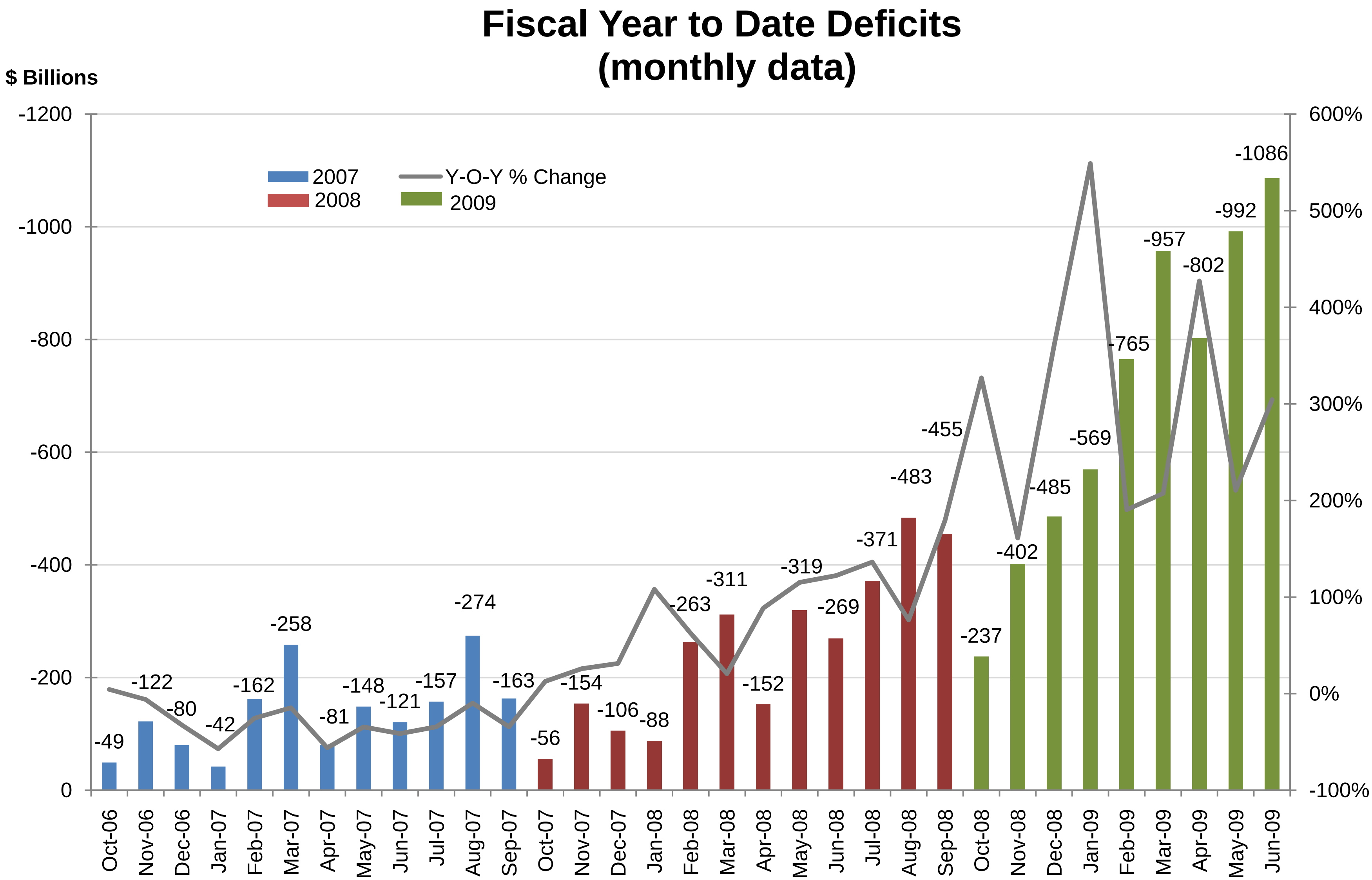
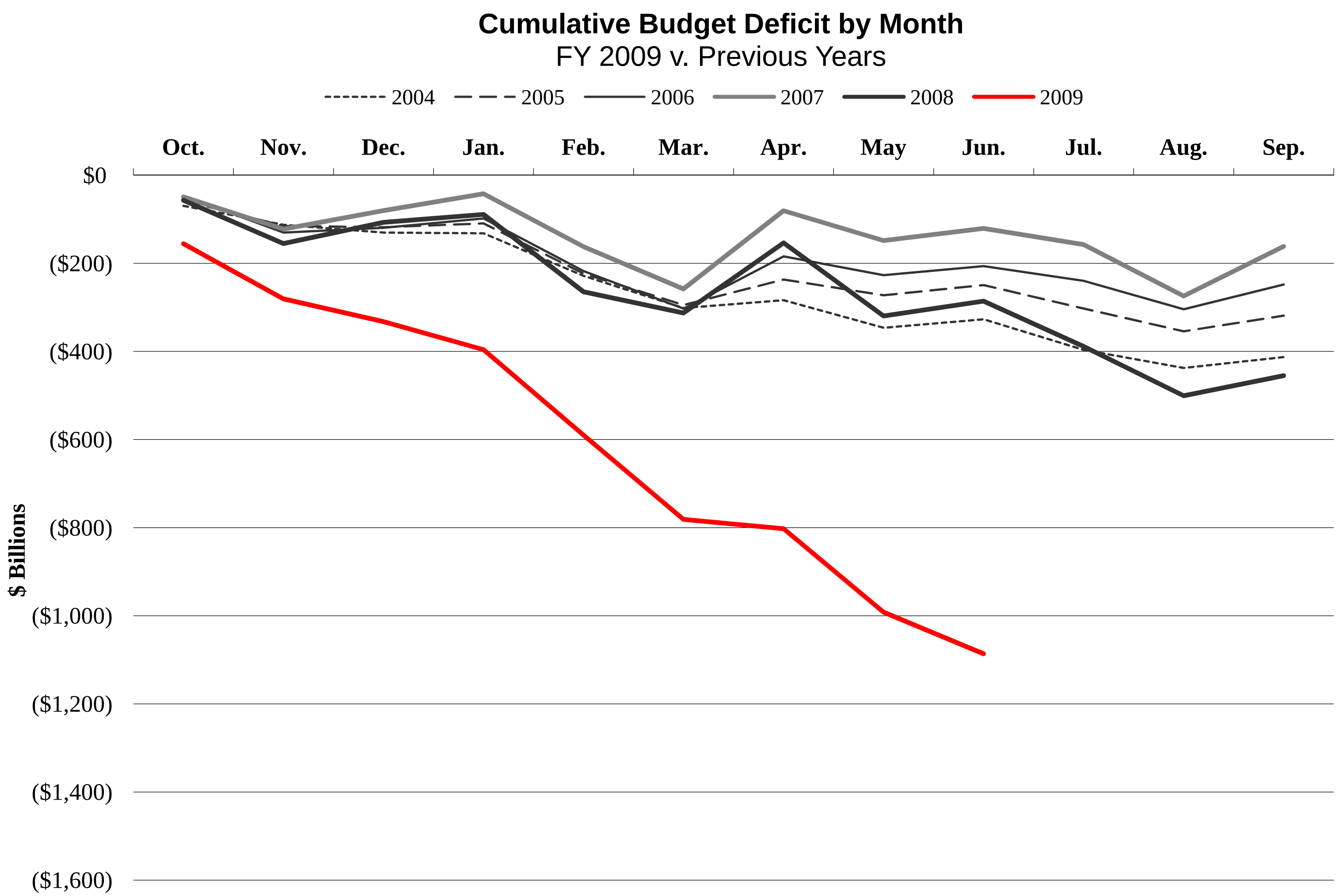
Presentation to the Treasury Borrowing Advisory Committee

U.S. Department of the Treasury
Office of Debt Management
August 4, 2009

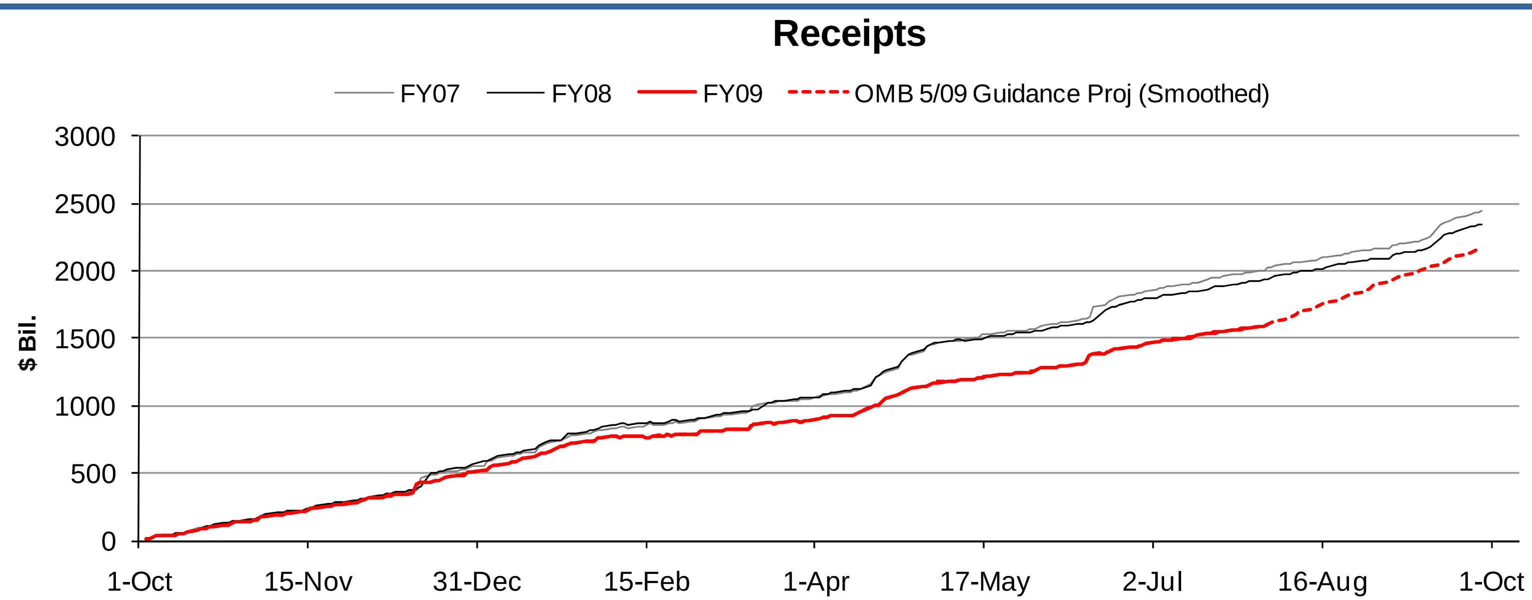
The fiscal deficit year to date reached nearly $1.1 trillion in June 2009

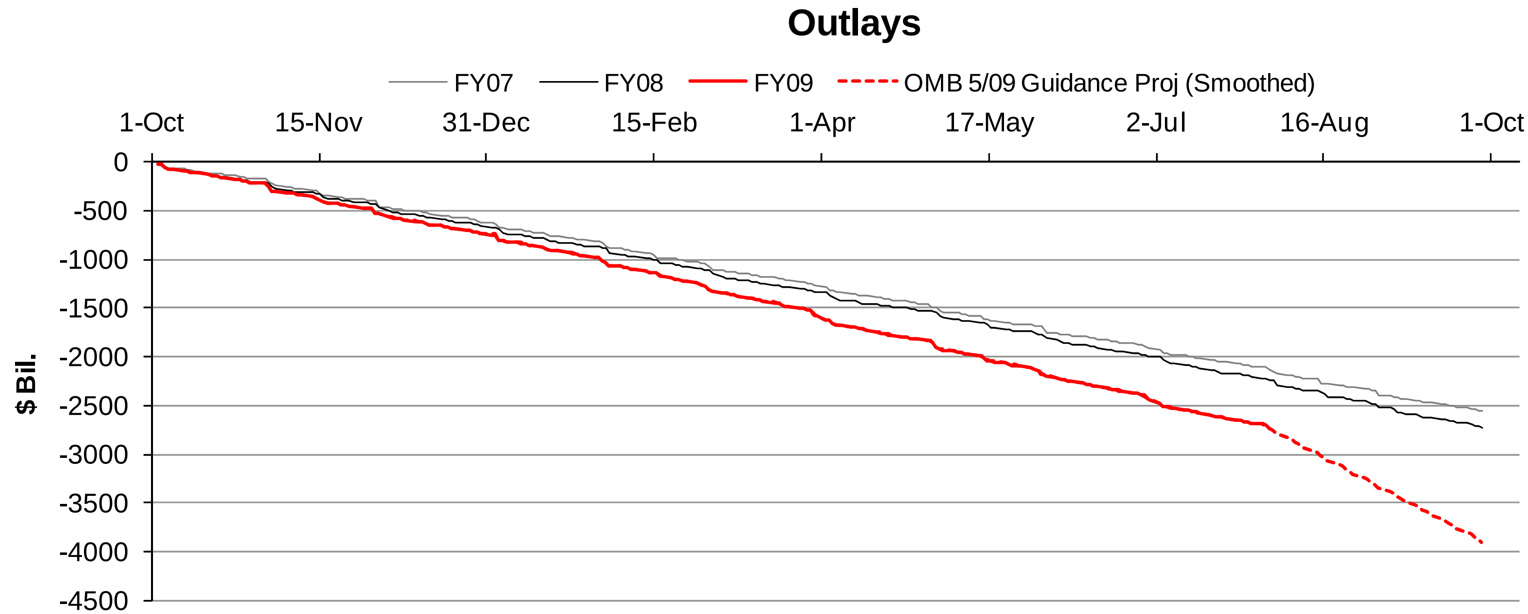


After briefly stabilizing during the tax season, the budget deficit continues to grow

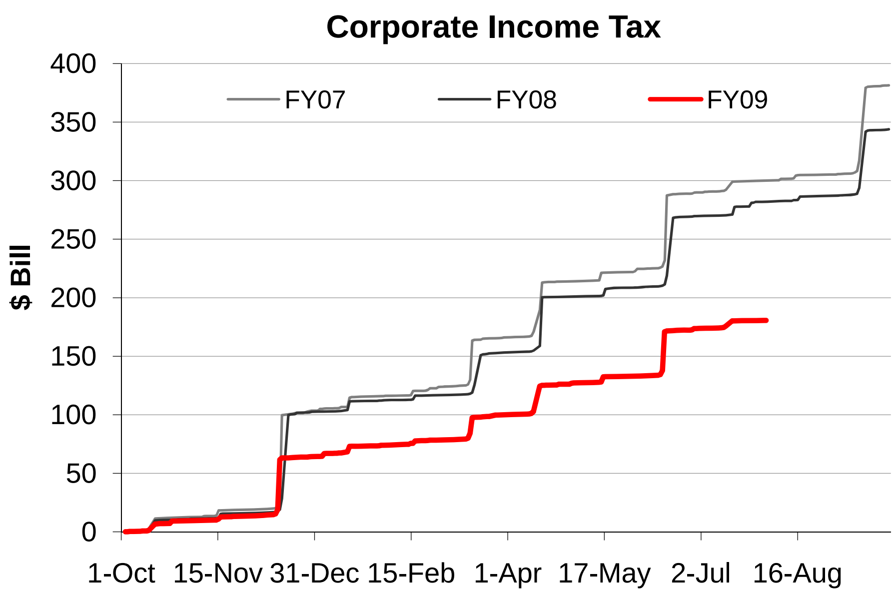


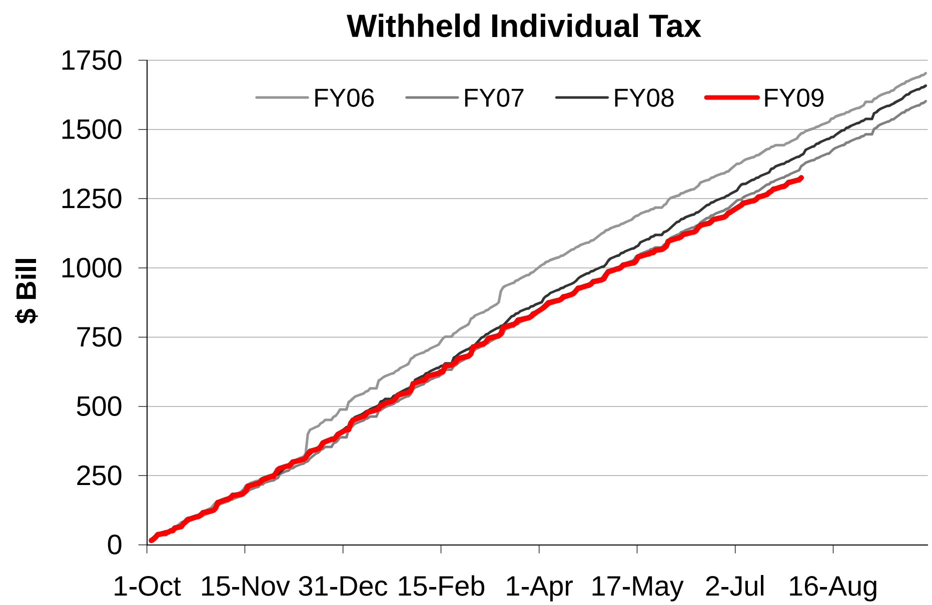
In the third quarter of FY2009, year-over-year growth in receipts was negative while outlay growth accelerated

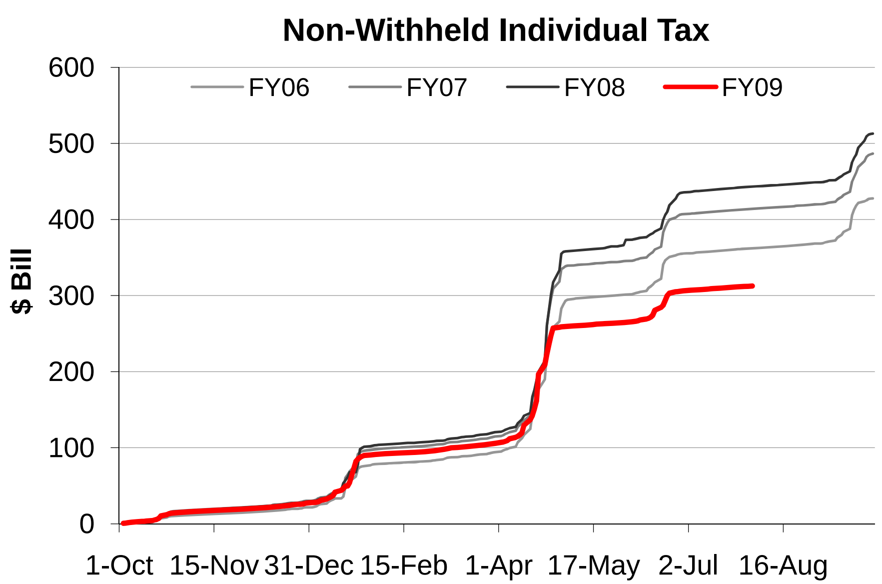


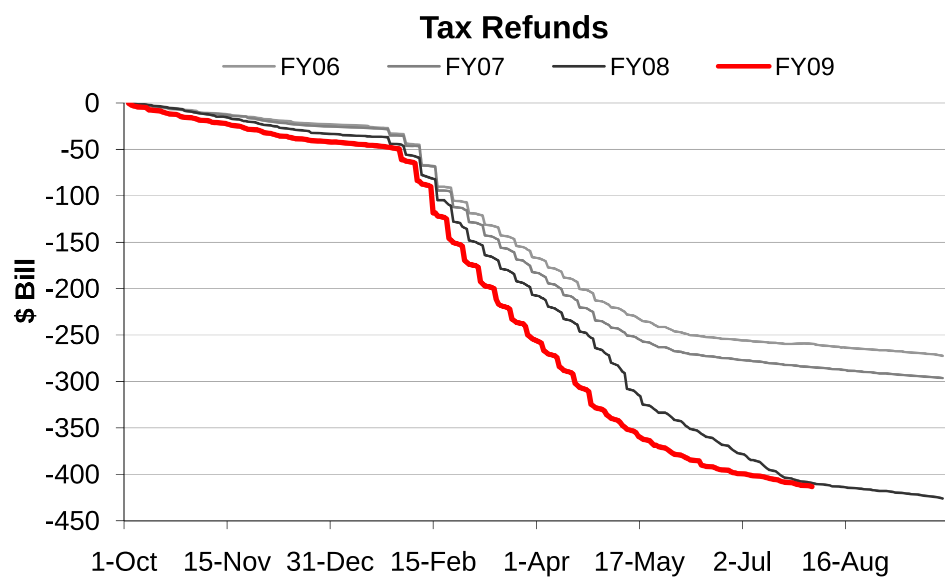


Non-Withheld and Corporate Income Taxes led receipt declines on a year-over-year basis

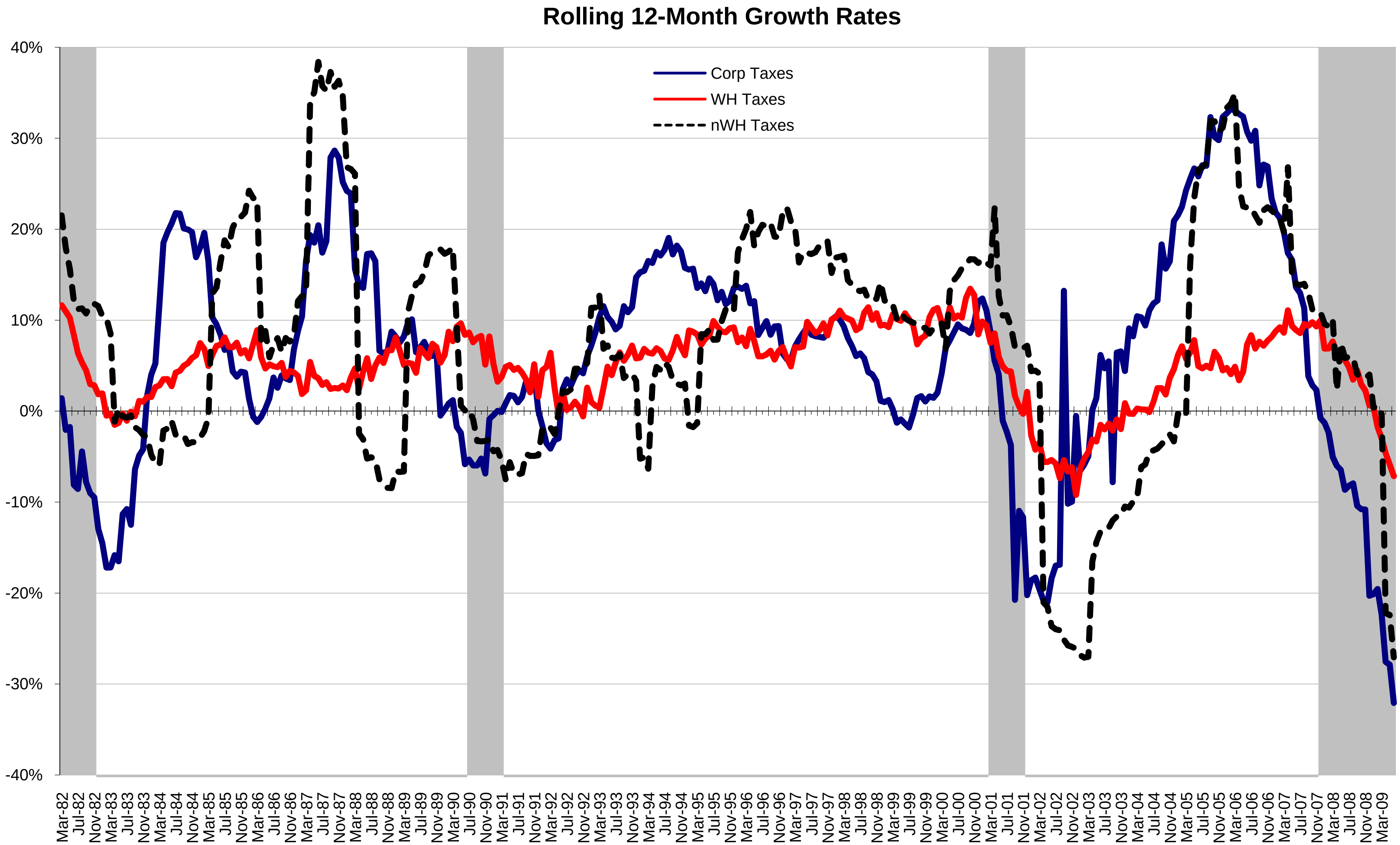




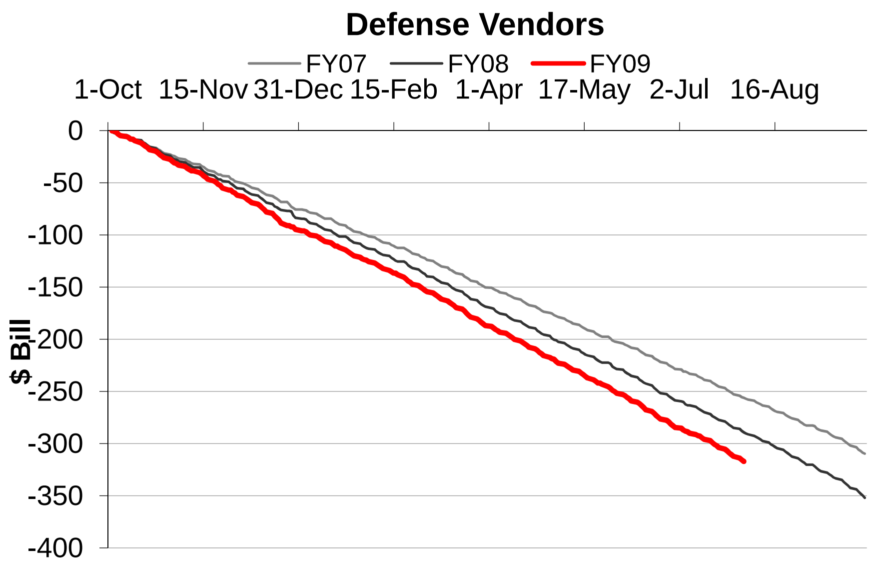


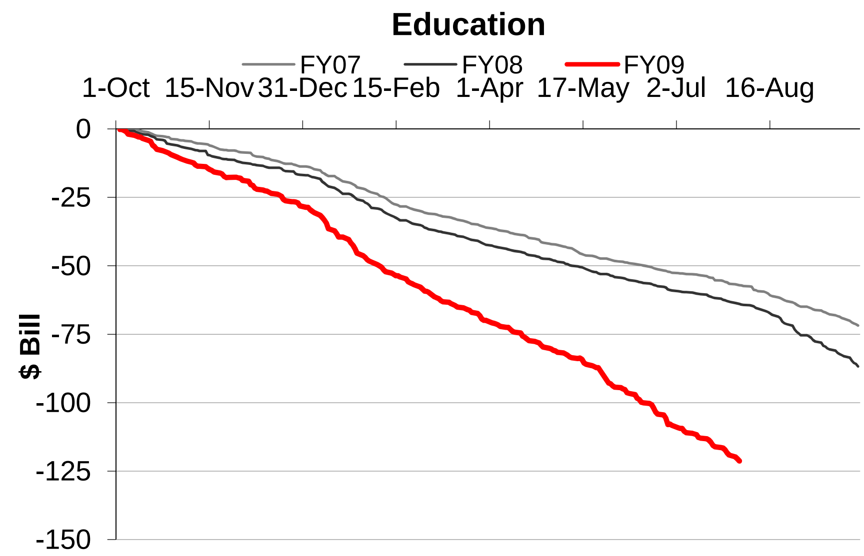


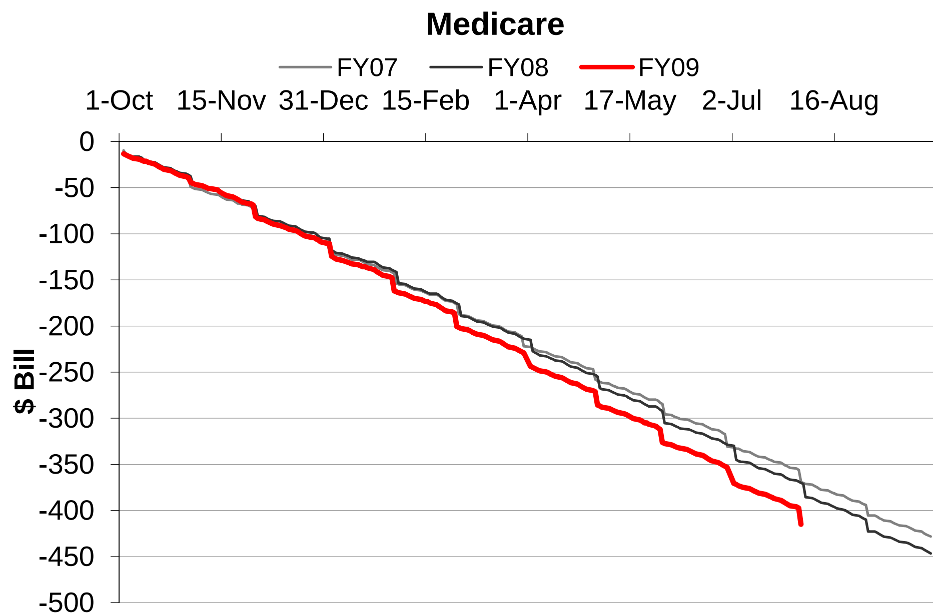
Tax receipts continued to decline in the last quarter with withheld receipts potentially lagging other categories

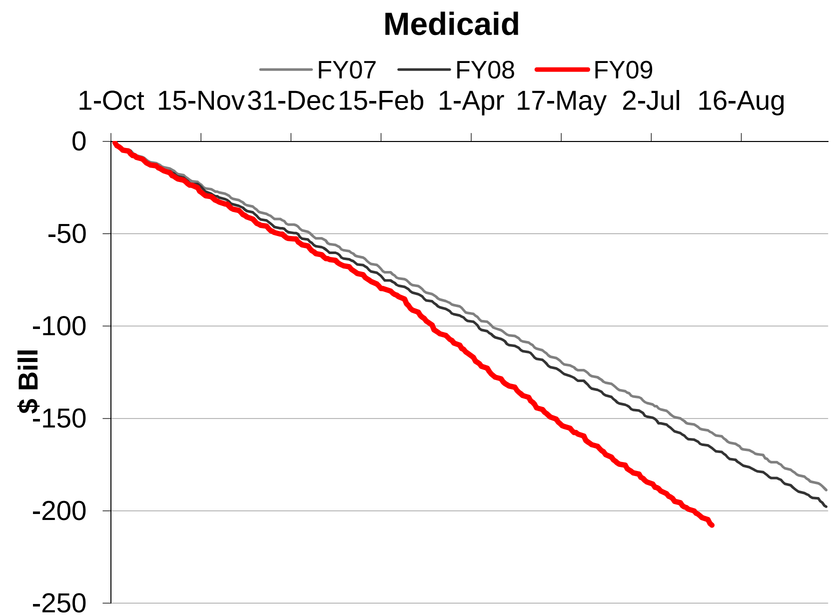


Education and Medicaid expenditures drove increases in outlays year-over-year







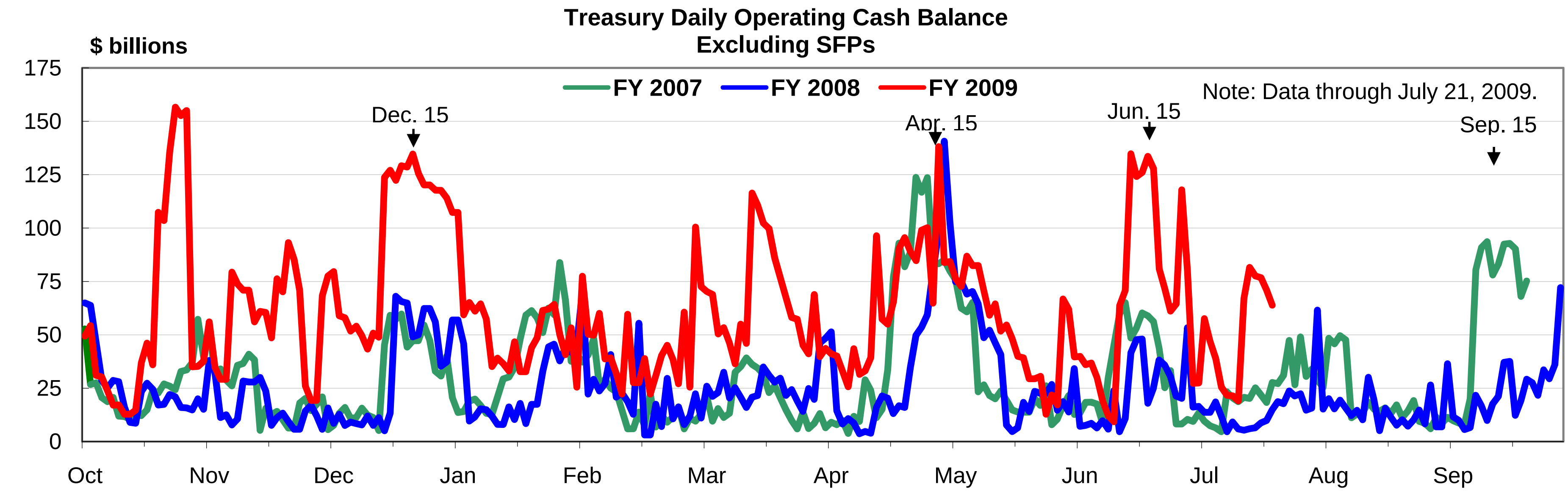


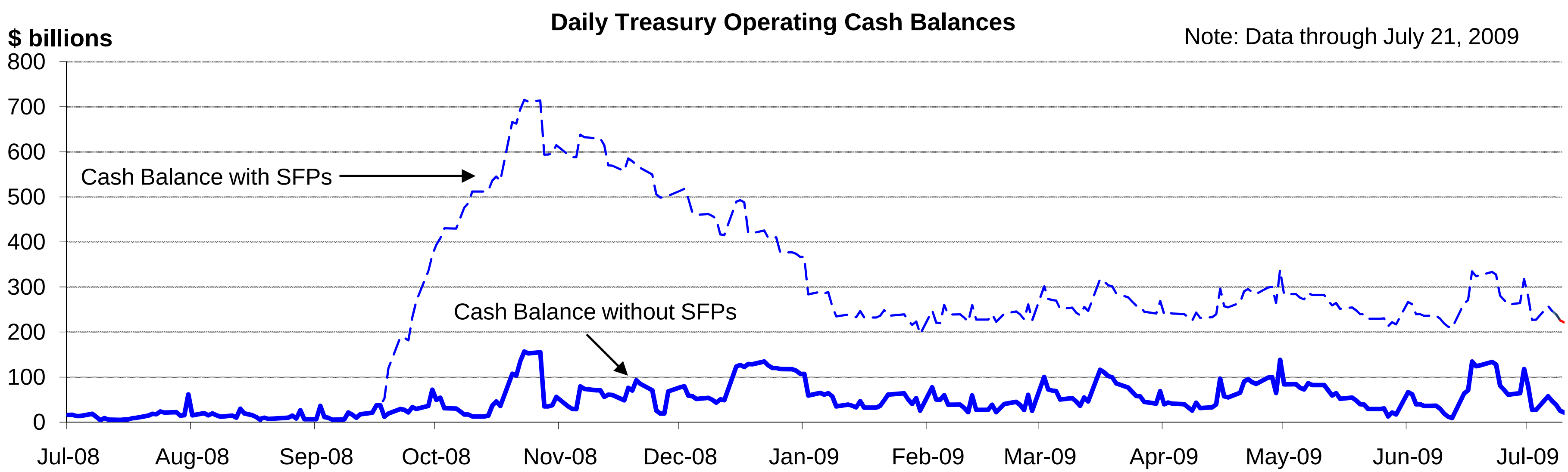
Net interest on debt has declined while other outlay categories have increased

Budget Totals Through June: Outlays
(Billions of Dollars)

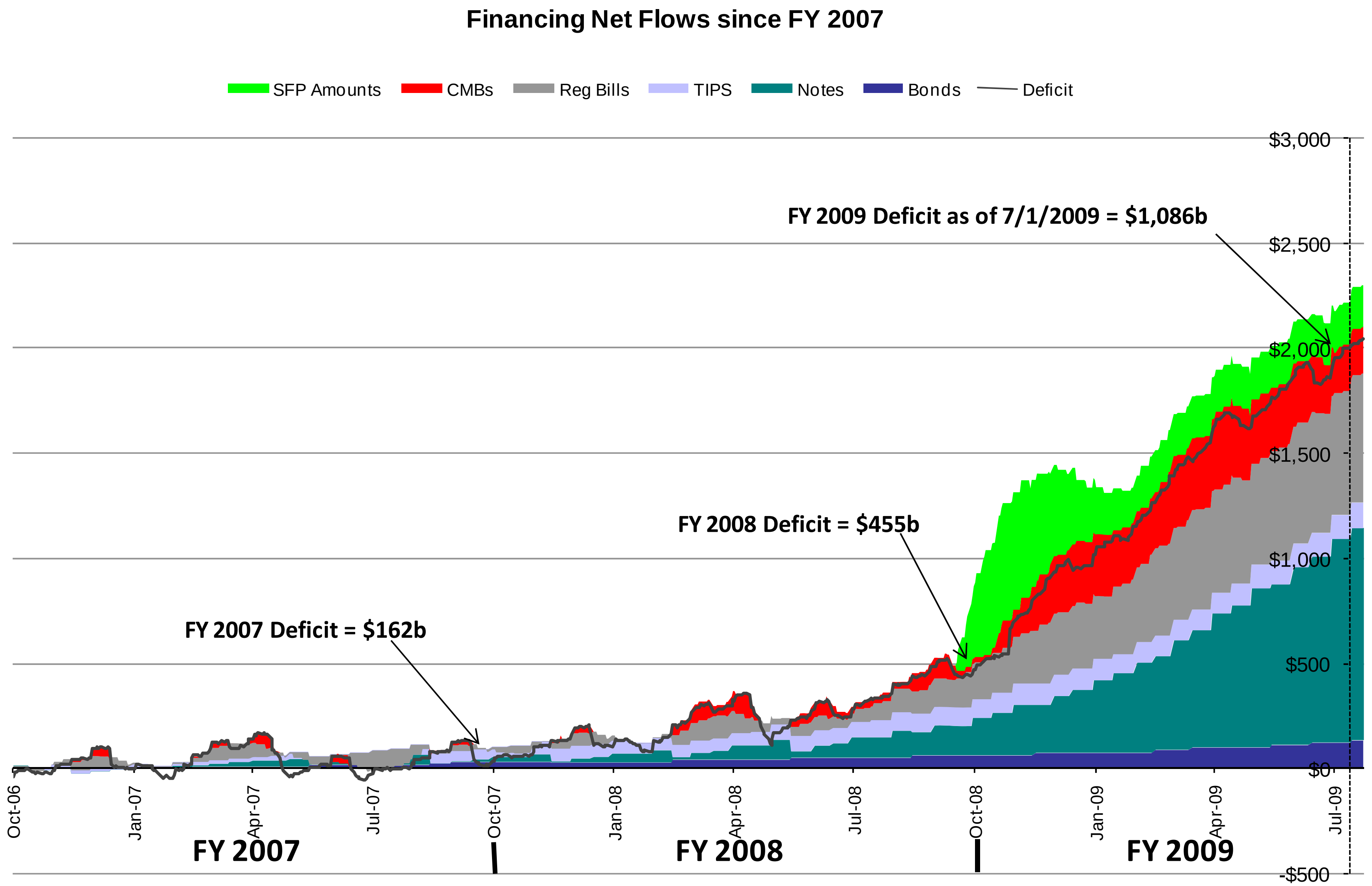
	FY 2007	FY 2008	FY 2009
Source			
Defense-Military	$397	$440	$473
Social Security Benefits	438	461	499
Medicare	339	337	369
Medicaid	144	151	186
Unemployment Benefits	28	32	80
Other	459	607	693
Subtotal	1,805	2,028	2,300
Net interest on Debt	261	191	143
TARP	0	0	147
Payments to GSEs	0	0	85
Total	**2,066**	**2,220**	**2,675**
(Pct of Whole Year)	76%	75%	

Cash balances remain elevated as a result of SFP rollovers

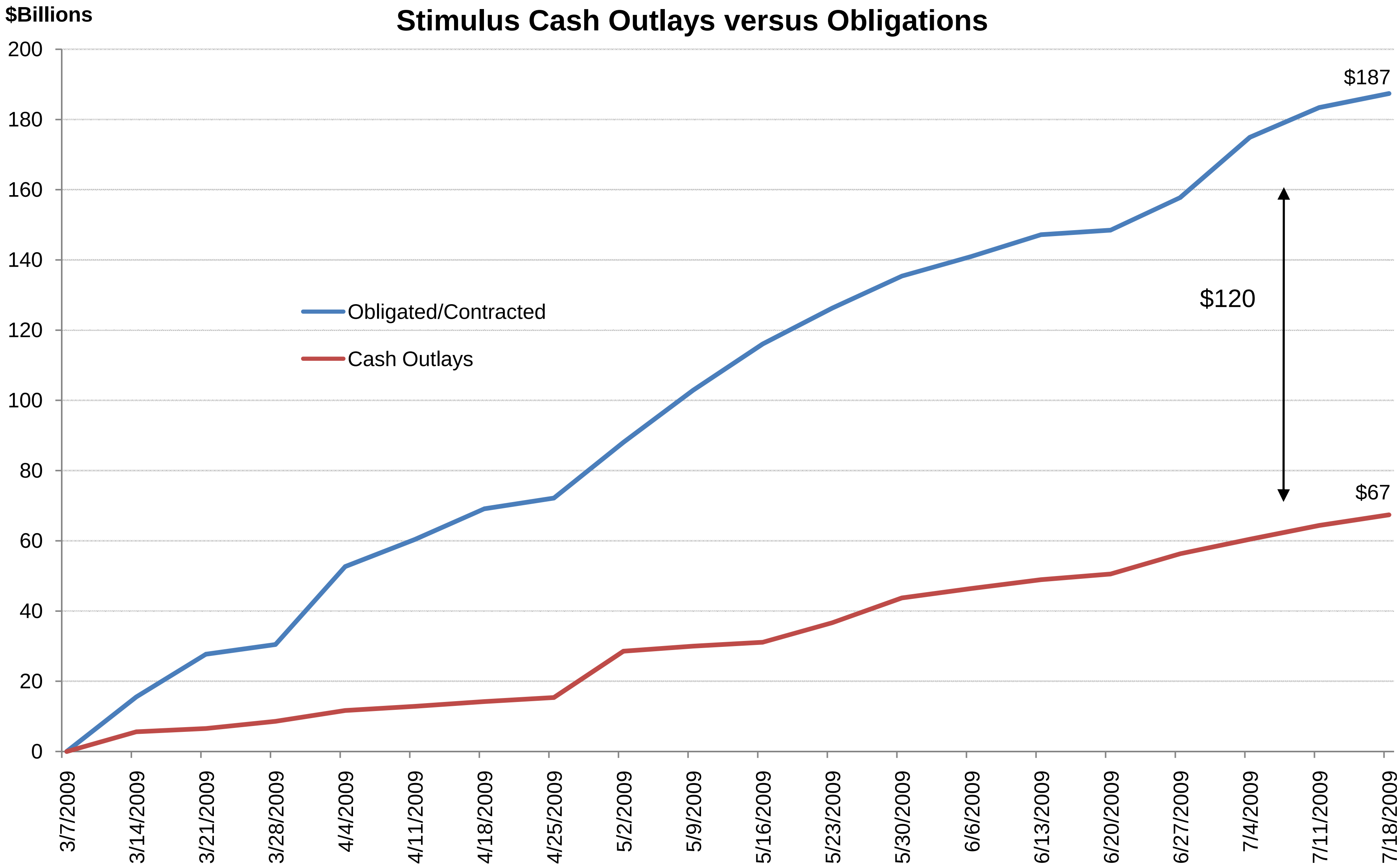




Treasury has responded to these financing needs in a regular and predictable manner

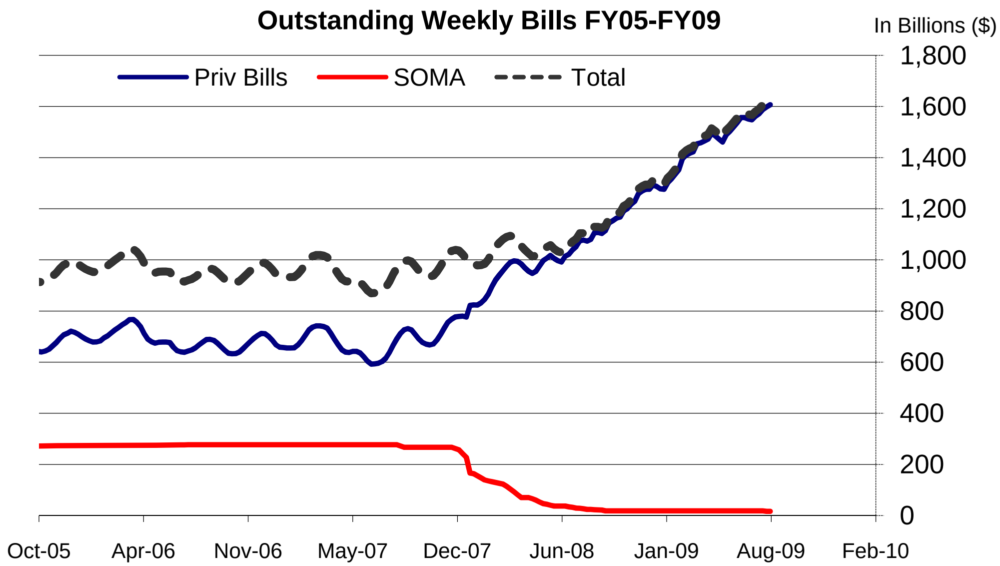


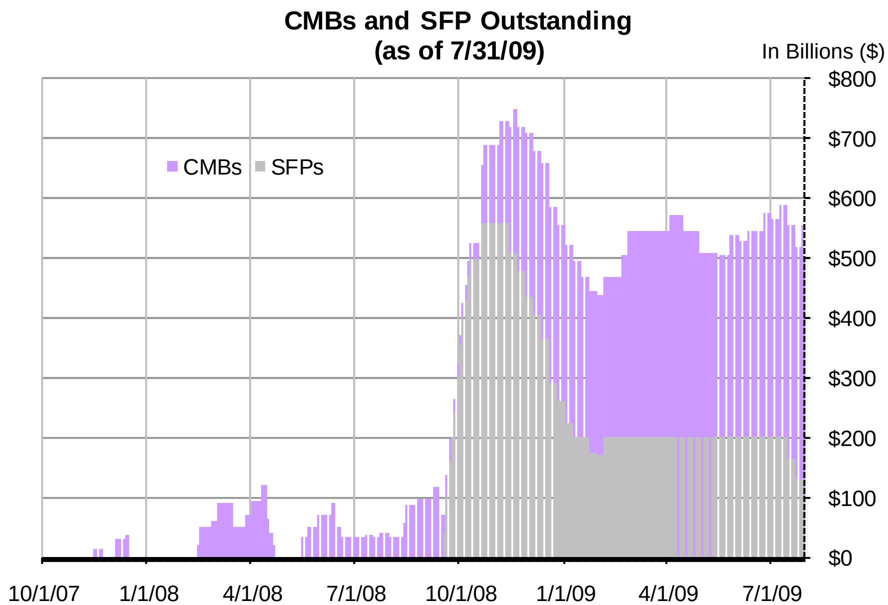
The lag between obligations and cash outlays by the Recovery Act will increase marketable borrowing in late FY2009 and early FY2010

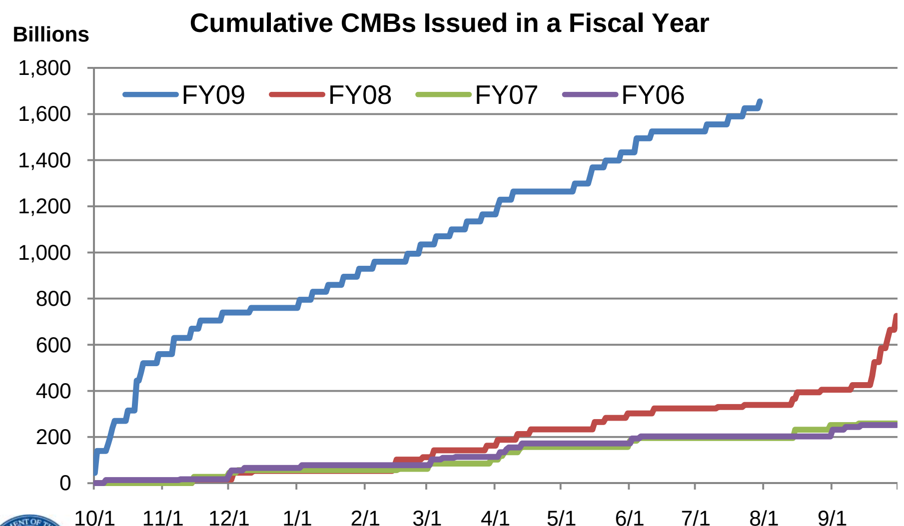


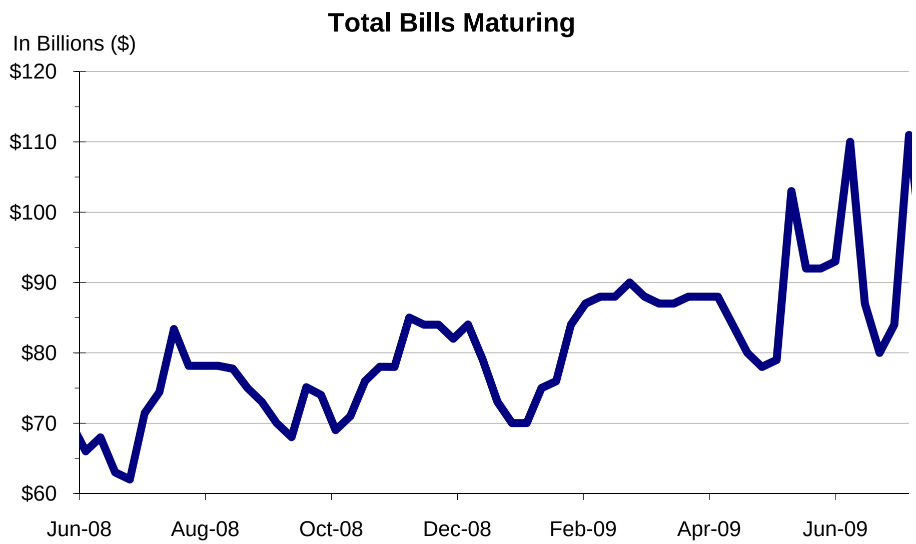
Source: www.Recovery.gov

Bill issuance levels remain elevated; SFP rollovers continue



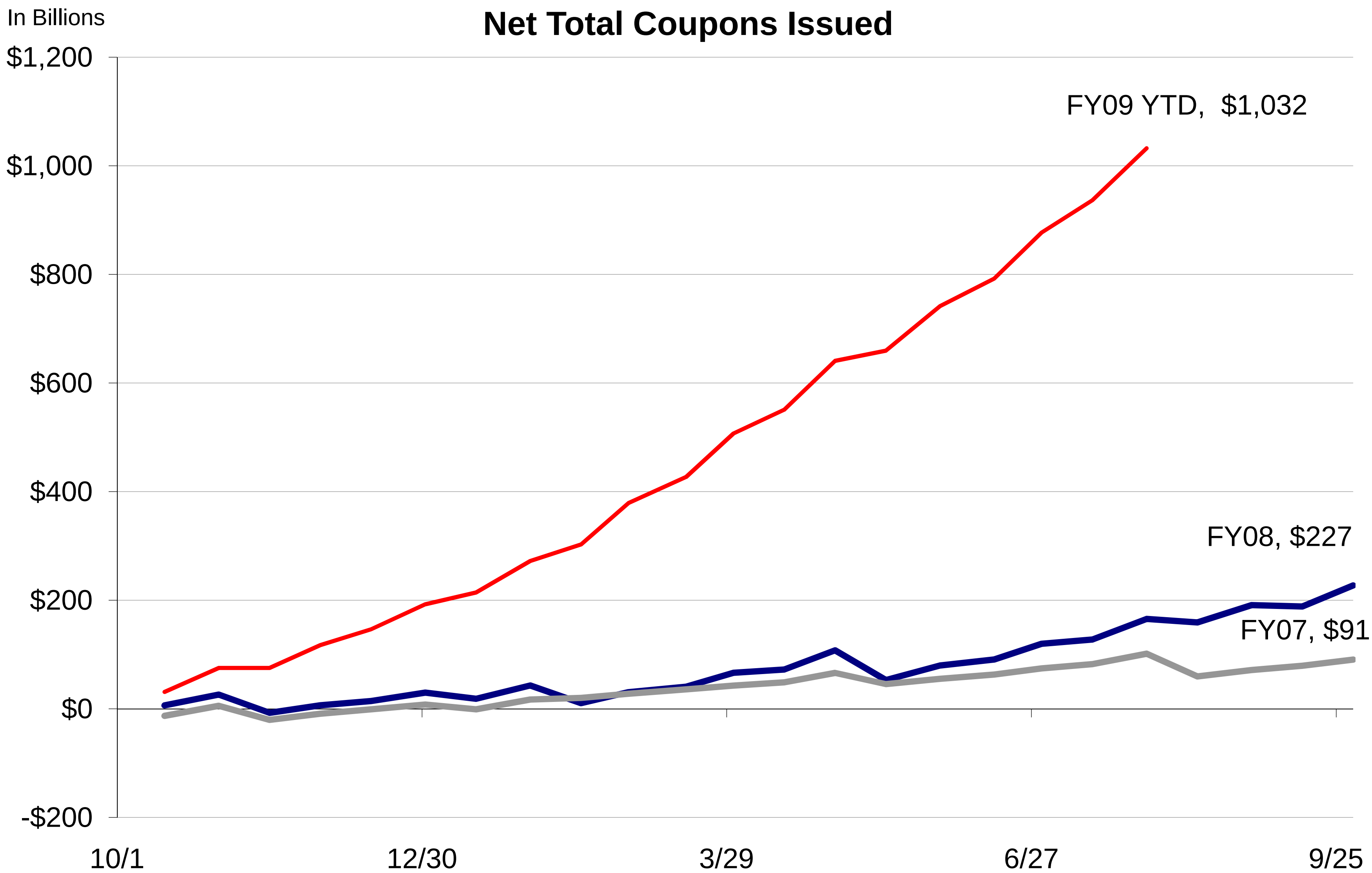






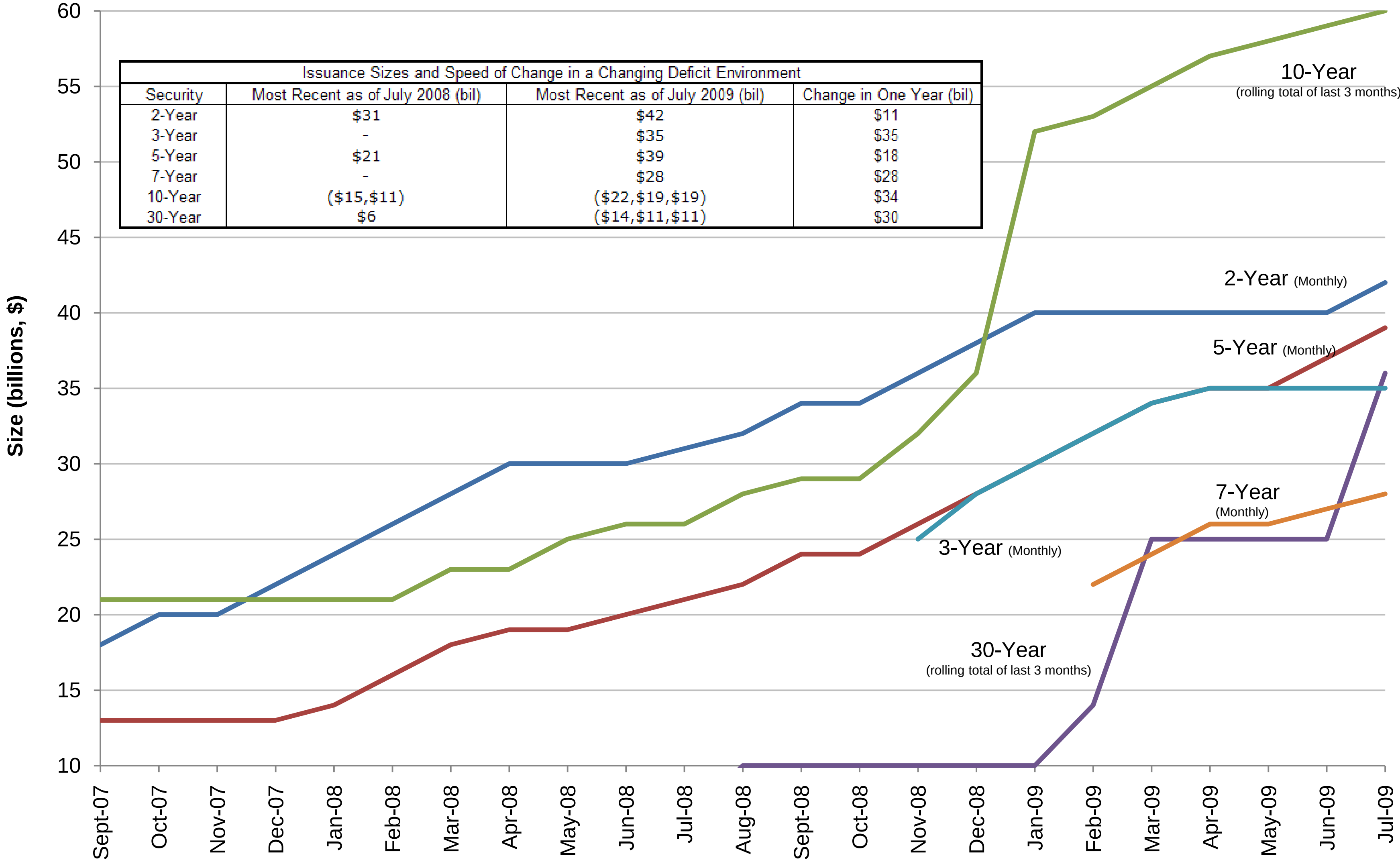
Office of Debt Management

To extend the average maturity, nominal coupon issuance has been higher than in previous years



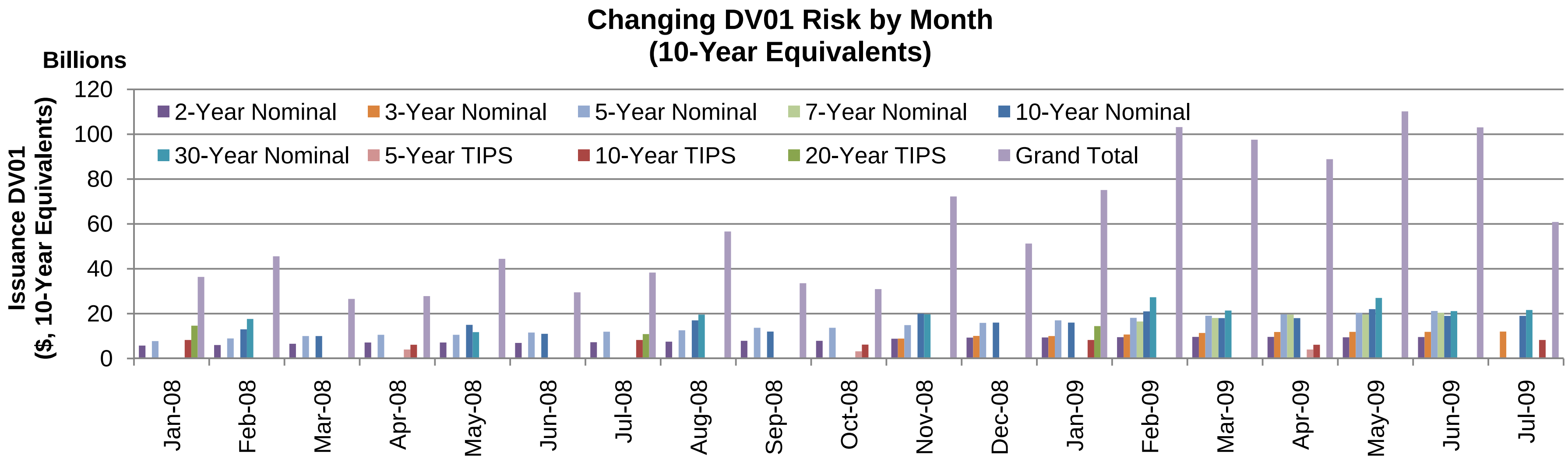
Existing coupon securities continue to increase to larger, more liquid benchmark sizes in a gradual, predictable manner

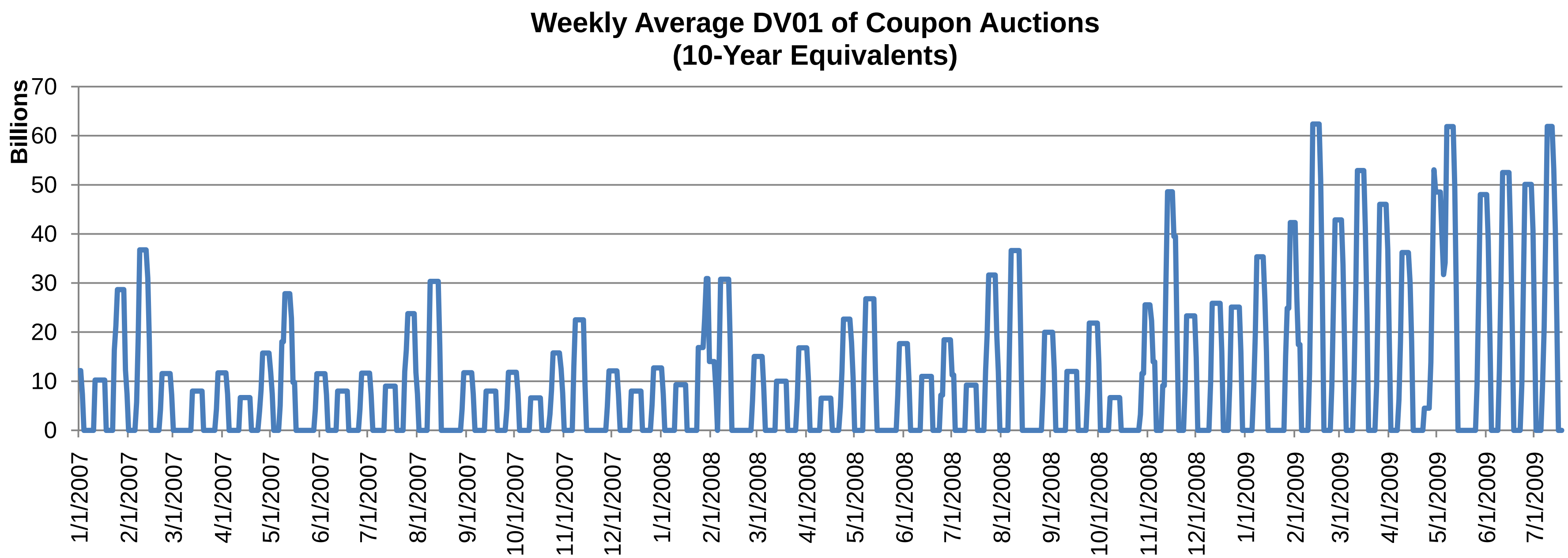
Coupon Issuance in 2007-2009



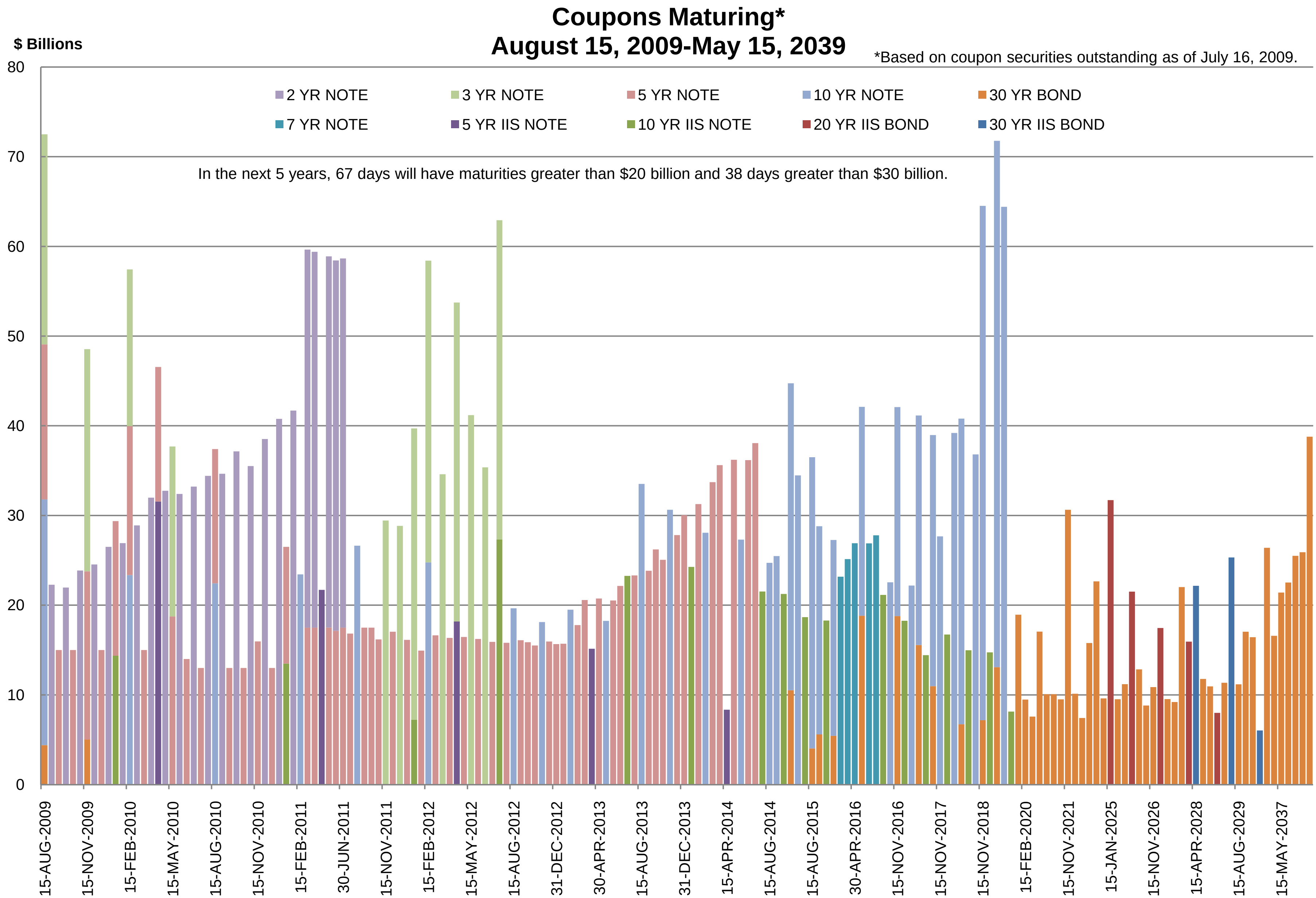
Issuance Sizes and Speed of Change in a Changing Deficit Environment			
Security	Most Recent as of July 2008 (bil)	Most Recent as of July 2009 (bil)	Change in One Year (bil)
2-Year	$31	$42	$11
3-Year	-	$35	$35
5-Year	$21	$39	$18
7-Year	-	$28	$28
10-Year	($15,$11)	($22,$19,$19)	$34
30-Year	$6	($14,$11,$11)	$30

DV01 has increased gradually as auction sizes increase

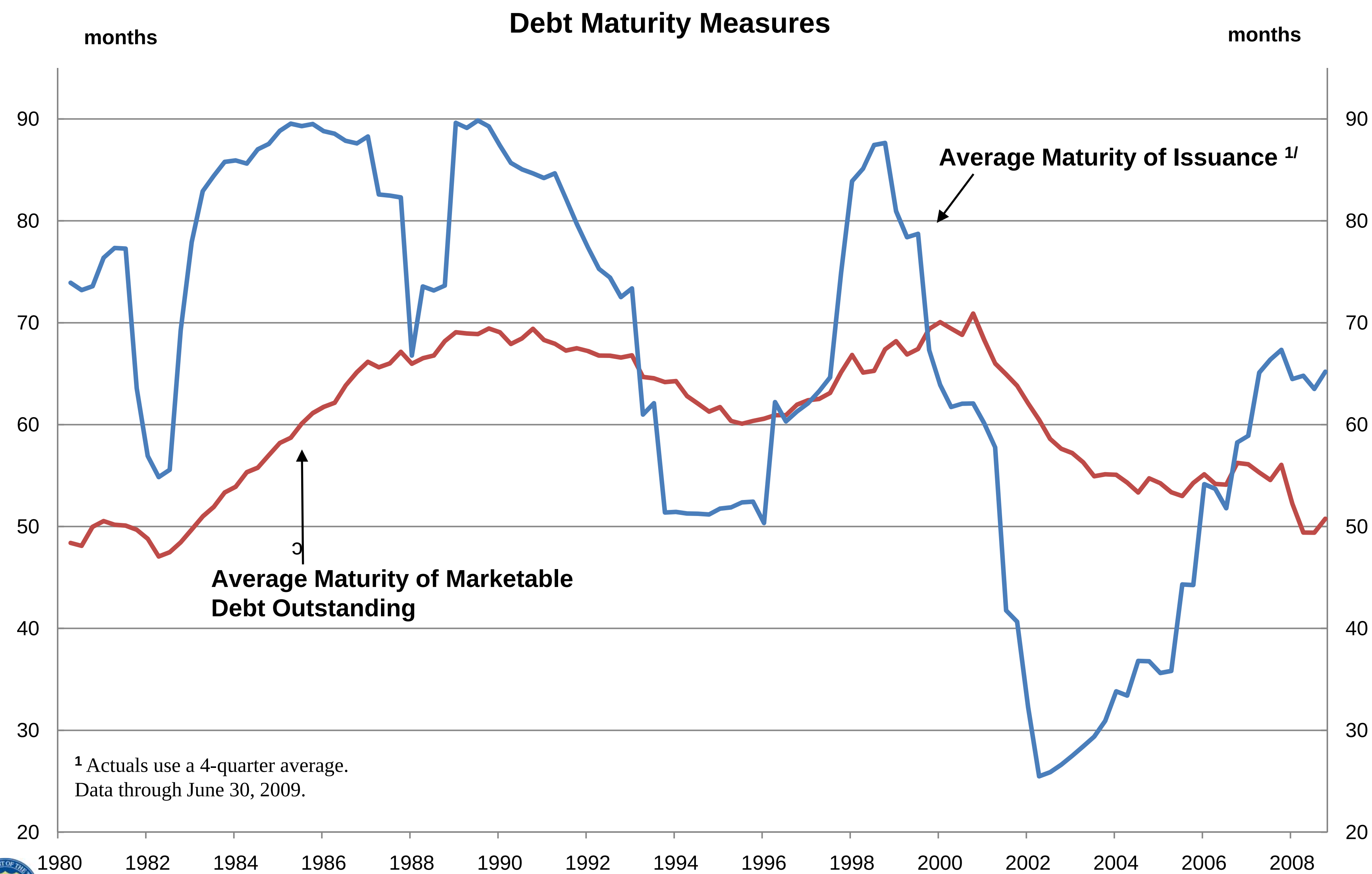




Maturing 2-year, 3-year and 5-year notes will lead to increased near- and medium-term financing needs

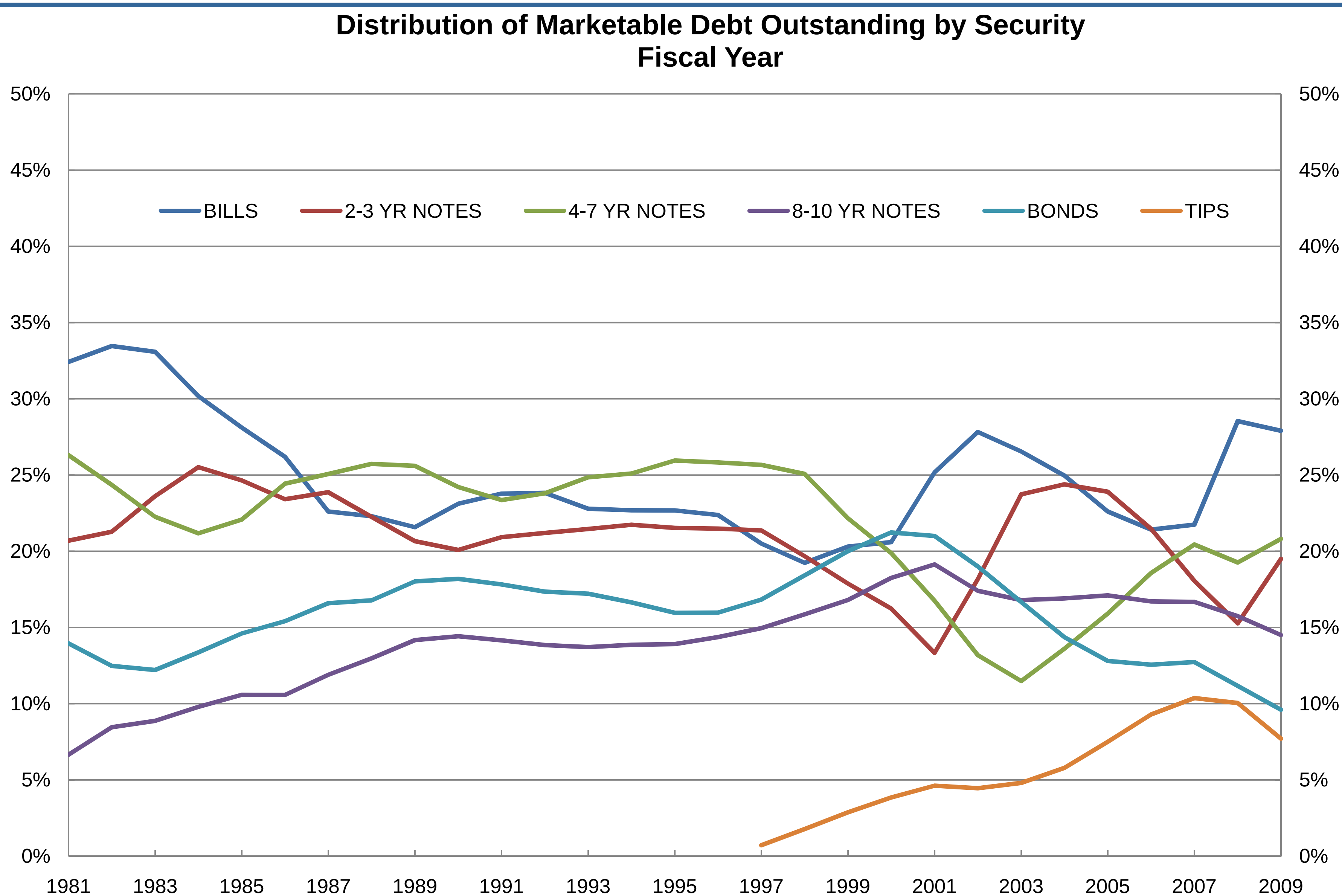


The average maturity of the marketable debt outstanding increased in the third quarter of FY 2009 as short-term issuance stabilized



[1] Actuals use a 4-quarter average.
Data through June 30, 2009.

The share of medium term notes outstanding has increased at the expense of other maturities



Primary dealer estimates for the FY 2009 deficit shrunk by $100 billion from the estimate provided during the May 2009 refunding

FY 09 Deficit Estimates

$ billions

	Primary Dealers*	CBO	OMB
Current:	1644	1825	1841
Range based on average absolute forecast error**	1605-1683	1772-1878	1768-1914
Estimates as of:	July 09	June 09	May 09

FY 2009 Marketable Borrowing Range***	1500-2050		
FY 2010 Marketable Borrowing Range***	1000-1600		

* Primary Dealers reflect average estimate. Based on Primary Dealer feedback on July 30, 2009.

** Ranges based on errors from 2004-2008.

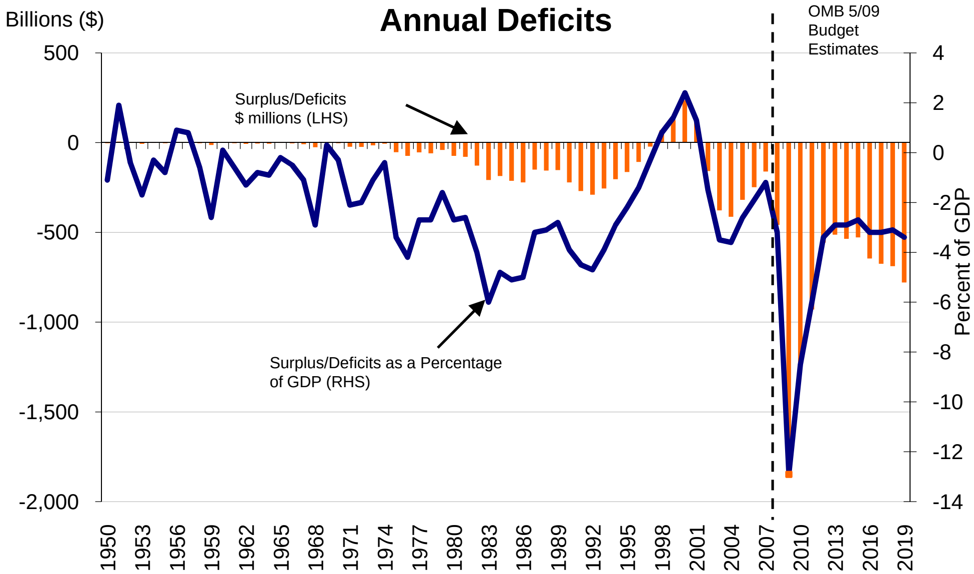
*** Based on Primary Dealer feedback on July 30, 2009.

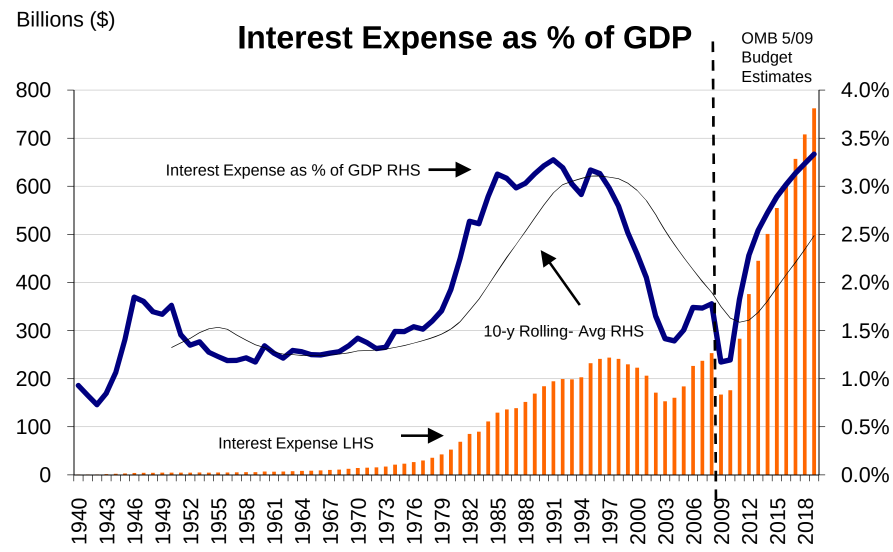
The current auction calendar has addressed recent changes in borrowing needs

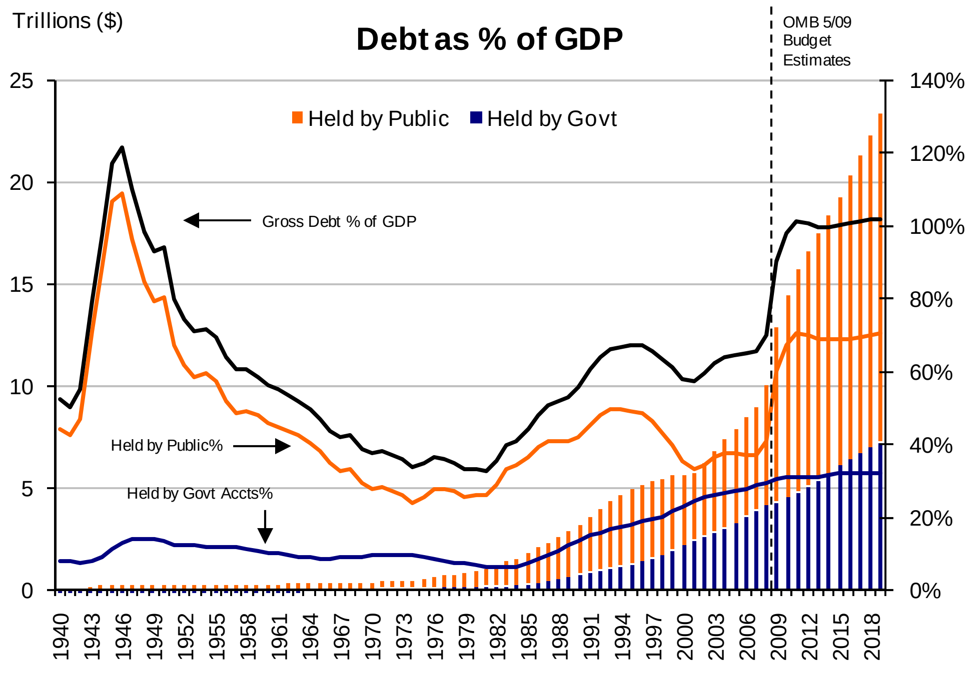
Announced through 8/3/09

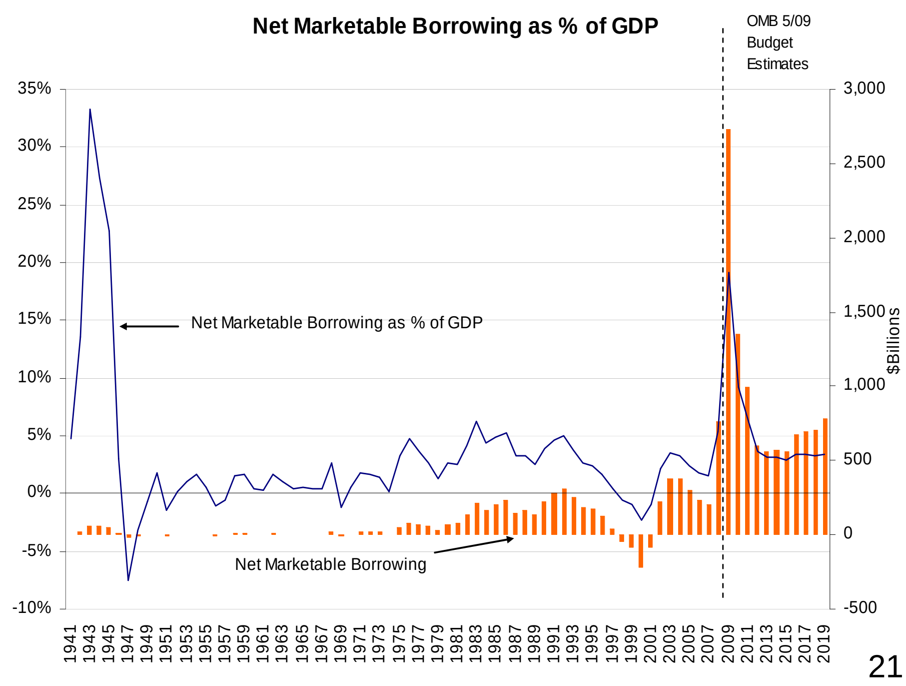
Security	Recent Size, $ Billions
4-week, 13-week, and 26-week bills	31, 31, 31
52-week bills	27
2-year note	42 per month
3-year note	35 per month
5-year note	39 per month
7-year note	28 per month
10-year note	60 (22, initial; 19, 1st reopening; 19, 2nd reopening)
30-year bond	36 (14, initial; 11, 1st reopening; 11, 2nd reopening)
5-year TIPS	14 (8 initial + 6 reopening)
10-year TIPS	14 (8 initial + 6 reopening)
20-year TIPS	14 (8 initial + 6 reopening)

Based on the OMB budget released in May 2009, borrowing needs will remain elevated









What adjustments to debt issuance, if any, should Treasury make in consideration of its financing needs in the short, medium, and long term?

TBAC Presentation to Treasury

August 4, 2009

TBAC Presentation to Treasury: TIPS

August 4, 2009

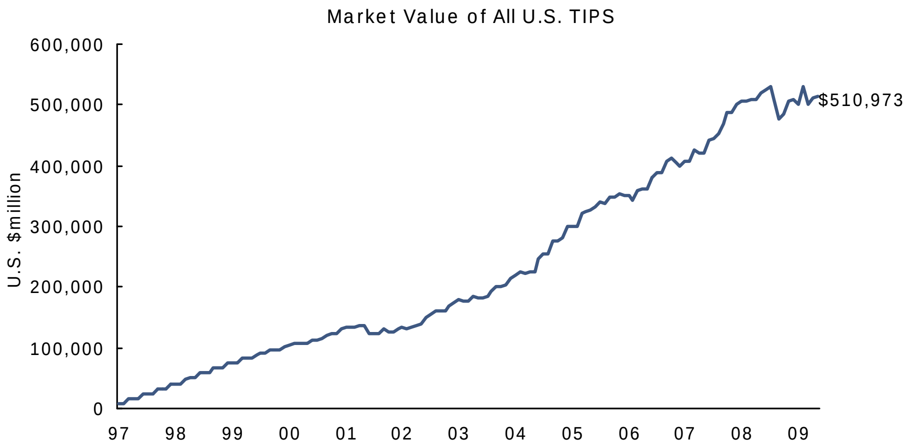
Outline

- History and Milestones
- Investor Base
- Value as Forecasting Tool
- Cost / Benefit
- Recommendations / Conclusions

TIPS Program Goals

- **TIPS program started in 1997**
- **Goals:**
  - To foster diverse investor base
  - To generate inflation credibility
  - To provide monetary authorities a real time market based measure of inflation expectations.

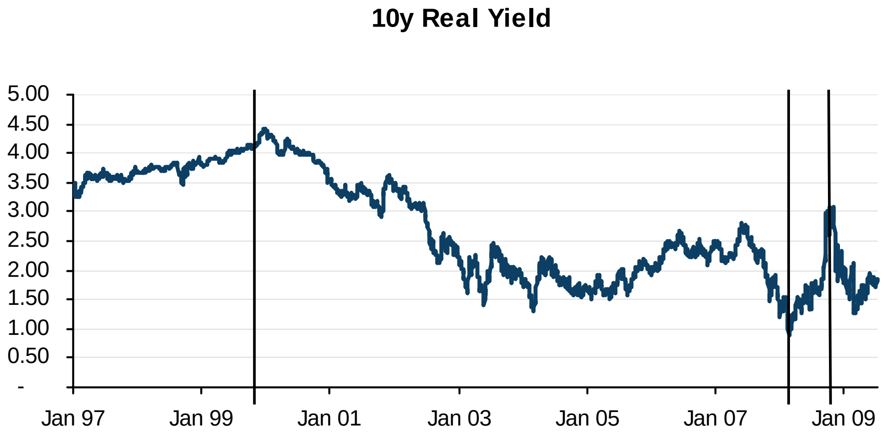
Goals largely met despite well known liquidity issues.

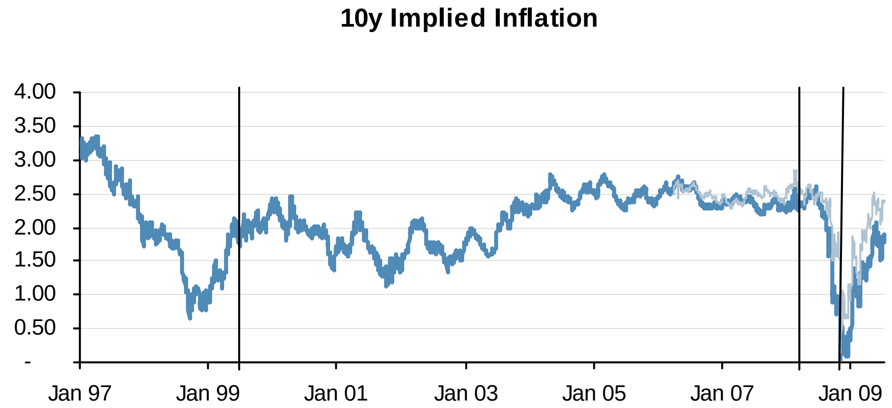


TIPS Milestones

TIPS Program Historical Milestones	
05/16/96	Treasury Secretary Rubin announces the intention to issue Treasury inflation-indexed securities
09/25/96	President Clinton and Treasury Secretary Rubin announced the terms and conditions of the first Treasury inflation-indexed security
01/29/97	First 10y TIPS auction
04/09/97	First 5y TIPS auction
04/08/98	First 30y TIPS auction
06/30/98	Final rules on fungible inflation-indexed STRIPS were published
09/01/98	Treasury begins selling series-I savings bonds
09/29/98	Treasury announces regular quarterly schedule for TIPS and discontinues 5y TIPS
10/31/01	Treasury eliminates 30y TIPS because of lower borrowing needs
07/15/02	First 5y TIPS matures
11/30/02	TIPS are stripped for the first time
04/30/03	Treasury expands 10y TIPS auctions to 4 per year with two new issues per year
02/08/04	CPI futures begin trading at CME
05/05/04	Treasury announces the introduction of 20y TIPS and reintroduction of 5y TIPS
07/27/04	First 20y TIPS auction
10/26/04	First reintroduced 5y TIPS auction
01/15/07	First 10y TIPS matures
01/22/08	TIPS index market value hits $500bn

TIPS Trading Regimes

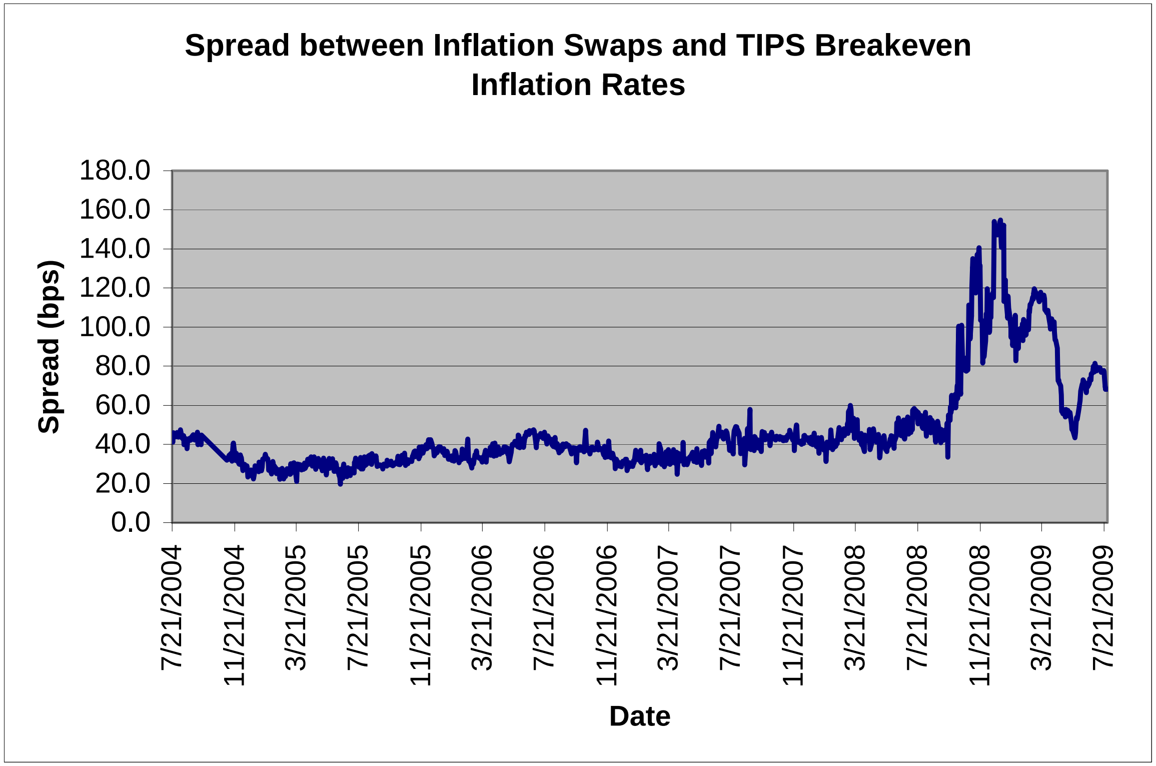




- 4 periods
- 1997 – 2000, new and novel asset class, not well understood.
- 2001 – 2008 (H1) increasing investor acceptance, hedge funds active.
- 2008 (H2) market breakdown due to forced de-levering as well as disorderly unwind of funding trades
- 2009 – hedge funds out, new more diverse investor base (more later)

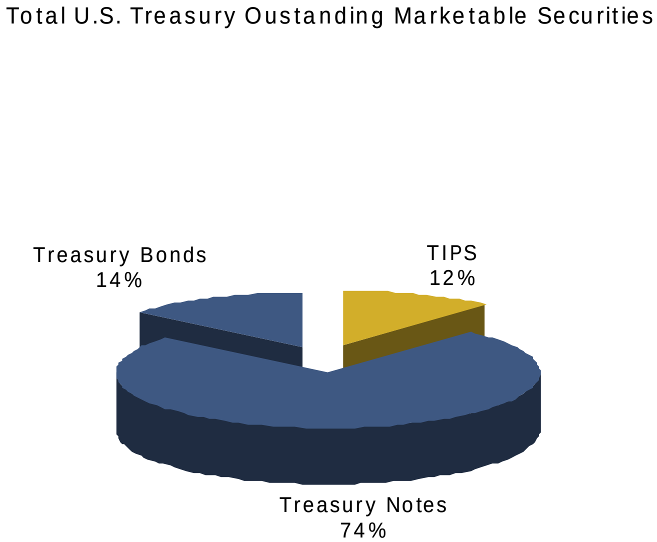
2008 Q4

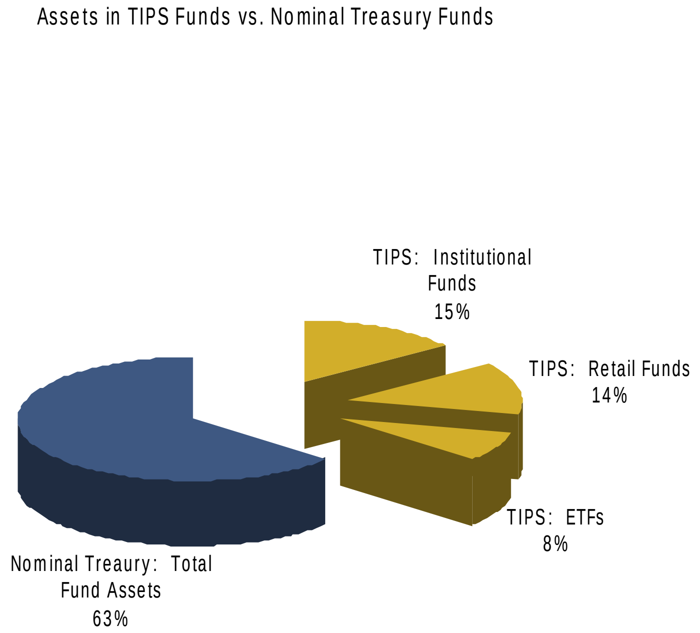
- Increasing spread between cash and swap based measures of expected inflation due to forced de-levering and disorderly unwinds of funding trades. (Inflation swap implied measures historically trade higher than TIPS implied breakevens due to funding mismatch).



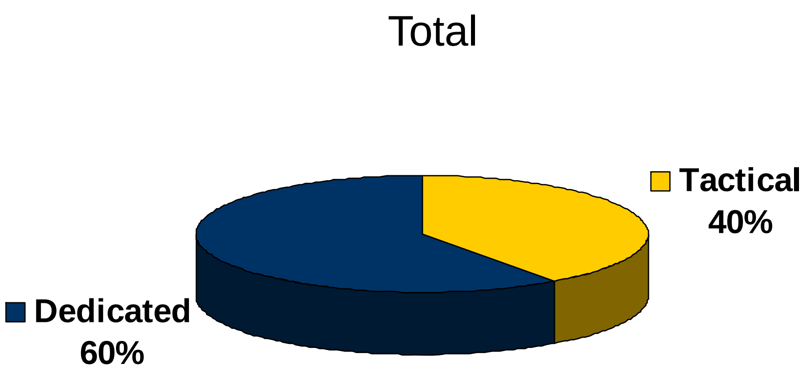
Only Explicit Inflation Hedge

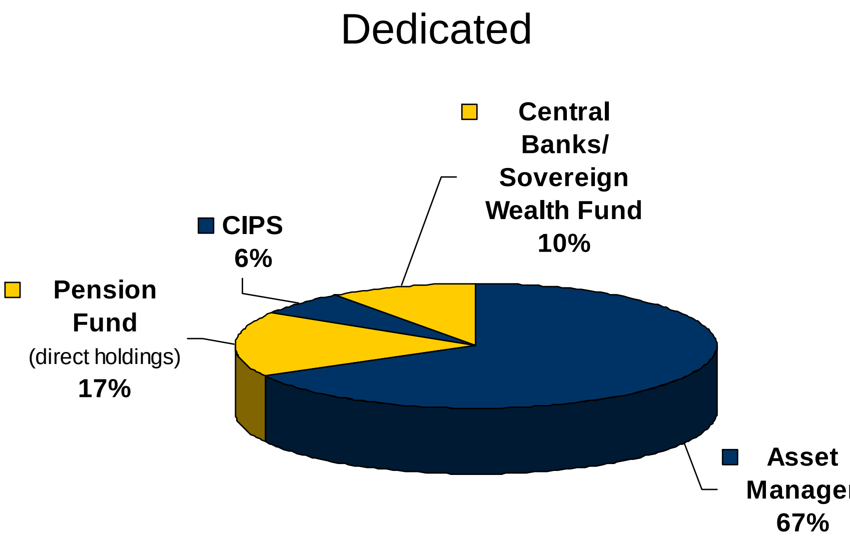
- **Currently retail investors have proportionately a far higher allocation to TIPs funds than to Nominal Treasury funds.**
- Recently (2009) have seen large additional flows from Central Banks and Sovereign Wealth Funds … these are both strategic and tactical.
- Domestic Pension Funds who don't already have allocations are considering (private and state)





Investor Base 2008
(educated guess)





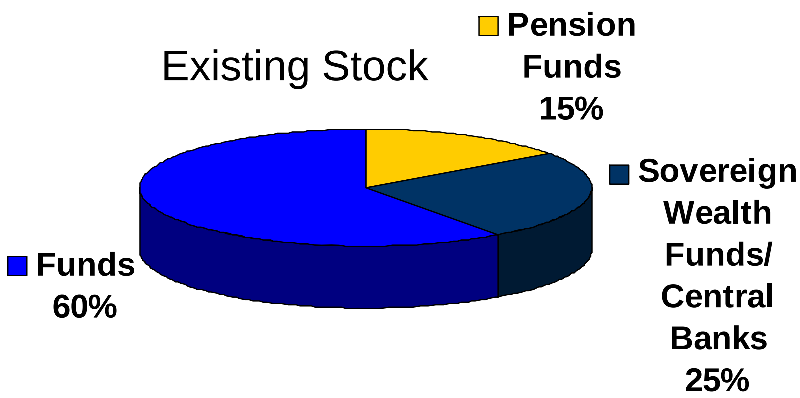
Tactical:
- Hedge Fund
- Bank Prop Desk
- Asset Manager
-Central Banks
- Sovereign Wealth Funds

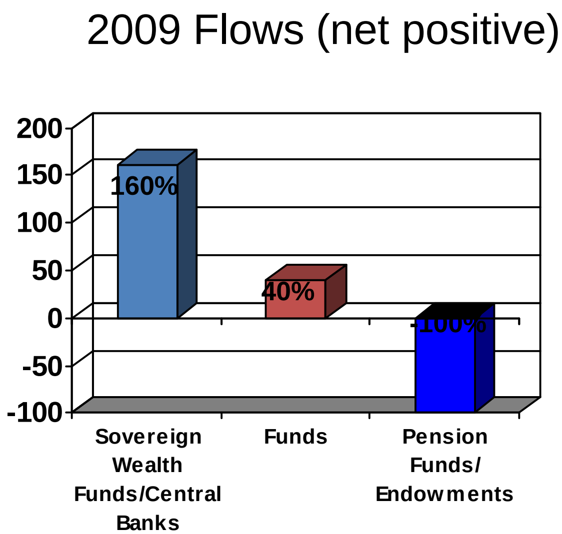
- Asset Manager is inclusive of Pension Fund, Central Banks, Sovereign Wealth Funds.

- CIPS- Corporate inflation protected security (mostly owned by high net worth)

Investor Base 2009
(case study from one asset manager)

2009 sees increased allocation from Sovereign Wealth Fund, Central Bank



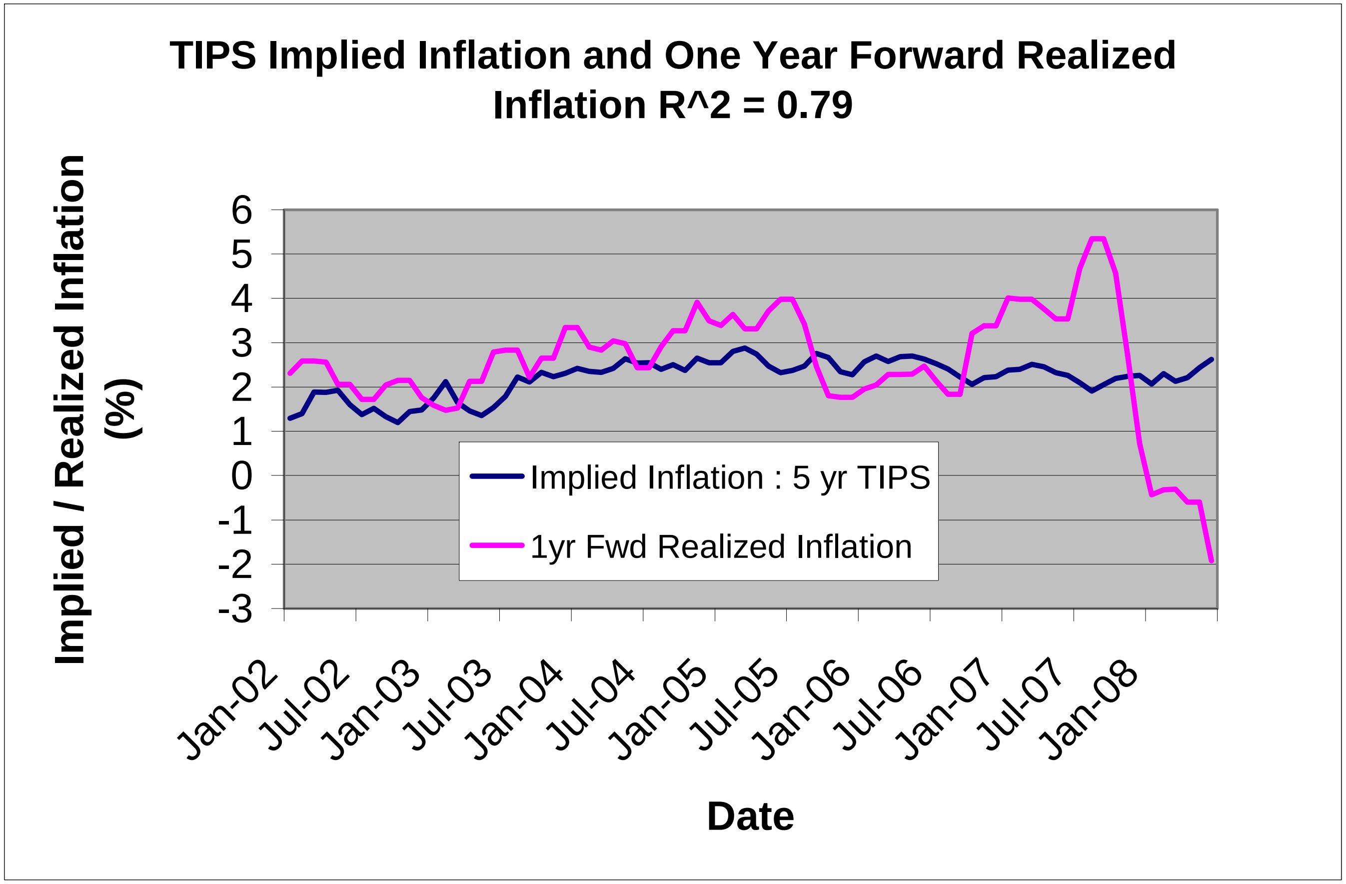


- **Fund Flows: Retail net positive.**
  Offset by Insurance Companies removing TIPS from VA offerings.
  (Difficult to hedge.)

- **Pension Fund/ Endowment: Out flow to fund benefits/ operations.**
  Cover losses in equities, hedge funds, private equity investment.

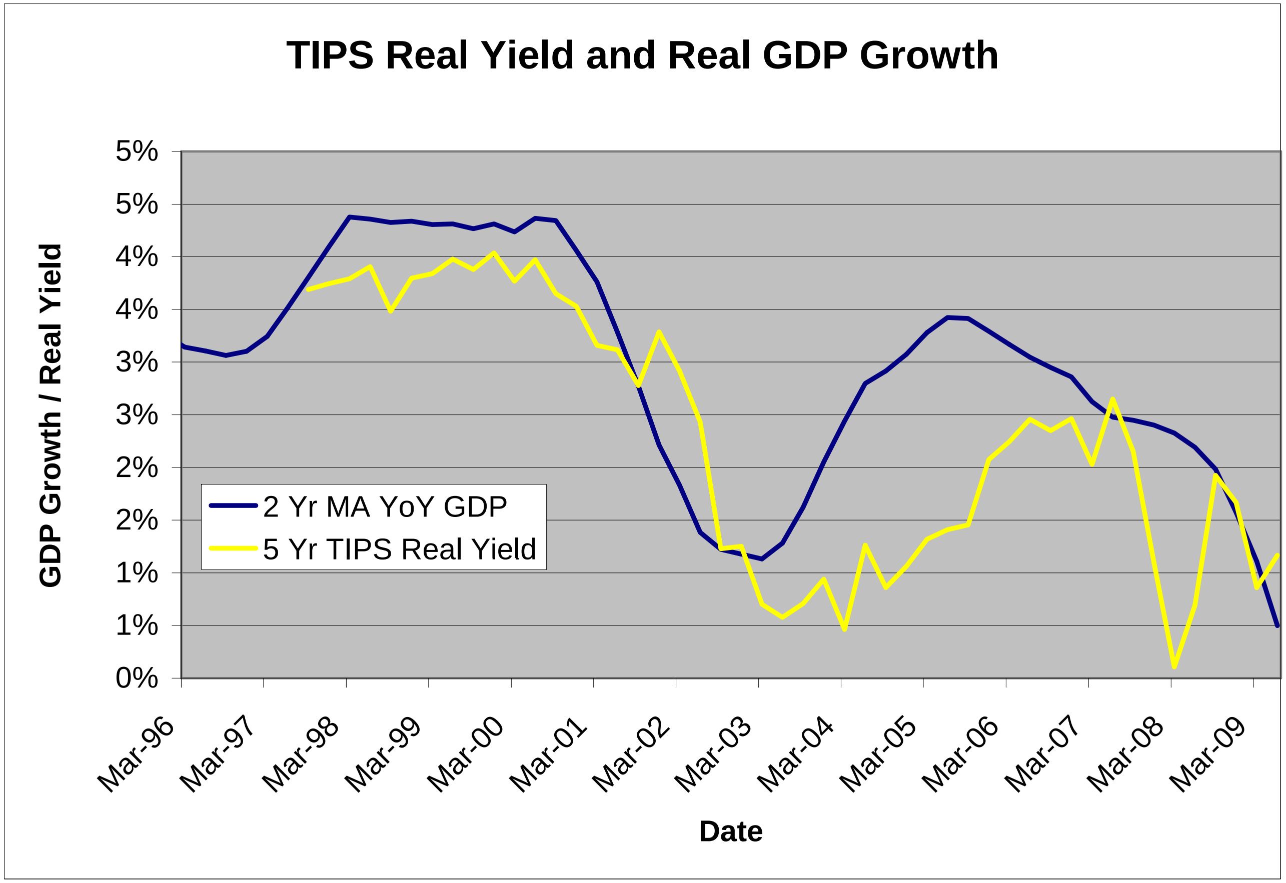
Implied vs. Realized Inflation

- Only liquid, market based indication of inflation expectations.
- TIPS do a reasonable job of forecasting future inflation

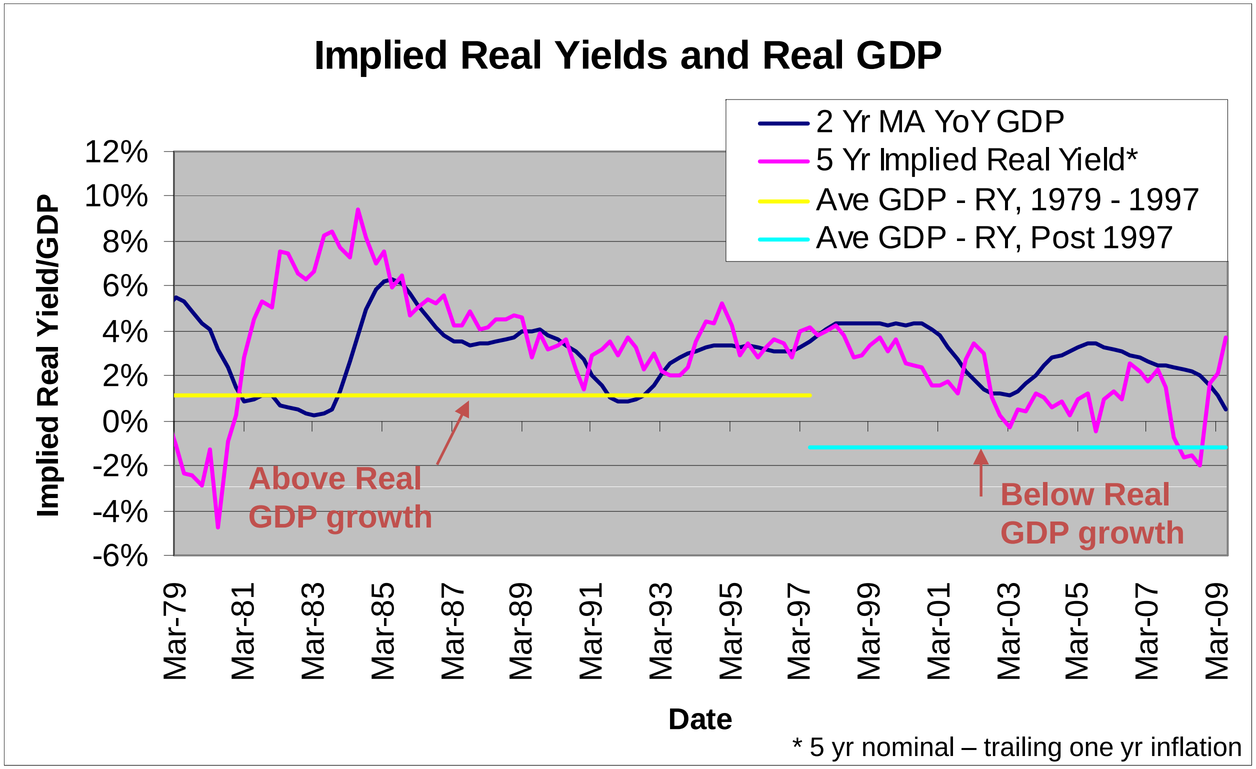


TIPS Real Yields vs. Real GDP

- TIPS Real Yields strongly correlated with Real GDP growth.
- Lead / Lag varies.

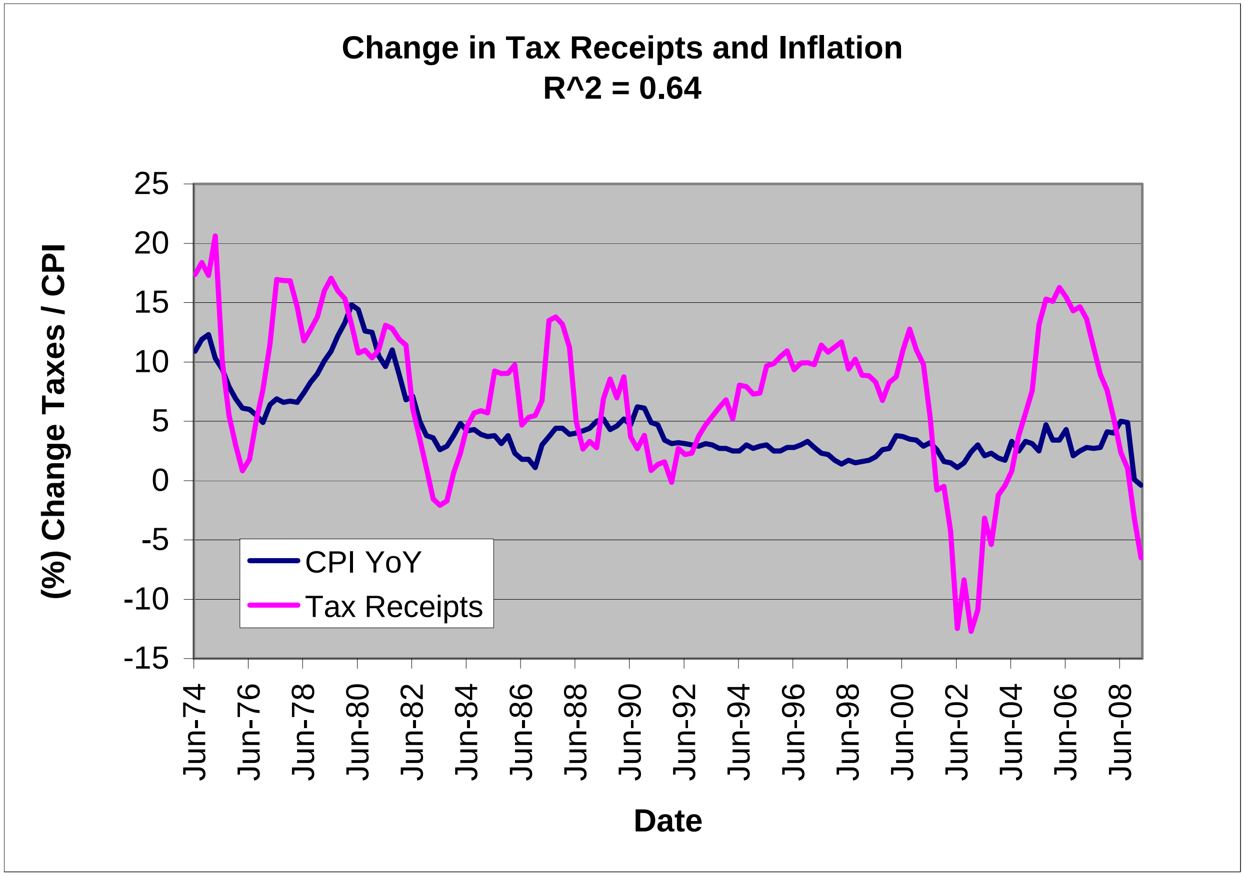


Real Borrowing Costs Lower Relative to GDP In TIPS Era



Possibly higher borrowing cost on TIPS issuance more than offset by lower cost on the much larger nominal issuance.
Inflation credibility important!

Tax Receipts Move With Inflation



Federal tax receipts a natural hedge for inflation pay out in TIPS.

Why have TIPS 'not taken off?'

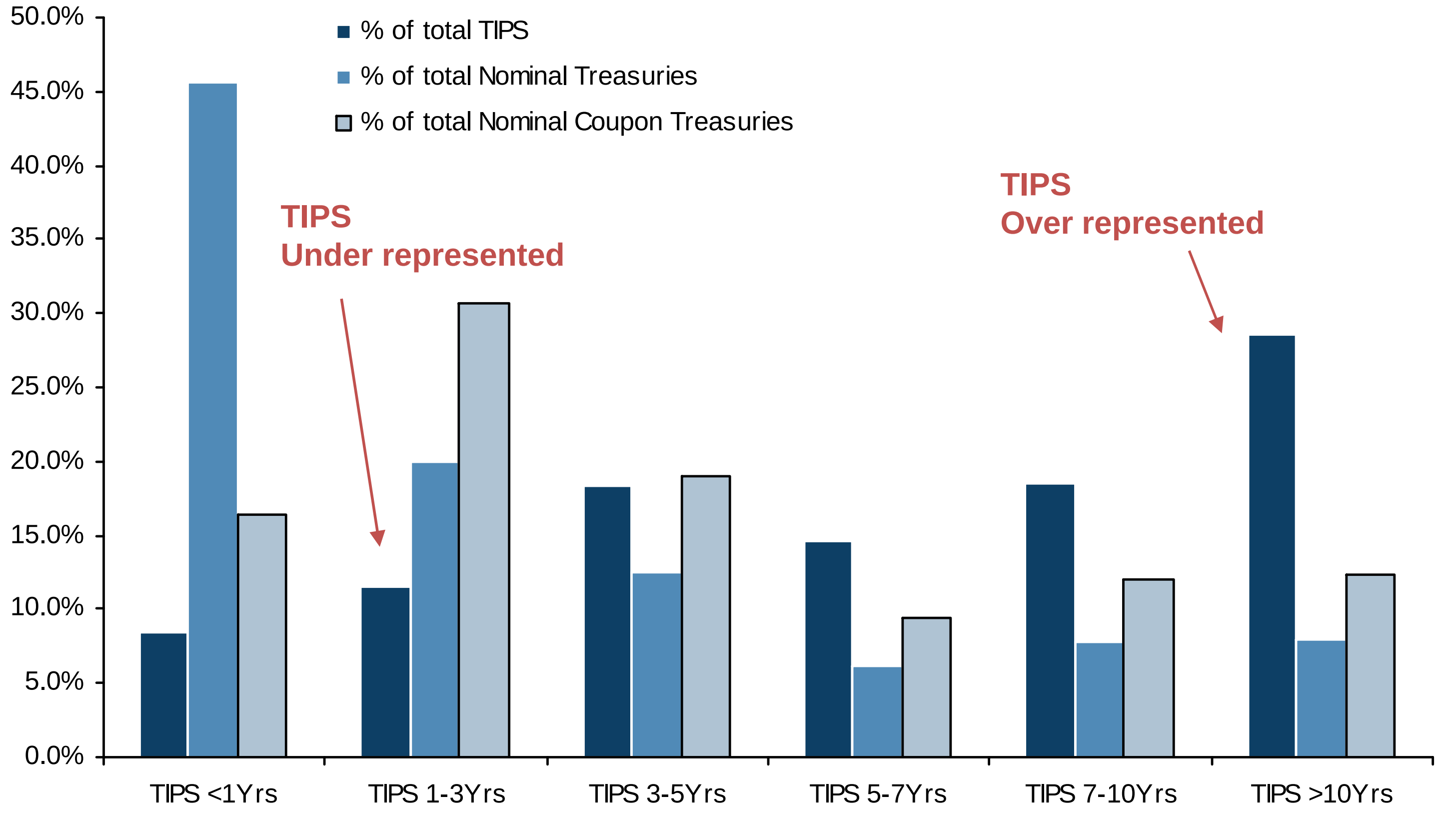
- TIPS illiquid only when compared to nominal coupon treasuries which are trading as well as investment instruments.
- Potential investors often question Treasury's commitment to the program.
- TIPS market dominated by buy and hold investors
- However :
  - Understanding of the mechanics of TIPS is growing.
  - Understanding of the need for TIPS in a diversified portfolio context with the need to hedge inflation risk is growing!
  - New classes of investors (Sovereign Wealth Fund, Central Banks, overlay strategies) entering markets, trading styles need to, and will adapt!

- Treasury needs to affirm commitment to keep this momentum going.

Recommendations

- More frequent, smaller auctions.
  - Liquidity often decreases between auctions. The auctions themselves sometimes help discover prices far from where the market was trading.
- Commit to issuing 5 yr TIPS.
  - This sector is developing an investor base with Central Banks and also investors who want inflation protection without duration risk. Maturity profile compared to nominals also argues for shorter maturity TIPS.
- Reintroduce 30 yr TIPS.
  - Natural, after reintroduction of 30 yr Nominal Bonds.
- Modestly increase size of TIPS as percent of overall portfolio.
  - Reaffirms inflation credibility. Market could probably handle it as investor base is growing.

TIPS and Nominal Maturity Profile



Conclusions

- All reasons for the introduction of TIPS still valid
  - Diversify investor base
  - Inflation credibility
  - Market based measure of inflation expectations

- TIPS are recovering from the debacle of Q4 2008.
- TIPS are growing in acceptance by main stream investors, and also attracting a new set of investors.
- There could come a time when these investors prefer Real debt to Nominal debt.
- TIPS should continue as one of the cornerstones of Treasury issuance plans.
- Treasury should be unequivocal in its plan to continue TIPS issuance.

TBAC Presentation to Treasury: Market Conditions

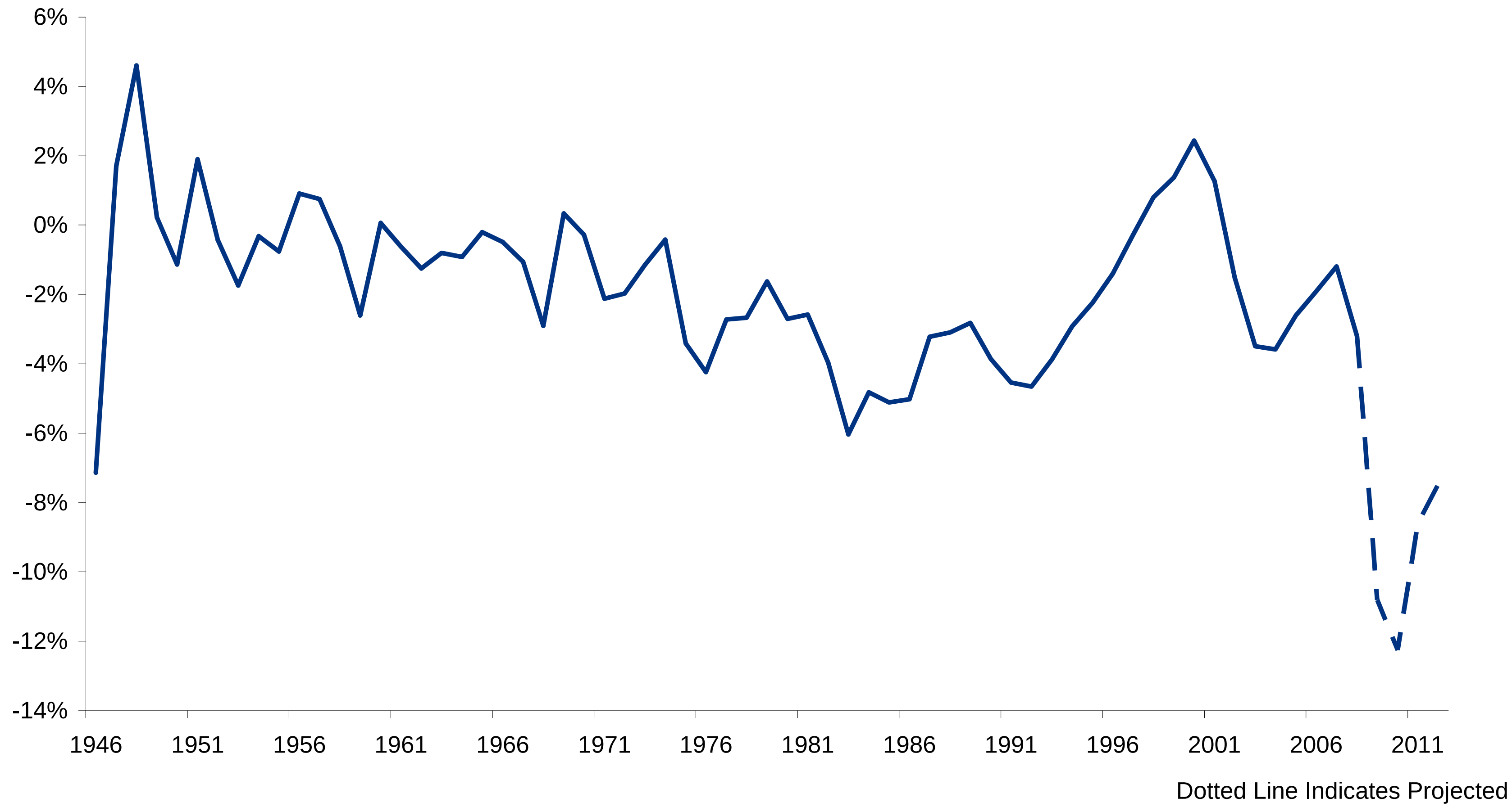
August 4, 2009

Economics

Economics

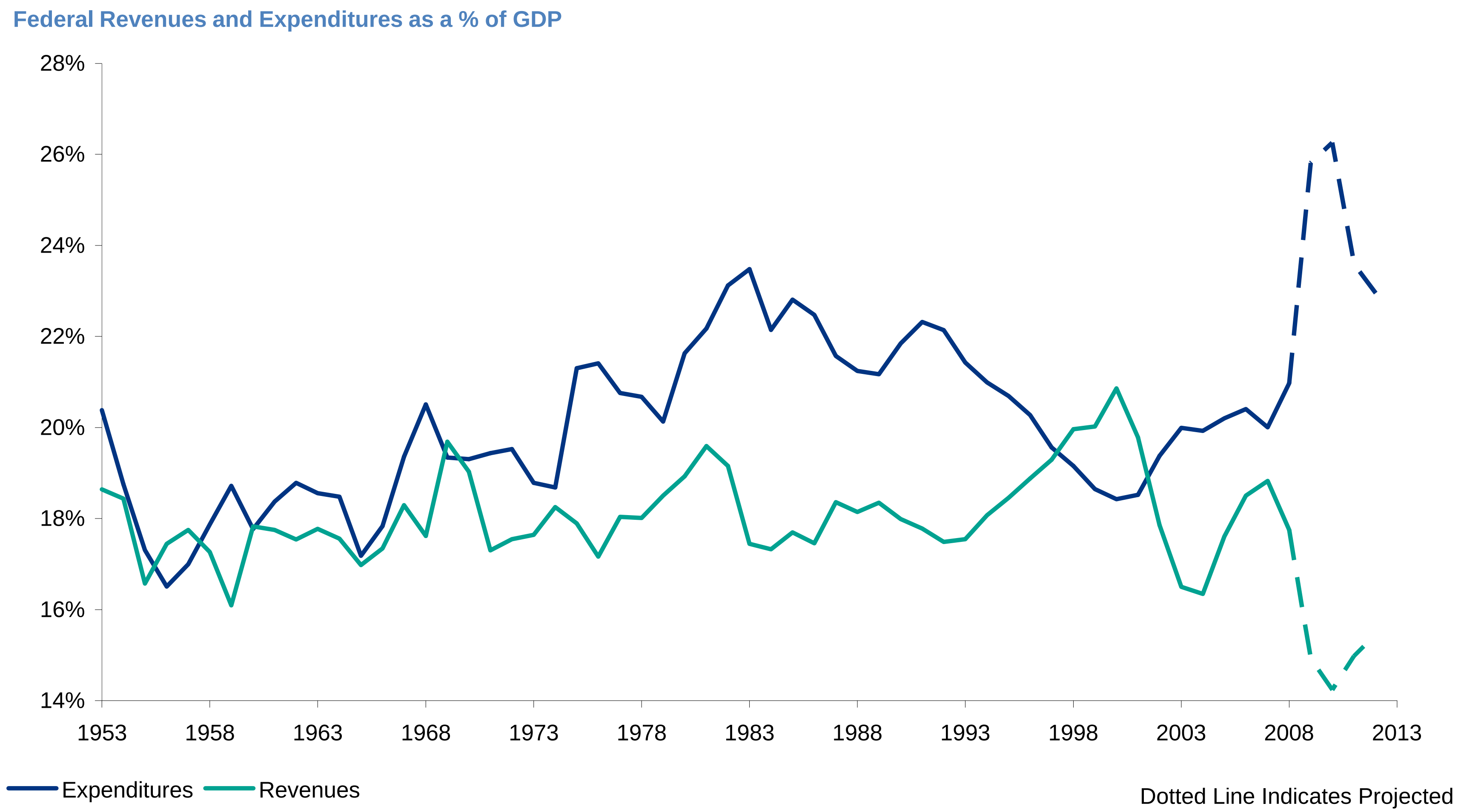
- Debt as a % of GDP is rising and nearing a post-war high. The U.S. Debt-to-GDP ratios, however, remain far lower than Japan and only slightly above the long-term average.
- Tax receipts lag during economic recovery cycles creating a larger, lingering funding need after the recovery has begun and yields have begun to rise.
- Consumption rates will remain lower and a drag on forward growth as the Baby Boomer generation begins to de-leverage and retire over the next 5 to 20 years.
- There has been significant money flow out of risk-free assets into risk assets since January, and credit spreads have tightened substantially with it.
- Equities, commodities, the U.S. Dollar, credit spreads and Treasury yields have all recently become highly correlated.

Federal Govt. Budget Balance as % of GDP



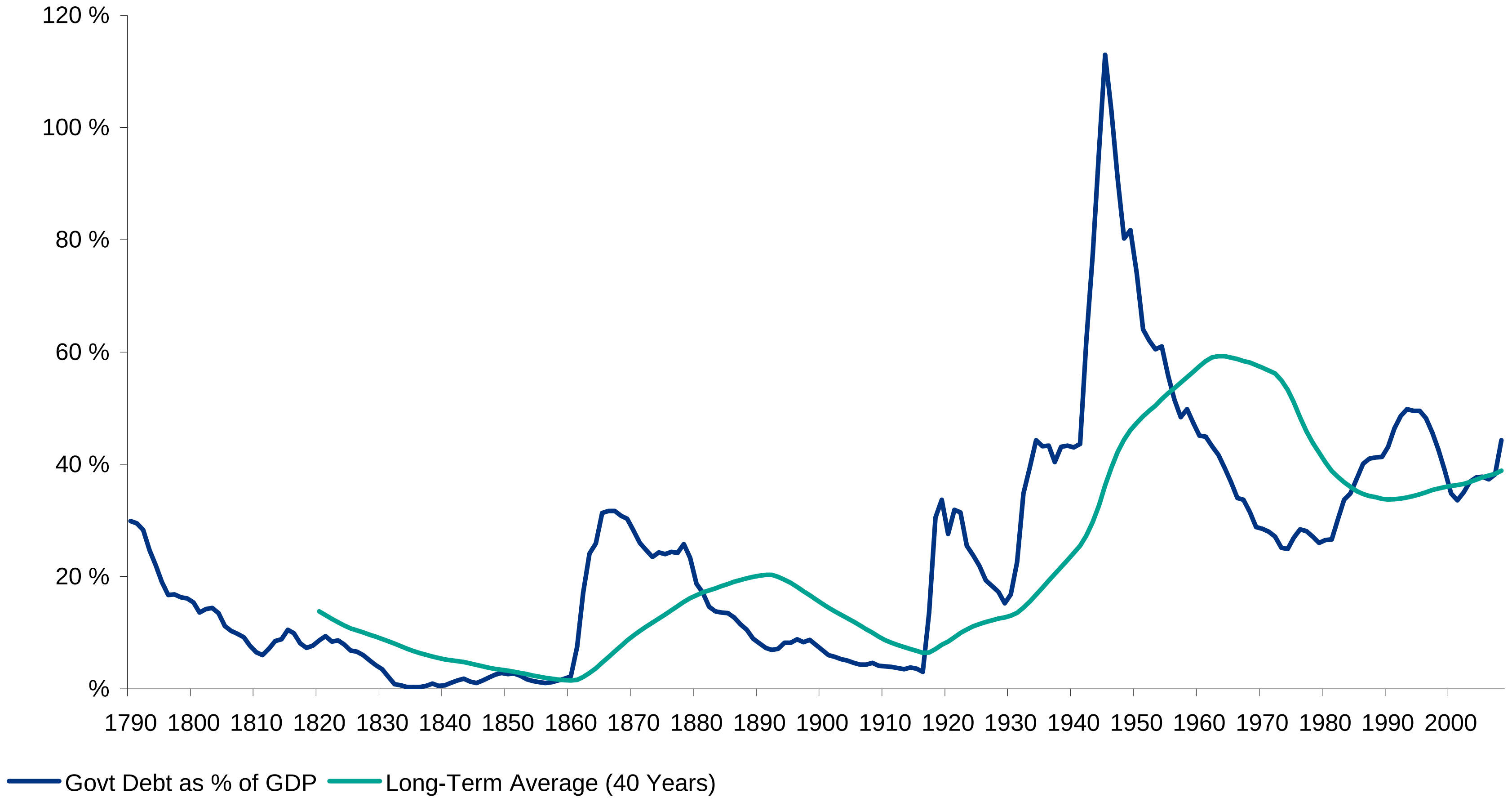
Projections by TBAC Member Firm

It Will Likely Take A Number of Years To Fill the US Funding Gap

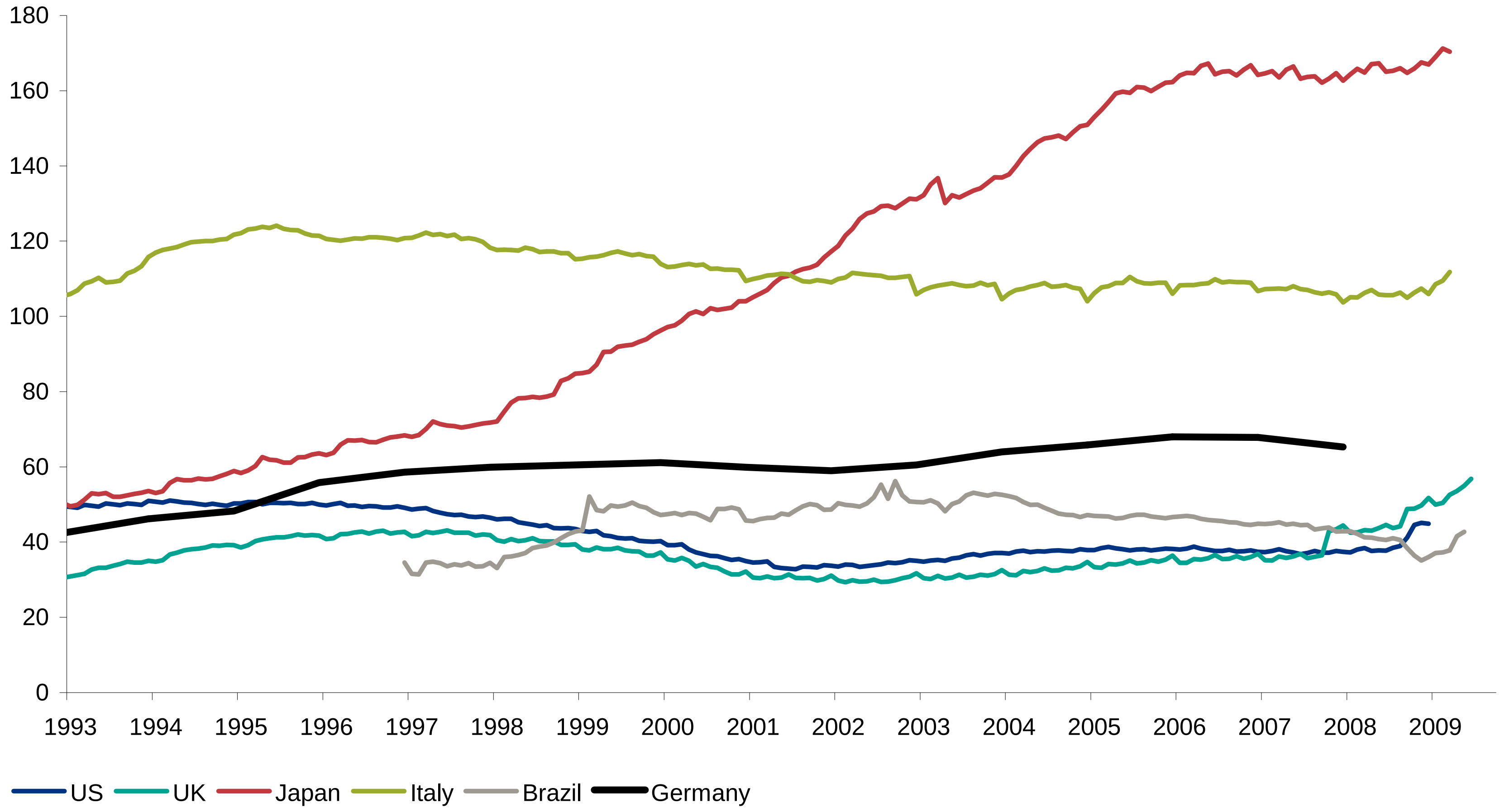


Projections by TBAC Member Firm

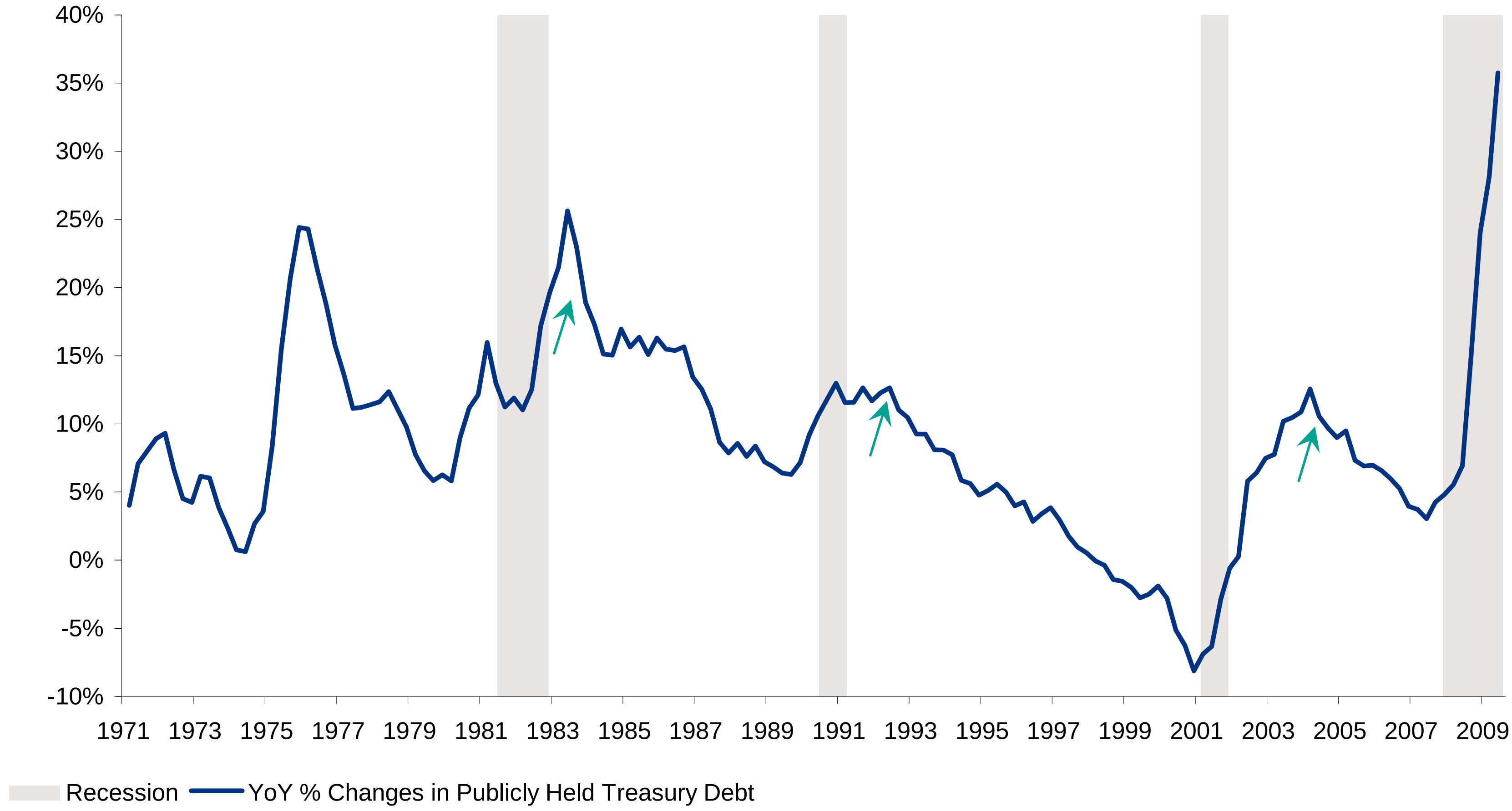
Long Term Debt/GDP Levels – Still Near Long-Term Average



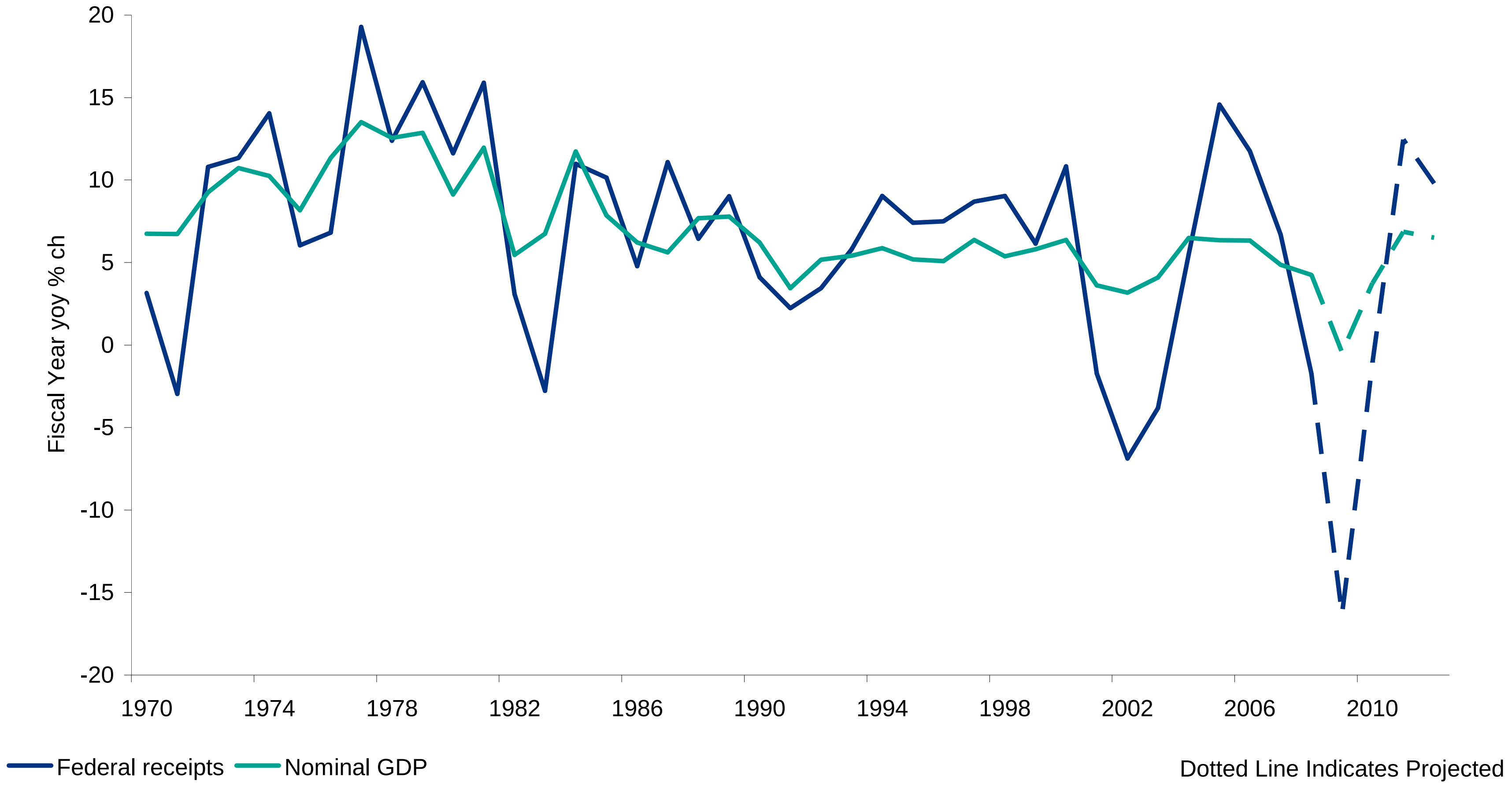
Global Sampling of Public Debt/GDP Ratios



Supply Pressures Linger After Recessions End As Treasury Receipts Lag

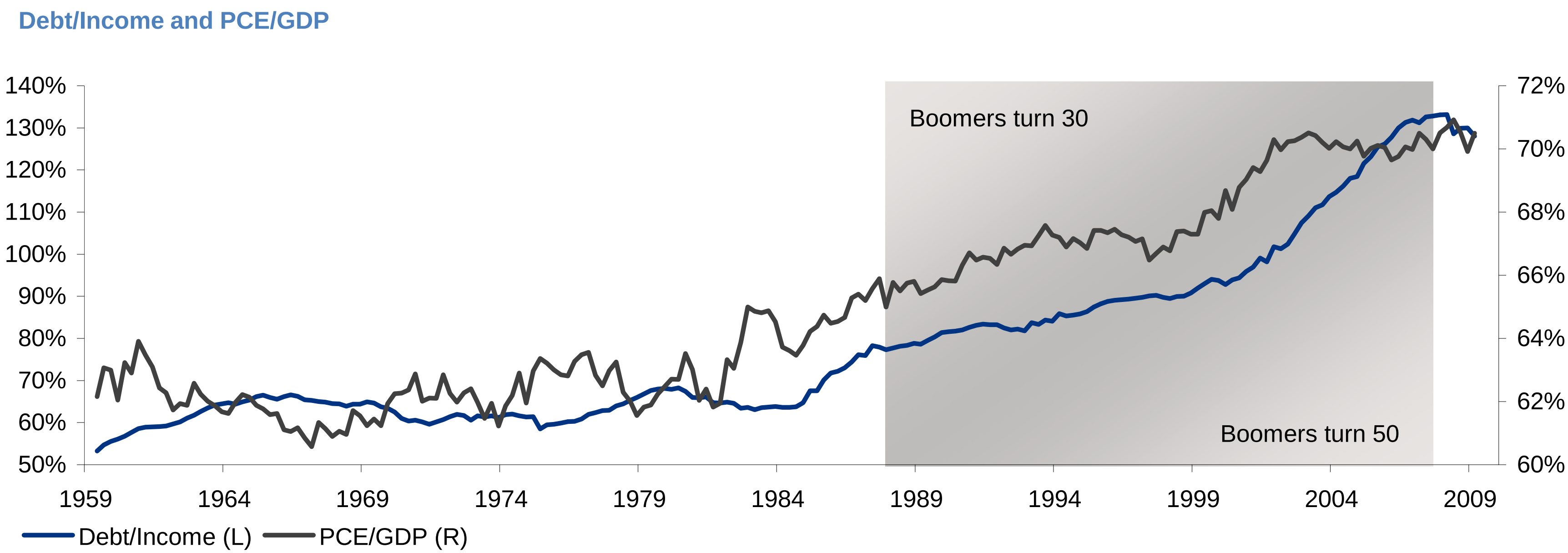


Cyclicality of Tax Receipts



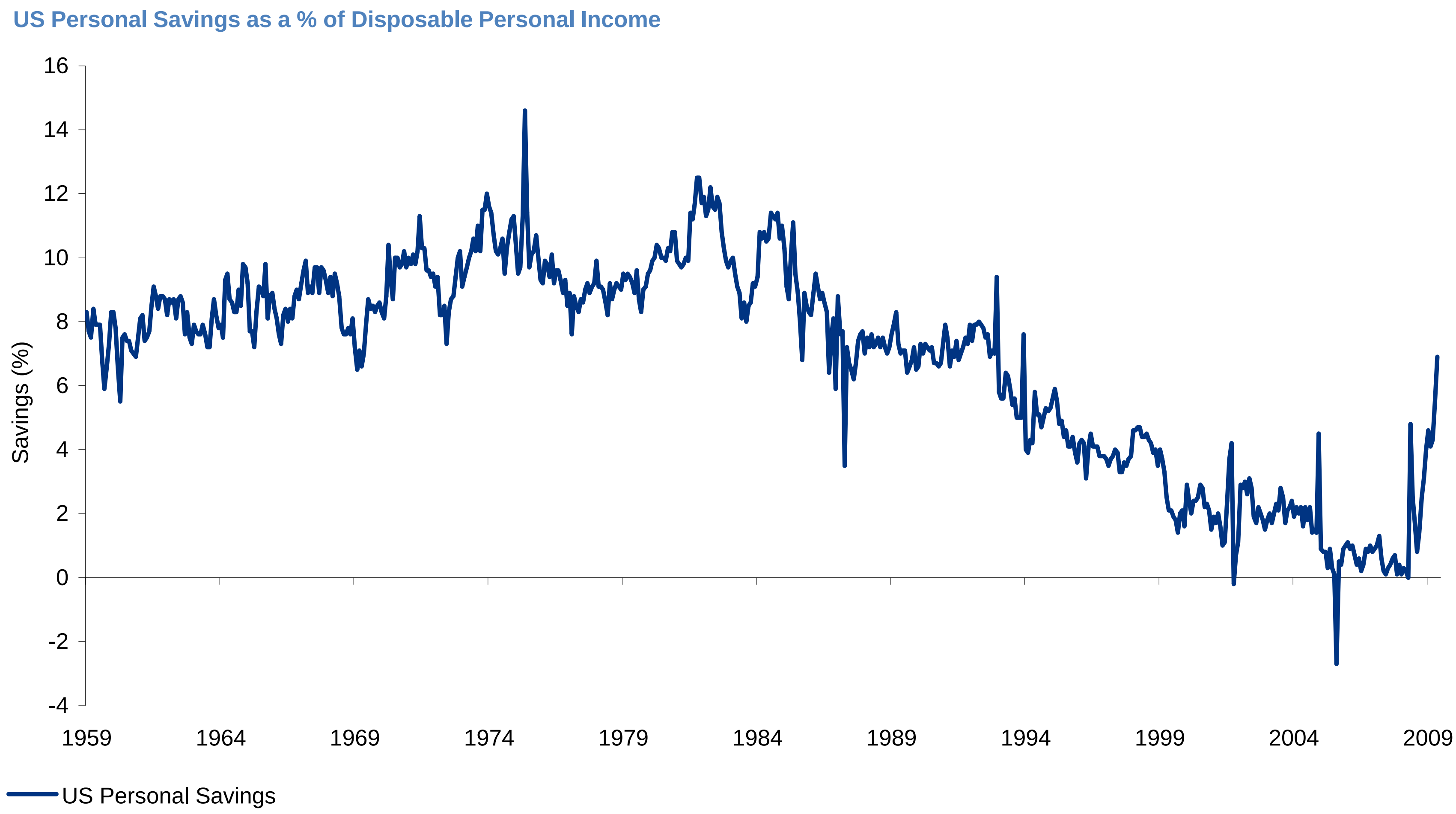
Projections by TBAC Member Firm

Household De-Leveraging Has Only Just Begun

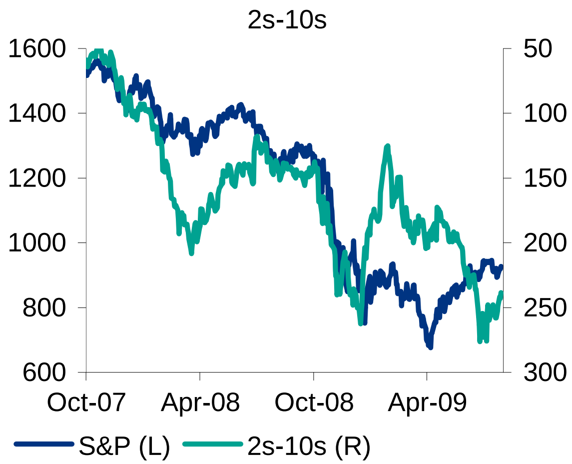


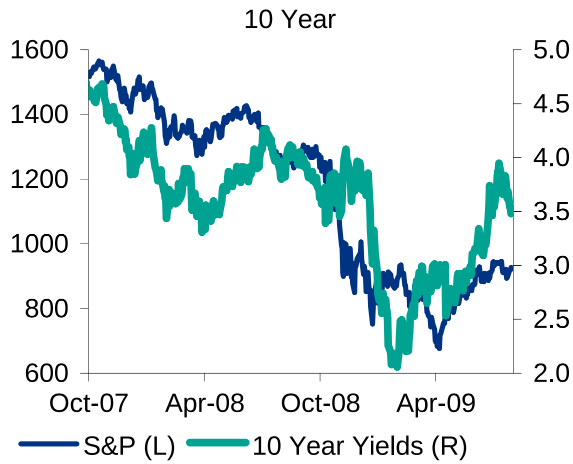
- Borrowing has increased significantly over the last 25yrs
- Beginning in the mid-1980's, PCE soared as a share of GDP while Debt levels spiked
- Demographics and loosening lending standards fueled the excesses
- The shaded area is when the peak boomers (1957) started the housing formation years. More recently, boomers are prone to college bills/savings and diminished consumption…

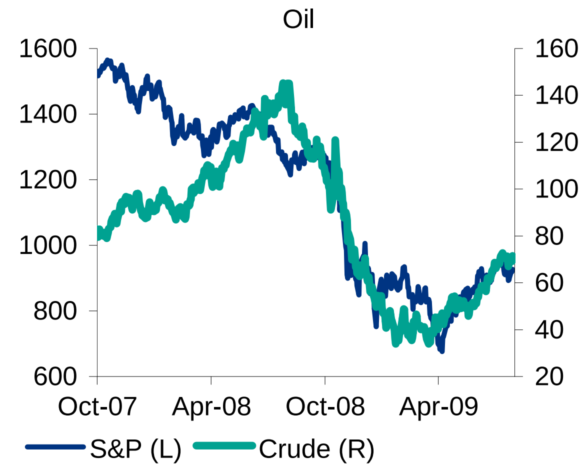
Personal Savings Rate Heading Into Former 6% to 12% Range

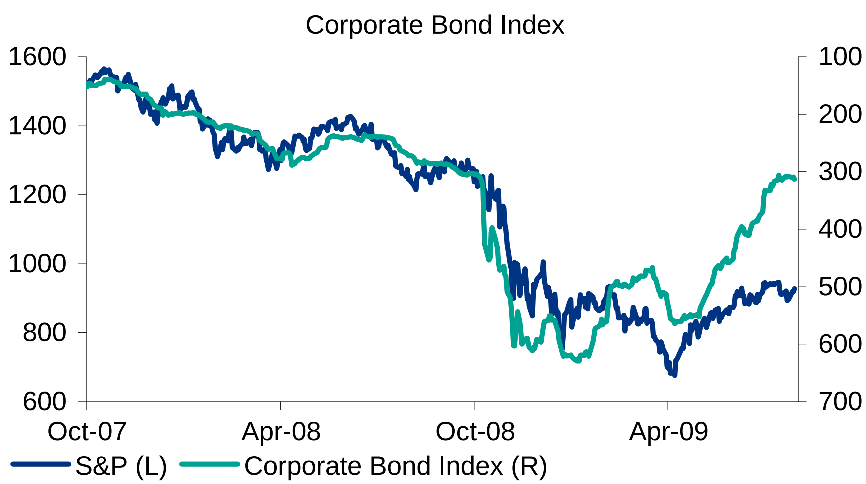


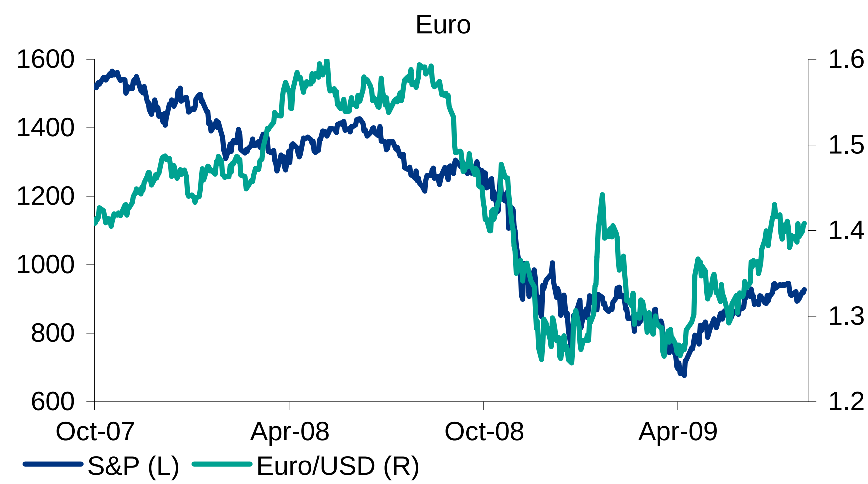
S&P's High Correlation with Various Assets



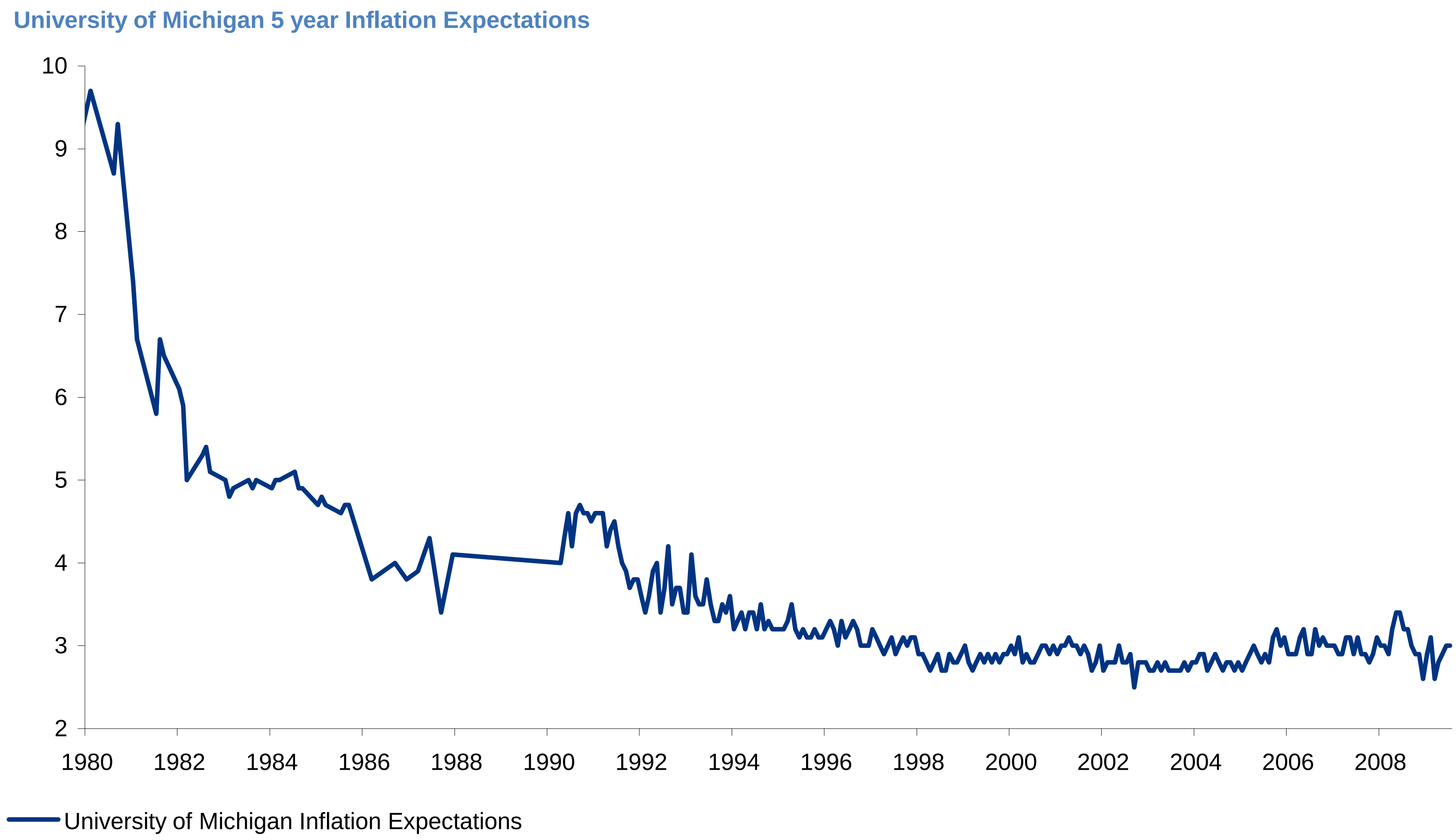




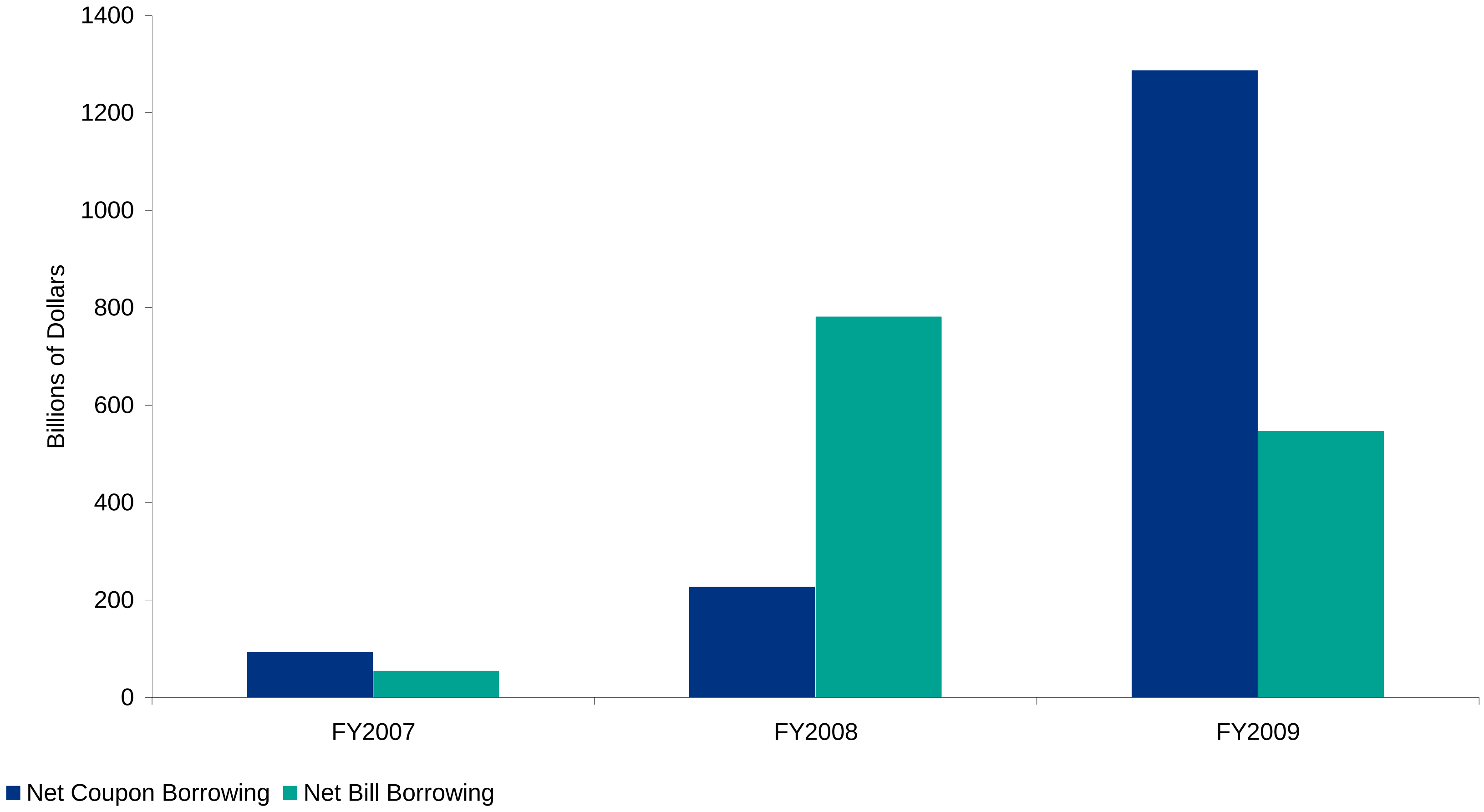




Long Term Inflation Expectations Still Contained



Bills Bear the Burden Initially, Now Rebalancing

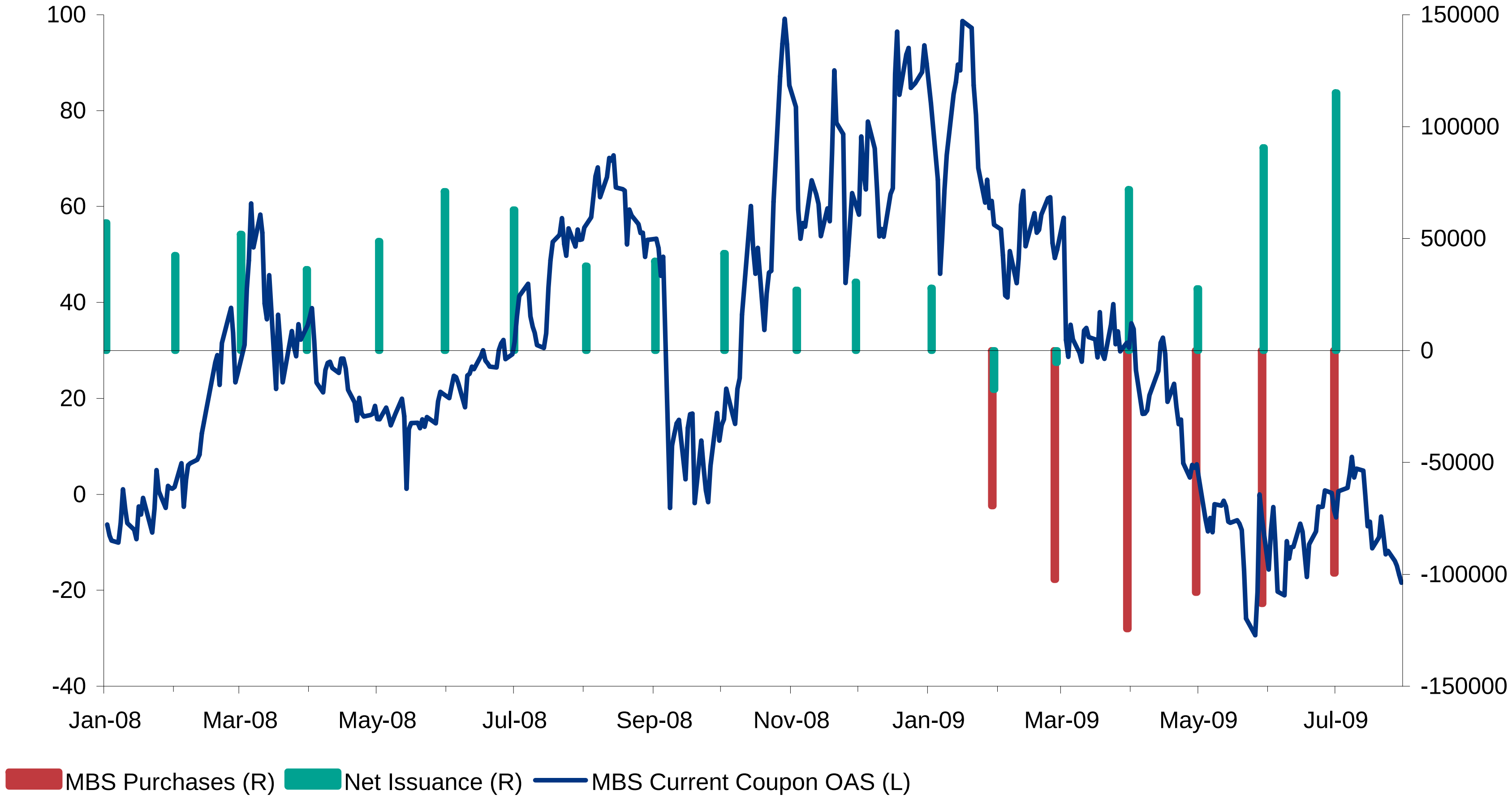


The Mortgage Market

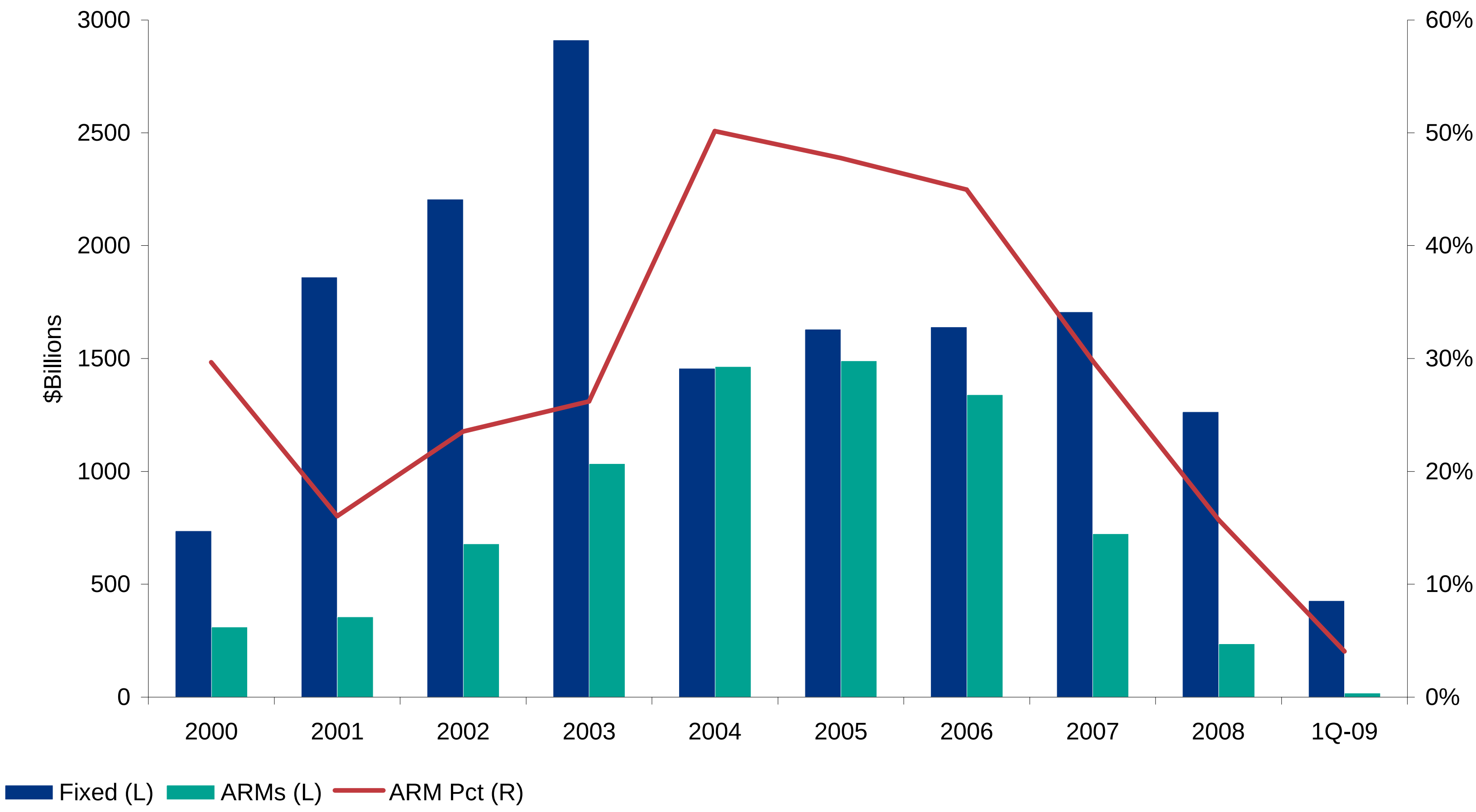
The Mortgage Market

- Conventional mortgage origination has picked up as spreads have narrowed considerably since the advent of the Fed QE Purchase program and all credit markets are in the process of normalizing.
- However, traditional mortgage pass-thru buyers have begun to step away from the market as uncertainties surround the eventual unwind mechanism and timing of QE mortgage purchases.
- Credit availability remains selective and concentrated in certain pockets.
- ARM origination, a major contributor to housing market affordability over the last 10 years, remains non-existent.
- Current coupon 5/1 ARMs are just beginning to adjust but remain flatter vs. 30 yr conventional fixed rate coupons than historical norms, despite a steep yield curve environment.
- Option ARM recasts are about to rise exponentially and force higher delinquency rates.
- More concerning, prime mortgage serious delinquencies are 4x higher than 2 years ago and are lagging the rise in the Unemployment Rate.

Fed Buybacks Help Floor Spreads

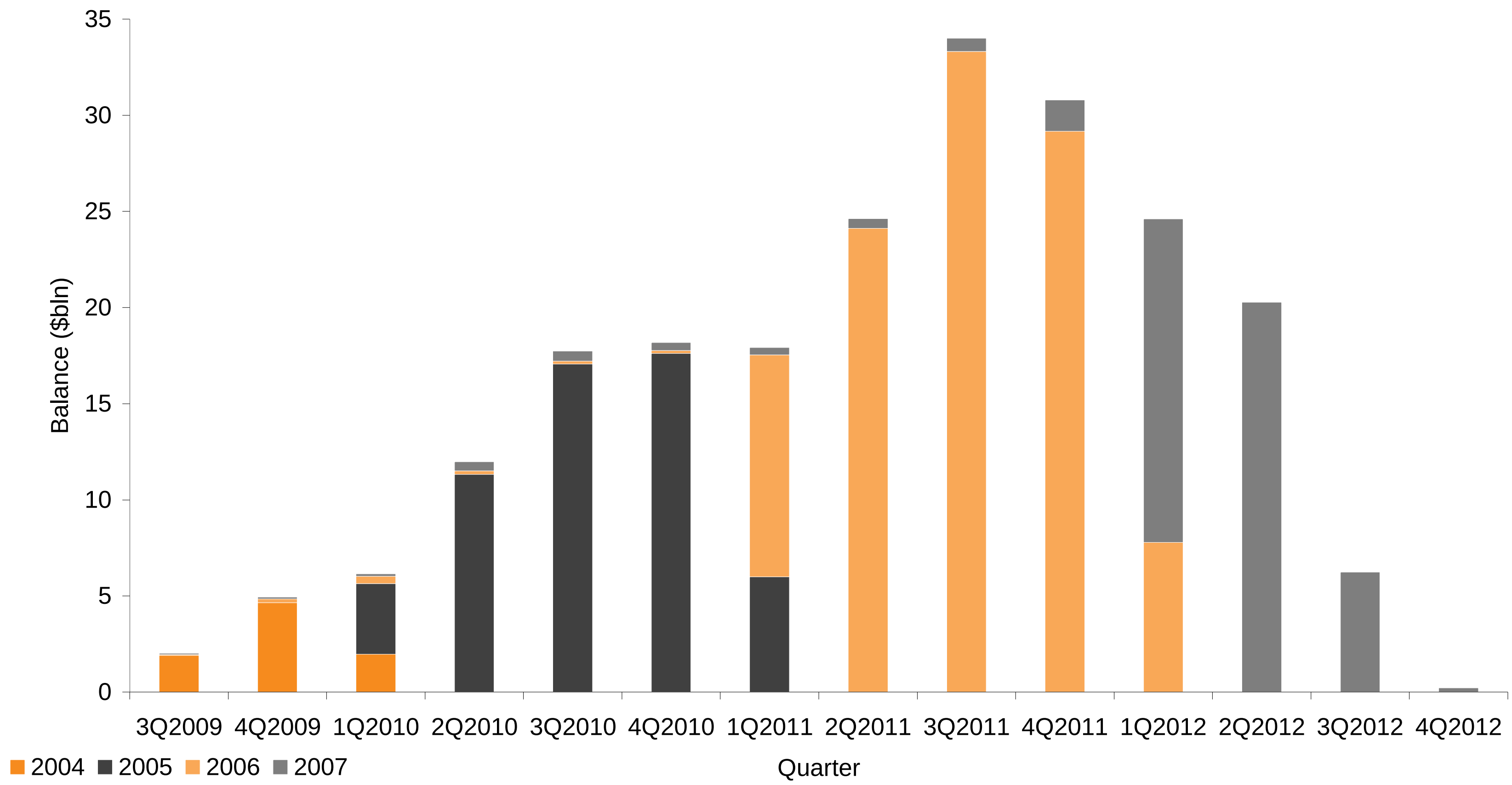


All Mortgage Originations by ARM/Fixed & ARM Share of Mortgage Market



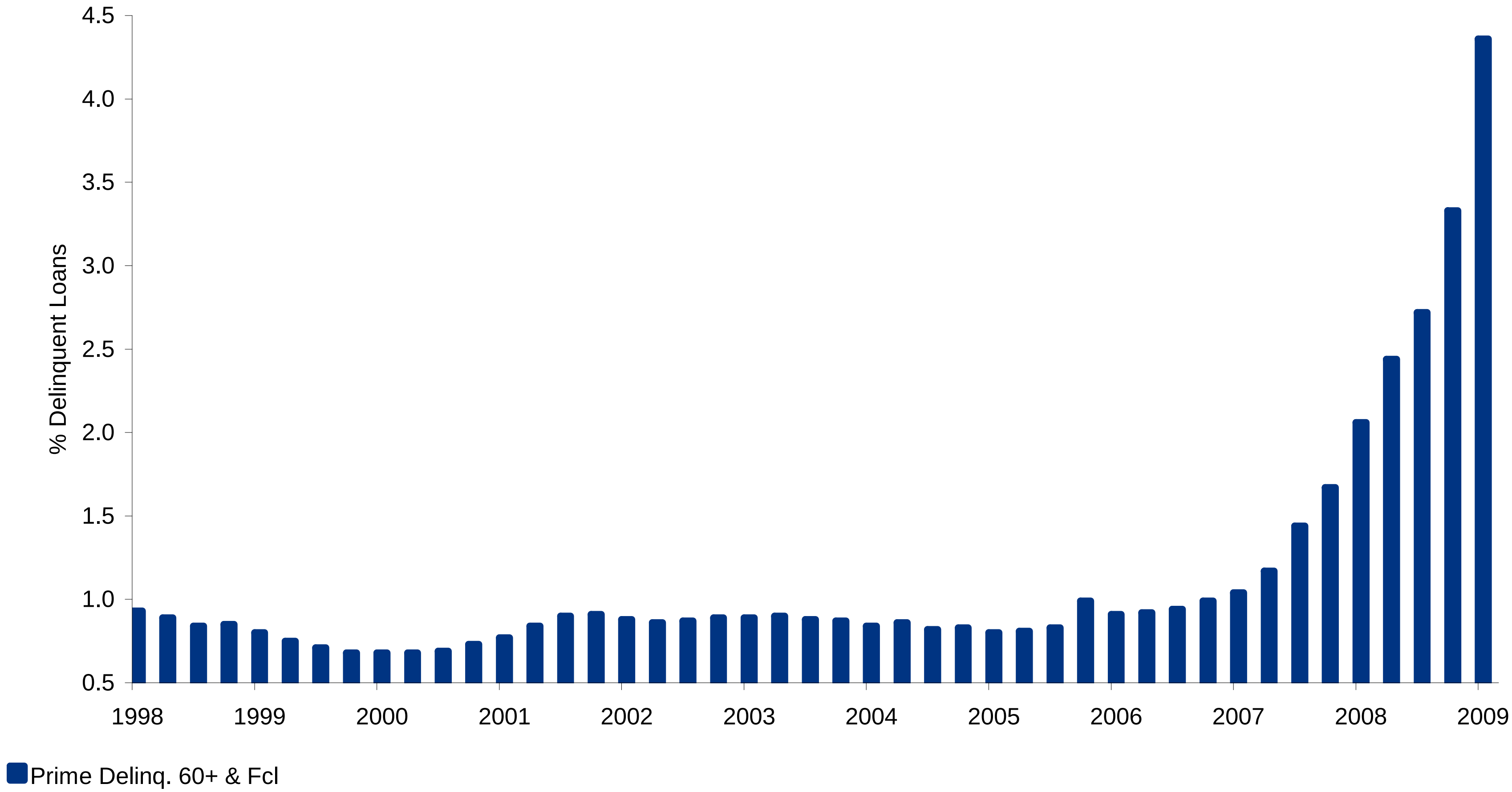
Option ARMS, Projected Recasts

Recast Schedule Balance ($bln) by Orig Year:
Assumes Rates Follow the Forward Curve, and borrowers currently making the minimum pmt will continue to do so



Projections by TBAC Member Firm

Prime Mortgage Delinquencies

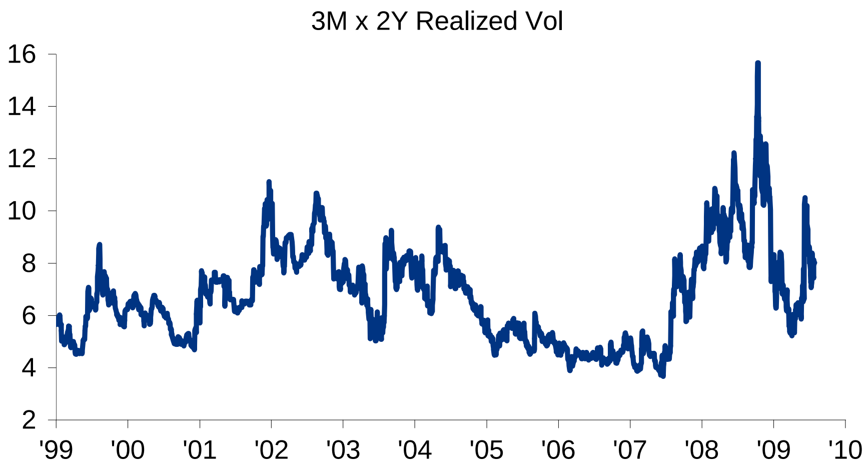


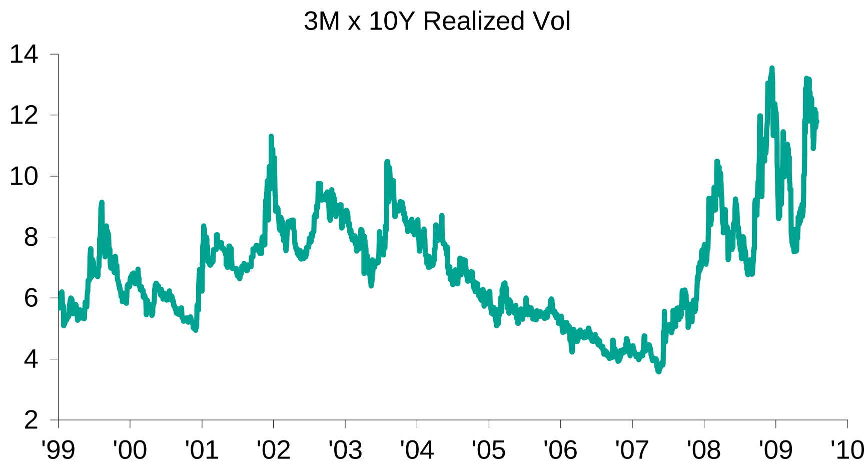
Volatility

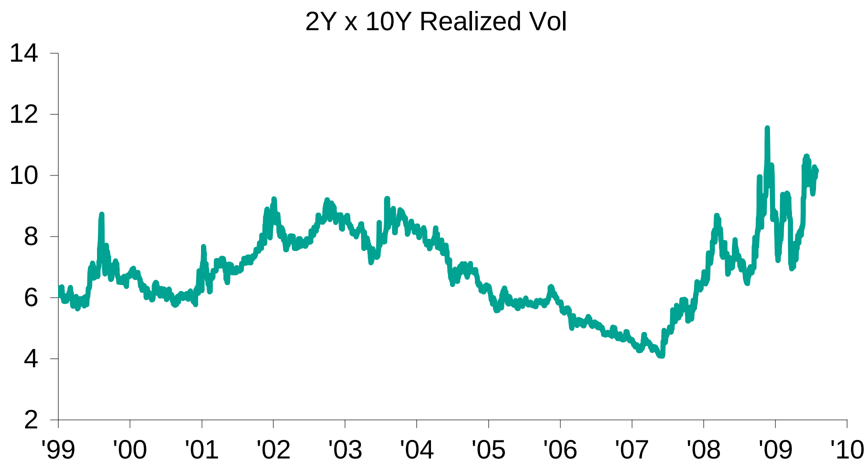
Volatility

- Realized and implied volatilities remain at heightened levels vs. historical norms.
- Zero-Interest Rate Policy is keeping volatility on the front-end lower but elevating volatility in the longer-end as long term inflation expectations swing wildly.
- The negative convexity profile of the mortgage market has worsened with QE purchases.
- Mortgage servicers, originators, and bank portfolios are driving the demand for volatility but the Street cannot source it, creating a chronic structural net short volatility position in the marketplace.
- There are no natural sellers of volatility left in the market with the collapse of hedge fund capital and leverage along with less retail appetite for structured note product.

Realized Volatility Mostly Near Historic Highs

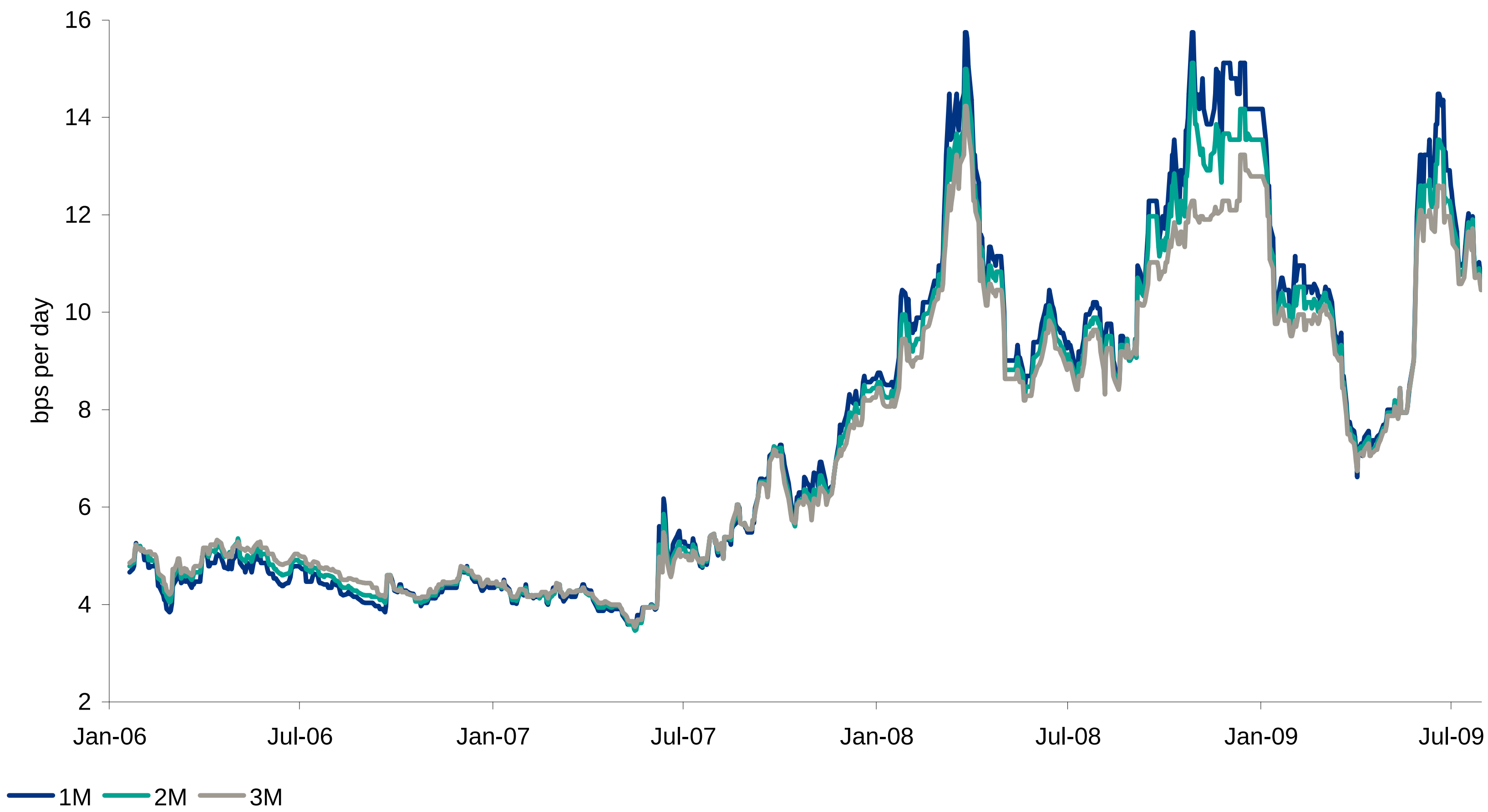






The Curve is a Driver of Market Volatility

Mortgage Volatility (bps)

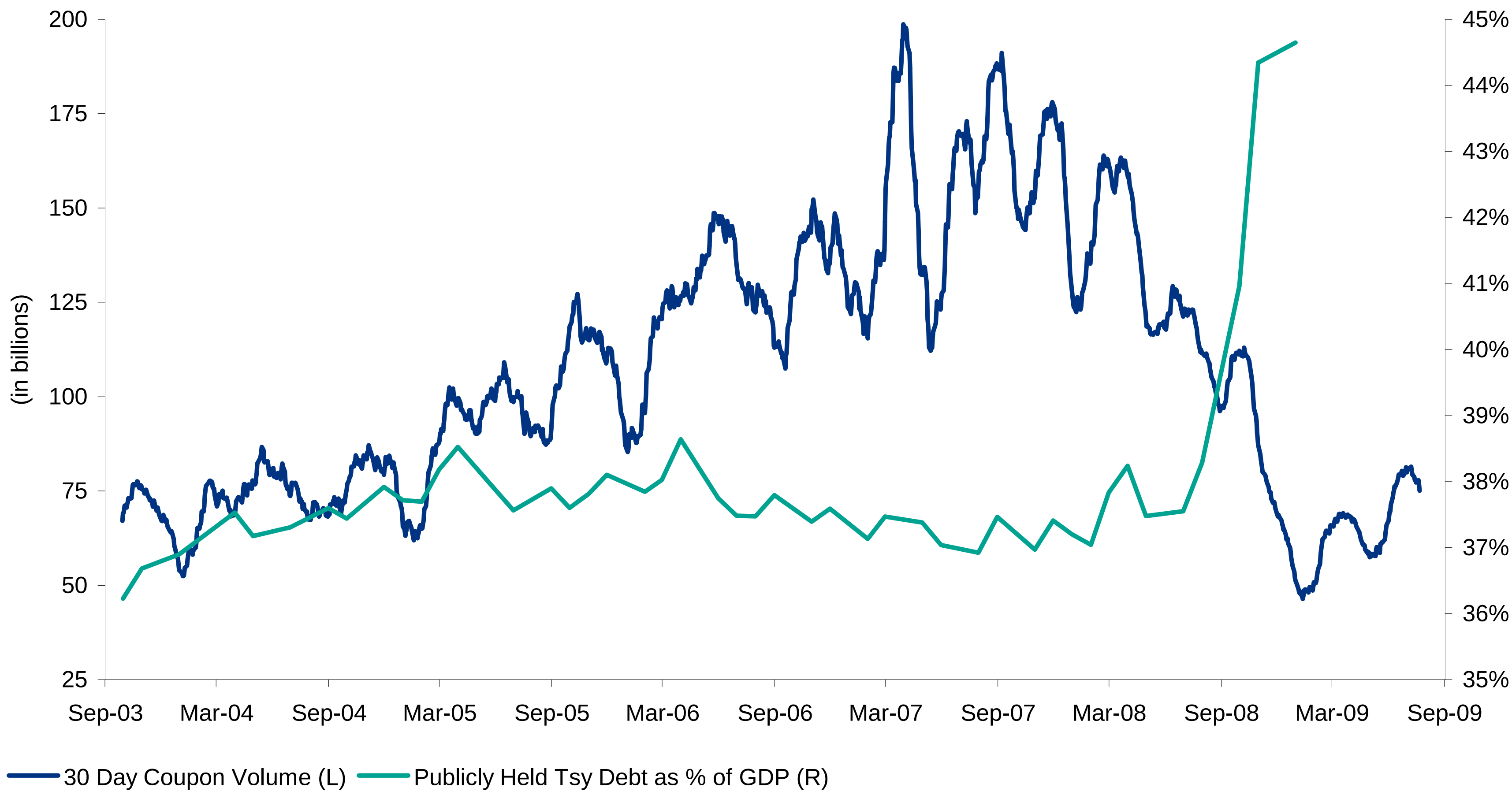


Treasury Auctions / Supply

Treasury Auctions / Supply

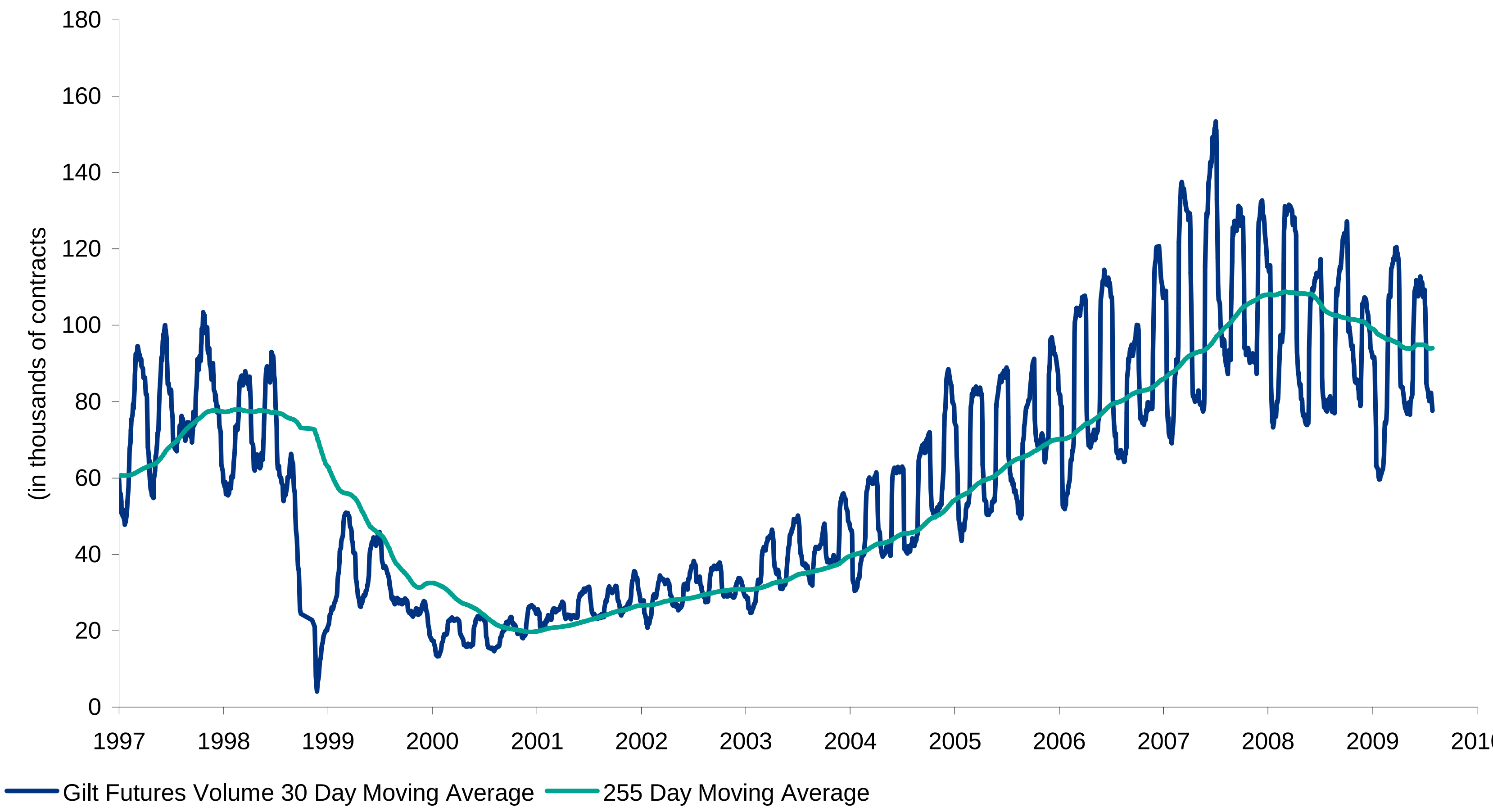
- Secondary trading volume is falling despite increased supply due to shrinking Dealer balance sheets and leverage.
- Too much attention paid to auction mechanics such as auction tails and too little attention paid to market movements in the weeks prior to supply periods.
- Bid-to-cover ratios are rising to record levels.
- Foreign auction participation rising and meeting supply needs.
- Global Central Banks remain significant and steady buyers in the auction process.
- Liquidity has returned to on-the-run issues. However, off-the-run liquidity remains poor as Fed QE purchases have been concentrated in on-the-runs and real money and Central Banks have sponsored the on-the-runs. Dealer balance sheets and rising VAR considerations are also a factor.
- There is room for further TIPS issuance as investor appetite for inflation protection has grown commensurate with QE policies.
- Issue sizes in the intermediate coupon sector are nearing market capacity but we do not see retail demand for new maturities such as 4yrs, 20yrs, or 50yrs. Instead, we see demand and room for 2yr, 10yr, TIPS, and possibly Putable issuance.
- Treasury repo settlement fails have declined significantly since the introduction of negative repo rate trading.

Treasury Supply Surges, Market Volume Lags as Balance Sheets Shrink

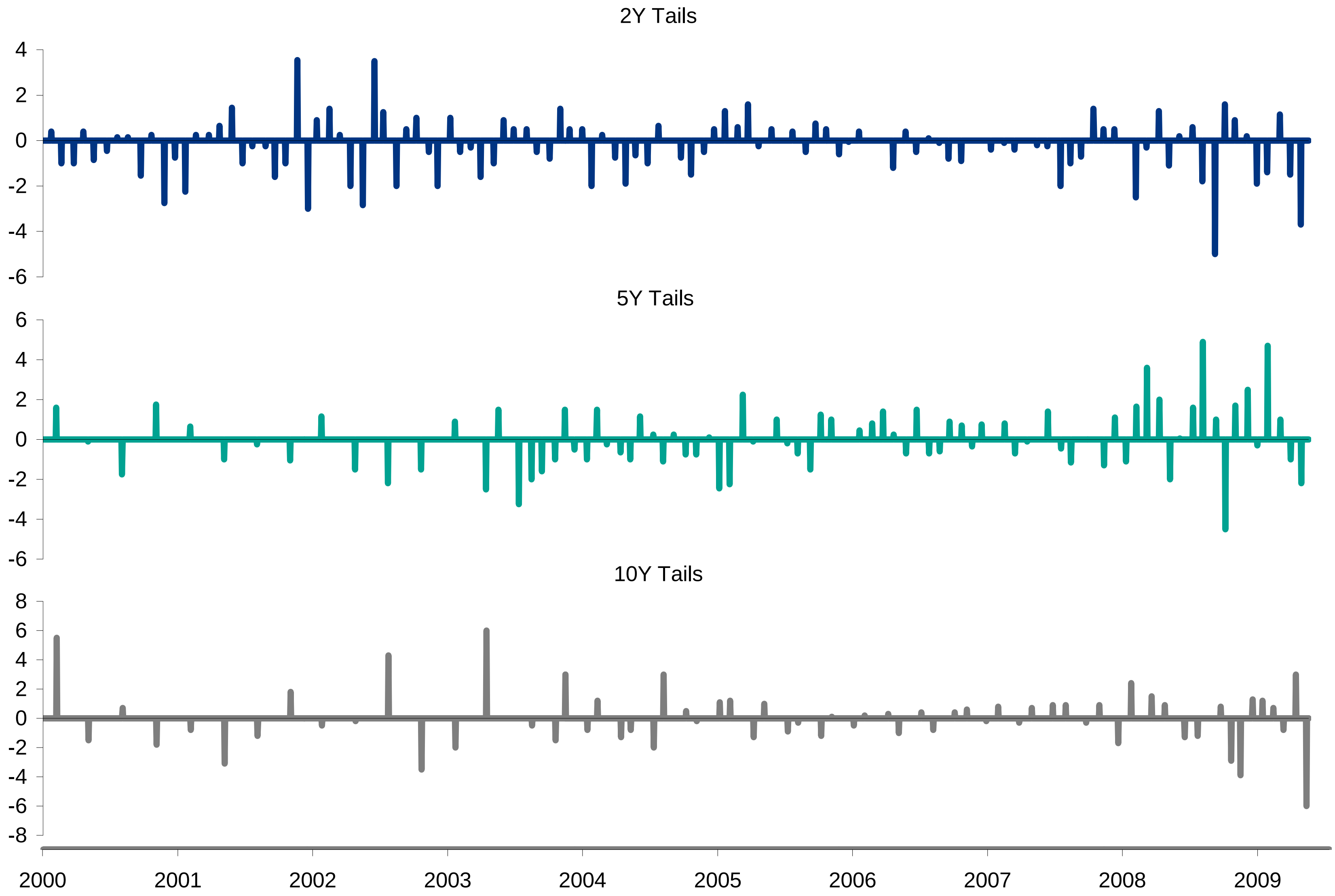


More Evidence of Recent Balance Sheet Constraint in UK Gilt Market

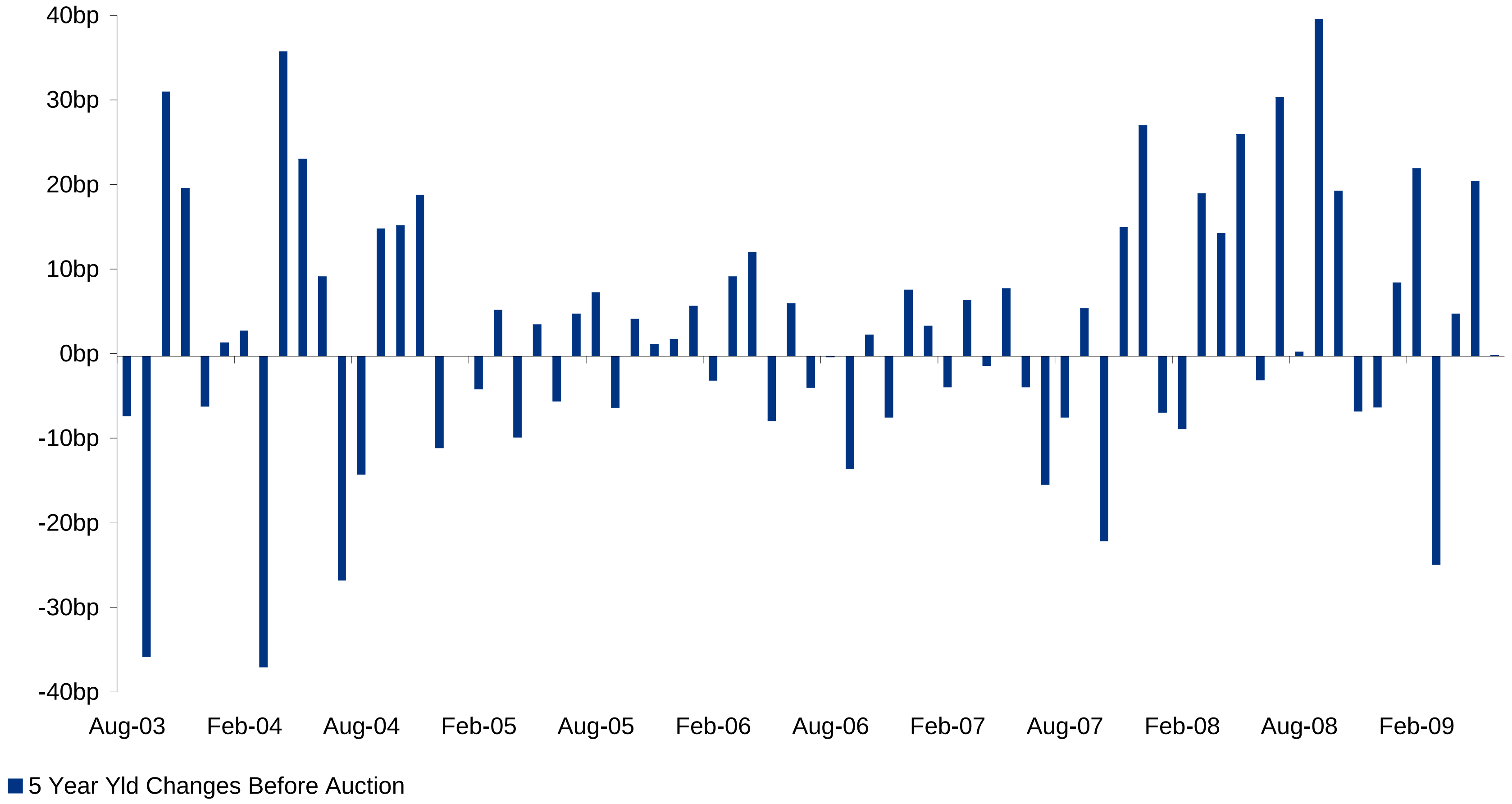
Gilt Futures Volume



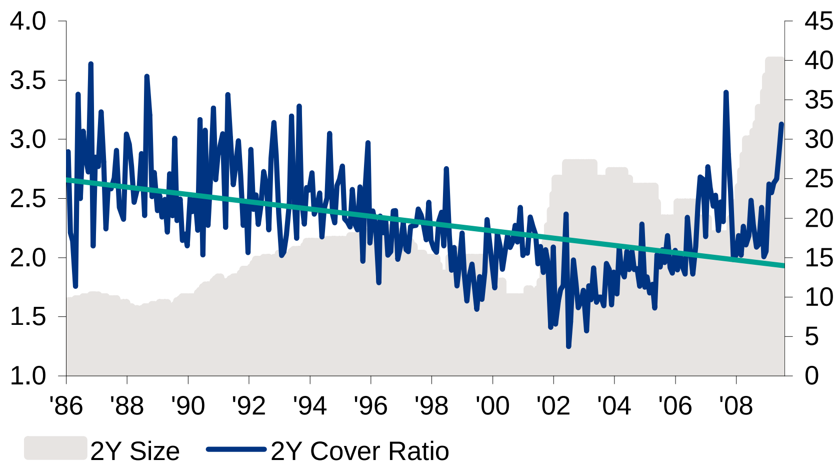
Treasury Auction Tails

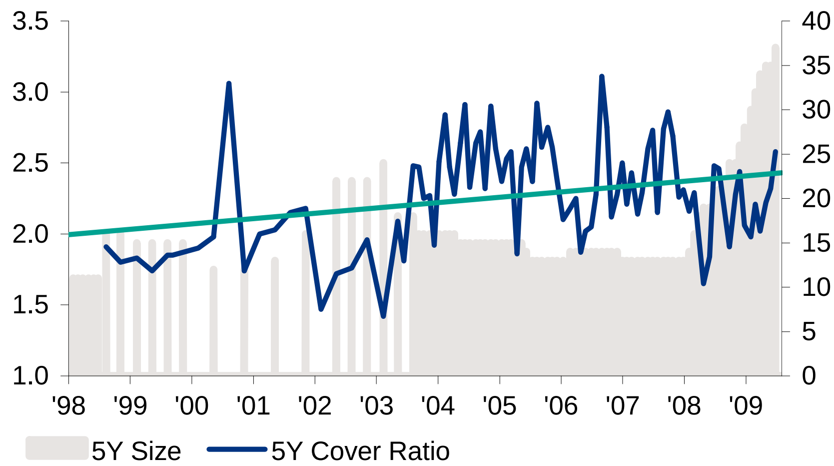


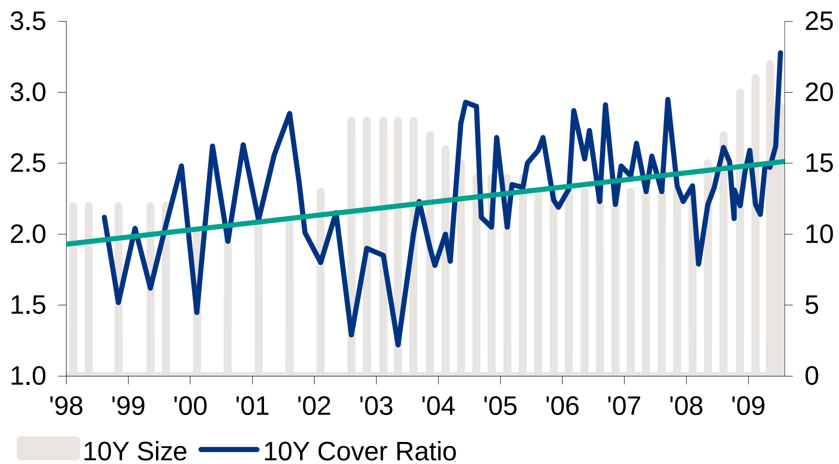
5 Year Yield Changes in Week Before the Auction

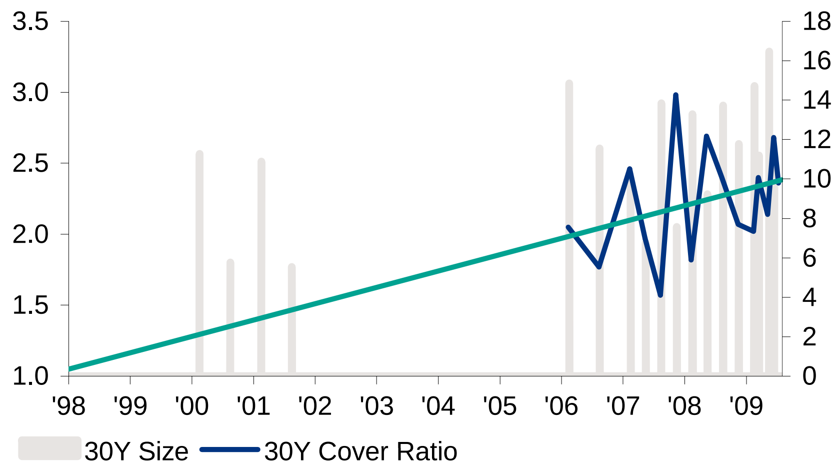


Higher Supply Has Not Generally Hurt Cover Ratios

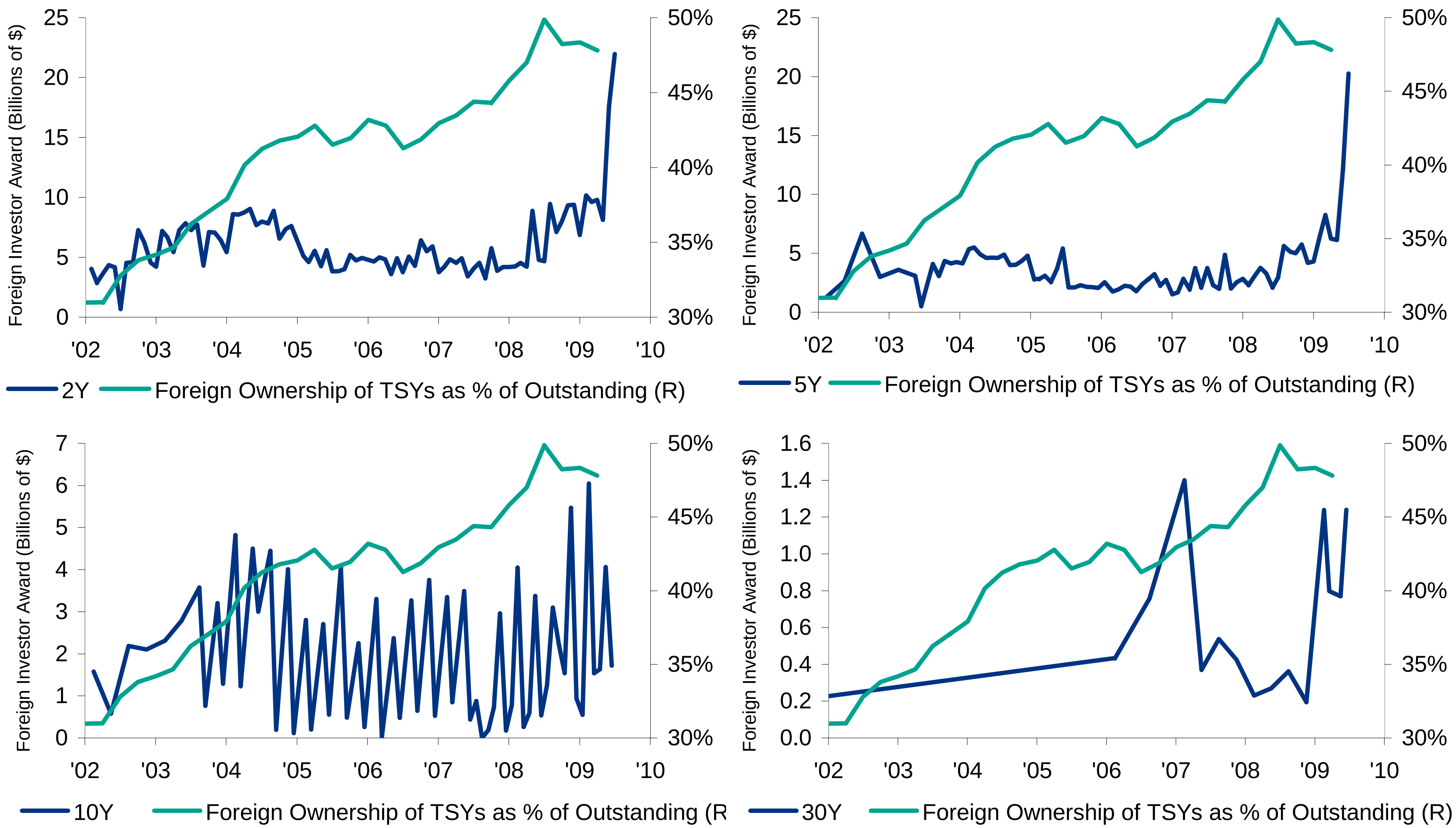




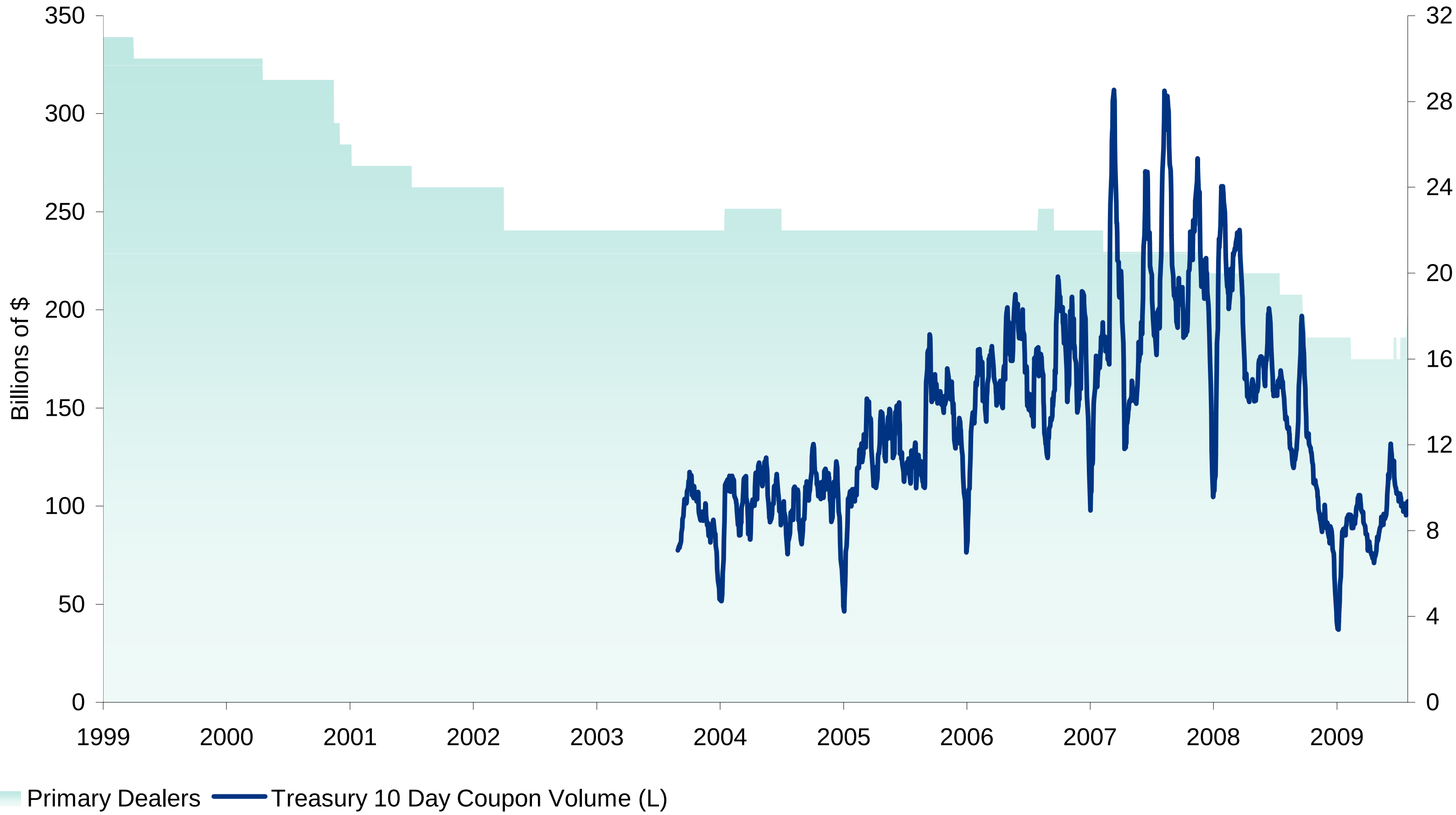




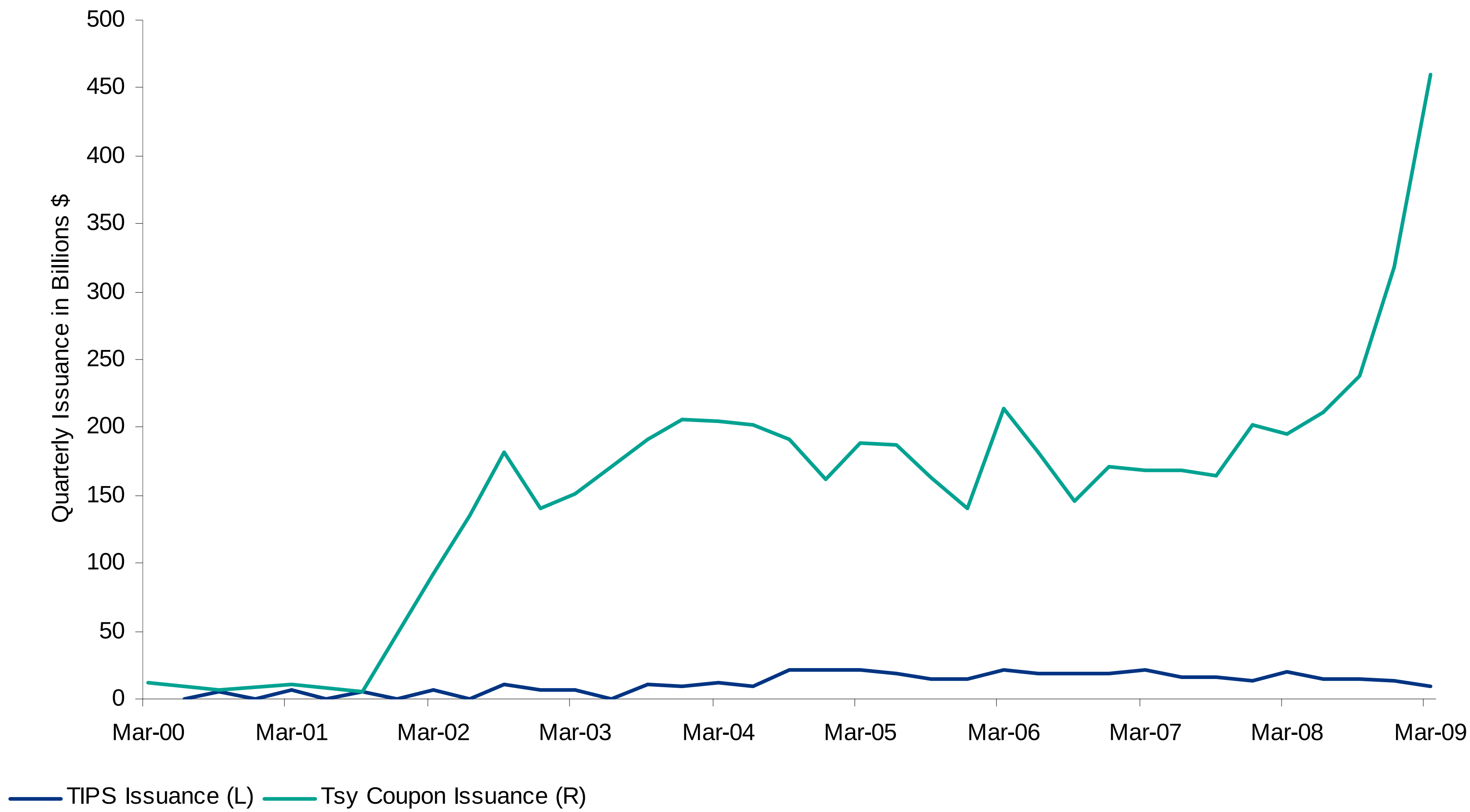
Foreign Investors Rise to the Supply Challenge



Total Primary Dealers vs. Rolling Volume



Gross TIPS Issuance vs. Gross Treasury Issuance



Net Treasury Issuance Less Fed Buybacks