

Research Quarterly



February 2004

Bond Markets Set Issuance Record in 2003; Interest Rate, Economic Growth Prospects Determine Outlook in 2004

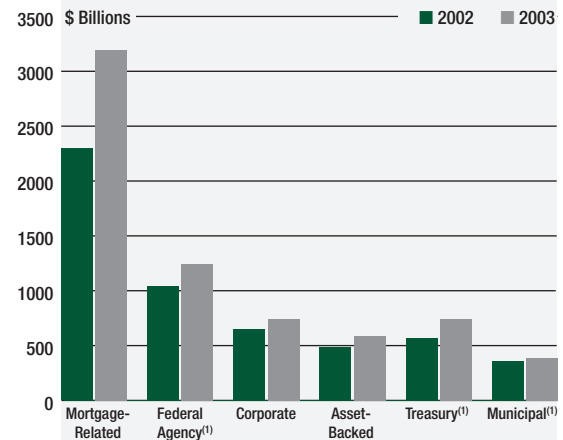
New issue activity in the U.S. bond markets topped last year's record, totaling \$6.92 trillion in 2003, an increase of 27.9 percent from the previous record of \$5.41 trillion set in 2002. The continued trend of strong debt issuance across most sectors reflects the effects of the low-interest-rate environment, increased demand for capital in the corporate sector and continued financing requirements in both the federal government and state and local entities. Robust issuance during 2003 tapered near the close of the year, when bond refinancing activity moderated as rates edged up, the equity market became an attractive alternative once again, and the remarkable level of mortgage activity began to subside. In 2004, yields are expected to rise and funding needs will shift as both investors and borrowers adjust to opportunities in the new economic landscape.

The changing economics of debt refinancing, potentially lower volumes in the mortgage-related market and the decision to raise new capital as rates begin to rise are expected to affect issuance levels. Though issuance will likely not match the spectacular levels of recent years, a likely scenario of continuing historically low rates, little threat of inflation and solid economic growth should lead to another good year for the bond markets.

Highlights

- Treasury gross coupon issuance totaled \$745.2 billion during 2003, increasing 30.4 percent from the \$571.6 billion issued in 2002.
- Federal agencies increased long-term issuance to a record \$1.27 trillion in 2003.
- Total municipal issuance increased 5.2 percent, to a record \$452.4 billion in 2003. Long-term issuance totaled \$383.0 billion.
- Corporate bond issuance increased 13.9 percent, to \$743.6 billion in 2003.
- Asset-backed issuance increased 19.4 percent, to a record \$584.2 billion, up from the record \$489.1 billion set in 2002.
- Mortgage-related securities issuance increased 39.2 percent, to \$3.20 trillion in 2003.
- The outstanding volume of money market instruments, including commercial paper, large time deposits, and bankers' acceptances, totaled an estimated \$2.51 trillion as of the end of 2003.
- Bond mutual funds net inflows totaled \$31.4 billion, down 77.6 percent from the inflow of \$140.4 billion in 2002.
- Special Report—Foreign Purchase of Long-Term U.S. Fixed Income Securities

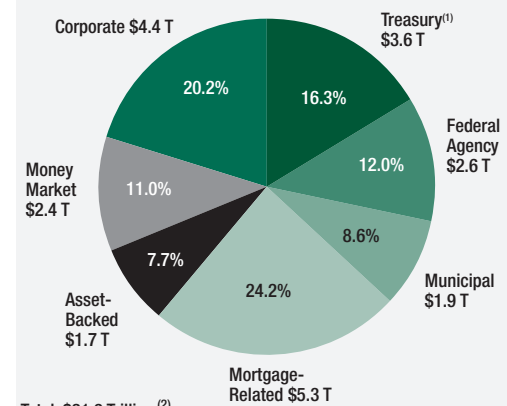
Issuance in the U.S. Bond Markets
2002 vs. 2003



⁽¹⁾ Includes long-term issuance only

Sources: Thomson Financial, U.S. Treasury, U.S. Federal Agencies, Inside MBS & ABS

Outstanding Bond Market Debt
As of December 31, 2003*



⁽¹⁾ Includes marketable public debt

⁽²⁾ Figures may not add due to rounding

* The Bond Market Association estimates

Sources: Federal Reserve System, U.S. Treasury, GNMA, FHLMC, Bloomberg

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Treasury Coupon Issuance Rises Sharply

Gross coupon issuance of U.S. Treasury securities totaled \$745.2 billion during 2003, a 30.4 percent increase over the \$571.6 billion issued in 2002. Coupon issuance in the fourth quarter totaled \$214.9 billion, 6.4 percent above the \$201.9 billion issued in the third quarter, reflective of recent federal budget deficit trends. During the fourth quarter, Treasury's net coupon issuance totaled \$102.8 billion, compared to \$91.1 billion in the previous quarter. The Treasury Department announced it expects net borrowing to total \$177 billion in marketable debt in the first quarter of 2004. Despite the increased supply, auctions of Treasury securities continued to attract investors looking for attractive yields and a high quality, risk free investment.

Slow economic growth, stimulative fiscal policy as well as continued spending on operations in Iraq, homeland security and domestic programs continued to drive the need for Treasury borrowing. As the economy began gathering strength during the third and fourth quarters, tax receipts pared down the deficit, which is expected to peak in FY2004. The Office of Management and Budget projects the federal budget deficit to end 2004 at \$521 billion, up from the \$374 billion deficit at the end of fiscal year 2003. The administration budget proposal anticipates a decrease in the deficit to \$237 billion in FY2009 due to rising tax revenues and spending restrictions. As the economy continues to improve, increased tax revenues from both individuals and corporations will contribute to an expected decline in the deficit in the coming years.

Total marketable Treasury debt outstanding, including bills and coupons, reached \$3.57 trillion as of December 31, 2003, an 11.5 percent increase from the end of 2002. The outstanding level of Treasury coupon securities totaled \$2.65 trillion at the end of the year, compared to \$2.32 trillion outstanding at the end of 2002. Gross retirements of coupon securities totaled \$418.7 billion at the end of 2003, compared to \$410.7 billion at the end of the previous year.

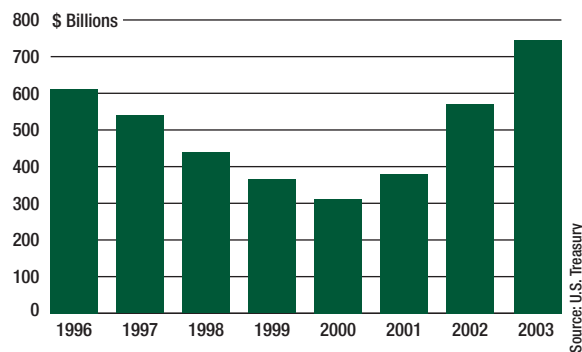
Trading Volume

Daily trading volume of Treasury securities by primary dealers averaged \$433.5 billion during 2003, up 18.3 percent from the \$366.4 billion in 2002. On a quarterly basis, average daily trading volume decreased to \$418.1 billion in the fourth quarter, down from \$475.4 billion in the third quarter, but higher than a year ago. The lower trading volume may, in part, be attributable to interest rate trends and the shifting financial market environment in the fourth quarter following the turbulent third quarter. The year 2003 was characterized by a great deal of yield and price volatility in the Treasury market, culminating in price movements driven largely by dynamic duration hedging in the mortgage market in late summer, with yields rising sharply and then falling back in September. As the year drew to a close, solid GDP growth in the second half suggests that yields on Treasury securities may move upward in the coming year.

Outlook

According to The Bond Market Association Government Forecast, Treasury issuance is expected to stabilize at around the current higher level during 2004 to meet continuing fiscal needs. Higher net issuance and economic growth are expected to contribute to a flatter yield curve as yields on Treasury securities rise in the first half of 2004.

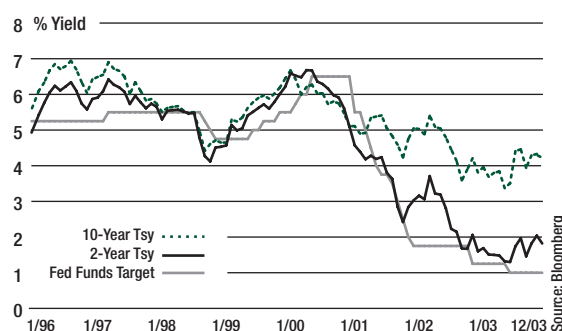
Issuance of U.S. Treasury Securities⁽¹⁾
1996-2003



⁽¹⁾ Includes only marketable coupon securities

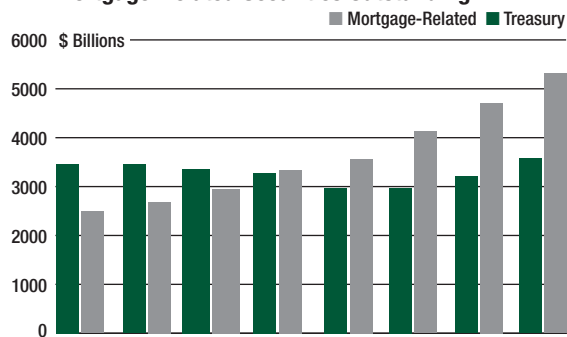
Source: U.S. Treasury

Treasury Yields and Fed Fnd Rate
Jan. 1996-Dec. 2003



Source: Bloomberg

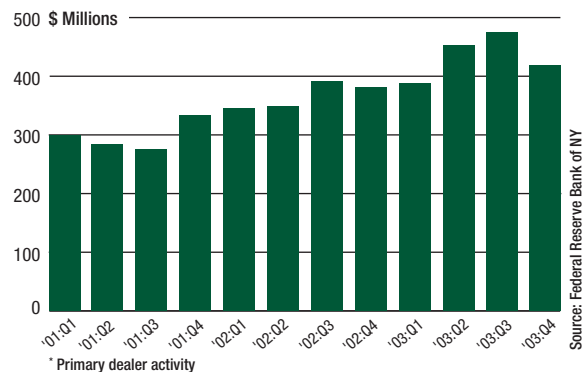
U.S. Treasury Securities Outstanding* vs. Mortgage-Related Securities Outstanding**



* Includes Marketable Public Debt
** Includes Agency MBS, Agency CMO and Private-Label MBS

Sources: U.S. Treasury, Federal Agencies, The Bond Market Association

Average Daily Trading Volume of Treasury Securities*
2001-2003



* Primary dealer activity

Source: Federal Reserve Bank of NY

Long-Term Agency Volume Sets New Record

Long-term issuance by federal agencies set a new record in 2003, totaling \$1.28 trillion, up 21.7 percent from the \$1.04 trillion issued in 2002. The high level of conforming residential home mortgage originations and sales, supported by low interest rates and a record-setting housing market during 2003, contributed to the increase in issuance. Long-term issuance by all federal agencies increased, with the exception of Freddie Mac and Sallie Mae. New issue activity by the Federal Home Loan Bank System totaled \$569.2 billion in 2003, up 30.7 percent from the \$435.4 billion issued in 2002. Fannie Mae also experienced significant growth in long-term debt issuance totaling \$347.8 billion in 2003, up 45.8 percent from the \$238.5 billion issued in 2002. Long-term debt issuance of the Farm Credit System and the Tennessee Valley Authority also increased. In contrast, long-term issuance by Freddie Mac decreased 6.2 percent, to \$277.1 billion, down from the \$295.5 billion issued in 2002. Long-term issuance by Sallie Mae also decreased in 2003, totaling \$18.7 billion, down 8.8 percent from 2002.

Average daily trading volume of agency securities by primary dealers was \$81.7 billion in 2003, virtually unchanged from the \$81.8 billion average daily trading volume in 2002.

Long-Term Federal Agency Debt Issuance

\$ Billions	2001	2002	2003	YTD-to-YTD % Change	YTD-to-YTD \$ Change
FHLB¹	383.0	435.4	569.2	30.7	133.8
Freddie Mac	235.2	295.5	277.1	-6.2%	(18.4)
Fannie Mae	249.4	238.5	347.8	45.8%	109.3
Sallie Mae	19.5	20.5	18.7	-8.8%	(1.8)
FCS²	31.0	50.1	52.5	4.8%	2.4
TVA³	3.4	1.5	2.2	46.7%	0.7
Totals	921.5	1,041.5	1,267.5	21.7%	226.0

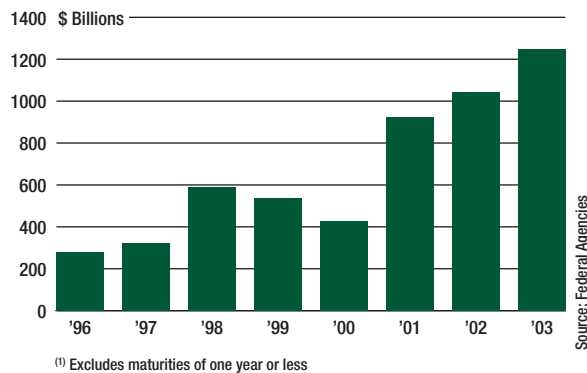
Short-Term Federal Agency Debt Outstanding

\$ Billions	12/31/02	9/30/03	12/31/03	% Change*	\$ Change*
FHLB¹	147.0	153.6	163.9	6.7%	10.3
Freddie Mac	164.1	267.7	189.0	-29.4	(78.7)
Fannie Mae	303.8	376.3	346.0	-8.1%	(30.3)
Sallie Mae	25.6	23.0	18.7	-18.7%	(4.3)
FCS²	24.8	12.2	12.9	5.7%	0.7
TVA³	3.2	2.1	0.9	-57.1%	(1.2)
Totals	668.5	834.9	731.4	-12.4%	(103.5)

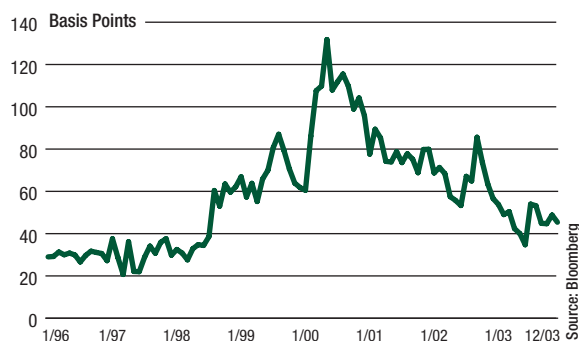
*Percentage and \$ amount change between 09/30/03 and 12/31/03
¹Federal Home Loan Bank System

²Farm Credit System
³Tennessee Valley Authority

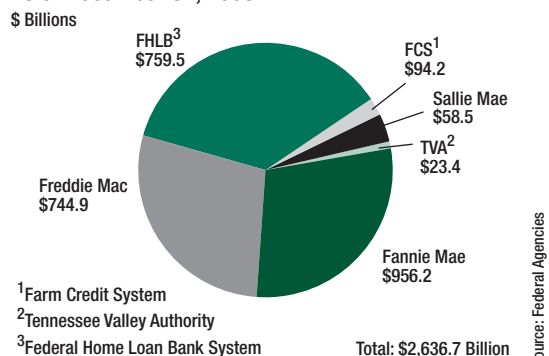
Long-Term Federal Agency Debt Issuance⁽¹⁾ 1996–2003



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

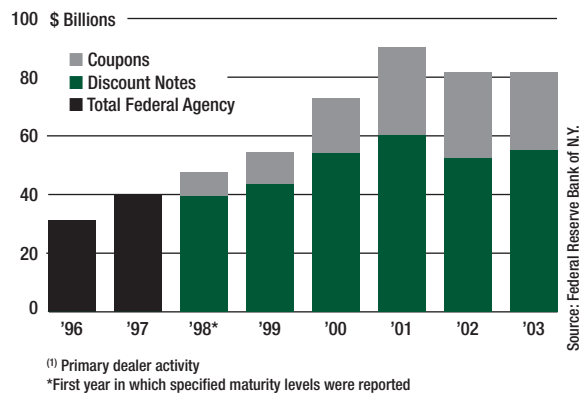


Total Federal Agency Debt Outstanding As of December 31, 2003



¹Farm Credit System
²Tennessee Valley Authority
³Federal Home Loan Bank System

Average Daily Trading Volume of Federal Agency Securities⁽¹⁾ 1996–2003



Municipal Issuance Volume Reaches Record \$452.4 Billion Due to Torrid First Half

Municipal bond issuance set a record in 2003, topping the previous record of \$430.0 billion set in 2002. Total short- and long-term municipal issuance totaled \$452.4 billion in 2003. Continuing fiscal pressures and the resulting demand for debt financing from the financial markets helped to drive the 5.2 percent increase in debt issuance during 2003. New issue volume peaked in the second quarter at \$149.2 billion, then slowed to \$104.3 billion in the third quarter, finishing the year with \$105.4 billion issued in the fourth quarter. The slower issuance volume during the second half of the year was the result of less refunding activity. Rising municipal yields eroded the viability of savings-motivated refunding transactions. Despite the increase in rates in the second half of the year, municipal yields rose more slowly than benchmark Treasuries. The ratio of yields on the 10-year AAA municipal securities to the 10-year Treasury securities decreased during the year from 97 percent at the beginning to 85 percent at the end.

Long-term municipal issuance with an original maturity of 13 months or greater increased to \$383.0 billion in 2003, 7.1 percent above the \$357.7 billion issued in 2002, which may be explained by a desire to lock in lower rates in a favorable interest rate environment before rates rise. By contrast, short-term issuance declined in 2003 by 4.2 percent to total \$69.4 billion for the year. Outstanding municipal volume reached an estimated \$1.98 trillion at the end of the year, 5.8 percent higher than the \$1.87 billion outstanding at the end of September.

New Capital Issuance

Issuance of new capital dominated overall municipal volume. Accounting for a majority of the record debt level, new capital issuance totaled \$266.2 billion in 2003, 12.2 percent higher than the \$237.3 billion issued in 2002. Municipal issuance was up across most sectors with the notable exceptions of economic development, transportation and water, sewer and gas sectors. The general government sector led new issuance volume, totaling \$96.2 billion in 2003, 36.5 percent higher than the \$70.5 billion issued in 2002. Issuance in the education sector totaled \$57.5 billion during the year, a 9.6 percent increase from the \$52.4 billion issued in 2002.

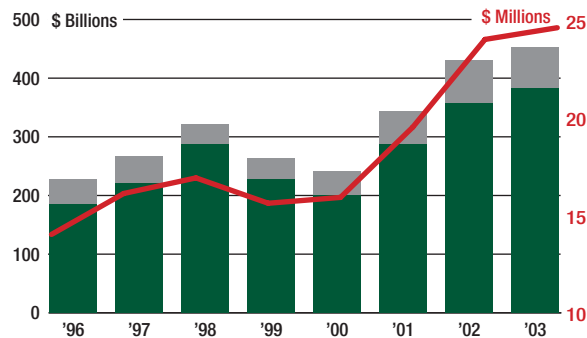
Issuance volume growth in 2004 is likely to come more from new project financing than from refundings.

Refunding Issuance

The volume of refunding issuance slowed during the year, reflecting the changing interest rate environment. Refunding volume totaled \$116.9 billion in 2003, compared to \$120.4 billion issued in 2002. The overall decrease in refunding issuance volume is evident across several use of proceeds sectors, including education and transportation. Issuance in the education sector decreased 11.0 percent, to \$21.5 billion during the year from \$24.2 billion in 2002. In contrast, general government refunding issuance increased 12.4 percent, to \$36.1 billion in 2003, compared to the \$32.1 billion issued in 2002.

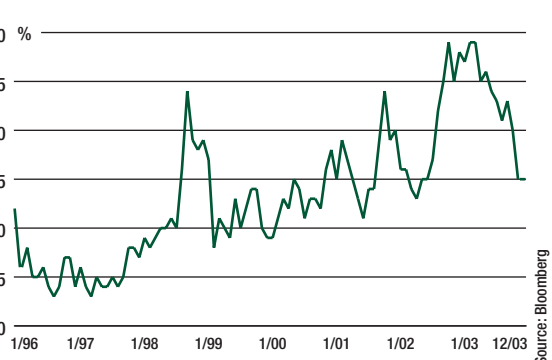
Short- and Long-Term Municipal Issuance

1996–2003 ■ Long-Term ■ Short-Term¹ ■ Average Deal Size (Millions)



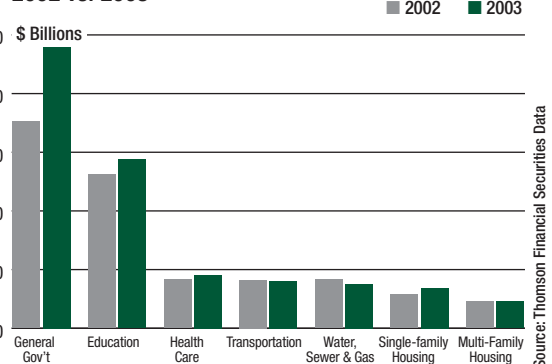
¹Includes maturities of 13 months or less Source: Thomson Financial Securities Data

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



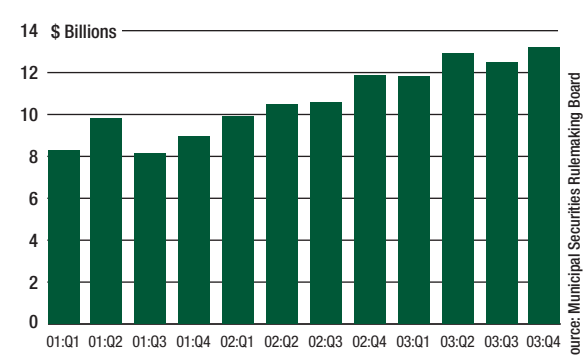
Source: Bloomberg

Municipal New Capital—Use of Proceeds



Source: Thomson Financial Securities Data

Average Daily Trading Volume of Municipal Securities* 2001:Q1–2003:Q4



Source: Municipal Securities Rulemaking Board

*Includes both dealer-to-dealer and dealer-to-customer transactions

Corporate Bond Issuance Grows Steadily in 2003; Growth Especially Strong in Q4

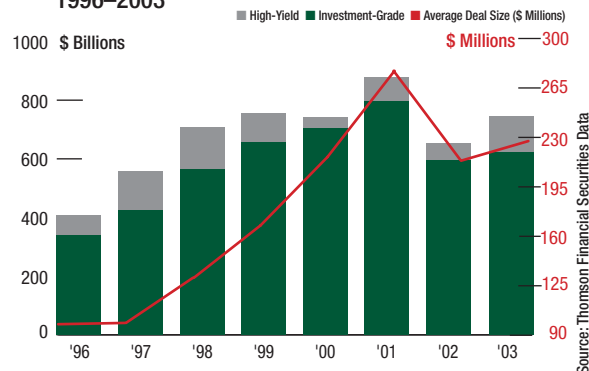
Supported by the low-interest-rate environment, improving credit quality and rising profits, new corporate bond issuance grew during 2003. New issue volume grew 13.9 percent, to \$743.6 billion, up from \$652.7 billion in 2002. With interest rates at historic lows and corporate bond spreads narrowing, corporations sought to take advantage of the favorable market environment. Corporate issuer uncertainty about the interest rate outlook in 2004 certainly was a factor in the strong issuance volume, especially in the fourth quarter. Yet, the economic growth outlook in 2004 suggests companies will continue to look to the markets for financing to respond to the anticipated corporate sector growth.

Issuance rose 6.2 percent in the fourth quarter of 2003, to \$158.7 billion, as many companies issued bonds to either restructure outstanding debt or issue new debt while the corporate cost of borrowing remained historically low. Fourth quarter issuance in 2003 rose 16.4 percent, up from \$136.3 billion in the fourth quarter of 2002. In addition to the favorable debt refinancing opportunities, new bond issuance was driven by business expansion and the resulting demand for capital. Strong growth in capital investment led the significant GDP growth during the second half of 2003. Capital spending growth suggests that corporations will be tapping the debt markets to finance growth, notwithstanding the still modest capacity utilization rate. Increasing demand resulting from continued growth in consumer spending suggests that corporations may continue to look to the markets to respond to new opportunities in 2004. Another source of corporate issuance demand is the renewed rate of merger and acquisition activity evident as 2003 came to an end.

Convertible bond issuance—including investment-grade and high-yield issues—rose almost 183 percent in 2003, to \$69.7 billion, up significantly from \$24.7 billion in 2002. The sharp increase in issuance partly reflects a recovery in the equity market during 2003, leading investors to seek the combination of higher returns and relative safety in the hybrid market. Issuance was \$12.4 billion during the fourth quarter, 82.4 percent higher than in the fourth quarter of 2002. Convertible issuance, however, decreased 21.6 percent between the third and fourth quarters of 2003, down from \$15.9 billion in the third quarter 2003, as investors moved back to the straight equity markets. The linked quarter decline reflects the strong gains in equities and a more favorable equity market environment than in recent years. Issuance of Medium-Term Notes (MTNs) rose 50.3 percent, to \$45.1 billion in the fourth quarter of 2003, compared to the same period in 2002. MTN issuance in 2003 was \$204.3 billion, up 6.5 percent from the \$191.8 billion issued in 2002.

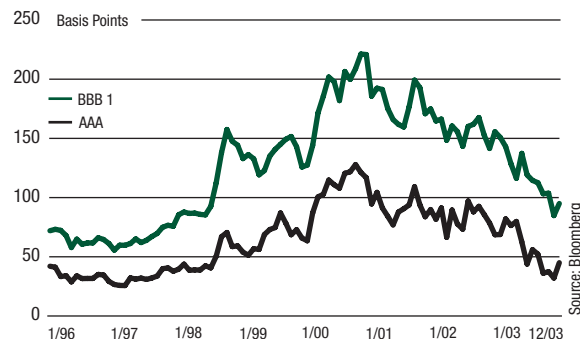
The continuation of the low-interest-rate environment and improvements in corporate earnings continued to produce some of the tightest corporate bond spreads seen in years. Corporate credit quality saw further gains during 2003. In addition to the general improvement in the financial position of corporations and their balance sheets, the corporate

Corporate Bond Issuance⁽¹⁾
1996–2003

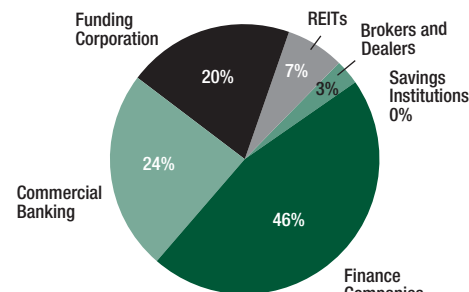


⁽¹⁾ Includes all non-convertible corporate debt, MTNs, and Yankee bonds, but excludes all issues with maturities of one year or less, CDs and federal agency debt.

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



Corporate Debt Outstanding—Financial Sectors
As of December 31, 2003*



Total: \$1,584.9 Billion

* The Bond Market Association estimates

spread tightening also reflects investor appetite for corporate bonds as investors seek higher returns. Investors moved away from cash and other lower return liquid investments in favor of higher-yielding corporate debt, especially as the credit outlook improved for many companies. With respect to the better credit outlook in the corporate sector, according to Stone & McCarthy Research Associates, there were 16 bond rating upgrades and 21 downgrades in the fourth quarter of 2003. The downgrade/upgrade ratio was the lowest during the four quarters of 2003.

Banner Year for High-Yield Issuance

New issue volume of non-convertible high-yield debt was especially strong, increasing 113.6 percent during 2003, to \$122.9 billion, up from the \$57.5 billion issued in 2002. On a linked quarter basis, issuance rose 3.0 percent in the fourth quarter of 2003, up from the \$29.7 billion issued during the third quarter of 2002. Issuance volume during the fourth quarter was more than two times greater than issuance during the fourth quarter of 2002.

Most high-yield sectors saw a rise in issuance during 2003. Issuance in the transportation sector had the most significant increase, reaching \$1.8 billion during the fourth quarter of 2003, almost 18 times higher than the \$100 million issued during the fourth quarter of 2002. In the credit institutions sector, issuance rose 353.3 percent to \$1.2 billion during the fourth quarter of 2003, up from \$257.7 million in the third quarter of 2003.

Investment-Grade Debt Issuance Rises Slightly Based on Fourth Quarter Gains

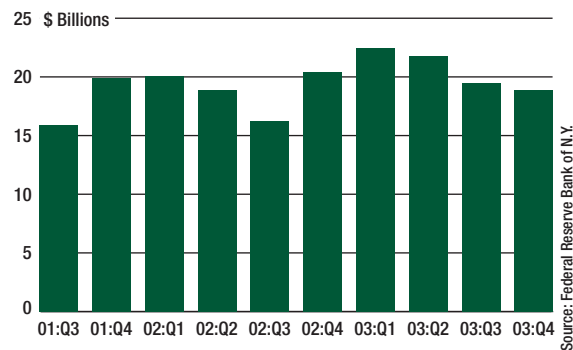
New issue volume of non-convertible investment-grade bonds rose slightly in 2003. Total issuance in 2003 was \$620.6 billion, a rise of 4.3 percent from the \$595.1 billion issued in 2002. Issuance in the fourth quarter of 2003 rose 5.2 percent, to \$128.1 billion compared to the same period in 2002. On a linked quarter basis, issuance rose 7.0 percent between the third and fourth quarters of 2003.

Strong fundamentals, along with consolidation through M&A led companies to take advantage of issuance opportunities in the bond markets. Issuance in the mortgage securities finance sector rose sharply in 2003—increasing 240.6 percent, to \$4.0 billion in the fourth quarter of 2003, up from \$1.2 billion issued during the fourth quarter of 2002. Investment-grade bond issuance by investment funds rose 231.0 percent in 2003 to \$695.0 million. Investment banking sector issuance was \$90.8 billion in 2003, a 42.1 percent increase from \$63.9 billion issued in 2002, benefiting from favorable conditions in the financial markets during much of 2003.

Trading Volume Sees Small Decrease

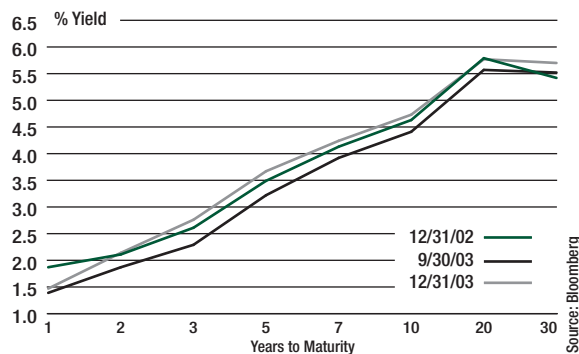
The average daily corporate bond trading volume by primary dealers for bonds with maturities of greater than one year decreased 3.2 percent in the fourth quarter, to \$18.9 billion, down from \$19.5 billion during the third quarter of 2003. According to MarketAxess, and based on information disseminated through the NASD's TRACE System, total estimated trading volume in the fourth quarter was \$484.2 billion, with a daily average of \$7.57 billion.

Average Daily Trading Volume for Corporate Bonds⁽¹⁾
2001:Q3–2003:Q4

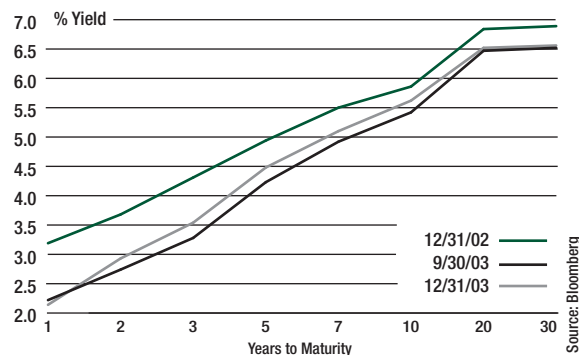


⁽¹⁾ Primary dealer activity; excludes all issues with maturities of one year or less

U.S. Corporate: AA Industrial Yield Curves



U.S. Corporate: BBB- Industrial Yield Curves



ABS Sets a New Record in 2003

Issuance in the asset-backed securities (ABS) market set a new record in 2003, totaling \$584.2 billion, up 19.4 percent from the previous record of \$489.1 billion set in 2002. The increase in new issue activity was led by the growth in the home equity loan (HEL) securitization market, which increased almost 50 percent from one year ago as interest rates remained historically low, leading to strong refinancing and purchase HEL originations in the primary market for most of the year. Total issuance in the fourth quarter increased 13.5 percent, to \$161.8 billion when compared to the third quarter of 2003, and 22.5 percent when compared to the fourth quarter of 2002. The predicted rise in interest rates pose a challenge for some of the ABS sectors, especially housing related, in 2004. Another factor behind the predicted shifts in relative rates of growth among ABS products is the anticipated expansion in non-home equity consumer loan originations, while home equity loan originations are expected to moderate or even slow with the expected rise in rates. Non-real estate consumer loan originations, such as credit card receivables and auto loans, should benefit from a growing economy and increased consumer spending.

Top ABS Sectors

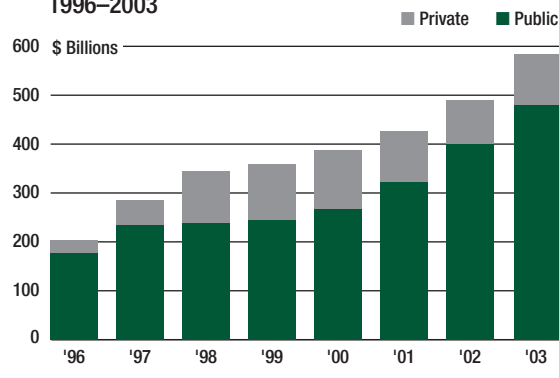
The HEL was the dominant sector in 2003, accounting for approximately 40 percent of all ABS issuance. The low-interest-rate environment contributed to record home sales and home equity loan originations and refinancings. Issuance totaled \$235.4 billion in 2003, up 46.9 percent from the \$160.3 billion issued in 2002. New issue activity decreased 9.1 percent in the fourth quarter when compared to the third, as mortgage originations slowed considerably in the fourth quarter. Issuance in the first quarter of 2004 may continue to decline as both originations and refinancings are projected to slow. Yield spreads on three-year home equity securities ended the year slightly tighter than at the end of the third quarter; however, spreads were approximately 30 basis points tighter than levels at the end of 2002. Tighter fourth quarter spreads may reflect expectations of improved credit quality, as the economy showed signs of accelerated growth during the second half of 2003.

Issuance in the auto loan sector decreased 12.2 percent, to \$82.4 billion in 2003, down from the \$93.8 billion issued in 2002. New issue activity increased slightly in the fourth quarter, when compared to the third, totaling \$21.6 billion and \$20.5 billion, respectively. Spreads of 2-year prime auto loans remained virtually unchanged from the end of the third quarter and slightly tighter than spreads at the end of 2002.

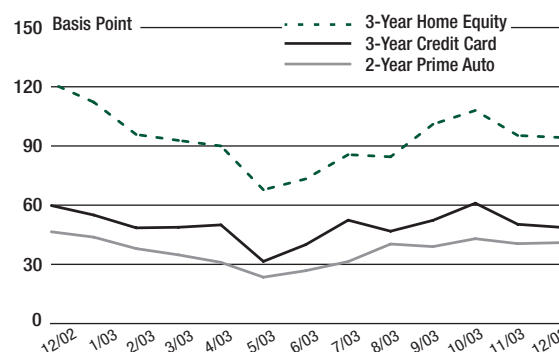
New issue activity in the credit card sector totaled \$69.5 billion in 2003, down 5.3 percent from the \$73.4 billion issued in 2002. Bankruptcies remained high in 2003 and continue to contribute to lower issuance levels. However, issuance increased 20.9 percent in the fourth quarter, when compared to the third, as the economy improved, boosting consumers' buying power.

The student loan sector was one of the strongest in 2003, increasing 37.6 percent, to \$44.6 billion, up from the \$32.4 billion issued in 2002. Issuance in the fourth quarter was virtually unchanged when compared to the third quarter, but 43.9 percent higher than in the fourth quarter of 2002. Sallie Mae continues to be the biggest player using the securitization market to fund loan originations.

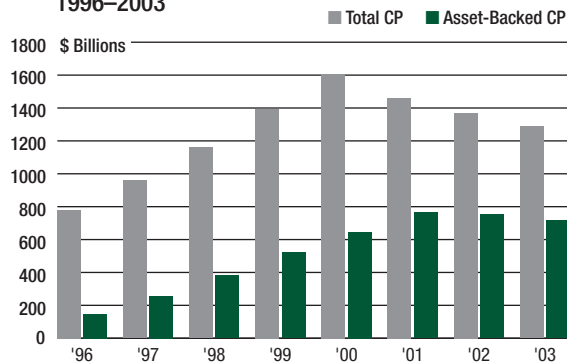
Issuance of Asset-Backed Securities 1996–2003



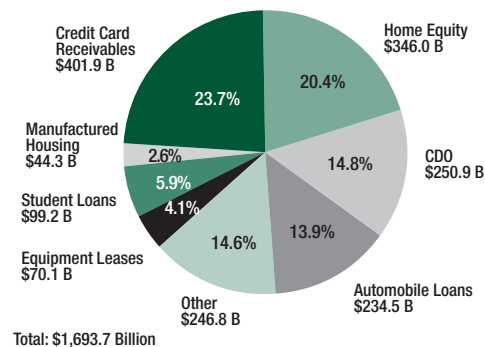
Asset-Backed Spreads to U.S. Treasuries Dec. 2002–Dec. 2003



Commercial Paper Outstanding 1996–2003



ABS Outstanding by Major Types of Credit As of December 31, 2003



Mortgage-Related Securities Issuance Surges to a New Record

Mortgage-related securities issuance, which includes agency and private-label pass-throughs and CMOs, set yet another record in 2003, totaling \$3.20 trillion, up 39.2 percent from the previous record of \$2.30 trillion in 2002. The low-interest-rate environment and booming housing market during most of the year drove origination and refinancing activity to record volumes. Mortgage originations increased to a record of \$3.79 trillion in 2003, up from the \$2.48 trillion in originations in 2002, according to The Mortgage Bankers Association. Refinancings increased to \$2.50 trillion in 2003 from \$1.46 trillion in 2002. Refinancing accounted for about two-thirds of total originations. In fact, refinancing in 2003 exceeded total originations in 2002. According to Commerce Department data, the homeownership rate reached a record level in 2003 as homeowners took advantage of historically low interest rates. However, mortgage-related issuance slowed considerably in the fourth quarter, totaling \$614.3 billion, down 33.2 percent from the third quarter of 2003 and down 18.9 percent from the fourth quarter of 2002 reflective of upward movement of mortgage rates during the latter part of the year. As mortgage interest rates increased during the second half of the year, mortgage originations—especially refinancings—slowed. Higher interest rates in the upcoming months may negatively affect issuance volumes of mortgage-related securities by reducing refinancing activity and, to some extent, purchase mortgage originations as well. According to the Mortgage Bankers Association, mortgage originations are projected to decrease to \$2.0 trillion in 2004. Yet, mortgage rates declined and a record level of mortgage applications were received during January.

Agency MBS and CMO

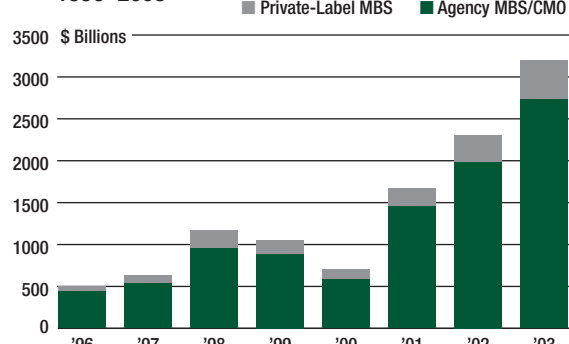
Issuance of agency mortgage-backed securities (MBS) increased to \$2.13 trillion in 2003, up 47.6 percent from the \$1.44 trillion issued in 2002. Again, as mortgage originations and refinancing slowed in the fourth quarter, issuance decreased by 40.4 percent when compared to the third quarter, and by 20.1 percent when compared to the fourth quarter of 2002. Fannie Mae's issuance totaled \$1.20 trillion in 2003, up 65.7 percent from the \$723.3 billion issued in 2002. Primary issuance of Freddie Mac MBS increased 30.4 percent in 2003, up from the \$547.1 billion issued in 2002. Ginnie Mae's guaranteed mortgage securities issuance volume increased 47.6 percent in 2003, totaling \$220.0 billion. All three agencies experienced MBS issuance decreases in the fourth quarter of 2003 when compared to the third quarter.

Agency collateralized mortgage obligations (CMO) issuance increased to \$598.3 billion in 2003, up 10.6 percent from the \$540.9 billion issued in 2002. On a linked quarterly basis, CMO issuance decreased 30.2 percent in the fourth quarter, to \$95.5 billion, down from the \$136.9 billion issued in the third quarter. The decrease in issuance in the fourth quarter was even more pronounced when compared to the fourth quarter of 2002, when issuance totaled \$171.6 billion.

Non-Agency MBS

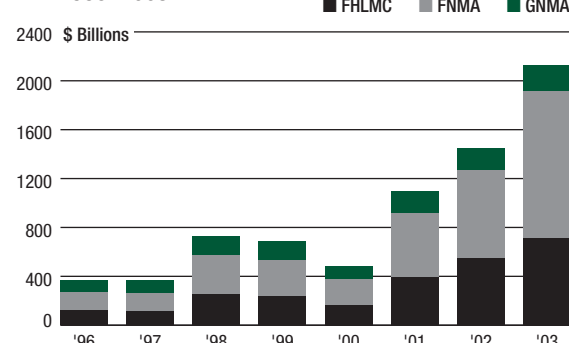
New issuance of non-agency MBS increased 50.1 percent in 2003, to \$466.9 billion, up from the \$311.0 billion issued in 2002. Issuance increased slightly in the fourth quarter and totaled \$124.7 billion, up from the \$121.3 billion issued in third quarter.

Issuance of Mortgage-Related Securities 1996–2003



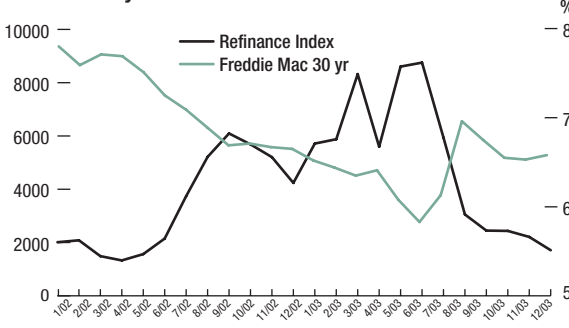
Sources: Fed., Agencies, Thompson Financial, Inside MBS & ABS, Bloomberg

Issuance of Agency Mortgage-Backed Securities 1996–2003



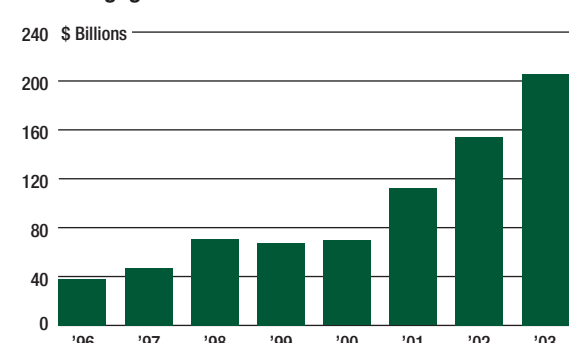
Sources: GNMA, FNMA, FHLMC

MBA Refinance Index vs. Freddie Mac 30-Yr Monthly Average Commitment Rate January 2002–December 2003



Sources: Freddie Mac, Mortgage Bankers Association of America

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



Source: Federal Reserve Bank of N.Y.

⁽¹⁾ Primary dealer activity

Outstanding Repo Agreements Increase

The average daily volume of total outstanding repurchase (repo) and reverse repo agreement contracts totaled \$4.04 trillion in 2003, a 6.7 percent increase over the average daily volume of \$3.79 trillion in 2002. Daily outstanding repo agreements increased 8.4 percent, to an average of \$2.36 trillion in 2003, compared to \$2.17 trillion in 2002. Average daily outstanding reverse repo increased to \$1.69 trillion in 2003, a gain of 4.3 percent over 2002's level of \$1.62 trillion. On a linked quarter basis, total repo agreements increased every quarter in 2003. The data represent financing activities of the primary dealers reporting to the Federal Reserve Bank of New York and include repo and reverse repo agreements involving U.S. government, federal agency, agency mortgage-backed, and corporate securities.

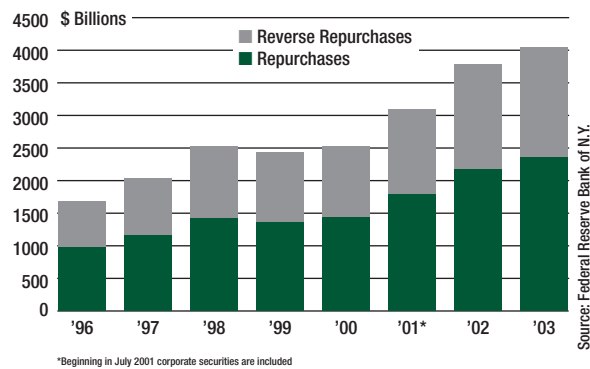
The Government Securities Division of the Fixed Income Clearing Corporation (an SEC registered clearing agency) facilitates orderly settlements in the U.S. government securities market and tracks repo trades settled through its system by product type. In excess of \$262.7 trillion in repo trades were submitted by GSD participants in 2003, with an average daily volume of approximately \$1.1 trillion. Repo transactions involving Treasury notes accounted for the largest share of GSD repo activity, representing \$181.8 trillion, or 69.2 percent of the total volume. Repos involving Treasury bonds accounted for an estimated \$17.5 trillion, or 6.7 percent of the total, and Treasury bills accounted for \$19.2 trillion, or 7.3 percent of the activity for the year. Transactions involving federal agency securities accounted for 12.7 percent of 2003's volume, down from 14.5 percent for 2002.

CP Stabilizes, Increase Anticipated in 2004

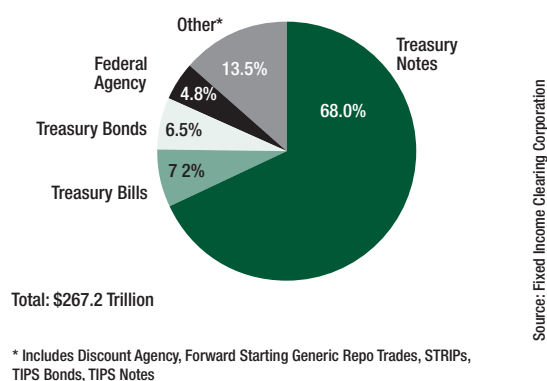
The outstanding volume of money market instruments, including commercial paper (CP), large time deposits and bankers' acceptances (BAs), totaled an estimated \$2.51 trillion outstanding as of December 2003, unchanged when compared to totals at the end of September 2003. CP outstanding was unchanged at \$1.29 trillion at the end of December 2003, when compared to total outstanding at the end of September 2003. Financial CP outstanding increased 1.9 percent, to \$1.19 trillion at the end of 2003, down from the \$1.17 trillion outstanding at the end of September 2003. Outstanding non-financial CP dropped 18.9 percent, to \$101.4 billion at the end of the fourth quarter, from the \$125.1 billion at the end of the third quarter—the lowest since 1991. CP financing may pick up in coming months as the economy gains strength, credit quality improves and renewed M&A activity. According to The Bond Market Association's forecast survey, CP outstanding is expected to increase in 2004. However, changes to accounting policy standards with respect to financial statement consolidation of variable interest entities—specifically, the adoption and implementation of FIN 46-R—could have a negative impact on the 2004 CP market, particularly for asset-backed CP.

The outstanding level of large time deposits rose to an estimated \$1.22 trillion as of December 31, 2003, relatively unchanged from the amount outstanding at the end of the fourth quarter. Bankers' acceptances totaled an estimated \$4.3 billion at the end of 2003.

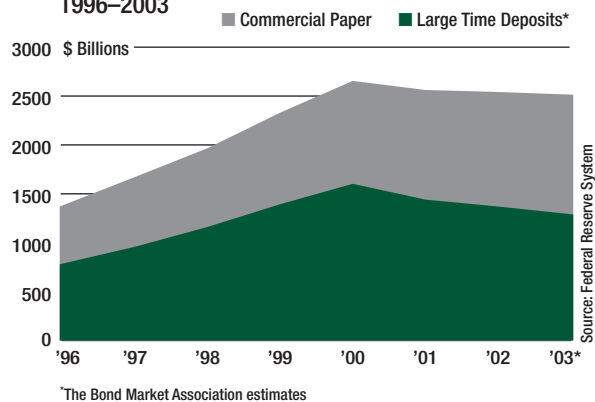
Financing by U.S. Government Securities Dealers Average Daily Amount Outstanding 1996–2003



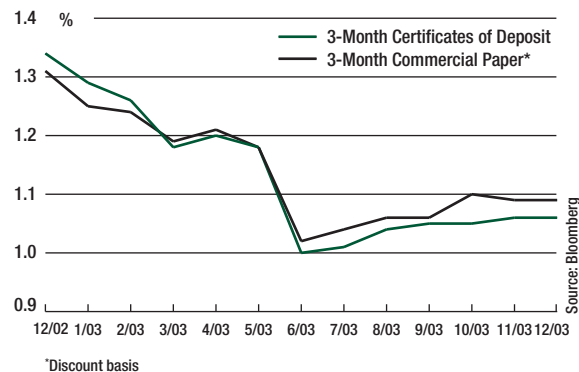
Repo Trades Submitted to the FICC 2003



Outstanding Money Market Instruments 1996–2003



Domestic Money Market Interest Rates Monthly Average Dec. 2002–Dec. 2003



Net Bond Mutual Fund Cash Flows Positive in 2003 Despite Slower Second Half

Consistent with the volatile market environment in 2003, bond mutual fund flows were also quite volatile. For most of the first half of the year, interest rates were at historic lows, leading to appreciating bond prices. During the second half of the year, the fundamentals in the economy began to change and interest rates edged up, the stock market improved and the economy grew.

During the first half of 2003, bond mutual funds had a net cash inflow of over \$65 billion; however, net cash outflows totaled approximately \$35 billion in the second half. For the full year, net inflows totaled \$31.4 billion, down 77.6 percent from the inflow of \$140.4 billion in 2002. Net assets of bond mutual funds increased 9.6 percent in 2003, to \$1.23 trillion, up from \$1.12 trillion at the end of 2002. Net assets all mutual funds combined increased to \$7.41 trillion in 2003.

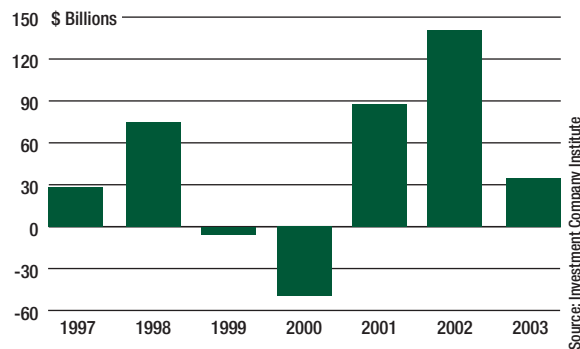
Net cash flows of taxable bond mutual funds showed a net inflow of \$38.4 billion, while municipal funds experienced an outflow of \$7.0 billion. During the same period last year, taxable funds had an inflow of \$124.0 billion and municipal funds an inflow of \$16.4 billion.

Bond Sector Mutual Funds Show Gains in Q4

As interest rates stabilized in the fourth quarter, bond funds began to recover the net Q3 outflows and take in more money across different market sectors. While mutual bond funds outflows totaled \$16.1 billion in the third quarter—including Treasury, MBS, corporate high-yield, corporate investment-grade and municipal bond funds—outflows declined in the fourth quarter to only \$2.5 billion. Treasury, corporate investment-grade and high-yield bond funds had inflows in the fourth quarter, and MBS and municipal bond funds experienced outflows. Corporate high-yield bond funds continued to lead the way again in the fourth quarter with an inflow of \$4.5 billion, up from the inflow of \$0.9 billion in the third quarter, as historically low interest rates led investors to search for higher-yielding investments. Corporate investment-grade bond funds also did well in the fourth quarter, with inflows totaling \$1.7 billion, compared to the outflow of \$3.7 billion in the third quarter. Treasury bond funds improved slightly with inflows of \$0.1 billion in the fourth quarter, compared to an outflow of \$0.5 billion in the third quarter. MBS mutual fund outflows decreased from \$7.7 billion to \$6.1 billion, while municipal outflow decreased from \$5.1 billion to \$2.7 billion. Net cash outflows of money market mutual funds reached \$259.0 billion in 2003, compared to an outflow of \$46.7 billion in 2002, as investors began to accept more risk for higher returns in a growing economy.

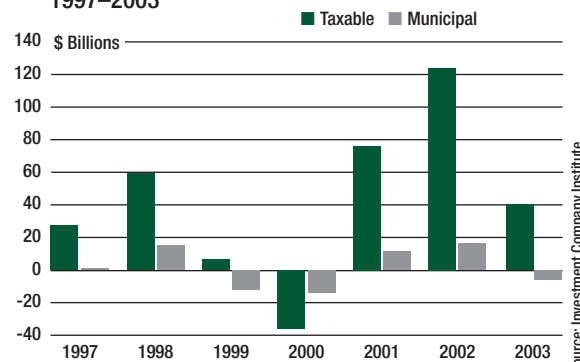
The direction of interest rates and the strength of the economic recovery will play a significant role in the cash flow of bond mutual funds. Higher interest rates offer yield opportunities for investors, but a very strong equity market would pose challenges for bond fund expansion.

Net Cash Flow of Bond Mutual Funds 1997–2003



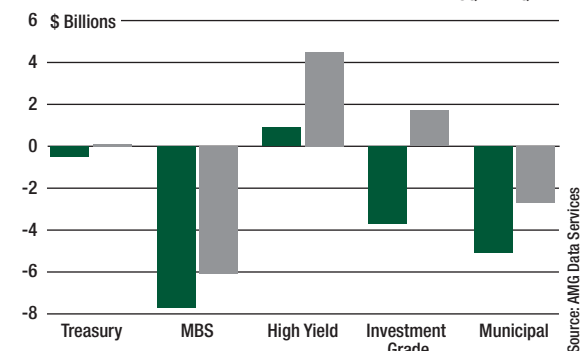
Source: Investment Company Institute

Net Cash Flows of Taxable vs. Municipal Mutual Funds 1997–2003



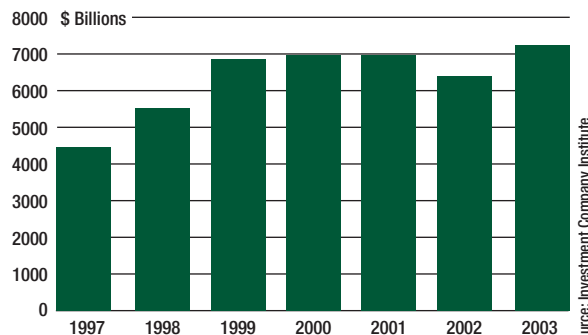
Source: Investment Company Institute

Net Cash Flows of Mutual Funds by Sector 2003: 3Q, 4Q



Source: AMG Data Services

Assets of Mutual Funds 1997–2003



Source: Investment Company Institute

Special Report: Foreign Investment in the U.S. Bond Markets

There has been a great deal of discussion about the level and trend of foreign investment in the U.S. bond markets in the coming year. In today's global financial markets, international capital flows play a very important role in determining bond market conditions, yields and prices. Indeed, non-U.S. investor commitment to and purchases in the highly efficient U.S. fixed income markets have played a large part in the growth of the bond markets, as well as contributing to the low interest rates and total return performance story over the last few years. Recent rate and dollar volatility have raised concerns about foreign disinvestments, or outflows, from the U.S. fixed-income markets. However, data supplied by the Treasury International Capital System shows that net purchase and holdings of long-term U.S. fixed income securities continues to increase.

Net Foreign Purchases Continue to Rise

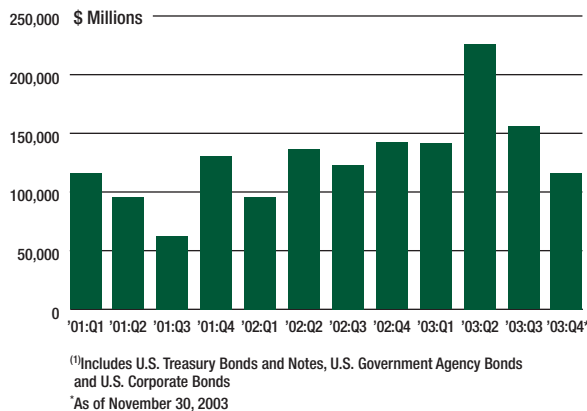
Net foreign purchases of long-term, U.S. fixed income securities have surged in recent years. The global economic climate, the economic performance in the U.S relative to other economies, and a reputation as a safe, low-risk place to invest have attracted foreign investors. In 2003, foreign investors purchased a net \$639.5 billion in fixed income securities as of the end of November (the most current available data), 28.6 percent higher than the net purchase in 2002. While Treasury bonds and notes continue to be most attractive to non-U.S. investors, the past several years have seen diversification in holdings by foreign central banks and private investors beyond Treasuries, and into other fixed income sectors, including U.S. government agency bonds and U.S. corporate bonds. As of November 30, 2003, net foreign purchase of corporate bonds totaled \$250.7 billion, compared to \$182.3 billion in 2002. In contrast, net purchase of government agency bonds was \$145.5 billion as of November 30, 2003, less than the full year total of \$195.1 billion in 2002. Full-year figures for 2003 were not available at time of publication.

Favorable financial market conditions during 2003 led to the growth in foreign investment during the second and third quarters. Net purchase of Treasury bonds and notes reached \$94.9 billion in the second quarter, exceeding quarterly net purchase volumes for each quarter in the last three years. As we head into 2004, the economy is expected to continue growing and with inflation well under control, the likelihood of rising bond yields may very well attract more investors to purchase dollar denominated debt. A potential obstacle to this scenario is the effect of the value of the dollar relative to other major currencies, especially the Euro. However, a stable political system and increased supply of U.S. debt continues to attract non-U.S. investors despite concerns about increased foreign outflows.

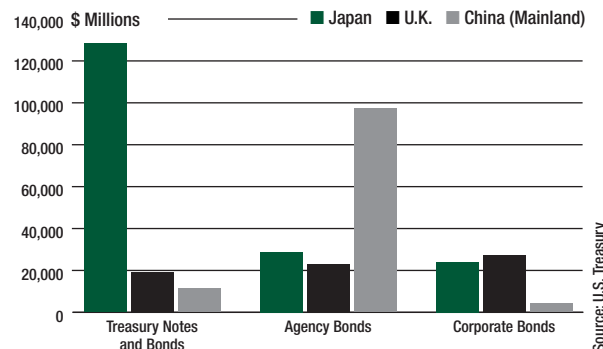
Japan, China Leading Foreign Holders of U.S. Bonds

At the end of November 2003, over \$1.50 trillion in U.S. Treasury securities were held by foreign investors. Japan ranked first in ownership with \$525.5 billion in U.S. securities, followed by China, with \$245.1 billion. Official holders, including central banks, of U.S. financial assets have unique reasons for acquiring U.S. denominated debt based on national economic policy. Ownership of U.S. securities can act as an instrument for

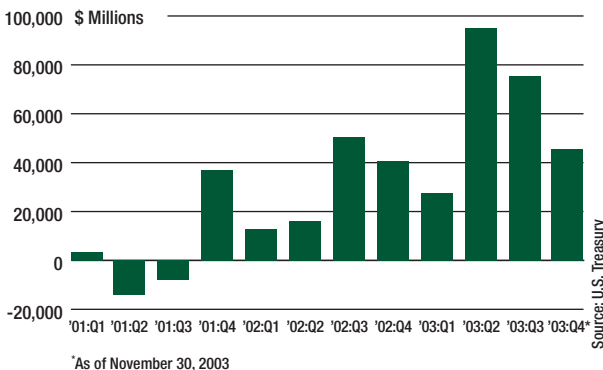
Net Foreign Purchase: Total Fixed Income⁽¹⁾
2001:Q1–2003:Q4



Net Foreign Purchase: U.S. Treasury Securities
As of Nov. 2003



Net Foreign Purchase: U.S. Treasury Bonds and Notes
2001:Q1–2003:Q4



foreign exchange intervention and management. Holdings of dollar denominated assets can be used to defend against currency speculation, depending on a central bank's tolerances for exchange rate risk and fluctuations. Economies that rely heavily on international trade are particularly sensitive to the value of their currency. For example, Japan, the largest holder of U.S. fixed income securities uses reserves of foreign currency denominated assets to protect the value of exports and lessen the impact of volatility and price fluctuation. The willingness to accept market-driven exchange rate volatility determines the need for foreign reserves. In addition, foreign central banks are able to use large reserves to "insure" the domestic currency against concerns of defaults on foreign debt payments.

Holdings of U.S. fixed income securities are also used to actively manage the value of domestic currency in the foreign exchange markets. Local currency appreciation and the demand for U.S. bonds may increase as a country sells its own currency denominated assets and purchases U.S. securities with the proceeds. The value of domestic currency can also be managed by using reserves to purchase domestic currency in the foreign exchange markets. China, which ranks second in holdings of U.S. fixed income securities has maintained a target exchange rate of about 8.28 yuan per dollar by purchasing U.S. securities.

As with all investors, private investor holdings and purchases in the U.S. markets take into account bond prices, the interest rates and economic outlook as well as the relative value of the dollar and the outlook in the foreign exchange markets. Dollar denominated assets are held to finance the trade of goods and services denominated in dollars, or to reinvest payments or capital flows resulting from the U.S. current account deficit.

Political, Economic Risk Factors Considered

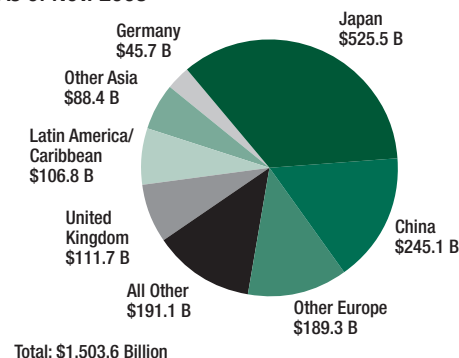
Decisions by non-U.S. investors to purchase financial assets are influenced by the level of political risk as well the economic environment, yields and interest rates, and overall risk tolerance. Net purchase of U.S. Treasury bonds and notes during 2001 totaled only \$18.4 billion as the U.S. entered a shallow recession.

The geopolitical uncertainty following the attacks of September 11, 2001 affected the decision to purchase dollar denominated Treasury securities. During this period, purchases by foreigners were concentrated in risk-free government agency bonds and corporate securities. In 2002, as concern about corporate governance peaked, the net purchase of long-term corporate debt slipped to \$182.3 billion, compared to the \$222.0 billion in the previous year. Attractive yields, increased activity and the return to a stable financial market environment in 2003 contributed to the strong levels of foreign net purchases noted earlier.

Looking Ahead

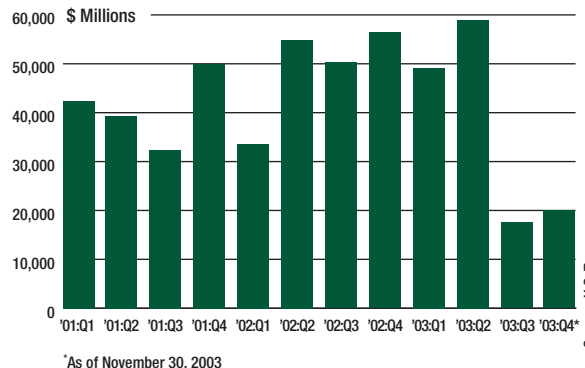
A deep and efficient market, an expanding economy and the prospect for higher yields and economic growth support the view that non-U.S. investment growth in the U.S. bond markets will continue. The dollar depreciation against major currencies remains an issue and depends on a number of conditions—interest rate differentials, limits on the desire of investors to finance our massive current account deficits, and expansionary or growth policies in other countries. Yet, the U.S. continues to be the engine of world economic growth.

Major Holders of Treasury Securities
As of Nov. 2003



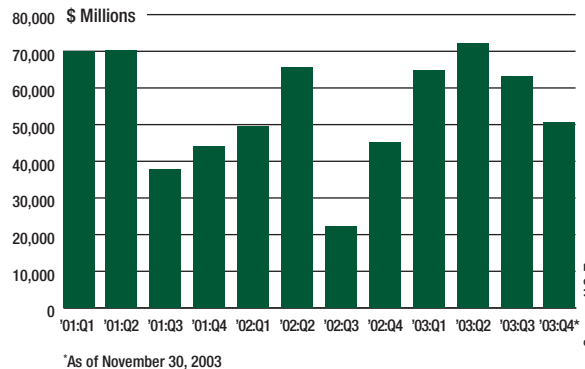
Sources: U.S. Treasury, Federal Reserve Board

Net Foreign Purchase: U.S. Gov't Agency Bonds
2001:Q1–2003:Q4



Source: U.S. Treasury

Net Foreign Purchase: U.S. Corporate Bonds
2001:Q1–2003:Q4



Source: U.S. Treasury