

Research Quarterly



November 2003

U.S. Bond Issuance Stays on Record Pace

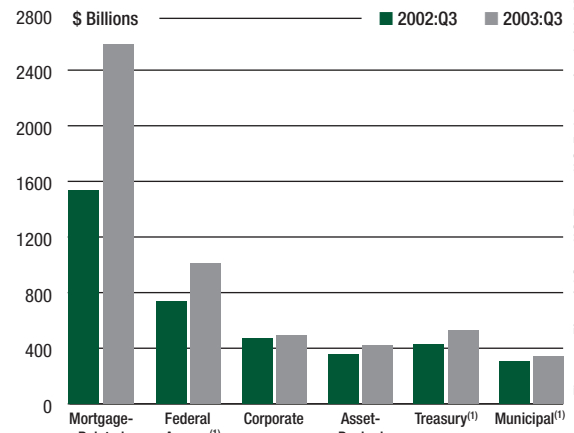
New issue activity in the U.S. bond markets stayed on its record pace through the first three quarters of 2003 and ahead of the same period in 2002. Issuance totaled \$5.38 trillion, up 40.3 percent from the \$3.84 trillion issued during the same period in 2002. The strong debt issuance reflects the low-interest-rate environment, fiscal stimulus, increased corporate investment, and poor state and local government fiscal conditions through the first half of 2003. During the third quarter, issuance volume was affected by a changing market environment of rate volatility and generally increased yields, a strengthening economy and rising funding costs. Total issuance volume increased through the third quarter in all market sectors. Strongest growth was in the mortgage-related securities sector which continued its surge through the quarter. Despite the increase in mortgage rates, the mortgage-related market continued strong and has already exceeded full-year 2002 issuance.

Though rates may very well rise by year-end, we expect a less turbulent market environment for the balance of the year compared to the third quarter when sharply rising rates and associated mortgage market hedging strategies affected both the mortgage and Treasury markets. Issuance activity through year-end will depend on the pace of economic growth.

Highlights

- Treasury gross coupon issuance totaled \$530.3 billion in the three quarters of 2003, increasing 24.9 percent from the \$424.6 billion issued in the same period of 2002.
- Federal agencies increased long-term issuance to \$1.01 trillion during the first three quarters of the year. Short-term federal agency debt outstanding increased 10.2 percent, to \$834.9 billion.
- Total municipal issuance increased 13.2 percent, to \$343.1 billion in the three quarters of 2003. Long-term issuance totaled \$288.8 billion.
- Corporate bond issuance increased 12.9 percent, to \$583.2 billion in the three quarters of 2003.
- Asset-backed issuance increased 18.6 percent, to \$423.4 billion, up from the \$357.0 billion issued during the same period one year ago.
- Mortgage-related securities issuance increased 67.9 percent, to \$2.58 trillion in the first three quarters of the year.
- The outstanding volume of money market instruments, including commercial paper (CP), large time deposits, and bankers' acceptances (BAs), totaled an estimated \$2.53 trillion outstanding as of September 30, 2003.
- Special—Bond Mutual Fund Flows Report.

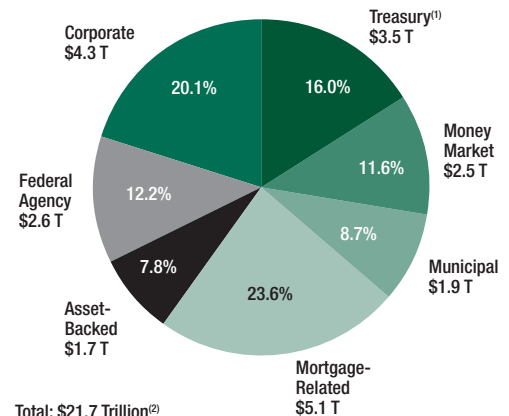
Issuance in the U.S. Bond Markets 2002:Q3 vs. 2003:Q3



(1) Includes long-term issuance only

Sources: Thomson Financial Sec., U.S. Treas., U.S. Fed. Agencies, Inside MBS & ABS

Outstanding Bond Market Debt As of Sept. 30, 2003*



Total: \$21.7 Trillion⁽²⁾

(1) Includes marketable public debt

(2) Figures may not add due to rounding

* The Bond Market Association estimates

Sources: Fed. Res. Sys., Thomson Financial Sec., U.S. Treas., GNMA, FNMA, FHLMC

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Treasury Coupon Issuance Continues to Soar

Gross coupon issuance in the U.S. Treasury market totaled \$530.3 billion during the first three quarters of 2003, increasing 24.9 percent from the \$424.6 billion issued in the same period of 2002. Coupon issuance in the third quarter totaled \$201.9 billion, 18.1 percent higher than the second quarter. Treasury has announced it expects net borrowing to total \$117 billion in marketable debt in the fourth quarter of 2003 and \$160 billion in the first quarter of 2004. It should be noted that the third quarter refunding auctions were well received across all maturities.

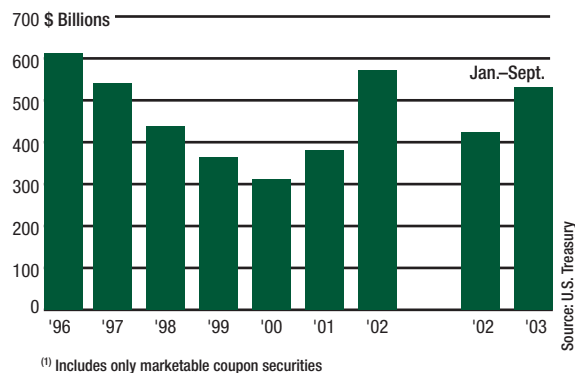
Issuance of government securities through September increased in response to continued deficit conditions prompted by the slow rate of economic growth over the last few years. Despite the strong third quarter GDP growth and pick up in tax receipts, a stimulative fiscal policy and spending on operations in Iraq, homeland security and domestic programs contributed to Treasury's borrowing needs. The federal budget deficit of \$374 billion in the fiscal year ending September 30 is 21 percent lower than the \$455 billion projected by The Office of Management and Budget this summer. In dollar terms, the deficit of FY2003 is the largest in U.S. history, though not a record as measured as a percent of GDP. A strong stock market, larger-than-expected corporate income tax receipts and lower-than-anticipated spending by various government agencies contributed to the lower actual deficit compared to the projection. Continuing improved prospects for economic growth are expected to result in improving federal fiscal conditions in the coming quarters.

Total marketable Treasury debt outstanding, including bills and coupons, increased to \$3.46 trillion as of September 30, a 10.9 percent increase from the third quarter of 2002. The outstanding level of Treasury coupon securities totaled \$2.54 trillion at the end of the third quarter, compared to \$2.25 trillion outstanding as of the end of the third quarter of 2002. Gross retirements of coupon securities totaled \$306.6 billion through September of 2003, compared to \$325.8 billion in the same period of 2002. The Treasury did not engage in buyback operations in the third quarter.

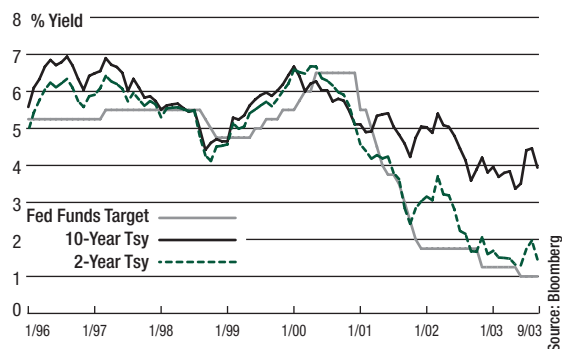
Concerns regarding foreign holdings of U.S. debt were raised following the G7 meeting in September amid discussions of alterations in the management of exchange rates. Net foreign purchases of U.S. securities is ahead of 2002, with U.S. Treasury bonds and notes totaling \$192.3 billion in the first eight months of the year, compared to \$57.6 billion in the same period of 2002. The percentage of foreign holdings of U.S. Treasury securities has increased in recent quarters and stood at 39.8 percent at the end of June, the most current available data.

Daily trading volume by primary dealers averaged \$438.6 billion during the three quarters of 2003, up 21.4 percent from the daily average of \$361.4 billion in the same period of 2002. On a quarterly basis, average daily trading volume increased to \$475.4 billion in the third quarter, compared to \$452.8 billion in the second quarter. Yields on Treasury securities were quite volatile, rising through the quarter before declining in September as investor uncertainty increased issuance and

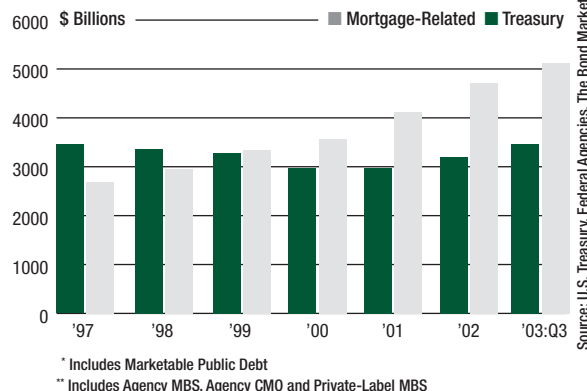
Issuance of U.S. Treasury Securities⁽¹⁾
1996–2003:Q3



Treasury Yields and Fed Fund Rate
Jan. 1996–Sept. 2003



U.S. Treasury Securities Outstanding* vs. Mortgage-Related Securities Outstanding**



Treasury Market continued on page 3

Treasury Market continued from page 2

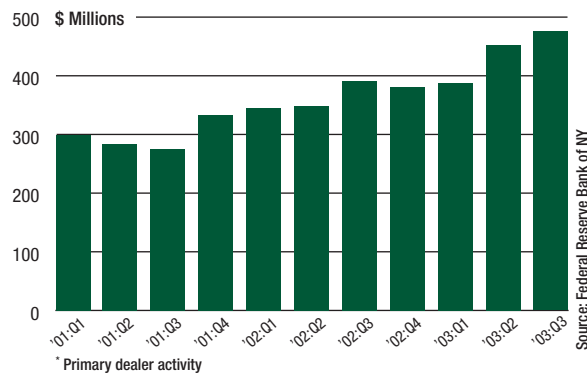
expectations of pending Fed policy decisions dictated market movements late in the quarter and into the fourth quarter. With continued economic growth and increased net issuance, yields on Treasury securities are expected to rise in the near term and perhaps to match those seen last summer accompanied by further steepening in the yield curve, according to The Bond Market Association's most recent survey of agency and government bond dealers.

Treasury Securities Affected by Mortgage Market Growth

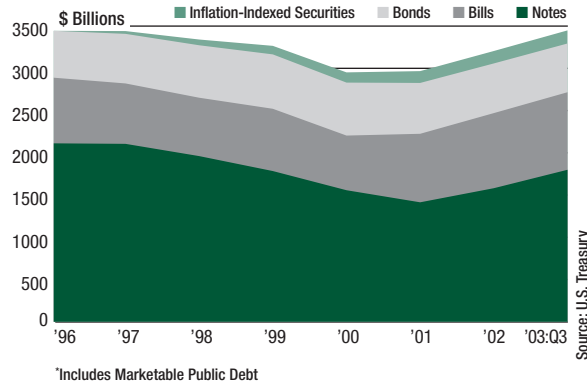
As the mortgage-backed securities (MBS) market continues to develop, the relationship between the MBS and Treasury market has grown increasingly important, contributing to Treasury yield movement and volatility in the quarter. Outstanding volume of mortgage-related securities, including agency MBS, agency collateralized mortgage obligations (CMOs) and private-label MBS and CMOs, is more than double the outstanding volume ten years ago, and outstanding mortgage-related securities now exceed Treasury securities outstanding.

As the mortgage-backed securities market has grown, the use of Treasury securities as well as the swap market to hedge position in mortgage portfolios has increased relative to the absolute size of the government securities market. Treasury securities are used to hedge against prepayment risk and to better match the duration and cash flows of investments with funding sources. Treasury price movement through the third quarter reflected the relative size of the mortgage market, mortgage rates and the associated slowing of prepayment rates. Mortgage investors sold government securities to achieve desired duration and maturity weighting as mortgage portfolios became "longer" due to fewer prepayments relative to the time when mortgage rates were declining earlier in the year. Treasury securities are also used in the MBS market to hedge against interest rate and yield curve risk. Absent another dramatic movement in rates such as early in the third quarter, we are unlikely to see duration hedging driven volatility as significant as that which occurred in the third quarter. Nevertheless, considering the growth of the MBS market, the Treasury yields will continue to be affected by the secondary mortgage market.

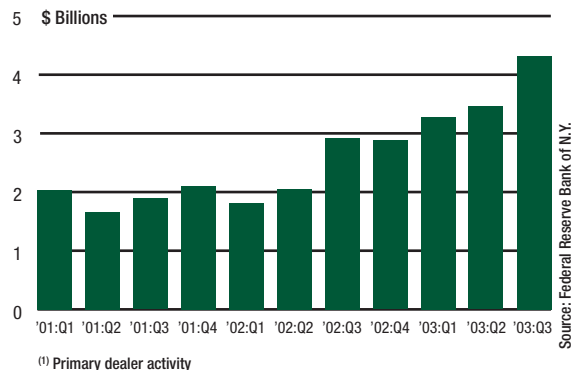
Average Daily Trading Volume of Treasury Securities* 2001:Q1–2003:Q3



U.S. Treasury Securities Outstanding* 1996–2003:Q3



Average Daily Trading Volume of U.S. Treasury Inflation-Indexed Securities⁽¹⁾ 2001:Q1–2003:Q3



Federal Agency Debt Surges

Long-term debt issuance by federal agencies totaled \$1.01 trillion during the first three quarters of 2003, up 36.5 percent from the \$740.0 billion issued in the same period last year. The strong mortgage market, supported by historically low interest rates and high volumes of conforming residential home mortgage originations, contributed to the strong issuance levels. However, issuance declined slightly in the third quarter, totaling \$338.9 billion, down from the \$344.6 billion issued in the second quarter. Mortgage interest rates increased during the third quarter from their lows in June, but rates are still historically low and continue to attract homebuyers. The Federal Home Loan Bank System totaled \$483.9 billion in issuance, up from the \$297.8 billion issued during the first three quarters of 2002. Long-term issuance by Fannie Mae surged in the first nine months of the year, totaling \$272.4 billion, up 57.9 percent from the same period last year. The increase in Fannie Mae's issuance was, to a great extent, driven by the increase in its retained mortgage portfolio, which totaled \$919.4 billion as of September 30, up from \$797.7 billion at the end of 2002. Long-term issuance by the Farm Credit System and the Tennessee Valley Authority also increased. Freddie Mac long-term issuance decreased by 12.9 percent to \$191.9 billion, and Sallie Mae issuance decreased 3.6 percent to \$16.2 billion.

Long-Term Federal Agency Debt Issuance

\$ Billions	2002	2002:Q3	2003:Q3	YTD-to-YTD % Change	YTD-to-YTD \$ Change
FHLB¹	435.4	297.8	483.9	62.5%	186.1
Freddie Mac	295.5	220.2	191.9	-12.9%	(28.3)
Fannie Mae	238.5	172.5	272.4	57.9%	99.9
Sallie Mae	20.5	16.8	16.2	-3.6%	(0.6)
FCS²	50.1	31.3	43.2	38.0%	11.9
TVA³	1.5	1.4	2.3	64.3%	0.9
Totals	1041.5	740.0	1009.9	36.5%	269.9

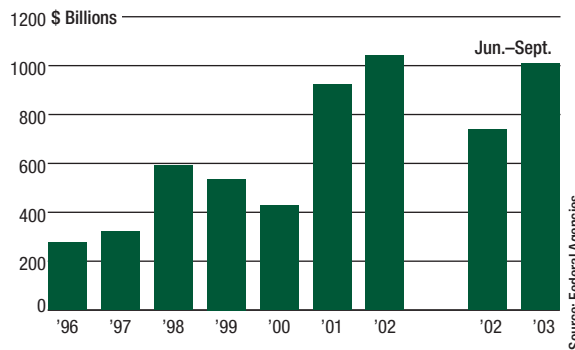
Short-Term Federal Agency Debt Outstanding

\$ Billions	9/30/02	6/30/03	9/30/03	% Change*	\$ Change*
FHLB¹	140.1	156.4	153.6	-1.8%	(2.8)
Freddie Mac	172.8	218.5	267.7	22.5%	49.2
Fannie Mae	257.2	340.4	376.3	10.5%	35.9
Sallie Mae	28.7	24.6	23	-6.5%	(1.6)
FCS²	29.6	15.3	12.2	-20.3%	(3.1)
TVA³	3.5	2.5	2.1	-16.3%	(0.4)
Totals	631.9	757.7	834.9	10.2%	77.2

*Percentage and amount change between 09/30/02 and 06/30/03
¹Federal Home Loan Bank System

²Farm Credit System
³Tennessee Valley Authority

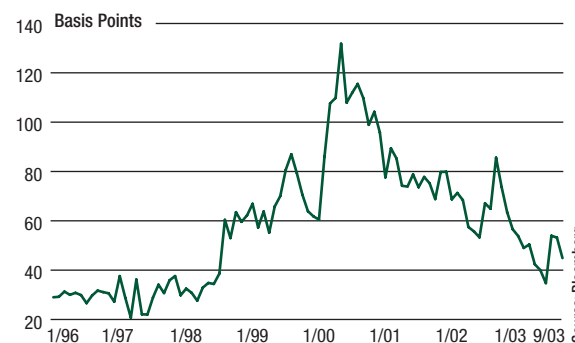
Long-Term Federal Agency Debt Issuance⁽¹⁾ 1996-2003:Q3



⁽¹⁾ Excludes maturities of one year or less

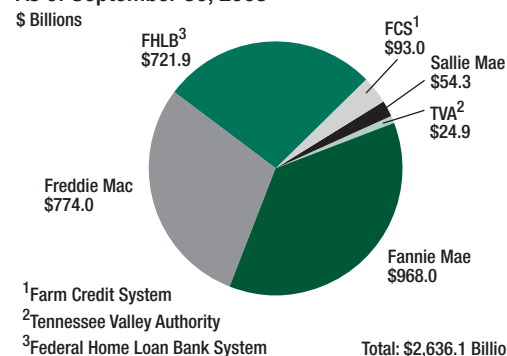
Source: Federal Agencies

U.S. Agency Spreads to U.S. Treasury—10-Year 1996-2003:Q3



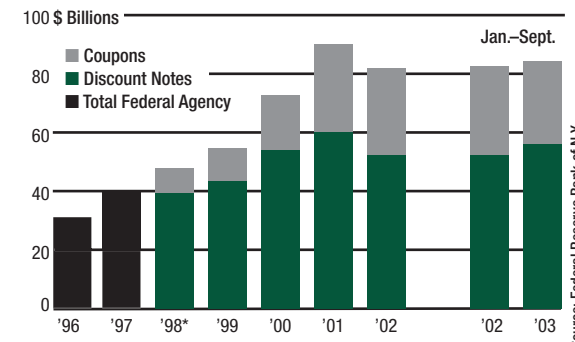
Source: Bloomberg

Total Federal Agency Debt Outstanding As of September 30, 2003



Source: Federal Agencies

Average Daily Trading Volume of Federal Agency Securities⁽¹⁾ 1996-2003:Q3



⁽¹⁾ Primary dealer activity
 *First year in which specified maturity levels were reported

Source: Federal Reserve Bank of N.Y.

Municipal Issuance Slows, Still on Record Pace

Municipal bond issuance stayed on its record pace through the third quarter, totaling \$343.1 billion in the first three quarters of 2003, a 13.2 percent increase from the \$303.2 billion in the same period of 2002. Issuance in the third quarter declined by 30.7 percent from the quarterly record of \$147.7 billion set in the second quarter, to \$102.4 billion. Strong issuance in the first three quarters of 2003 was spurred by low yields and increased investor demand in the early part of the year. However, the period of July through September saw a decline in quarterly issuance compared to earlier in the year as yields climbed and refunding volume declined. The market conditions became less favorable for refinancing outstanding debt as the quarter progressed. Going forward, issuance volume of municipal securities is expected to reflect this changing environment of higher rates as the economy gains strength.

Long-term issuance, those with original maturities of 13 months or more, increased to \$288.8 billion in the three quarters of 2003, up 14.0 percent from the \$253.4 billion issued in the same period of 2002. Short-term issuance of municipal securities increased 9.2 percent, to \$54.3 billion in the first nine months of the year. Outstanding municipal volume reached an estimated \$1.88 trillion at the end of the third quarter, 2.1 percent higher than the \$1.84 billion outstanding at the end of the second quarter.

New Capital Issuance Continues Strong Pace

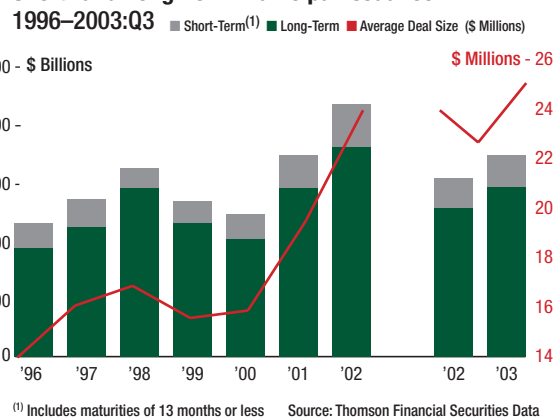
New capital issues accounted for the majority of the issuance increase, totaling \$196.7 billion in the three quarters of 2003, 18.6 percent above the \$165.8 billion in new money issuance in the same period of 2002. New capital issuance was higher across most sectors, with bonds used to finance general government operations and education accounting for 59.0 percent of issuance volume. Issuance volume in the general government sector increased 35.0 percent, to \$70.9 billion in the period ending September 30. Issuance volume in the education sector, which ranked second in use of proceeds, increased 14.1 percent to total \$45.1 billion in the first nine months of the year.

Higher Rates Slow Refunding

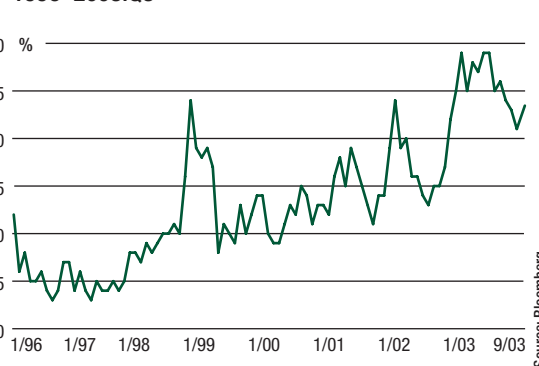
Refunding volume totaled \$92.1 billion in the three quarters of 2003, up a modest 5.0 percent from the \$87.7 billion issued in the same period of 2002, supported by the low-interest-rate environment, especially in the first half of the year. As yields on municipal securities began to rise, refunding volume slowed in the third quarter, totaling \$23.7 billion, the lowest refunding volume since early 2002. Refunding volume in the general government sector increased to \$28.0 billion in the three quarters of the year, compared to \$23.0 billion in the same period of 2002. In contrast, refunding volume in the education sector decreased 9.6 percent, totaling \$16.2 billion, down from \$17.9 billion in the same period of 2002.

The need to meet budget shortfalls and continued spending requirements for infrastructure and general government operations will continue to drive the level of new bond financing. Should rates continue to rise, the costs of raising funds in the capital markets will increase and diminish the attractiveness of refinancing outstanding debt.

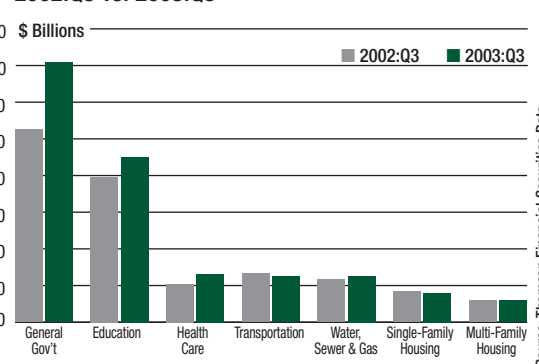
Short- and Long-Term Municipal Issuance



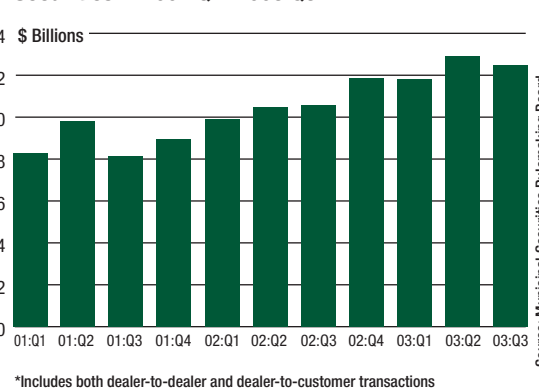
10-Yr Municipal G.O. AAA to 10-Yr Treasury Ratio



Municipal New Capital—Use of Proceeds



Average Daily Trading Volume of Municipal Securities*



Corporate Issuance Continues Steady Growth, Credit Spreads Tighten

New corporate bond issuance has shown moderate growth through the first three quarters of 2003 with most of the issuance gains attributed to the high-yield sector. Total new issuance volume increased 12.9 percent, to \$583.2 billion, compared to the \$516.3 billion issued during the same period last year. Issuance growth in 2003 is the result of corporations taking advantage of a favorable market environment of low interest rates and narrowing credit spreads to restructure outstanding debt. Issuance growth for the balance of the year will depend on continued improvements in corporate credit, as well as an increase in capital spending and renewed M&A activity.

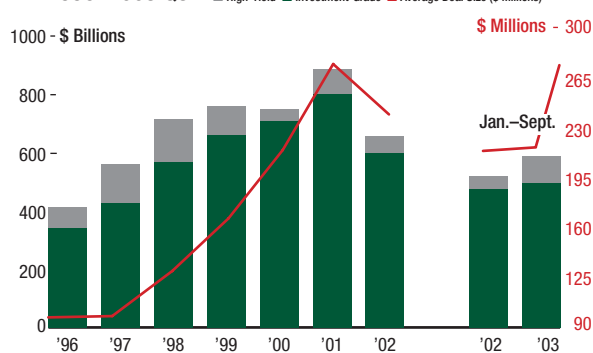
On a linked quarter basis, total corporate bond issuance decreased 30.8 percent in the third quarter to \$148.4 billion compared to the second quarter of 2003. The lower third quarter volume is explained in part by the unusually strong volume in the second quarter, when corporations went to market in large numbers as the market environment improved following the end of the Iraq war. Third quarter issuance in 2003 was 28.8 percent higher than the \$115.2 billion issued in the third quarter of 2002.

There is little doubt that we are through the trough in the credit cycle, and credit conditions have improved. Credit quality, as measured by credit rating trends, continued to improve during the third quarter. According to Stone & McCarthy Research Associates' analysis of rating trends at the three major credit rating agencies, there were 12 bond rating upgrades and 28 downgrades during the third quarter of 2003. This was the most favorable upgrade/downgrade ratio of any quarter during the last three years. Another indication of the credit outlook is the number of "fallen angels"—those bonds that have fallen from investment grade to below investment-grade. According to S&P, the number was a third lower than in the first nine months of 2002.

Tightening corporate bond spreads is another indication of improved corporate credit conditions during 2003. The low-interest-rate environment and an improving corporate earnings picture has continued to produce the tightest spreads between corporate bonds and Treasury securities in the last three years since spreads were at a credit cycle high in mid-2000, or the beginning of the bear market for equities.

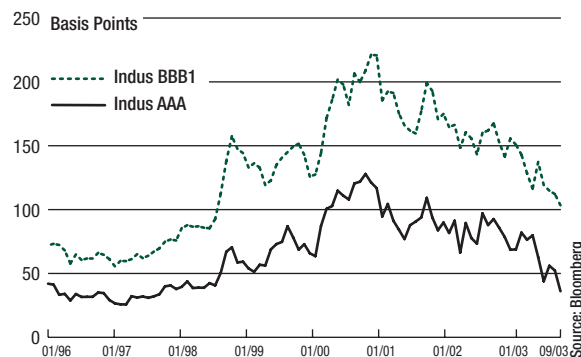
Issuance of convertible bonds—including investment-grade and high-yield issues—totaled \$67.1 billion in the first three quarters of 2003, more than 2.5 times the issuance volume during the same period last year. Convertible bond issuance growth reflected investor preference for hybrid investments in which there is a potential for higher returns coupled with the relative safety of fixed-income investments. As the equity market rose in the third quarter, investors were moving into pure equity investments. With these changing market dynamics, convertible bond issuance was \$16.2

Corporate Bond Issuance⁽¹⁾
1996–2003:Q3



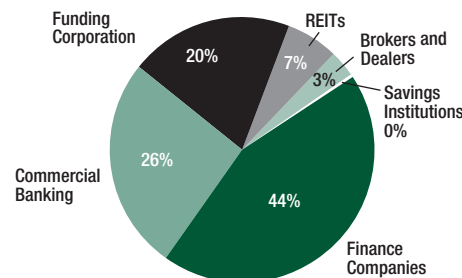
⁽¹⁾ Includes all non-convertible corporate debt, MTNs, and Yankee bonds, but excludes all issues with maturities of one year or less, CDs and federal agency debt.
Source: Thomson Financial Securities Data

U.S. Corporate Spreads to U.S. Treasury—10-Year
1996–2003:Q3



Source: Bloomberg

Corporate Debt Outstanding—Financial Sectors
As of September 30, 2003*



Total: \$1,538.2 Billion

* The Bond Market Association estimates

Sources: Federal Reserve System, The Bond Market Association

Corporate Bond Market continued from page 6

billion in the third quarter, down 128.1 percent when compared to the second quarter. As a point of comparison, convertible bond issuance in the third quarter was nearly 10 times higher than the \$1.7 billion issuance volume for the same quarter of 2002. Issuance of medium-term notes (MTN) decreased to \$153.3 billion in the three quarters of 2003, roughly 5.6 percent lower than the \$161.8 billion issued in the same period the year before. Still relatively low borrowing rates, making longer term financing more attractive to issuers, contributed to the MTN issuance decline.

High-Yield Issuance Increases Significantly

New issue volume of non-convertible high-yield debt (below “BBB”) more than doubled in the first three quarters of the year, to \$93.0 billion, up from the \$43.0 billion issued during the same period of 2002, the result of dramatically tighter credit spreads and increased corporate investment. Issuance decreased on a linked quarter basis to \$29.7 billion in the third quarter of 2003, a 32.5 percent decrease from the second quarter’s issuance of \$43.9 billion. Issuance did, however, increase by 61.1 percent when compared to the first quarter of this year, from a total of \$18.4 billion. Issuance volume for the third quarter was over five times greater than the previous year’s third quarter issuance level of \$4.5 billion.

Issuance improved in most high-yield sectors during the first three quarters of 2003. The most significant gain was found in the radio and television industries, in which the volume increased threefold.

High-yield spreads tightened dramatically as investors were attracted by the historically attractive return opportunities. The demand for high yield corporate bonds brought spreads down dramatically. As an indicator, the BBB—lowest investment-grade rating—spread declined by almost 16 basis points in the third quarter and by roughly 50 basis points since the first of the year.

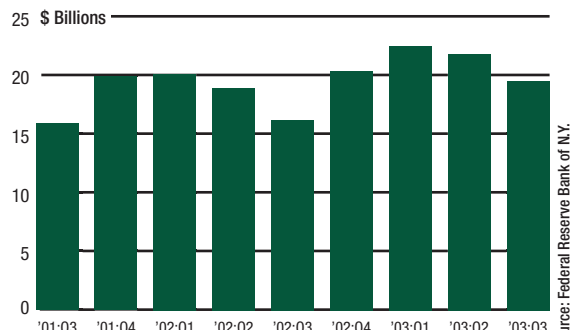
Investment-Grade Issuance Increases Modestly

New issue volume of non-convertible investment-grade bonds increased during the first three quarters of 2003 when compared to the first three quarters of 2002. Total issuance increased 3.8 percent from the \$473.3 billion issued in 2002, to \$491.2 billion issued during the first three quarters of 2003. On a linked quarter basis, issuance declined in the third quarter by 43.7 percent, but was 7.3 percent higher than the third quarter of 2002. The commercial bank industry increased issuance by 22.4 percent during the first three quarters of 2003, to \$108.8 billion, up from \$86.4 billion during the same period of 2002, reflecting strong growth and earnings performance of banks. By contrast, issuance in the non-bank credit institution sector decreased to \$80.7 billion in 2003, a decrease of 33.2 percent from \$120.9 billion issued over the same period in 2002.

Trading Volume Decreases in the Third Quarter

The average daily corporate bond trading volume by primary dealers for bonds with maturities of greater than one year was \$19.5 billion in the third quarter of 2003, a decrease of 11.8 percent over the \$21.8 billion during the second quarter of 2003.

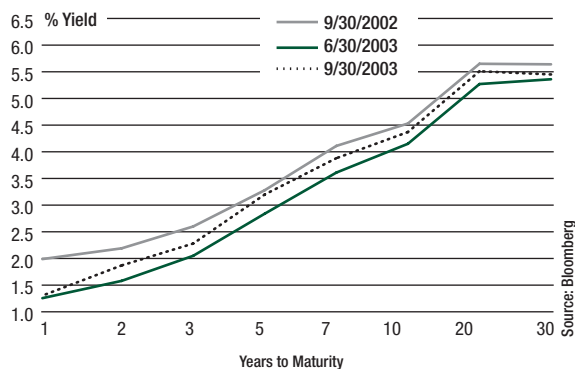
Average Daily Trading Volume for Corporate Bonds⁽¹⁾
2001:Q3–2003:Q3



⁽¹⁾ Primary dealer activity; excludes all issues with maturities of one year or less

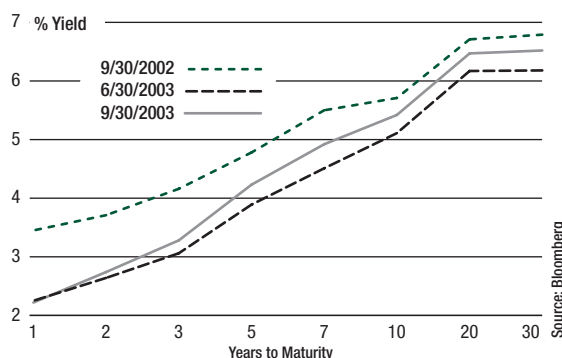
Source: Federal Reserve Bank of N.Y.

U.S. Corporate: AA Industrial — Yield Curves



Source: Bloomberg

U.S. Corporate: BBB3 Industrial — Yield Curve



Source: Bloomberg

ABS Issuance Slows in the Third Quarter

Asset-backed securities issuance continues to be on pace to break last year's record of \$485.4 billion. Issuance decreased slightly during the third quarter to \$144.3 billion, down from the \$154.1 billion issued in the second quarter of 2003. Market fundamentals are still favorable, but interest rate volatility in the third quarter along with the stronger performance of the corporate bond and equity markets, contributed to the lower issuance volume. Total ABS issuance should remain strong in the fourth quarter and break last year's record, as investors and issuers continue to seek the stability of the ABS market as the economy recovers and volatility in other financial markets subside. New issue activity totaled \$423.4 billion in the first three quarters of the year, up 18.6 percent from the \$357.0 billion issued during the same period last year. Once again, issuance continued to be driven by the home equity sector which in turn is fueled by the growth in primary home equity loan (HEL) origination volume, which accounted for about 40 percent of total ABS issuance.

Top ABS Sectors

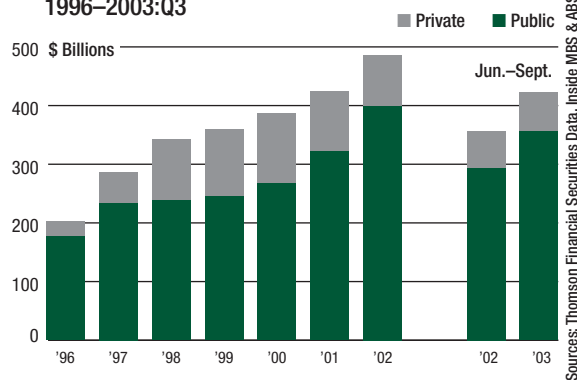
The home equity sector maintained its strong performance supported by the resilient housing market, as home sales reached a record in September, and HEL products remain popular among lenders and homeowners. Despite an increase in mortgage interest rates during the third quarter, high levels of originations and refinancings continued to buoy the home equity sector. Issuance may continue to increase for the remainder of the year as investors and issuers take advantage of favorable market conditions. Issuance totaled \$175.2 billion in the first three quarters of the year, up 53.1 percent from the \$114.5 billion issued during the same period last year. Issuance was virtually unchanged in the third quarter when compared to the second. Yield spreads widened significantly in the third quarter as investors sought higher premiums on these securities.

Issuance in the credit card sector decreased slightly in the first nine months of the year, totaling \$52.0 billion, down from the \$52.8 billion issued last year in the same period. The decrease on a linked quarter basis was more pronounced, with issuance totaling \$11.8 billion in the third quarter of 2003, down 36.9 percent from the \$18.7 billion issued in the second quarter. Consumer credit quality weakened and bankruptcy trends remained high. Yields of 3-year credit card widened over 10 basis points in the third quarter.

New issue activity in the student loan market increased 13.3 percent, to \$29.2 billion in the first three quarters of the year, up from the \$25.8 billion issued in the same period last year. Issuance decreased 19.4 percent, to \$9.8 billion in the third quarter when compared to the second quarter, but increased 21.1 percent when compared to the third quarter of 2002.

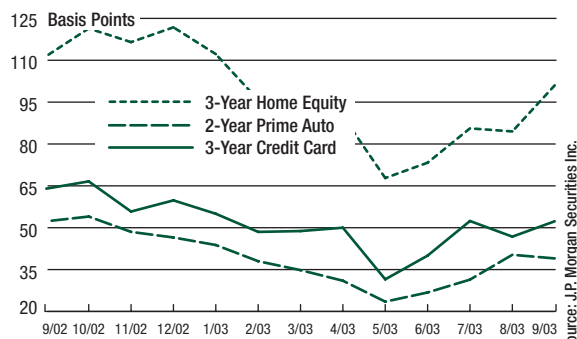
Auto loan issuance decreased to \$56.2 billion in the first three quarters of the year, down 19.0 percent from the \$69.4 billion issued in the same period of 2002. New issue activity in the third quarter decreased 5.2 percent when compared to the second quarter, and 18.9 percent when compared to the third quarter of 2002. Spreads of 2-year prime auto widened nearly 13 basis points in the third quarter, though spreads declined in September.

Issuance of Asset-Backed Securities
1996–2003:Q3



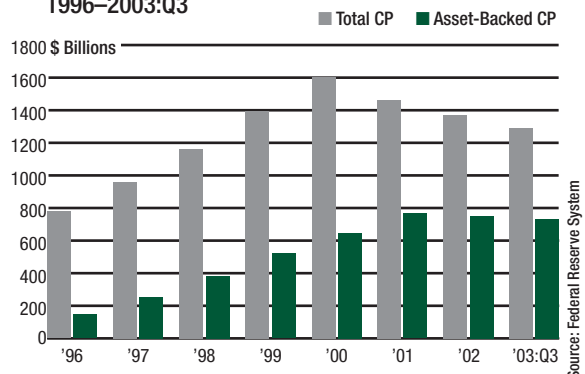
Sources: Thomson Financial Securities Data, Inside MBS & ABS

Asset-Backed Spreads to U.S. Treasury
September 2002–September 2003



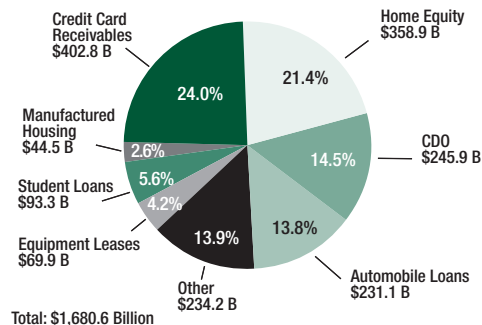
Source: J.P. Morgan Securities Inc.

Commercial Paper Outstanding
1996–2003:Q3



Source: Federal Reserve System

ABS Outstanding by Major Types of Credit
As of September 30, 2003



Sources: Federal Reserve System, The Bond Market Association

Mortgage-Related Securities Set Record in 2003

Issuance of mortgage-related securities, which include agency and non-agency pass-throughs and CMOs, totaled \$2.58 trillion in the first three quarters of the year, and already surpassed the record of \$2.31 trillion set last year with one quarter left in the year. New issue activity was 67.9 percent higher than the \$1.54 trillion issued during the first three quarters of 2002. On a linked quarter basis, mortgage-related securities issuance was up 6.6 percent, to \$920.8 billion in the third quarter. The resilient mortgage market continued its strong pace in the third quarter despite the increase in mortgage interest rates during the third quarter from their lows in June. According to Commerce Department data, the homeownership rate reached a record level in the third quarter. Mortgage originations were at about \$1.06 trillion in the third quarter, with 68 percent of the volume attributable to refinancings of existing mortgages and the balance to new purchase mortgages, according to Mortgage Bankers Association data.

Agency MBS and CMO

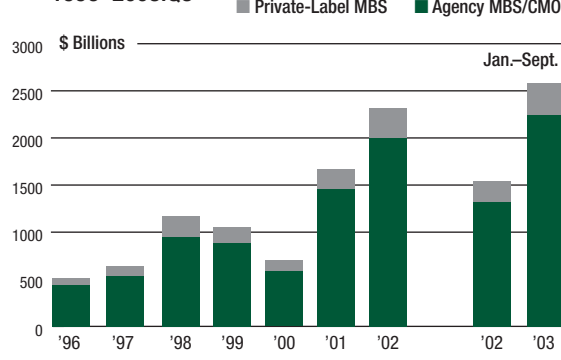
New issue activity of conforming agency mortgage-backed securities (MBS) increased to \$1.74 trillion in the first three quarters of 2003, up 82.7 percent from the \$951.1 billion issued during the same period last year. Issuance increased 13.3 percent, to \$661.2 billion in the third quarter, up 13.3 percent from the \$583.7 billion issued in the second quarter of 2003. Fannie Mae led the way with \$995.5 billion in issuance in the first nine months of the year, more than double the \$471.6 billion issued during the same period last year. Issuance totaled \$349.9 billion in the third quarter and was virtually unchanged when compared to the second quarter of 2003, and partly attributable to growth in its retained portfolio as well as the effect of higher interest rates on mortgage activity. Issuance of Freddie Mac MBS increased 62.5 percent in the first three quarters of the year, to \$570.5 billion, up from the \$351.0 billion issued in the same period one year ago. Issuance of Ginnie Mae's guaranteed mortgage securities also increased to \$171.8 billion in the first three quarters, up from the \$128.5 billion issued in the same period of 2002.

Issuance of agency collateralized mortgage obligations (CMO) increased to \$504.2 billion in the first three quarters of the year, up 36.5 percent from the \$369.3 billion issued last year in the same period, largely due to the strength in the first half of the year. However, issuance decreased 15.7 percent, to \$138.3 billion in the third quarter, down from the \$164.0 billion issued in the second quarter of 2003. All three agencies experienced a decline in their quarterly CMO issuance volumes, the effect of rate volatility.

Non-Agency MBS

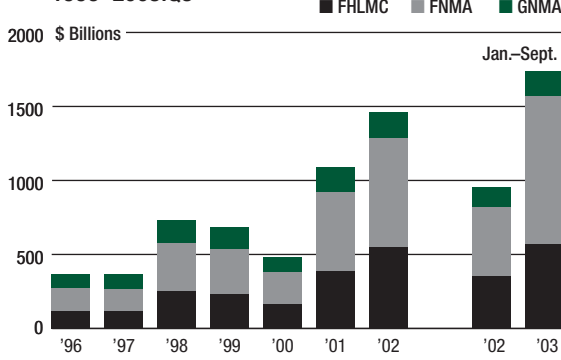
New issue activity in the non-agency MBS market surged to a record and totaled \$342.2 billion in the first three quarters of the year, up 56.7 percent from the \$218.4 billion issued in the same period last year, as originations of jumbo mortgages showed significant growth. Issuance volume for the first three quarters of 2003 has already surpassed all issuance of 2002.

Issuance of Mortgage-Related Securities
1996–2003:Q3



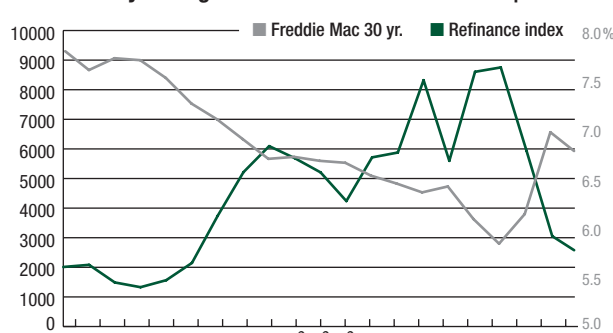
Sources: Fed. Agencies, Thomson Financial Sec., Inside MBS & ABS

Issuance of Agency Mortgage-Backed Securities
1996–2003:Q3



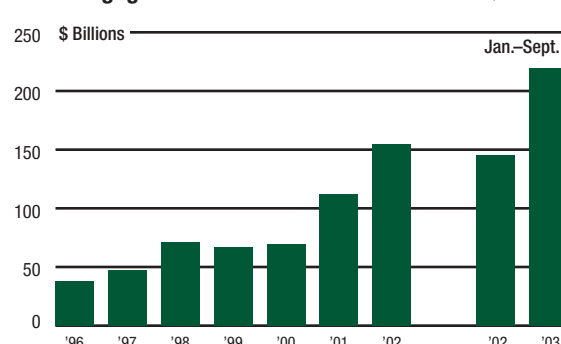
Sources: GNMA, FNMA, FHLMC, Inside MBS & ABS

MBA Refinance Index vs. Freddie Mac 30-yr.
Monthly Average Commitment Rate* Jan. 02–Sept. 03



* Includes fees and points
Source: Freddie Mac America

Average Daily Trading Volume of Agency
Mortgage-Backed Securities⁽¹⁾ 1996–2003:Q3



Source: Federal Reserve Bank of N.Y.

⁽¹⁾ Primary dealer activity

Outstanding Repo Agreements Increase to \$3.97 Trillion

The average daily volume of total outstanding repurchase (repo) and reverse repo agreement contracts totaled \$3.97 trillion for the first three quarters of 2003, an increase of 9.0 percent from the average volume of \$3.64 trillion during the same period of 2002. Daily outstanding repurchase agreements averaged \$2.3 trillion through September 2003, an increase of 9.5 percent from the \$2.1 trillion volume during the same period of 2002. Average daily outstanding reverse repurchase contracts grew to \$1.66 trillion during the first three quarters of 2003, a gain of 7.7 percent over last year's level of \$1.54 trillion.

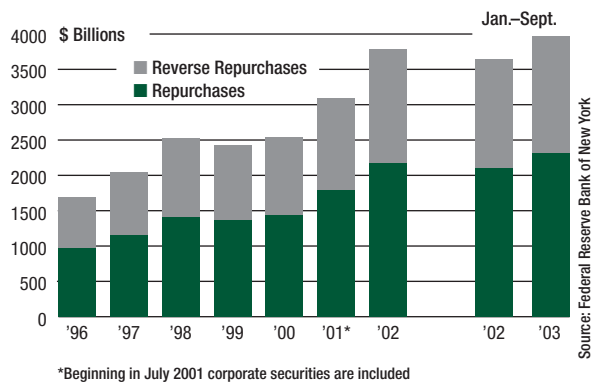
The data represent financing activities of the primary dealers reporting to the Federal Reserve Bank of New York and include repurchase and reverse repurchase agreements involving U.S. government, federal agency, agency mortgage-backed, and corporate securities.

The Government Securities Division of the Fixed Income Clearing Corporation (an SEC registered clearing agency) facilitates orderly settlements in the U.S. government securities market and tracks repo trades settled through its system by product type. Through the third quarter of 2003, over \$190.7 trillion in repo trades were submitted by Government Securities Division participants, with an average daily volume of over \$1 trillion. Repo transactions involving Treasury notes accounted for the largest share of Government Securities Division repo activity, representing \$130.0 trillion or 68.2 percent of total volume. Repos involving Treasury bills accounted for an estimated \$14.7 trillion, or 7.7 percent of the total and Treasury bonds accounted for \$12.6 trillion, or 6.6 percent of the activity for the year. Transactions involving federal agency securities continued to increase, making it second in volume to Treasury notes, accounting for \$25.6 trillion or 13.4 percent of 2003's volume.

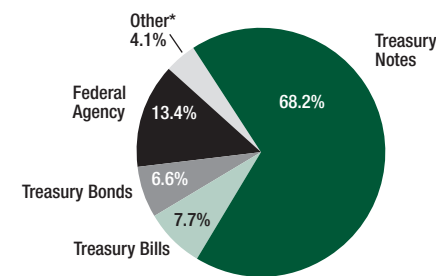
Money Market Supply Totals \$2.53 Trillion

The outstanding volume of money market instruments, including commercial paper (CP), large time deposits and bankers' acceptances (BAs), totaled an estimated \$2.53 trillion at the end of the third quarter, a decline of a little more than 1 percent from the \$2.56 trillion outstanding as of June 30. CP outstanding declined 1.5 percent, to \$1.29 trillion as of September 30, from \$1.31 trillion as of June 30. Outstanding non-financial CP dropped 2.1 percent, to \$125.1 billion at the end of the third quarter, from the \$127.8 billion outstanding at the end of June. Financial CP outstanding also decreased, totaling \$1.17 trillion outstanding at the end of the third quarter 2003, a less than 1 percent decrease from the \$1.18 trillion outstanding at the end of June. The use of CP has declined in recent quarters due principally to market concerns over issuer credit quality and a slower demand for merger and acquisition funding. CP financing may pick up in coming months, based on generally improving credit ratings and signs of renewed M&A activity. The outstanding level of large time deposits decreased to an estimated \$1.23 trillion as of September 30, 2003, a 1.6 percent decrease over the \$1.25 trillion outstanding at the end of the second quarter. BAs increased, to an estimated \$4.7 billion in September 2003, up 2.21 percent from the \$4.6 billion outstanding as of June 2003.

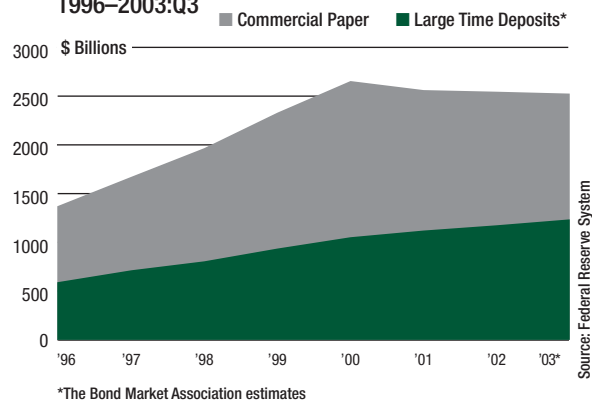
Financing by U.S. Government Securities Dealers
Average Amount Outstanding 1996-2003:Q3



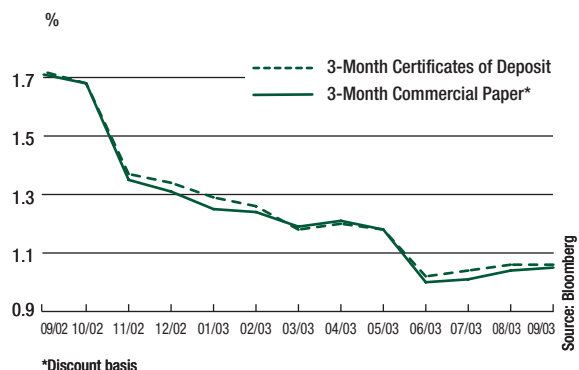
Repo Trades Submitted to the FICC
2003:Q3



Outstanding Money Market Instruments
1996-2003:Q3



Domestic Money Market Interest Rates
Monthly Average Sept. 2002-Sept. 2003



New Feature: Bond Mutual Fund Flows

Starting this quarter, the Research Quarterly will be providing data on the net flow of funds—that is, new investments less redemptions—into bond mutual funds in the aggregate and among specialized sector funds—Treasury, mortgage-backed securities, investment-grade corporate, high-yield corporate and municipal bond funds—using data provided by the Investment Company Institute and AMG, a leading provider of mutual fund data.

Flow of Investor Funds Affects Yields and Prices

During the third quarter, bond prices and yields were quite volatile, with benchmark 10-year Treasury yields ranging from a high of 4.60 to a low of 3.54. Part of the volatility can be attributed to changing fundamentals—the early stages of an economic recovery, an increasing awareness of inflationary pressures relative to deflationary pressures, as well as dynamic duration hedging by large mortgage investors.

The flow of funds is an important variable in forecasting and analyzing the bond markets. Bond prices and the financial markets are affected not only by market and economic fundamentals but also flows of funds in and out of specific market sectors. For instance, the surge in the late '90s and the subsequent bubble in technology stocks, to a large extent, can be attributed to the flow of investment dollars into and out of technology stocks. Even though the fundamentals of other equities remained solid, valuations paled as money moved out of other equity sectors into technology. Outflows from technology stocks since then helps to explain the precipitous drop in technology equity valuations from the peak in early 2000. Bond investors, of course, assume much less risk than those who invested in the high-flying equities of recent years. After all, there is much greater likelihood of interest and principal payment of bonds than return of capital on speculative IPOs. Nevertheless, the rise in bond prices through mid-2003 was aided by the inflow of investment funds to the very attractive fixed-income markets.

Introducing Quarterly Analysis of Bond Mutual Funds

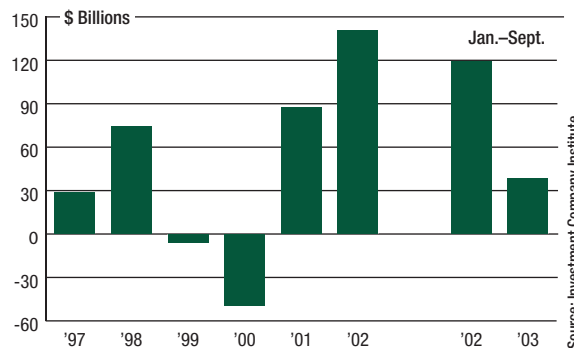
In addition to buying individual bonds, investors may also participate in the bond market by investing in bond mutual funds. Approximately 50 percent of all U.S. households are invested in mutual funds, according to periodic surveys of the Investment Company Institute. Mutual funds give the investor the benefit of diversification and professional management. There are many types of bond funds—some invest in the entire bond market while others focus on a specific maturity sector or a particular type of bond. Especially among retail investors, bond funds are a popular way to invest in the diverse asset classes that make up the fixed-income market.

Net Bond Mutual Fund Cash Inflows Through Mid-Year, Outflows in Most Funds During Third Quarter

The aggregate net cash flows of all bond mutual funds increased rapidly during the last two years and reached a peak inflow of \$140.4 billion in 2002, which reversed the trend of net outflows in 1999-2000, periods characterized by Fed tightening through May of 2000 and

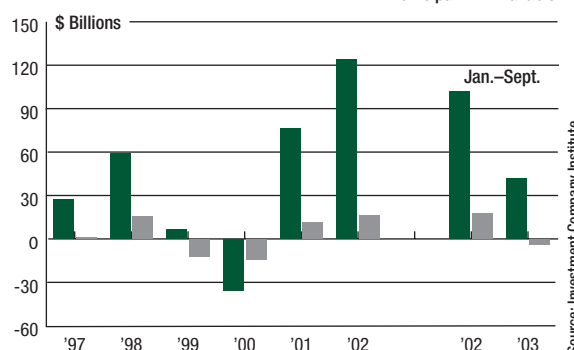
Bond Mutual Funds continued on page 12

Historical Net Cash Flows of Bond Mutual Funds 1997-2003:Q3



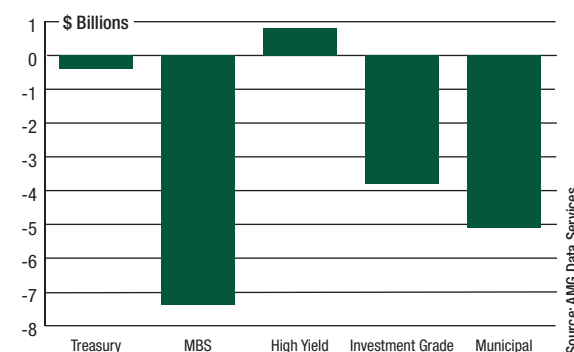
Source: Investment Company Institute

Net Cash Flows of Taxable vs. Municipal Mutual Funds 1997-2003:Q3



Source: Investment Company Institute

Net Cash Flows of Mutual Funds by Sector 2003:Q3



Source: AMG Data Services

Bond Mutual Funds continued from page 11

generally rising rates through the latter half of 2000. Though still positive, the rate of aggregate bond mutual fund net inflows slowed considerably in 2003, totaling \$44.2 billion during the first three quarters, down 57.4 percent from the inflow of \$103.8 billion in the same period one year ago. Optimism about an economic recovery that began to take shape in the first part of year, a robust stock market and a sharp increase in interest rates during the third quarter led investors to move away from bond funds to higher risk mutual fund products as investors sought higher returns in alternative investment vehicles—specifically, equity funds.

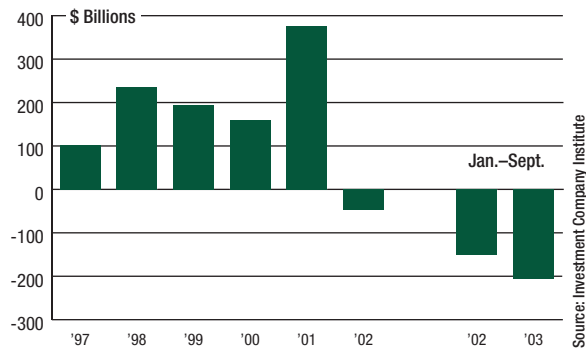
Consistent with the theme of investors looking for higher return opportunities, the one bond mutual fund sector that showed a net inflow in the quarter was high-yield corporate bond funds where net inflows totaled \$771 million. The largest high-yield corporate bond funds exceeded \$125 billion in assets as of July 31, based on data provided by Standard & Poors. Other bond fund sectors did not fare quite as well. Reflective of MBS volatility during the quarter, MBS funds had the largest outflow of \$7.4 billion in the third quarter. Investment-grade, municipal and Treasury funds also experienced outflows of \$3.8 billion, \$5.1 billion and \$388 million, respectively.

Net cash flows into taxable bond mutual funds were stronger than municipal bond funds. Taxable funds had an inflow of \$46.3 billion in the first three quarters of the year, while municipal funds experienced an outflow of \$2.1 billion. During the same period last year, taxable funds had an inflow of \$88.6 billion and municipal funds an inflow of \$15.2 billion.

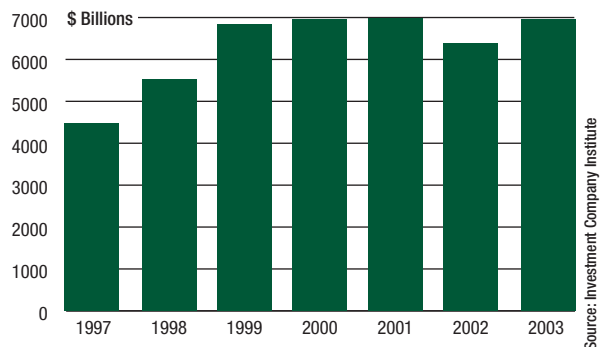
Net cash flows of money market mutual funds turned negative in 2002 for the first time since 1994. Outflows reached \$156.0 billion at the end of September, compared to an outflow of \$95.2 billion during the same period one year ago. Investors who had been sitting “on the sidelines” decided to invest longer term when the economy started to gain momentum as investors sought higher yields in the low rate environment.

What will the bond mutual fund flow story be for the balance of 2003? The outlook for the rest of the year will depend on the strength of the economy and the direction of interest rates. It will also be affected by new bond fund product development. Mutual fund flows will likely mirror investor sentiment and how investors view the risk and return trade-off. Better corporate earnings, lower unemployment and higher interest rates would suggest slower flows into bond funds. Yet benchmark rates have come down from the third quarter highs. If interest rates stabilize or fall, more cash may flow into bond mutual funds.

Net Cash Flow of Money Market Mutual Funds
1997–2003:Q3



Assets of Mutual Funds*
1997–2003



* As of September 30, 2003