occur again in 1981-82. Given the current and expected strength in the domestic economy, another recession-caused break in the money-debt link is remote. A repeat of the downward adjustment in money demand is less remote—but still unlikely. Recent regulatory changes, primarily with respect to allowing households to economize in money balances, perhaps could lead to a repeat of the 1974-75 episode. However, it is risky to base policy on such an expectation.

Still, the Federal Reserve, by the very nature of its changed operating procedures, could break the link between the national debt and money. Under its old procedures, attempts to stabilize short-term interest rates tended to lead to excessive money-supply growth when large debt growth put upward pressure on interest rates. But under its new procedures, the Fed has allowed short-term interest rates to rise, sometimes dramatically, in the face of large increases in credit demand, including increases in federal debt.

The market seems to have accepted the implications of the Fed's new operating procedures for much sharper variations in short-term interest rates, as a consequence of the Fed's attempts to achieve better short-run control of money. However, after watching the Federal Reserve overshoot its M1 target for four straight years, the financial markets seem unwilling to translate this better short-run monetary control into confidence that the Fed will hit its long-run monetary target in 1981 and beyond. The 1980 overshoot (even though much smaller than in previous years) may have convinced financial markets that the close debt-money link continues even under the new operating procedures. A month of rapid money-supply growth, such as April, may then confirm these fears—leading market participants to believe that future money growth can be better forecast on the basis of expected growth of debt than on the basis of Federal Reserve long-run money-supply targets. If, in the months ahead, money growth stays within its long-run target ranges, the markets may begin to base their money-growth expectations more firmly on the Fed's announced targets. When that occurs, long-term bond yields should begin to decline.

Michael W. Keran

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FIRST CLASS

BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 5/20/81	Change from 5/13/81	Change from year ago Dollar	Percent
Loans (gross, adjusted) and investments*	148,407	− 481	10,849	7.9
Loans (gross, adjusted) — total#	126,431	− 375	10,556	9.1
Commercial and industrial	37,253	− 255	3,539	10.5
Real estate	52,231	82	5,504	11.8
Loans to individuals	22,882	− 8	− 1,178	− 4.9
Securities loans	1,513	85	637	72.7
U.S. Treasury securities*	6,394	− 72	18	0.3
Other securities*	15,582	− 34	279	1.8
Demand deposits — total#	39,811	− 669	− 1,652	− 4.0
Demand deposits — adjusted	27,396	−1,210	− 2,562	− 8.6
Savings deposits — total	30,133	− 93	3,567	13.4
Time deposits — total#	80,029	686	15,477	24.0
Individuals, part. & corp.	70,506	488	14,844	26.7
(Large negotiable CD's)	31,583	− 201	8,722	38.2

Weekly Averages of Daily Figures	Week ended 5/20/81	Week ended 5/13/81	Comparable year-ago period
Member Bank Reserve Position			
Excess Reserves (+)/Deficiency (−)	n.a.	n.a.	43
Borrowings	132	275	2
Net free reserves (+)/Net borrowed(−)	n.a.	n.a.	41

* Excludes trading account securities.
# Includes items not shown separately.

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