



C A M B R I D G E A S S O C I A T E S L L C

U.S. MARKET COMMENTARY

WHAT HAPPENS WHEN THE FED BECOMES SATIATED?

November 2009

Sean McLaughlin
Eric Schaaf

Copyright © 2009 by Cambridge Associates LLC. All rights reserved.

This report may not be displayed, reproduced, distributed, transmitted, or used to create derivative works in any form, in whole or in portion, by any means, without written permission from Cambridge Associates LLC ("CA"). Copying of this publication is a violation of federal copyright laws (17 U.S.C. 101 et seq.). Violators of this copyright may be subject to liability for substantial monetary damages. The information and material published in this report are confidential and non-transferable. This means that authorized members may not disclose any information or material derived from this report to third parties, or use information or material from this report, without prior written authorization. An authorized member may disclose information or material from this report to its staff, trustees, or Investment Committee with the understanding that these individuals will treat it confidentially. Additionally, information from this report may be disclosed if disclosure is required by law or court order, but members are required to provide notice to CA reasonably in advance of such disclosure. This report is provided for informational purposes only. It is not intended to constitute an offer of securities of any of the issuers that are described in the report. This report is provided only to persons that CA believes to be "Accredited Investors" as that term is defined in Regulation D under the Securities Act of 1933. When applicable, investors should completely review all Fund offering materials before considering an investment. No part of this report is intended as a recommendation of any firm or any security. Factual information contained herein about investment firms and their returns which has not been independently verified has generally been collected from the firms themselves through the mail. CA can neither assure nor accept responsibility for accuracy, but substantial legal liability may apply to misrepresentations of results delivered through the mail. The CA manager universe statistics, including medians, are derived from CA's proprietary database covering investment managers. These universe statistics and rankings exclude managers that exclude cash from their reported total returns, and for calculations including any years from 1998 to the present, those managers with less than \$50 million in product assets. Returns for inactive (discontinued) managers are included if performance is available for the entire period measured. Performance results are generally gross of investment management fees. CA does not necessarily endorse or recommend the managers in this universe.

Cambridge Associates, LLC is a Massachusetts limited liability company with offices in Arlington, VA; Boston, MA; Dallas, TX; and Menlo Park, CA. Cambridge Associates Limited is registered as a limited company in England and Wales No. 06135829 and is authorised and regulated by the Financial Services Authority in the conduct of Investment Business. Cambridge Associates Limited, LLC is a Massachusetts limited liability company with a branch office in Sydney, Australia (ARBN 109 366 654). Cambridge Associates Asia Pte Ltd is a Singapore corporation (Registration No. 200101063G).

What Happens When the Fed Becomes Sated?

A year ago, the Federal Reserve Bank (Fed) announced it would begin buying up to \$600 billion in direct Agency debt and mortgage-backed securities (MBS). In the months that followed, the program migrated from large to giant, expanding its range of securities to include Treasuries and boosting its purchase target to about \$1.7 trillion. As the Fed nears completion of the program, we analyze its impact on the ubiquitous Barclays Capital Aggregate Bond Index (Agg), including implications for index funds and possible distortions in the yield spreads of Agency debt and MBS over Treasury securities.

Is the Fed Now Running the World's Largest Bond Fund?

The Fed's purchases of Agency MBS and Agency debt to date total \$1.5 trillion, including \$300 billion in Treasury securities, \$155 billion in Agency debentures, and about \$1 trillion in Agency MBS (Table A).¹ The program is likely to total a stunning \$1.7 trillion when completed next spring,² which is far larger than any existing pension fund, mutual fund, or sovereign wealth fund; in fact, it is larger than the *combined asset total* for all of the hedge funds in the world. The impact of these government purchases on bond markets has been massive, reducing the availability of certain bonds, pushing up Agency security prices (in some cases by several hundred basis points), and positively impacting index performance.

The size of the government intervention begs for a yardstick by which it can be calibrated. Institutional investors often express concerns that the very largest institutional bond managers cannot invest nimbly because of their size; Table B compares the scale of the nearly \$1.7 trillion projected Fed securities purchase pool to the aggregate size of the ten largest bond managers tracked by Cambridge Associates. PIMCO, WAMCO, Vanguard, Dodge & Cox, and the other bond fund giants *together* do not come close to the projected eventual assets of the government-run pool, and this ignores the fact that bond managers have a larger pool from which to fish, including corporate bonds; in contrast, the government-run pool is only buying Treasuries, Agency debt,³ and Agency MBS. The Fed's pool has invested an average of about \$7 billion per day since March; talk about the need to be nimble!

Much has been made (including by us) of the \$320 billion in net inflows to U.S.-registered bond mutual funds so far in 2009 (and rightly so—this year's net inflow is more than twice the previous calendar-year record). Yet, the Fed's cumulative securities purchases in this program over the past year have already topped the *cumulative* net inflows into bond mutual funds throughout their *entire* existence! (See Table C,

¹ In this report, we will sometimes refer to Treasury securities and Agency bonds (not Agency MBS) collectively as "government bonds." Agency bonds are not backed by the full faith and credit of the Treasury, so that they can be kept off the government's balance sheet, but the government has made explicitly clear since 2008 that it stands behind the two agencies.

² In mid-November, St. Louis Fed President James Bullard, who will be a voting member of the Fed's Open Market Committee next year, said that he advocates keeping the asset-purchase program "open but at a very low level," rather than terminating it in March 2010.

³ The Agency universe is primarily bonds issued by Fannie Mae and Freddie Mac that are not backed by mortgages.

which compares cumulative net flows into bond funds starting in 1990 with the growth of the Fed's Treasury/Agency debt/MBS purchase program.⁴)

The challenge for traditional bond managers is to invest without impacting bond prices. The Fed's securities purchases pool has the opposite implicit aim (at least for the time being)—the Fed is trying hard to push down mortgage rates and support bond prices. As phrased on the Fed website, “The goal of the program is to provide support to mortgage and housing markets and to foster improved conditions in financial markets more generally.”⁵

The effort appears to be successful thus far. While mortgage availability remains constrained (particularly for borrowers looking for high-balance “jumbo” mortgages), rates for mortgages that can be guaranteed by a government agency are very low relative to history. Option-adjusted yield spreads for Fannie Mae MBS over comparable Treasury securities are now negative, versus a long-term average of 59 basis points (bps) and a high of 182 bps about one year ago (Table D). For families seeing lower refinancing costs, this is essentially a stealth fiscal stimulus package. For a couple shopping for a first home, lower mortgage rates have increased affordability by a similar amount, perhaps helping to put a floor under home prices in the lower and middle tiers of the housing market.

How Do I Get Out of This Mess?

When the Fed begins to exit the market (by simply letting the securities run off, or possibly by selling some and letting the rest run off) and slow its purchases over the coming months, the challenge will be to moderate the negative impact on bond prices and mortgage rates. The Fed's securities pool is already a significant owner of the three categories of securities that it has purchased as part of this program: it owns roughly 8% of Agency debt, 9% of Treasury securities, and 20% of the gigantic Agency MBS market. By the end of the first quarter, the government pool could own about 13% of the securities in the Agg, including 26% of Agency MBS and 9% of Treasury and Agency bonds (Table E).⁶

Tweaking Bond Benchmarks

As the government buys more and more of the issuance and outstanding securities in the three categories (Treasuries, Agency debt, and Agency MBS), it will push up prices of these securities and make it

⁴ Cumulative bond fund net inflows from 1990 through November 4, 2009, total \$987 billion according to the Investment Company Institute (ICI). Net flows estimates prior to 1990 are unavailable, but bond funds at the beginning of 1990 had total assets of \$272 billion, compared to \$13 billion at the beginning of 1980. Comparing annual fund assets data from the ICI with the annual return of the Agg, we estimate that cumulative net flows into bond funds during the heady 1980s bond bull market were about \$150 billion. Cumulative net flows for all periods prior to 1980 may have been less than \$10 billion (bond funds, after all, held just \$13 billion in assets at the start of the decade).

⁵ Please see <http://www.federalreserve.gov>.

⁶ This moderately overstates the percentage of the index's securities that will be owned by the government, since the universe of bonds is likely to expand modestly over this quarter and the first quarter of next year.

harder for index and active managers to locate and purchase them. Imagine if a government agency was determined to purchase 25% of all homes on cul-de-sacs within the span of 15 months; private buyers that also desired to own these homes would quickly find themselves in a bidding war. The traditional Agg index cannot escape the effects of these distortions, creating a conundrum for bond investors.

Responding to this difficulty, Barclays Capital has created a float-adjusted version of the Agg. The Treasury “slice” of the Agg is already float adjusted, meaning that the Treasury securities owned by the government are excluded. A newly introduced float-adjusted version of the overall Agg index now broadens this concept to include Agency MBS and Agency debentures. Table F projects how the sector weightings of the traditional and float-adjusted Agg indices may differ at the end of the first quarter of next year. Currently, the float-adjusted index is about 3 percentage points underweight Agency MBS versus the traditional index, with corresponding Treasury and corporate overweights of about 1.8 and 1.3 percentage points, respectively. The MBS underweight is likely to move to about 6%, offset primarily by a 3% overweight to Treasuries and corporates.

The float-adjusted index was introduced in July, and its differences with the traditional Agg will grow through the projected end of the Fed’s securities purchase program in the first quarter. Given the short history, there is no surefire way to predict whether all of this effort will make a material difference on relative performance between the two indices. However, in order to create a rough estimate, we constructed two simulated (but simplistic) indices. One is weighted 60% to Barclays Capital’s MBS index and 40% to the Government/Credit index (broadly similar to the current weightings of the Agg). The other simulated index has a 6% underweight to MBS and a corresponding overweight to the Government/Credit, in a rough approximation of the float-adjusted Agg index’s MBS-light construction. Looking at the rolling 12-month performance differential between the two simulated indices going back to 1976, the average differential is about -2 bps annually, with a standard deviation of 16 bps. In other words, the MBS-light index, on average, outperformed slightly (not surprising, since MBS have higher yields due in part to the negative convexity that arises from homeowners’ prepayment options), and two-thirds of the time, the relative performance differential was between 14 bps and -18 bps. The performance differential is probably enough to make a difference for a bond manager, but not for an investment portfolio with a minor allocation to bonds.

What Are Index Managers Doing?

Vanguard Group recently announced that it is adopting the float-adjusted index for its Agg-benchmarked index funds (which have more than \$90 billion in assets). However, other major index providers have generally not done so, arguing that it is not worth the trouble and expense of shifting benchmarks for something that is likely to be transitory and have a relatively small impact. We would guess that the float-adjusted index will outperform the traditional Agg next year once the Fed ceases to become the marginal (indeed the *primary*) purchaser of MBS issues,⁷ but this is not a high-conviction thesis by any

⁷ And the Fed’s participation in the MBS market is much more significant in percentage (and dollar) terms than in the Agency debt and Treasury markets.

means. Furthermore, if mortgage rates rise significantly, the Fed will likely not be shy about re-entering the market with version 2.0 of the securities purchase program. In any case, we are comfortable with the float-adjusted approach but do not see it as a make-or-break issue.

In this discussion of Agency MBS and the Agg, it is important to recognize that neither MBS nor an Agg-style mix of securities is an ideal holding for a portfolio's deflation hedge. As a refresher, we believe that investors should hedge equity-oriented portfolios against the risk of protracted, malign deflationary periods with high-quality, noncallable bonds. For portfolios with modest bond allocations, we would not favor the Agg or other strategies or indexes with hefty allocations to MBS. While they offer yield pickup (and thus are popular with active managers), they have a characteristic that seriously undermines their ability to provide deflation protection—negative convexity.

The negative convexity arises because MBS holders are effectively short a call option on the underlying mortgages. When interest rates rise, homeowners generally hold onto their existing mortgages unless they sell the home or need to refinance following a divorce, so the duration of the securities extends even as their value declines. Conversely, when interest rates fall (such as during a deflationary period), mortgage holders with sufficient income and home equity will rush to refinance, shortening the securities' duration just as things are getting interesting for bondholders.

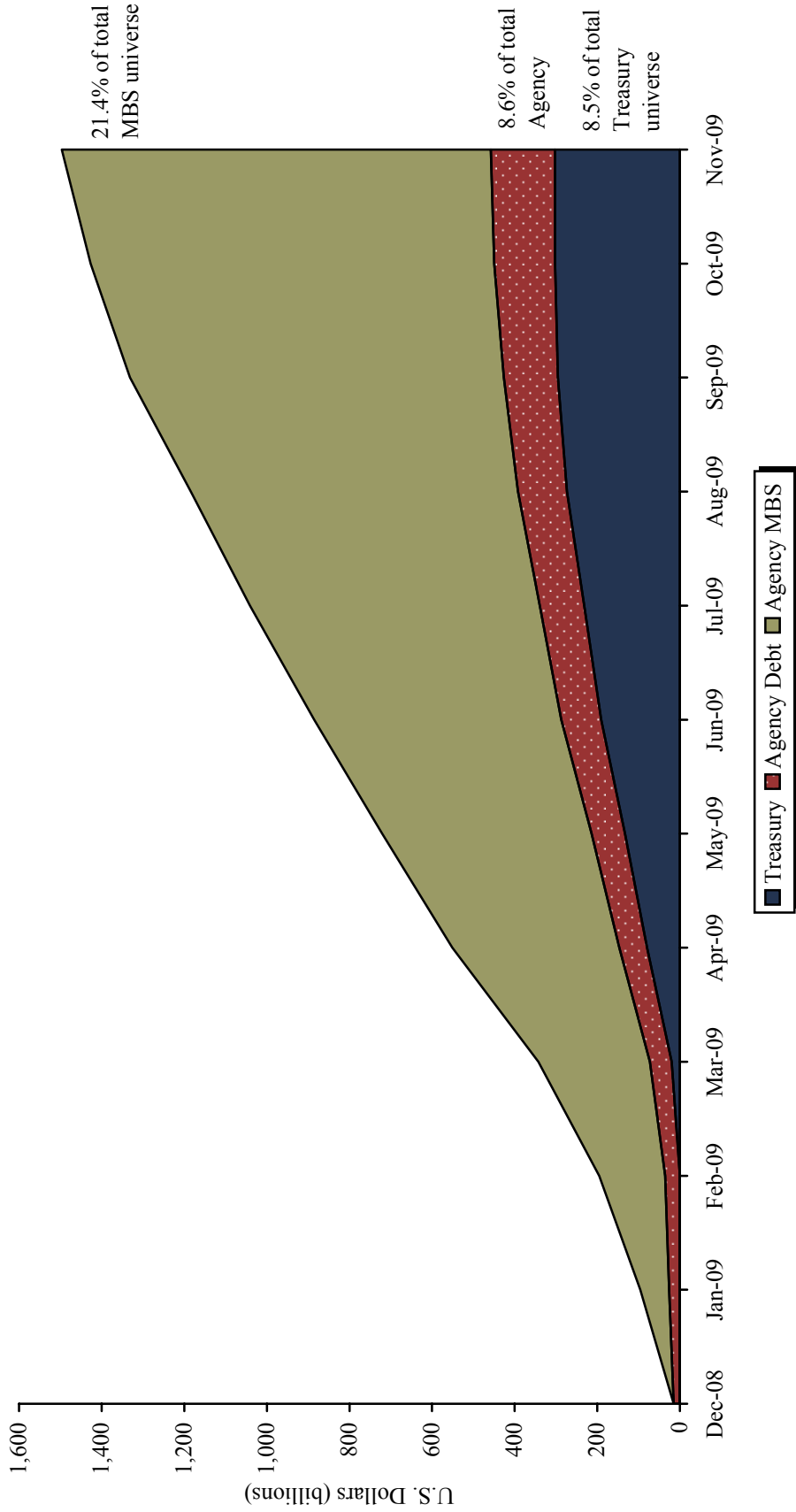
For portfolios with modest allocations to bonds as a deflation hedge, every dollar invested must count, and for that reason Agg-like portfolios with hefty mortgage exposure are not a great fit.

Conclusion

As if we were not already concerned about the \$1.2 trillion plus of new Treasury supply in 2010,⁸ bond investors also need to consider the impact of the government's buyback programs so far and the impact when the government attempts to extricate itself from them early next year. As stated previously, the effect of the government ceasing its \$7 billion daily purchases will be similar to all of the bond managers in the country simultaneously ceasing to buy government securities; in other words, unlikely to go unnoticed. The changes in indices are meaningful, but we believe investors that own bonds primarily as a deflation hedge should *perennially* shy away from mortgage-backed investments, not just during the unwind of the Fed's purchase program.

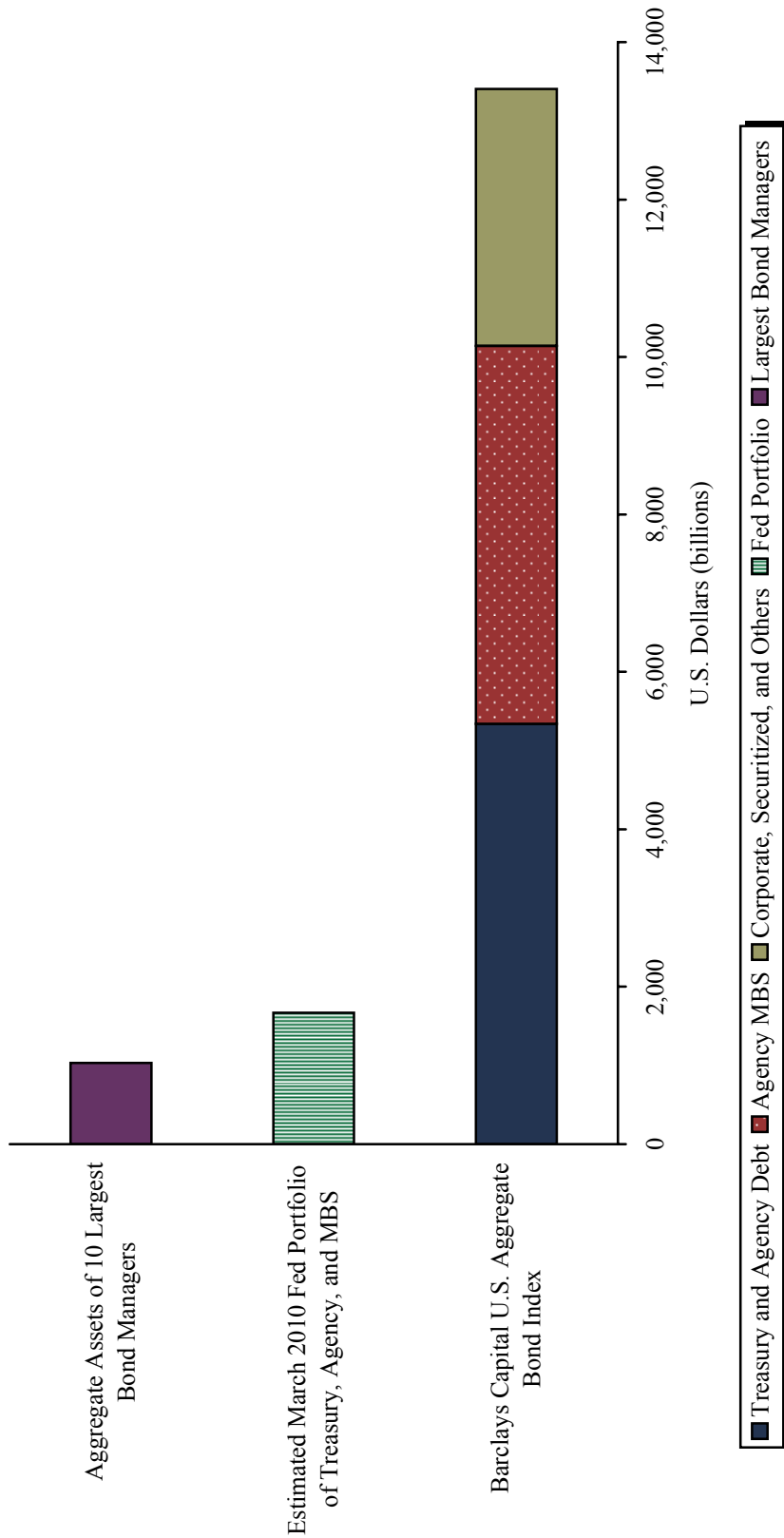
⁸ See our November 2009 Market Commentary *Amid Surging Supply of U.S. Treasuries, Can Demand Hold Up?*

Table A
CUMULATIVE BOND MARKET PURCHASES BY FEDERAL RESERVE AND TREASURY
As of November 30, 2009



Sources: Barclays Capital and SIFMA.

Table B
U.S. BOND UNIVERSE
As of November 12, 2009

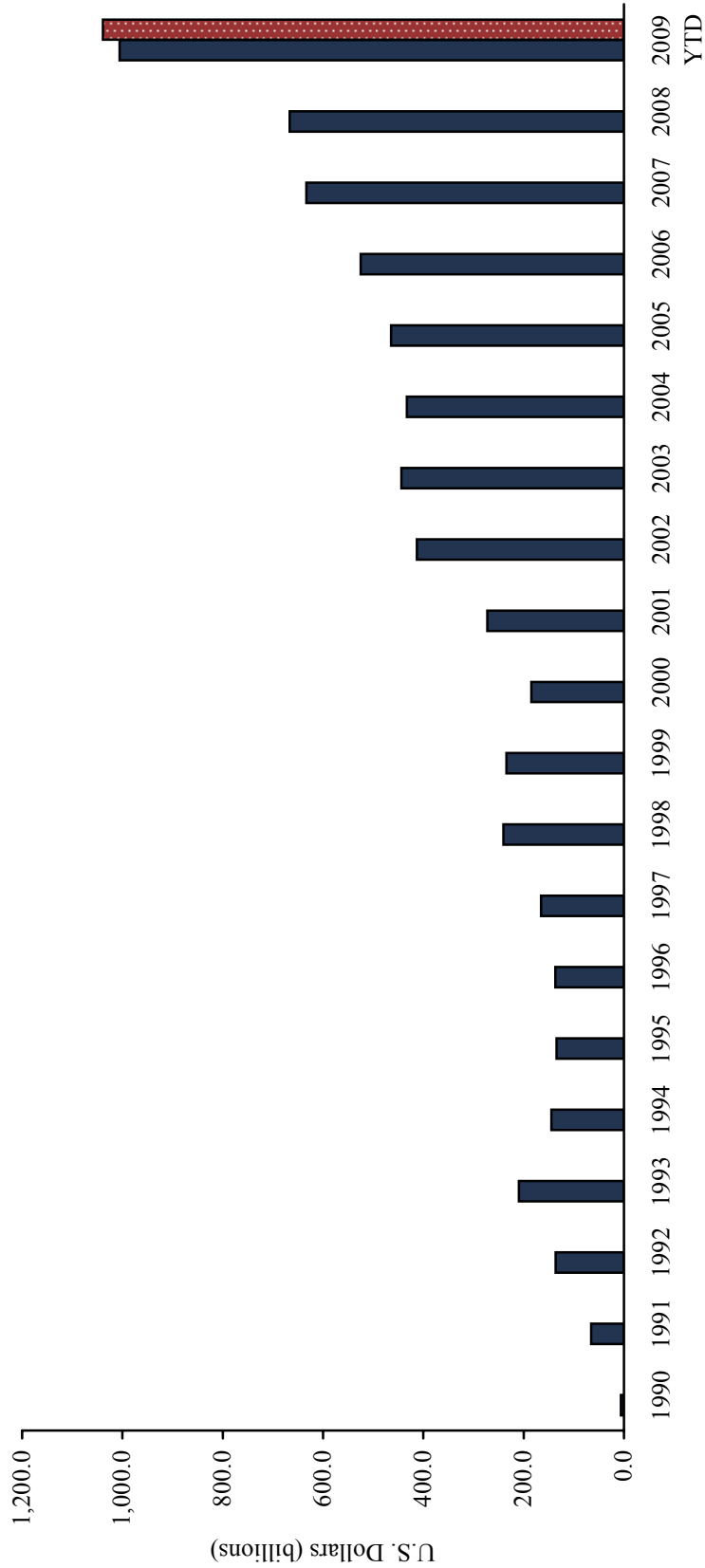


Sources: Barclays Capital, Cambridge Associates LLC Investment Manager Database, and Federal Reserve.

Notes: Largest bond managers represents the ten largest U.S. fixed income managers by total market value in the Cambridge Associates Investment Manager Database. Largest bond managers' market value is as of September 30, 2009.

Table C
CUMULATIVE NET CASH FLOWS OF U.S. BOND MUTUAL FUNDS AND
NET PURCHASES BY FEDERAL RESERVE OF TREASURY, AGENCY AND MBS SECURITIES

January 1, 1990 – November 30, 2009



■ Mutual Funds ■ Fed's Treasury/Agency/MBS Pool

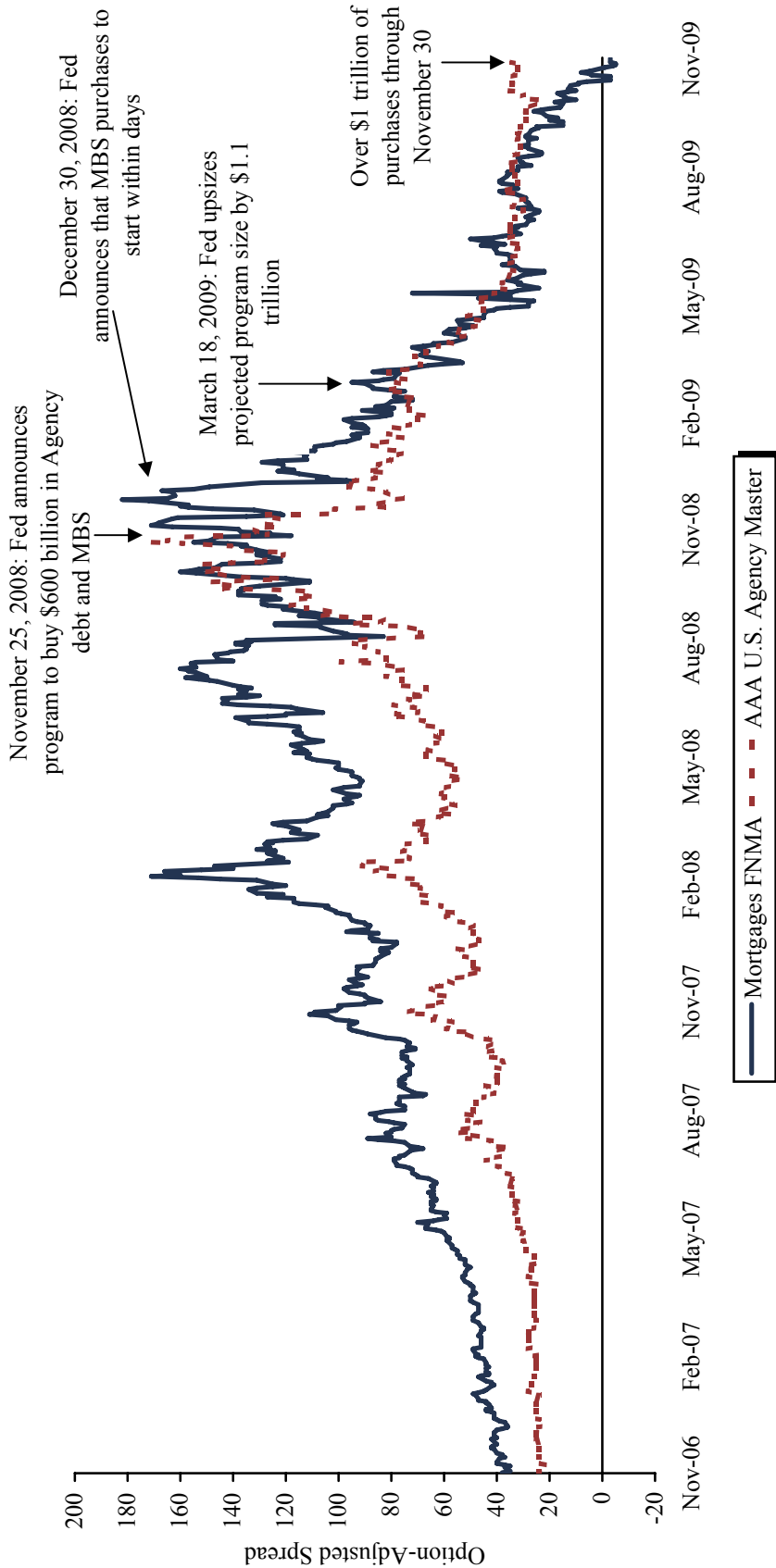
Sources: Investment Company Institute and SIFMA.

Note: October and November mutual fund cash flows are based on estimates by Investment Company Institute as of November 18, 2009.

Table D

OPTION-ADJUSTED SPREADS

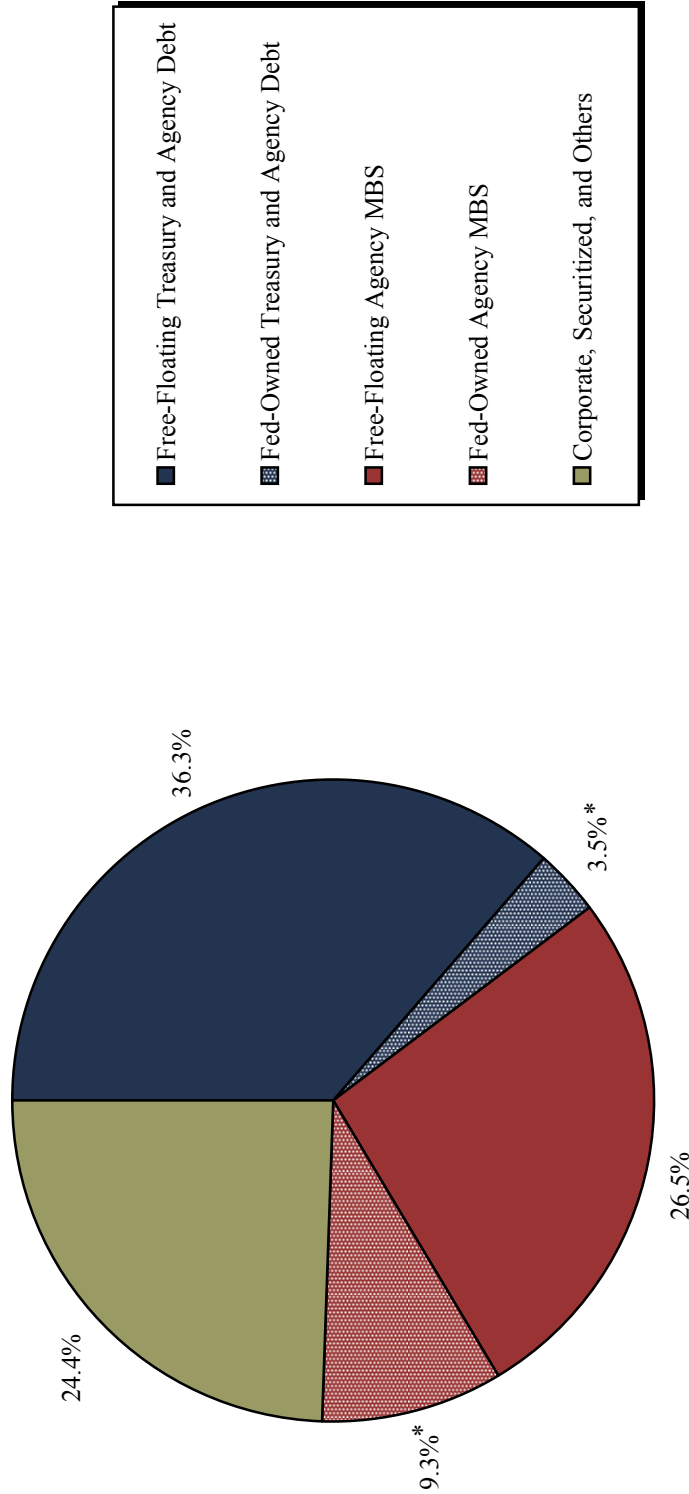
As of November 30, 2009



Source: BofA Merrill Lynch.

Table E
INDUSTRY BREAKDOWN OF BARCLAYS CAPITAL U.S. AGGREGATE BOND INDEX

Projected as of March 31, 2010



Sources: Barclays Capital and Federal Reserve.

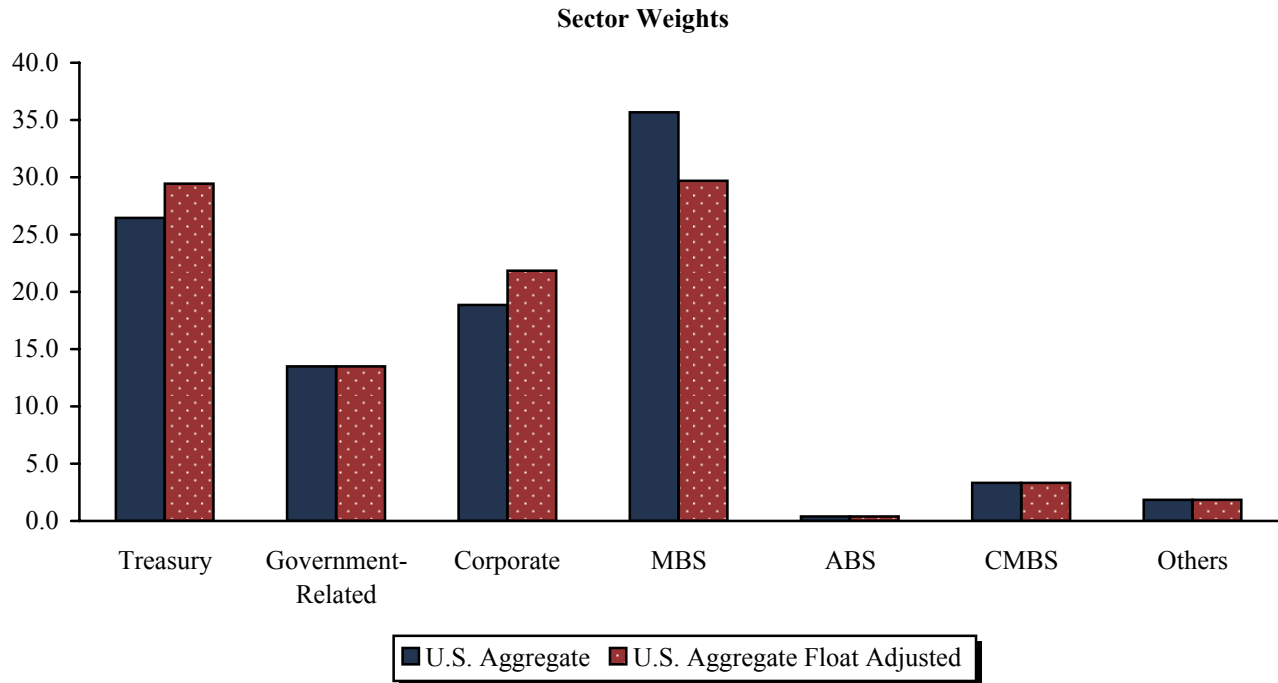
Note: Graph assumes no change in outstanding securities of any category from November 12, 2009, through March 31, 2010.

* Represents securities projected to be owned by the Federal Reserve by March 31, 2010.

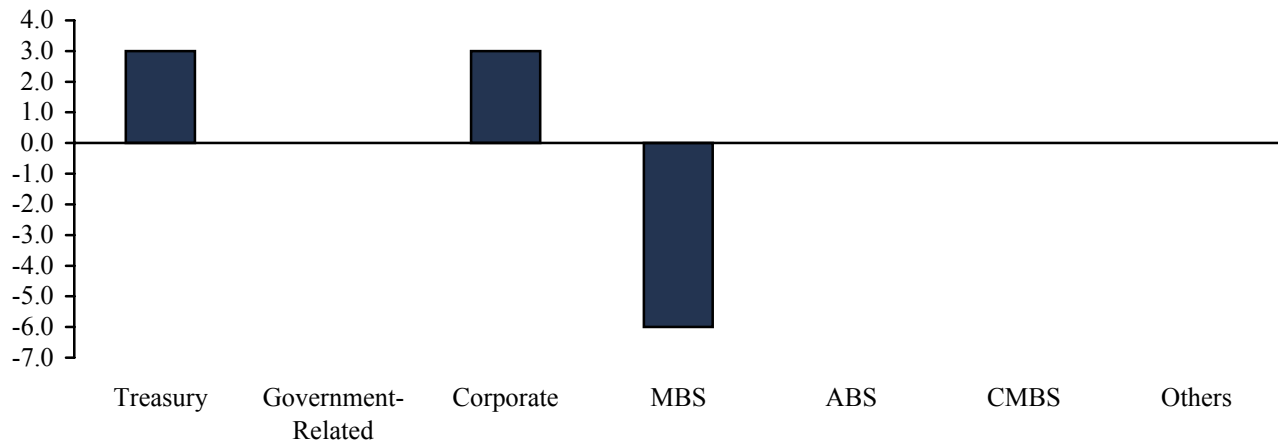
Table F

**ESTIMATED ALLOCATIONS OF
TRADITIONAL AND FLOAT-ADJUSTED AGGREGATE BOND INDICES**

As of March 31, 2010



Over/Underweighting of U.S. Aggregate Float Adjusted Index



Sources: Barclays Capital and Vanguard Group.

Note: Assumes November 2, 2009, sector allocations for the traditional Aggregate index and then applies Vanguard estimates of eventual over- and underweights within the Aggregate Float Adjusted index.