

# Presentation to the Treasury Borrowing Advisory Committee



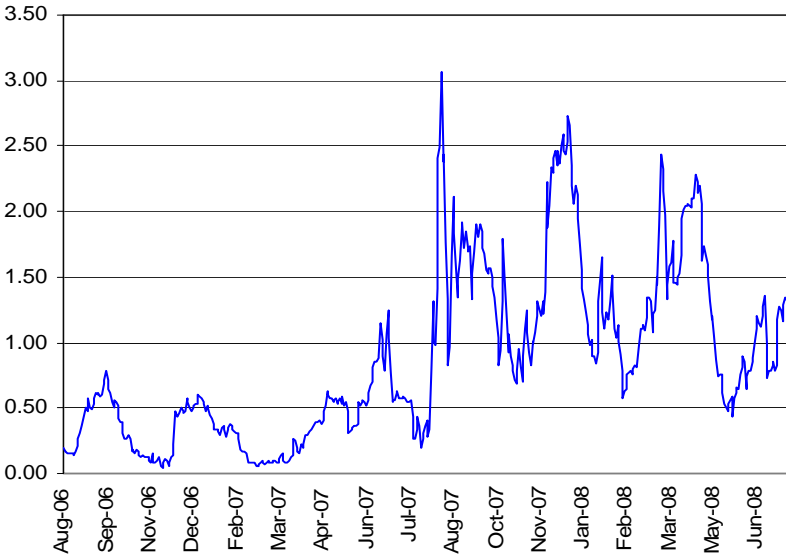
UNITED STATES  
DEPARTMENT OF  
THE TREASURY



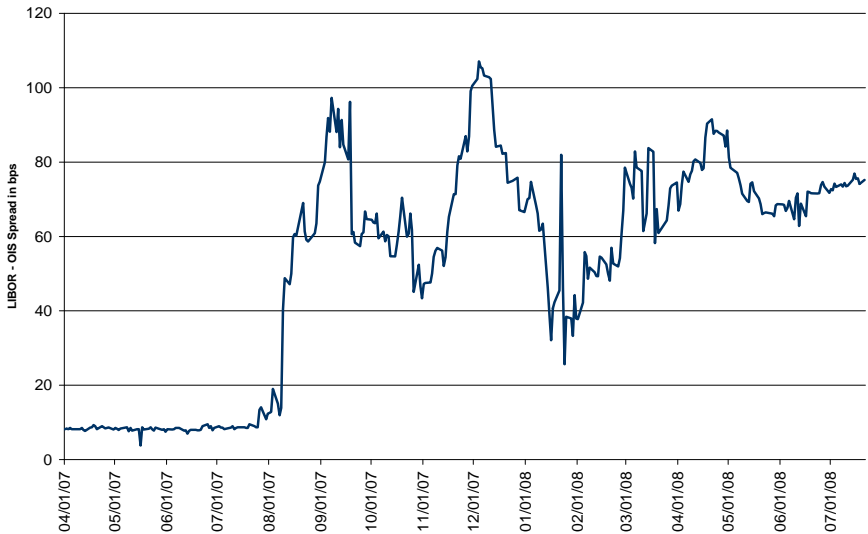
U.S. Department of the Treasury  
Office of Debt Management  
July 29, 2008

# Volatility across credit market sectors continue

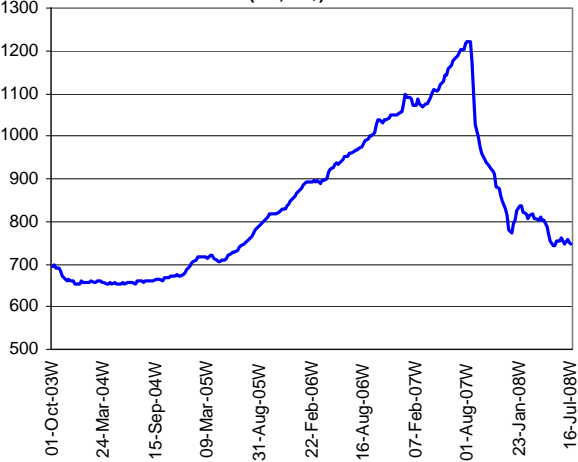
1-Month TED (Treasury - Eurodollar) Spread



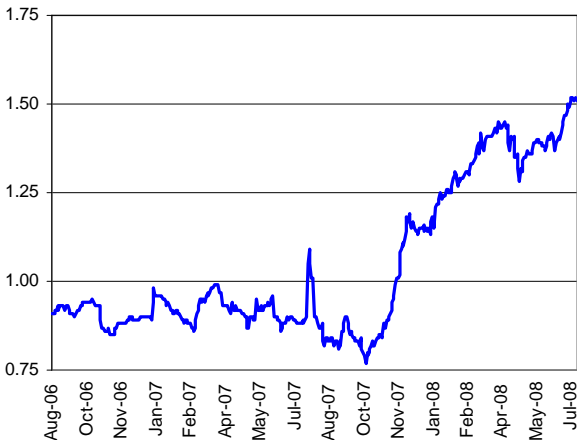
3 Month LIBOR - OIS Spread



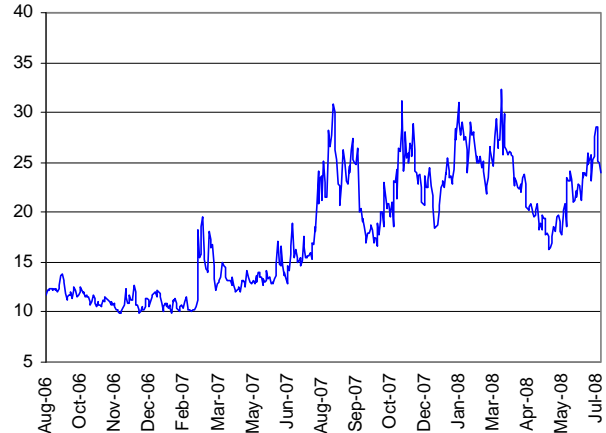
Asset Backed Commercial Paper Outstanding (SA, Bil\$)



Moody's Seasoned Baa/Aaa Corporate Bond Spread

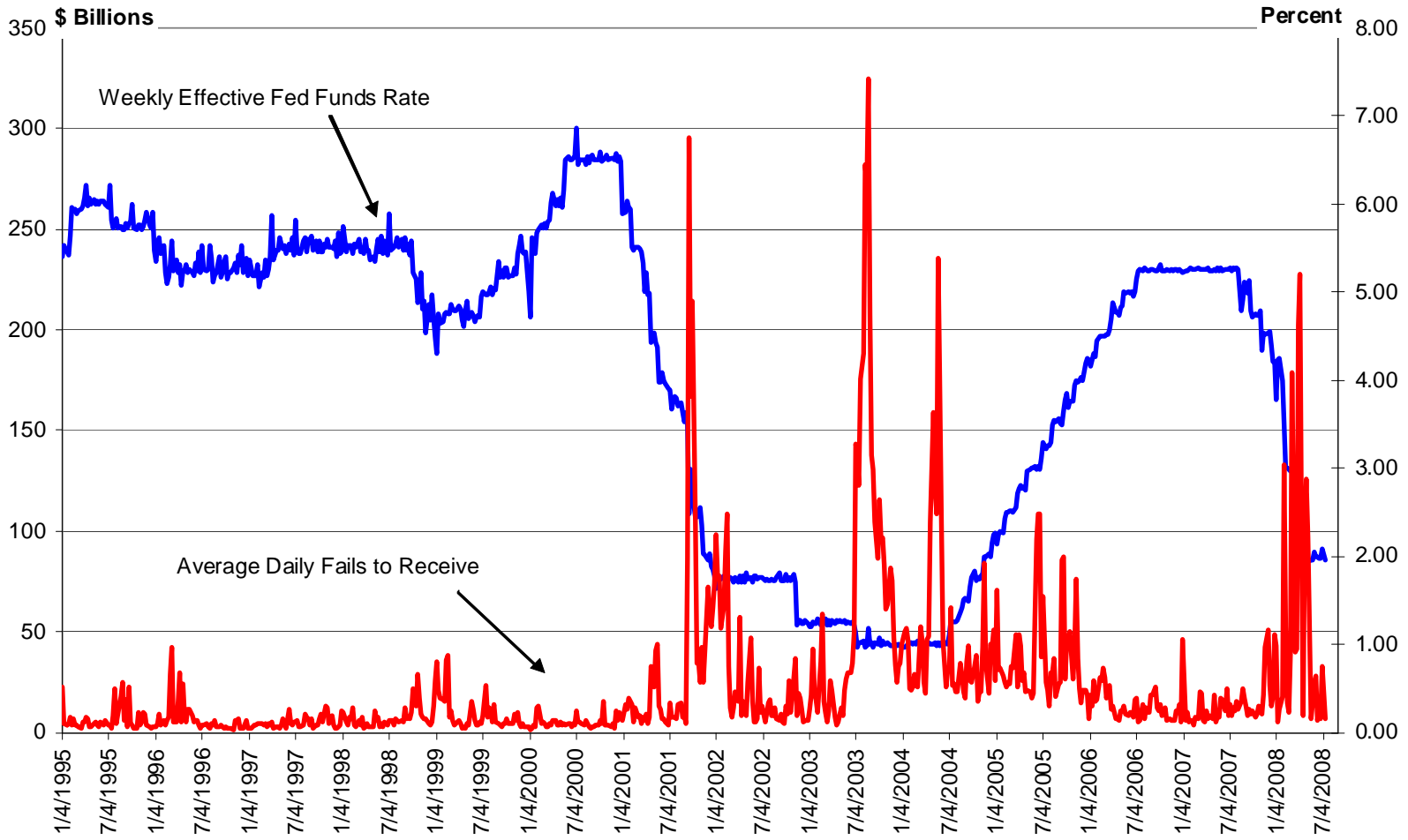


CBOE Market Volatility Index, VIX



# But Treasury settlement fails have fallen from their April peak

## Primary Dealer Treasury Security Settlement Fails Interest Rate Environment



Source: FRBNY FR2004 Settlement Fails Data & FRB H.15

# The private sector continues to make progress on initiatives to address Treasury security fails

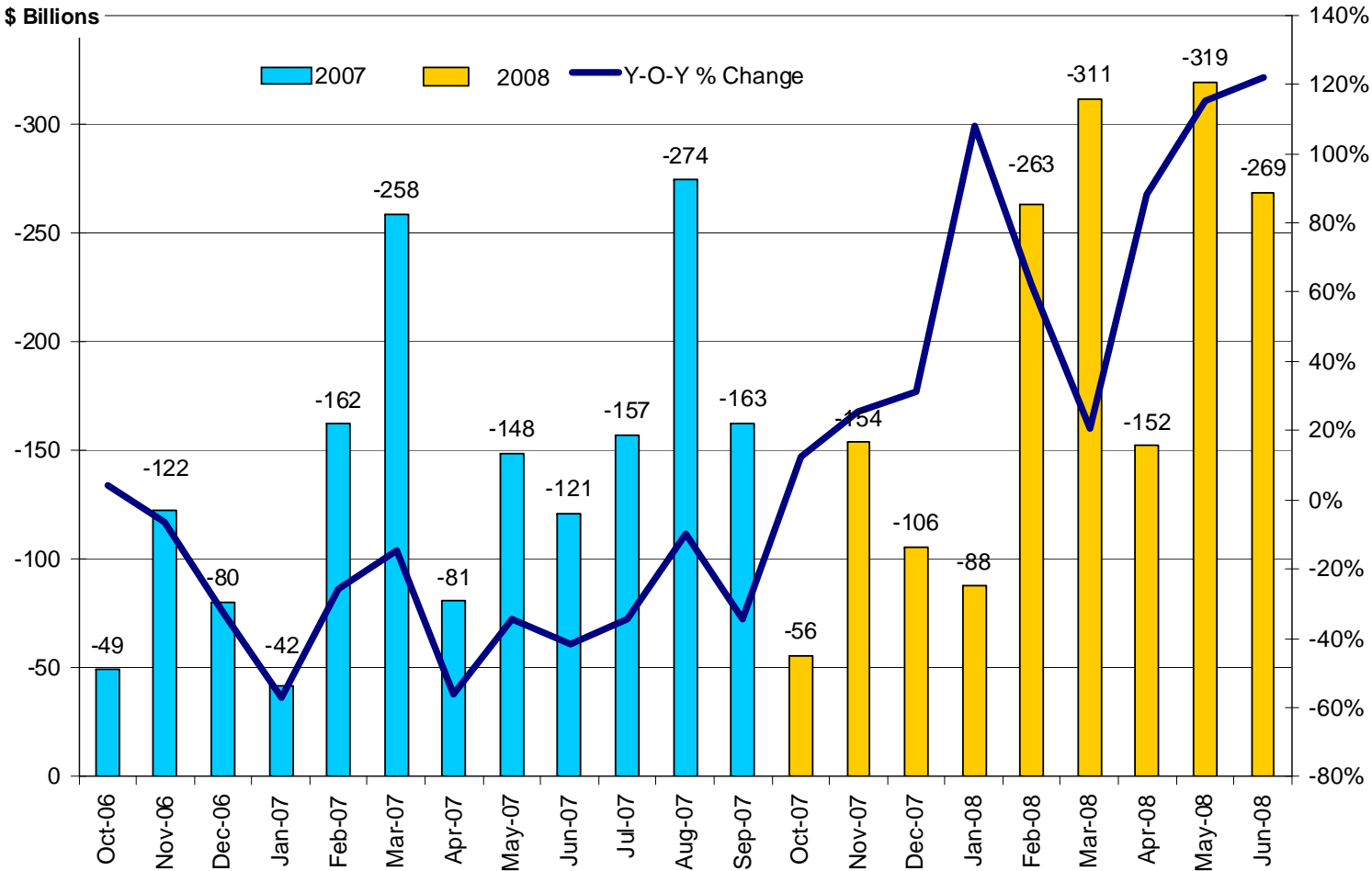
Since the May refunding, SIFMA and the Treasury Market Practices Group (TMPG) jointly are addressing:

- ◆ Fails Best Practices: SIFMA/TMPG plan to issue a final document in August 2008.
- ◆ Fails Monitoring Committee: Operational in August 2008 after Fails Best Practices are issued.
- ◆ Mini-Closeout Provisions for the MRA: To be issued this quarter.
- ◆ SIFMA's buy-in procedures - Engaged in discussions with Treasury staff on new cash settlement feature.
- ◆ Prompt Delivery Trading Practices and Negative Rate Repo Trading - Both are available, but not used frequently. SIFMA plans 3 month study with recommendations.
- ◆ Fails Margining: Operationally possible for repos, but challenges remain for margining of cash fails.



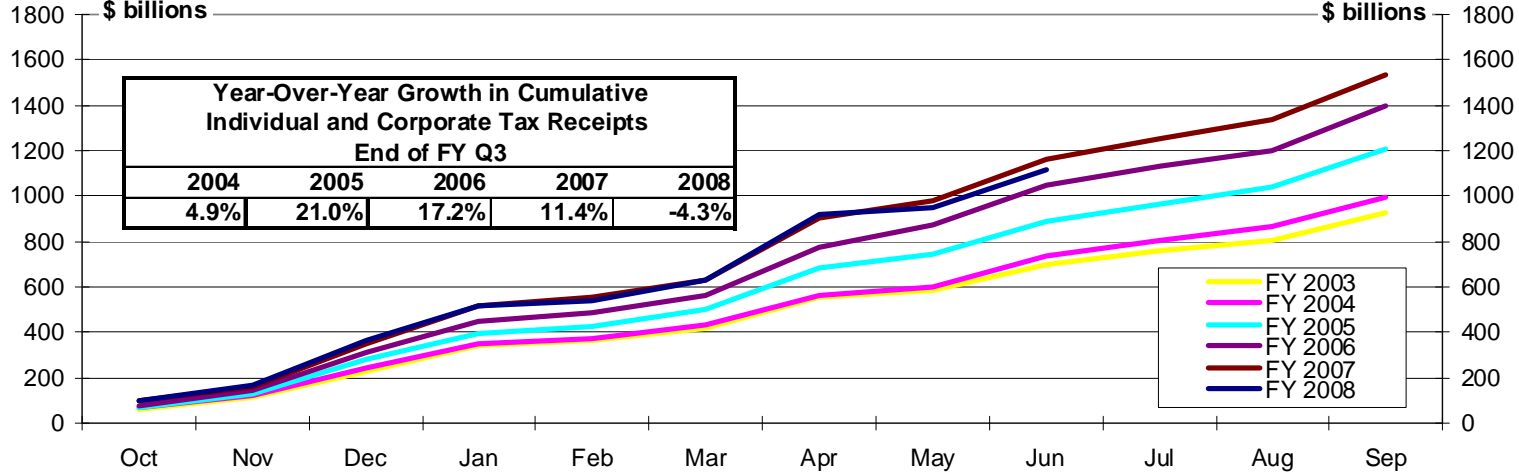
# From a fiscal perspective, borrowing requirements have increased since the beginning of the year

Fiscal Year to Date Deficits  
(monthly data)

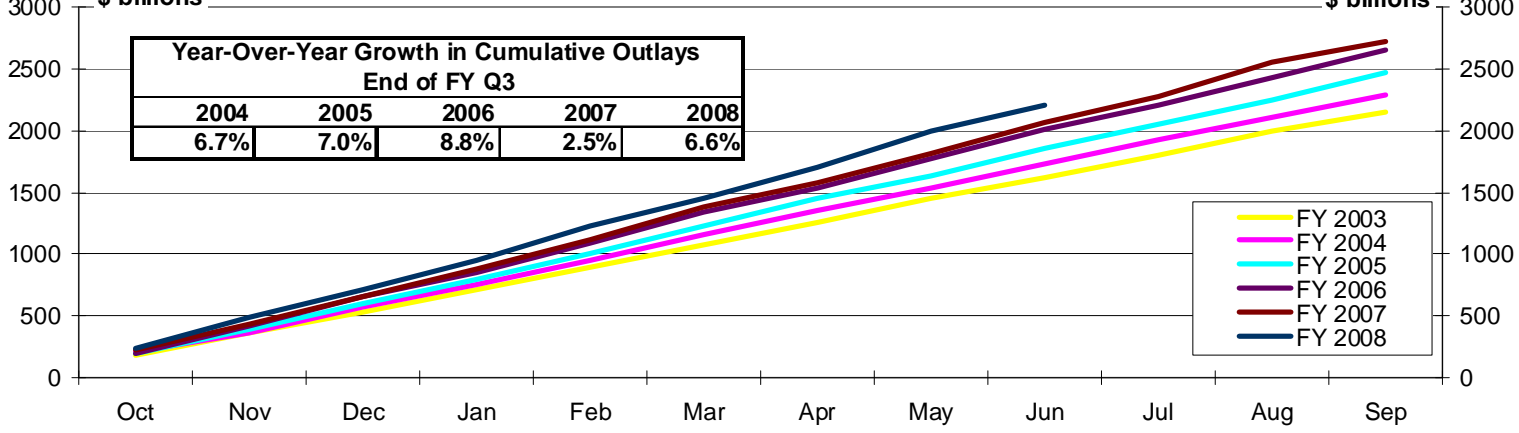


# Year-over-year growth in receipts is weaker than last year while growth in outlays continues

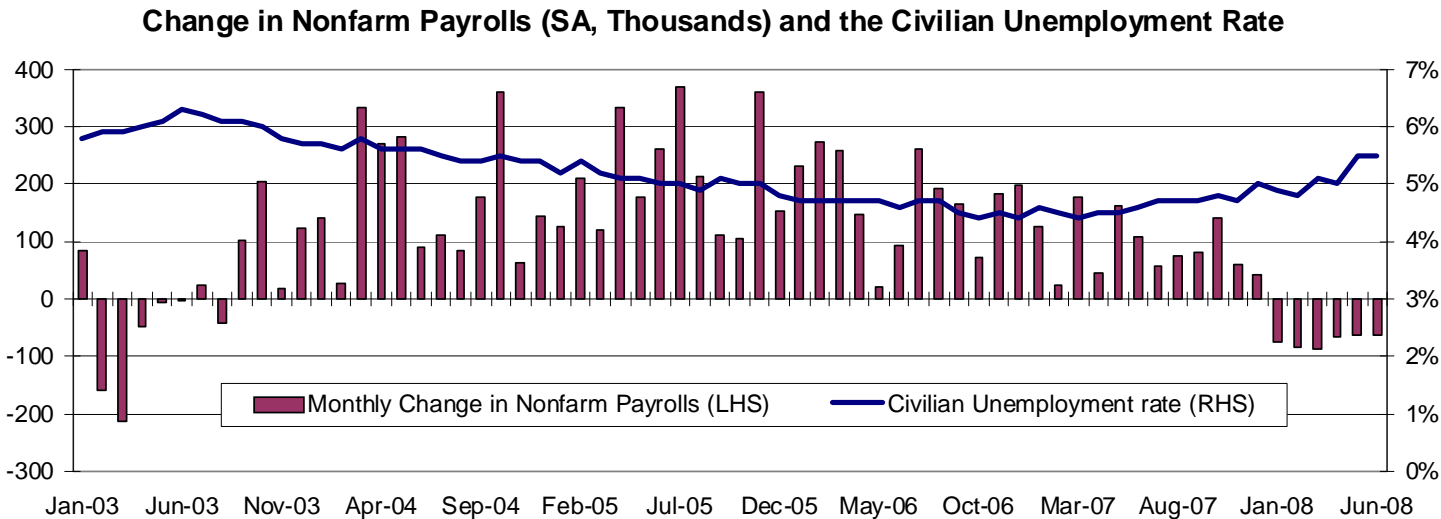
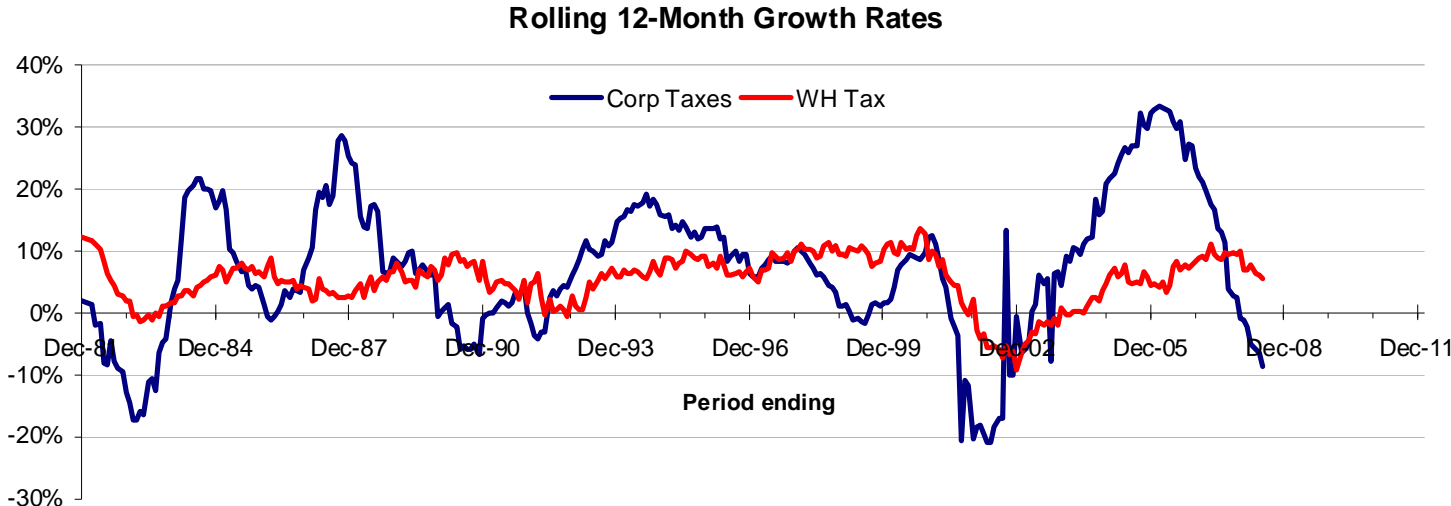
## Individual and Corporate Tax Receipts Fiscal Year to Date



## Total Outlays Fiscal Year to Date



# Withheld tax growth appears to be following trends in corporate taxes



# Primary Dealer Estimates for the FY 2008 deficit average \$413 billion, virtually unchanged from \$414 billion in November 2007

<b>FY 08 Deficit Estimates</b>			\$ billions
	<b>Primary Dealers*</b>	<b>CBO</b>	<b>OMB</b>
<b>Current:</b>	413	396	389
<b>Range based on average absolute forecast error</b>	375-451	319-473	345-433
<b>Estimates as of:</b>	July 08	March 08	July 08

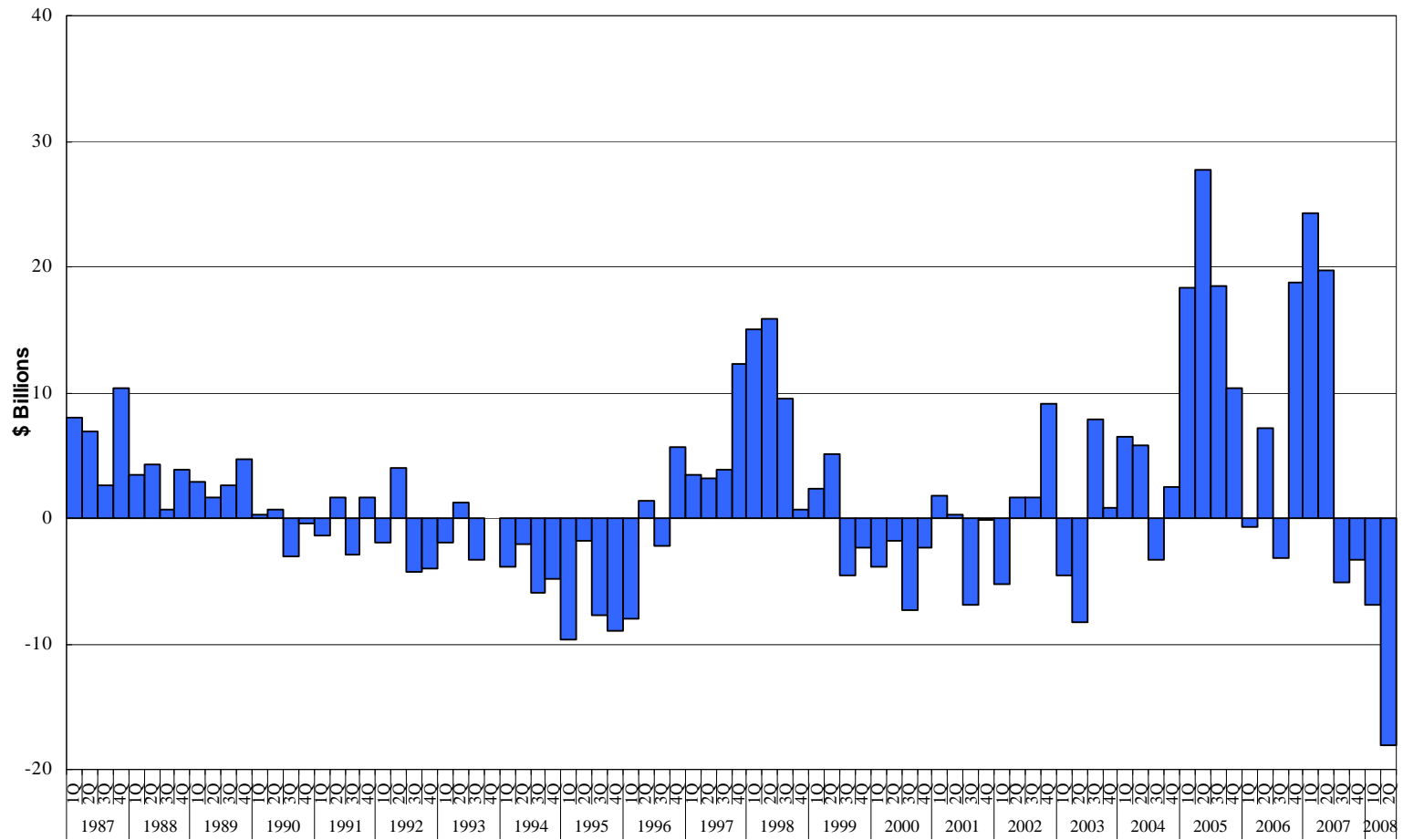
Note: Ranges based on errors from 2003-2007.  
 \* Primary Dealers reflect average estimate.





# Large SLGS redemptions increase marketable borrowing needs

## State and Local Governments (SLGS) Calendar Year

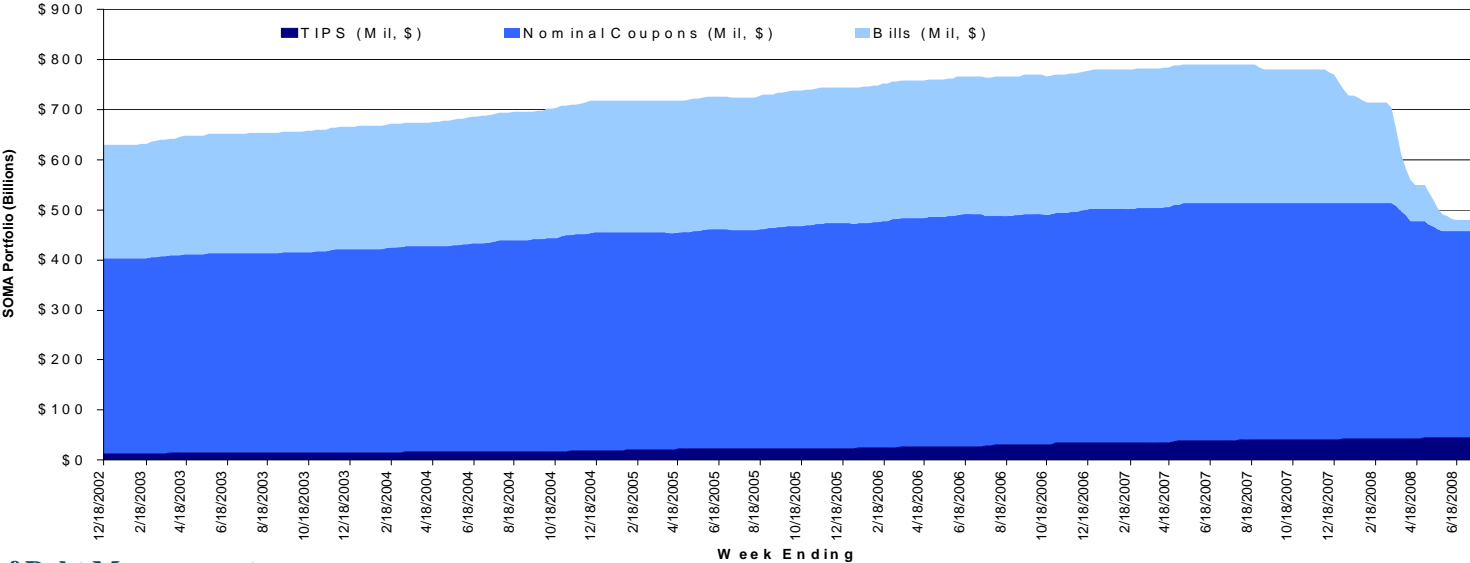


# Since the beginning of FY2008, the Fed's holdings of Treasuries have declined by \$300 billion as new liquidity tools have been introduced

Federal Reserve Liquidity Tools and Oughtright Treasury Holdings											Fiscal Year to Date Change
(Monthly Averages, \$ Billions)											
Liquidity Tools	October	November	December	January	February	March	April	May	June	July 9, 2008	
TAF	0	0	0	44	60	70	100	125	150	150	
PDCF	0	0	0	0	0	23*	27	15	8	0	
Discount Window	0	0	3	2	0	0	9	14	14	13	
28-day RPs**	0	0	0	0	0	60	80	80	80	80	
Authorized Currency Swaps	0	0	18	24	36	36	36	62	62	62	
TSLF	0	0	0	0	0	0	118	128	104	104	
<b>Total</b>	0	0	21	68	96	189	370	424	418	409	
Outright Treasury Holdings	780	780	770	728	713	682	559	514	482	479	

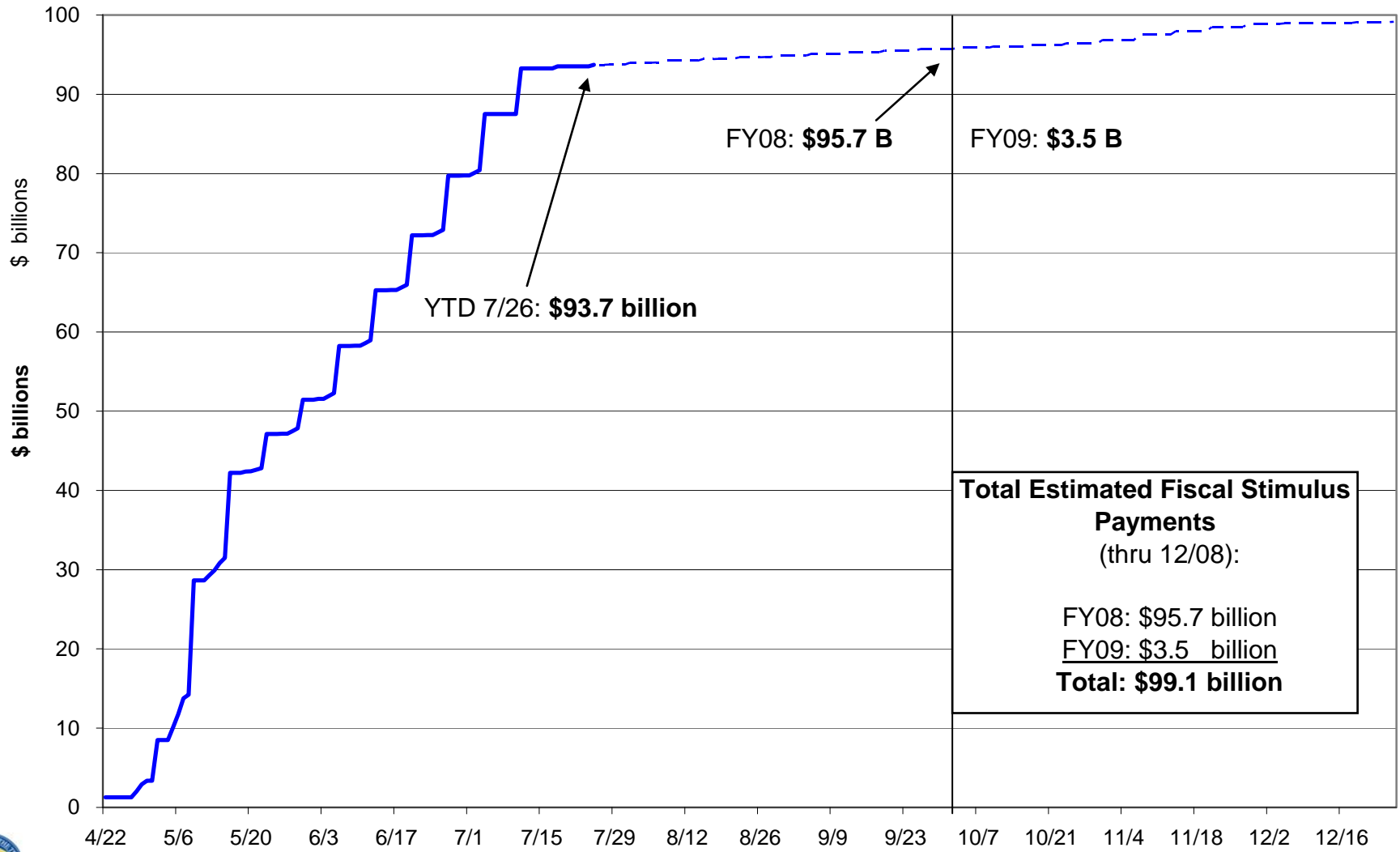
\* 2-week average    \*\* Outstanding end of month

SOMA Holdings of Bills, Nominal Coupons and TIPS



# Treasury has made over \$90 billion in stimulus payments year to date.

## Cumulative 2008 Fiscal Stimulus Payments

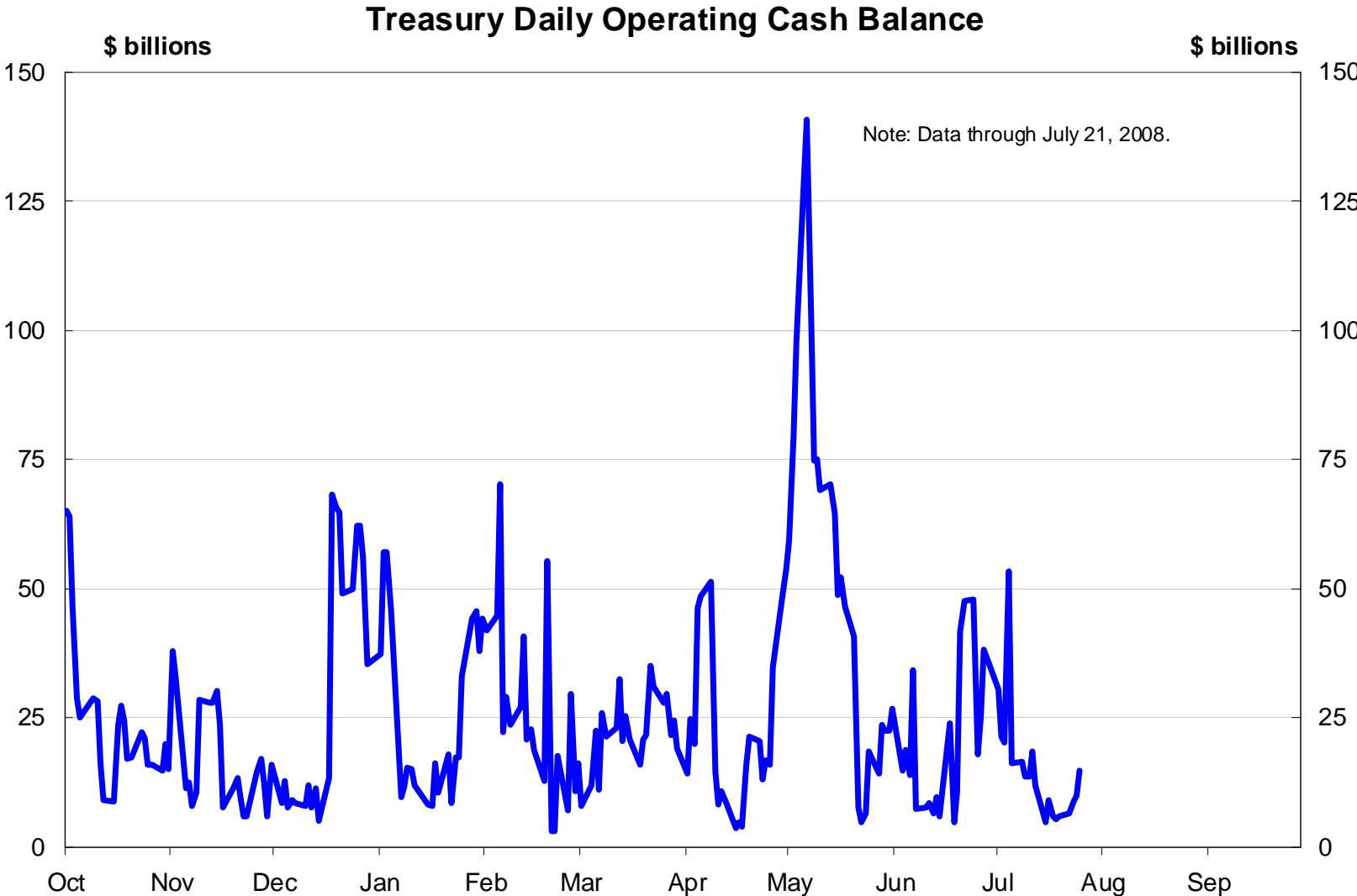


**Total Estimated Fiscal Stimulus Payments**  
(thru 12/08):

FY08: \$95.7 billion  
 FY09: \$3.5 billion  
**Total: \$99.1 billion**

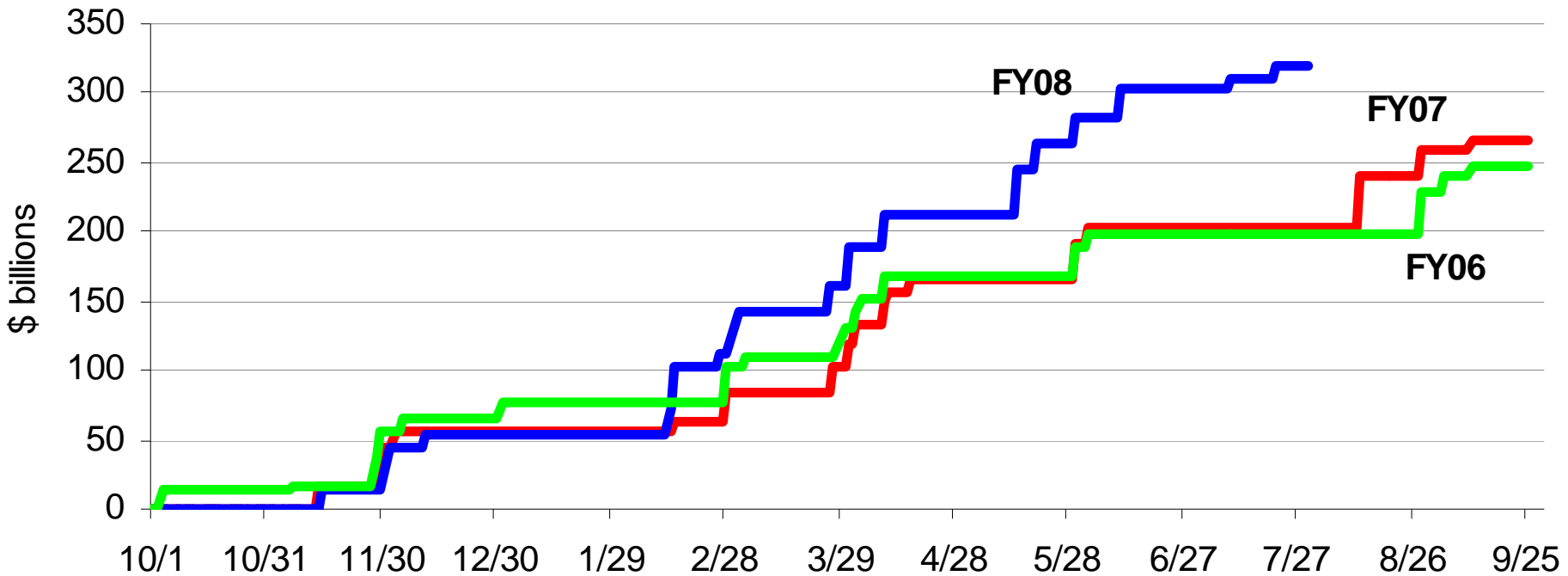


# Mitigating volatility in cash balances resulting from net receipts, redemptions, and other factors remains challenging



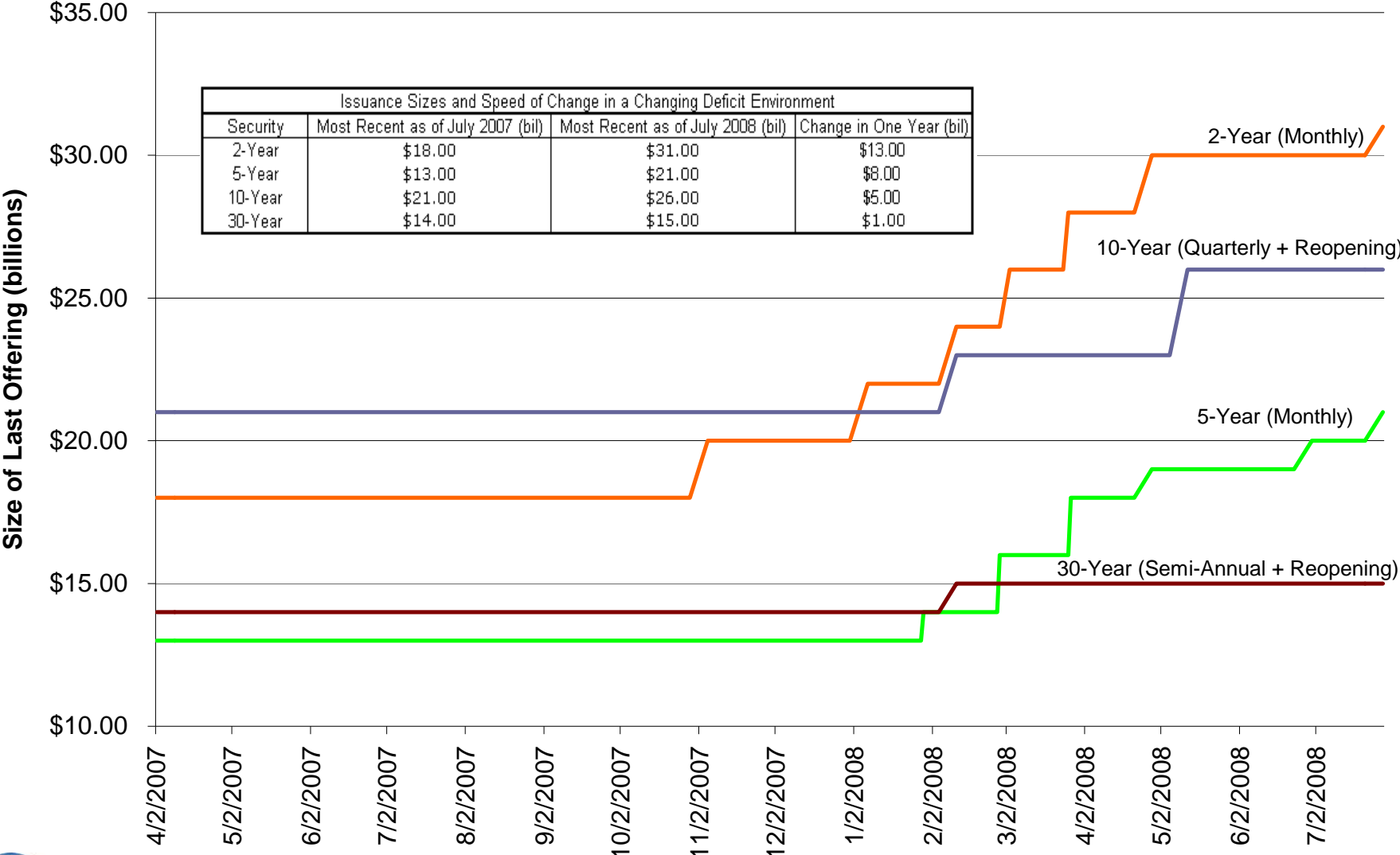
# Growth in marketable financing needs has led to increased issuance of cash management bills with some extending over fiscal year end

### Cash Management Bill Issuance (FY 2006 - FY 2008)

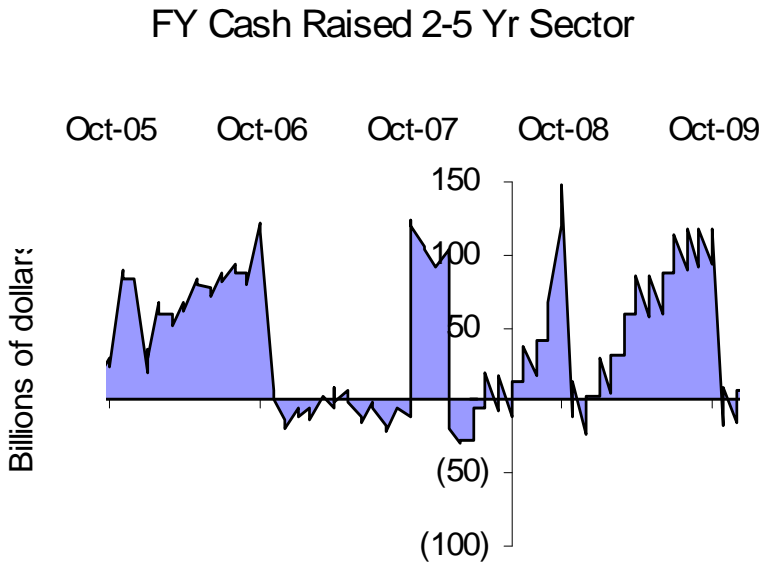
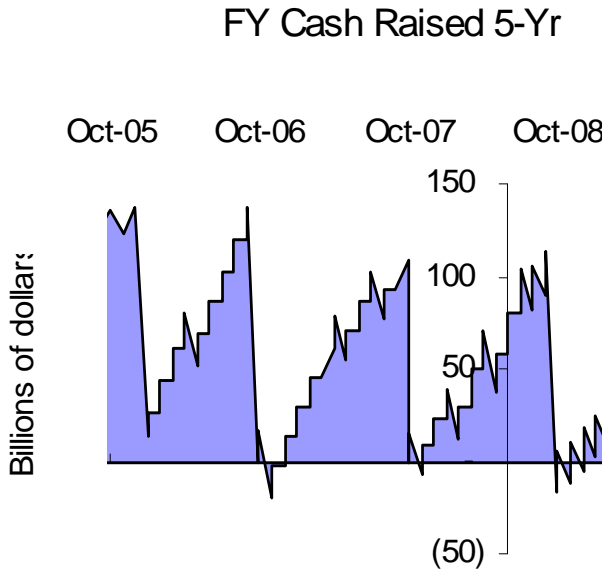
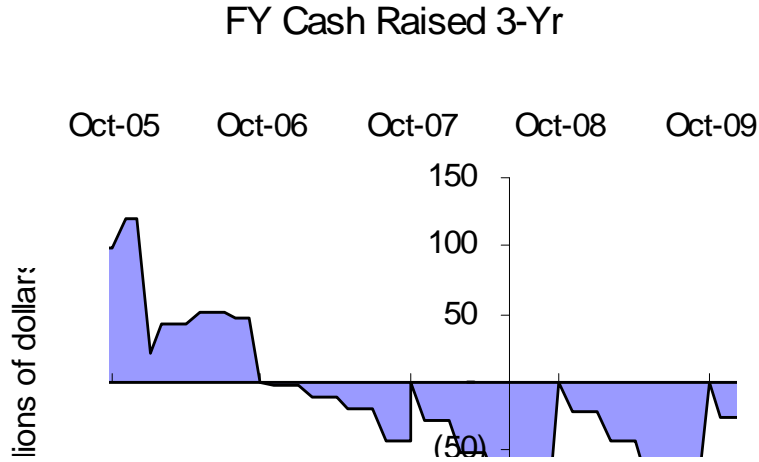
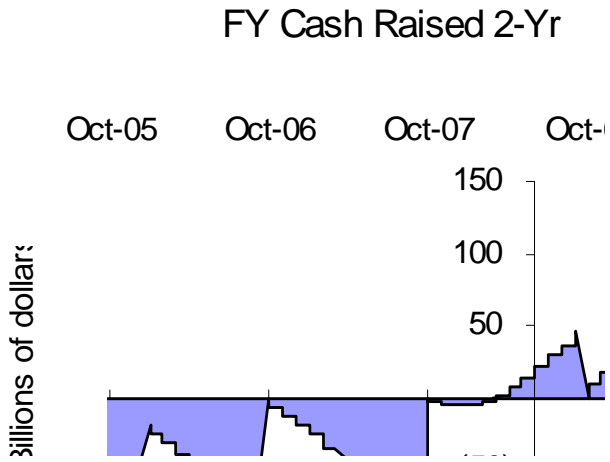


# In addition, nominal coupon security issuance has been increased in response to borrowing needs

Coupon Issuance in 2007-2008



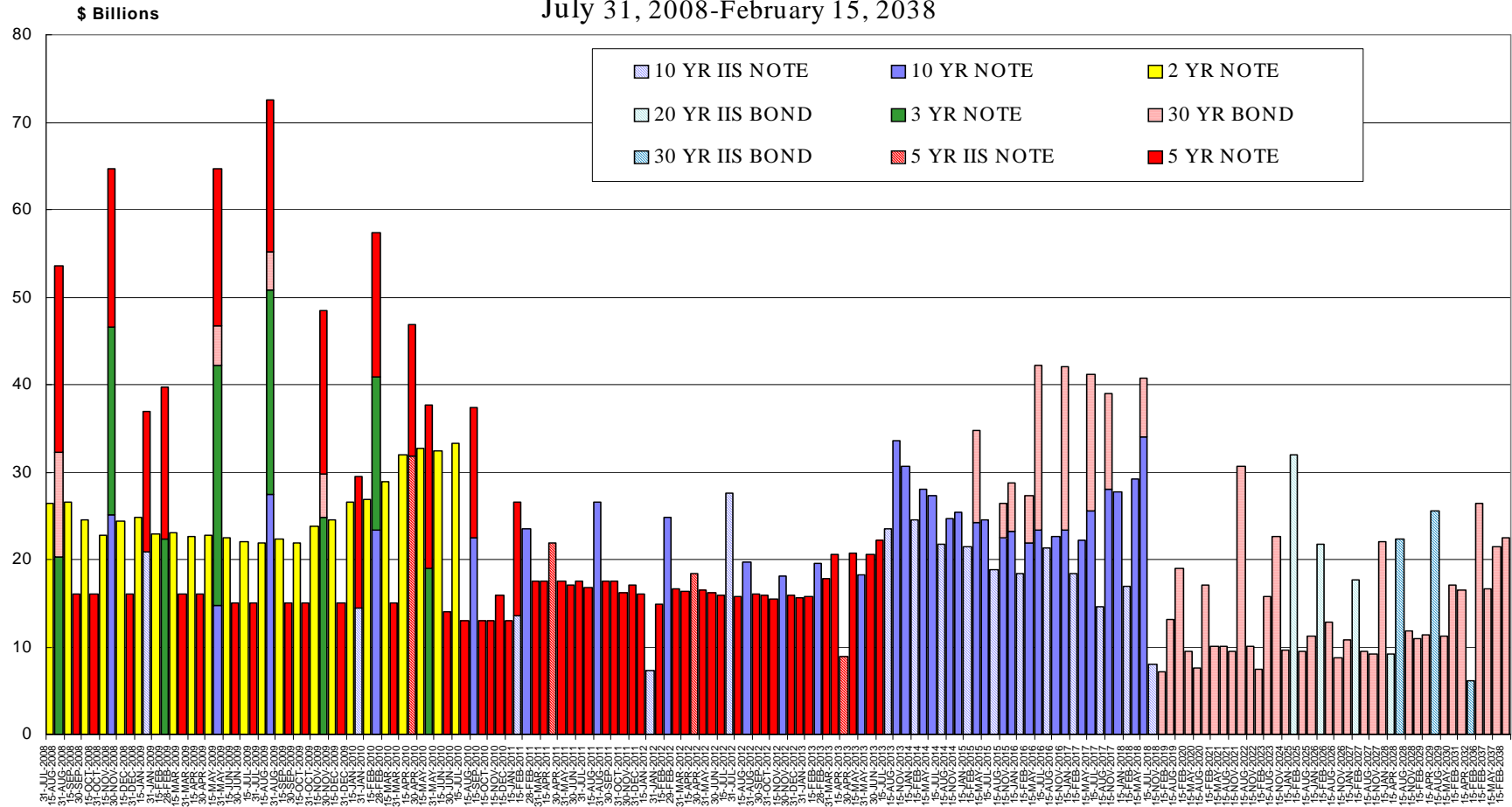
# The 2-year to 5-year sector continue to raise cash in response to recent borrowing needs



Forecasts of cash raised in future months assume that offering amounts will remain the same as those of July 2008.

# Note though that in FY 2009, maturing 3-yr notes and 5-yr notes create sizable redemptions

Coupons Maturing\*  
July 31, 2008-February 15, 2038



\*Based on coupon securities outstanding as of July 31, 2008.



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Given Treasury's financing needs in the coming years as well as current and medium-term trends in the economic outlook, what are the Committee's thoughts on Treasury's debt issuance?

In particular, we would like the Committee's advice on whether the recent adjustments to the financing schedule provide Treasury with sufficient debt management tools to handle a wide range of budgetary and financing outcomes, or if additional adjustments should be considered.

# Treasury Borrowing Advisory Committee Presentation to the U.S. Treasury

## Credit Market Conditions

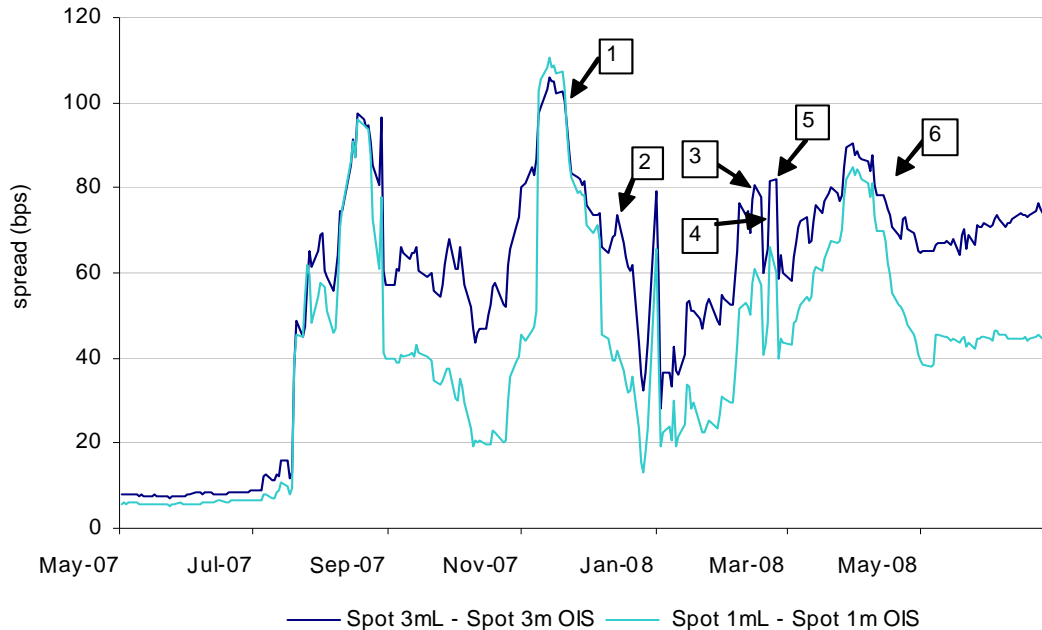
July 28, 2008

- I. Funding Strains & Libor/OIS Spreads
- II. Assessing the New Fed Facilities
- III. Investor Activity

- I. Funding Strains & Libor/OIS Spreads

# Libor/OIS spreads

Spot Libor / OIS spreads



1 - 12/12/07 TAF announced, first auction 12/17 for 12/20 settle, bi-weekly 40b total

2- 1/4/08 TAF increased to 60b from 40b

3- 3/7/08 TAF increased to 100b from 60b, 28-day single tranche repo operations launched : first auction 3/7 for 3/10 settle

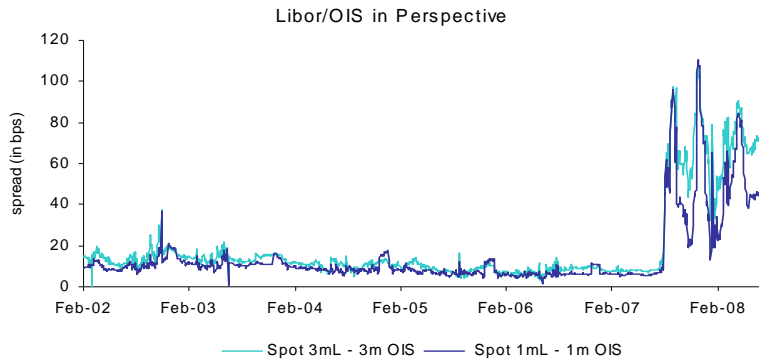
4- 3/11/08 TSLF introduced, first auction 3/27 for 3/28 settle

5- 3/16/08 PDCF introduced

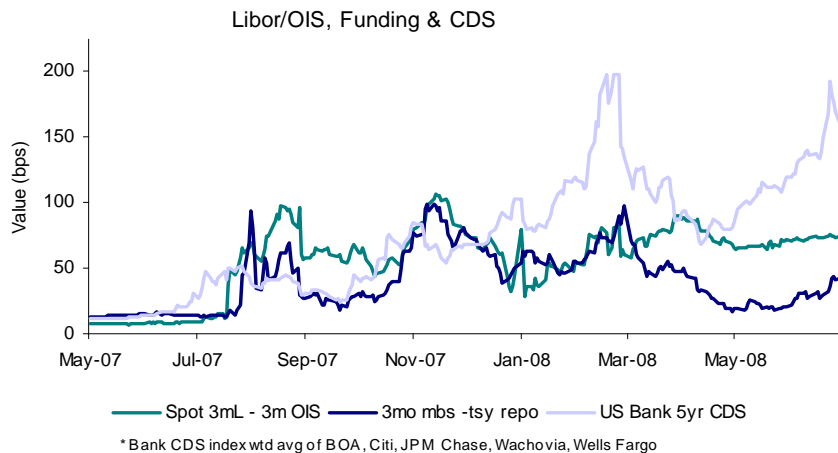
6- 5/2/08 TAF size increased to 150bn from 100b

- Funding strains in Money Markets quickly escalated during August 2007 as interbank liquidity diminished and European Bank demand for USD increased. 75bps of easing in the FF target level by November brought spreads in; however, year-end funding pressure saw that narrowing reverse with Libor/OIS spreads reaching a high of 110bps in early December.
- The introduction of TAF on Dec 12, 2007 quickly improved conditions as the market anticipated that the 40bn in USD provided via the US TAF would ease funding strains into year-end.
- A further increase in the size of TAF announced on January 4, 2008 sent spreads to their tightest levels since early August; however, disruption to global equity markets unwound this in January.
- Since then, further TAF size increases and the introduction of the TSLF and PDCF have reduced the term interbank premium in 1-month money, while 3-month money trades persistently in a 60-80bps spread to 3-month OIS.
- TAF and its subsequent increases appear to have had the largest impact on Libor/OIS spreads and the introduction of a 3-month TAF would likely help to narrow the gap between 1-month and 3-month Libor.

# Libor/OIS in Perspective



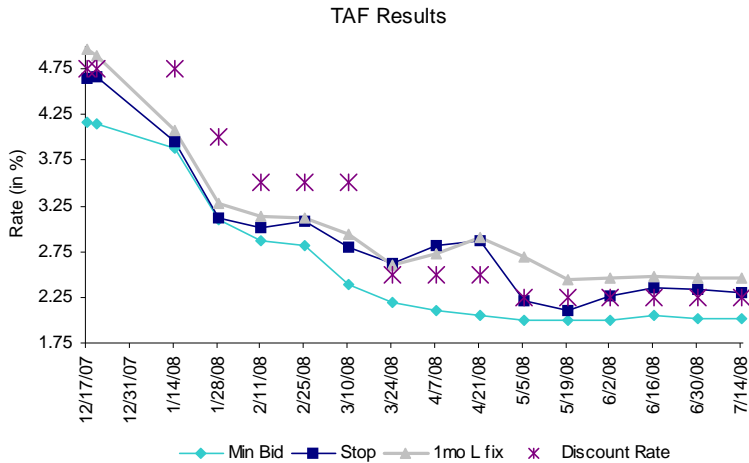
- While the volatility and outright levels in Libor/OIS swaps are extreme by historical standards, it is difficult to point to one explanatory factor.



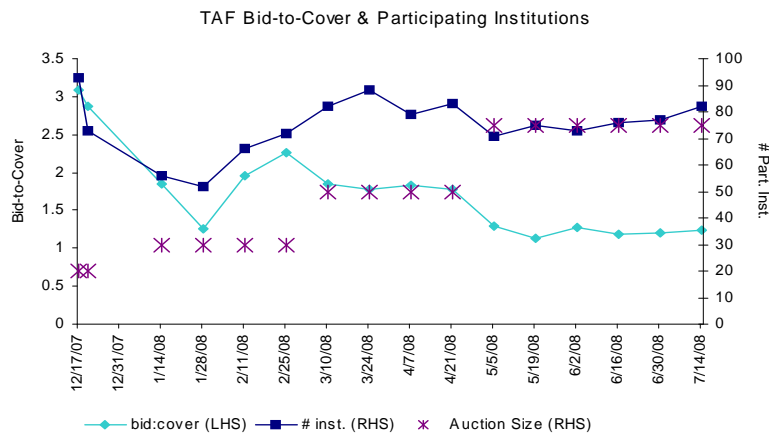
- Before the launch of the TSLF in March, the spread between 3-month MBS repo and 3-month TSY repo explained roughly 50% of the variation in Libor/OIS spreads. US Bank CDS is even less correlated, implying that the move in Libor/OIS spreads is likely a function of a dynamic combination of balance sheet pressures, liquidity concerns, credit risk, and an embedded market fear premium, as well as a general preference for holding cash over lending.

- II. Assessing the New Fed Facilities

# Assessing TAF



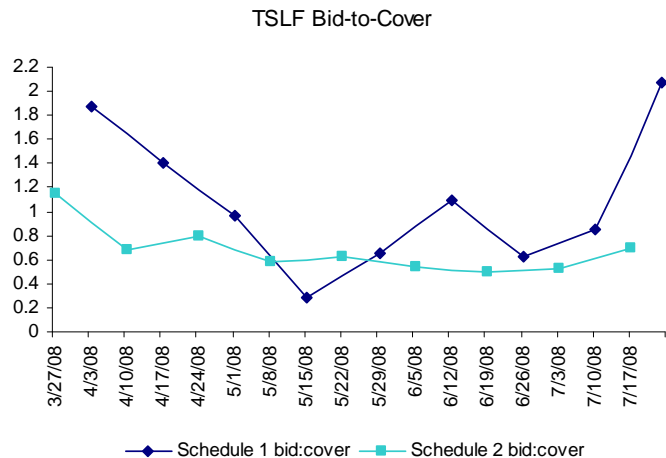
- Early TAF results were well behaved but began to trade much closer to interbank levels than OIS during March. At the same time, concerns that the Libor fixing process understated the true cost of borrowing in the interbank market were reinforced when the TAF stopped above 1-month Libor on March 24<sup>th</sup> and April 7<sup>th</sup>. We think that the presence of Discount Window stigma might have had a hand in TAF trading like the interbank market as banks were willing to pay-up to secure money away from the Discount Window.



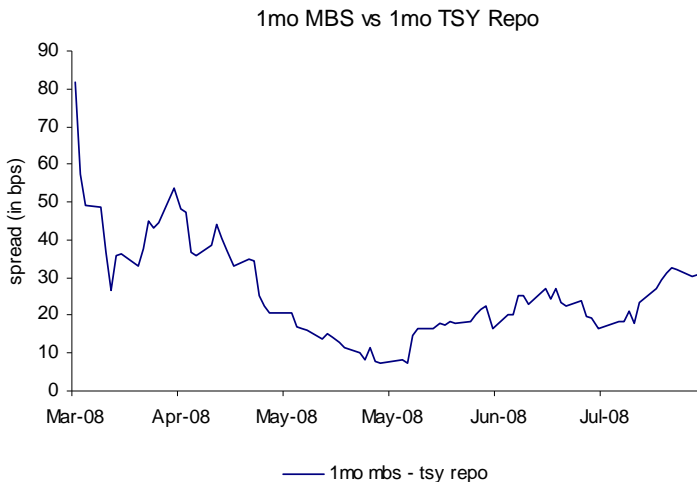
- On May 2nd, the size of the TAF was increased to 150b from 100b, which reset the stop levels closer to OIS and brought the bid-to-cover down closer to 1.
- Recent stability in clearing spreads, bid-to-cover and the number of participating institutions indicates that 150b is an appropriate amount of 1-month money for the market at this time. However, the steepness of 1-month/3-month Libor indicates an embedded term premium for longer dated funding that could be reduced by a longer tenor TAF auction.



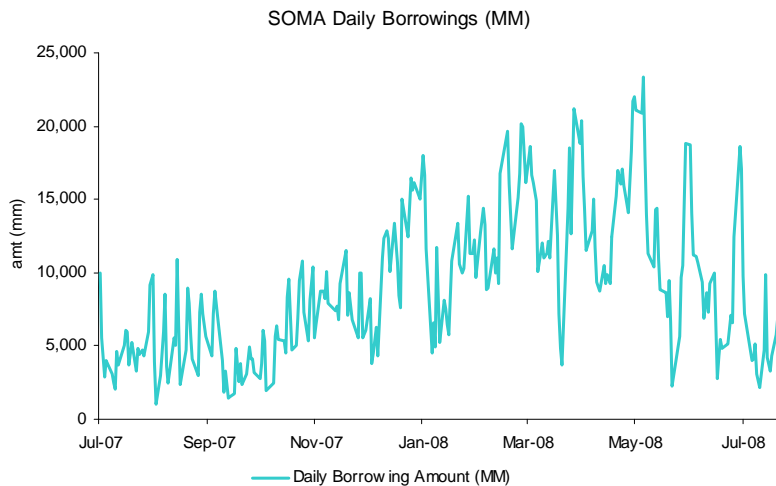
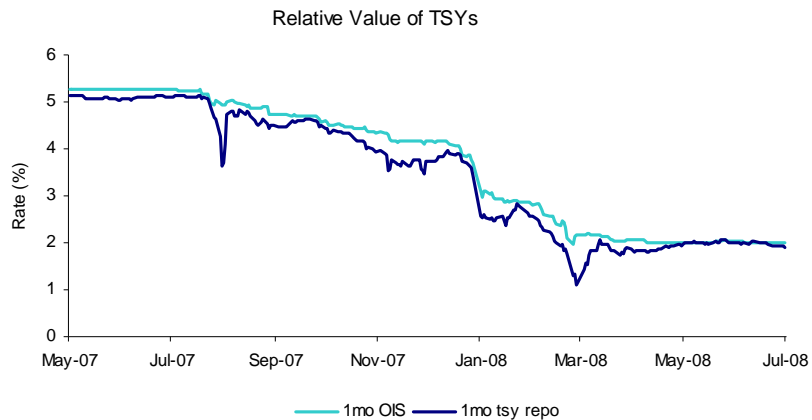
# Assessing TSLF



- The TSLF was not as popular with the primary dealer community as TAF was for the banking community given that TSLF is a collateral swap and thus provides less value-added vs. TAF. The collateral schedule is more restrictive and is an auction for TSY tri-party repo instead of cash.
- The amount of TSY in the market supplied by the Fed via TSLF and the sterilization of their other liquidity platforms (approx 430bn) cheapened TSY repo a tremendous amount.
- Overnight TSY repo had been trading at close to a 150bp spread to FF effective in late March and cheapened to 2-5bps by mid-May. This cheapening narrowed the funding spread between TSLF collateral classes, which rendered the TSLF less attractive.
- In late July, widening in the MBS/TSY repo spread saw the Schedule 1 TSLF garner more interest as the facility became an attractive method for MBS funding.

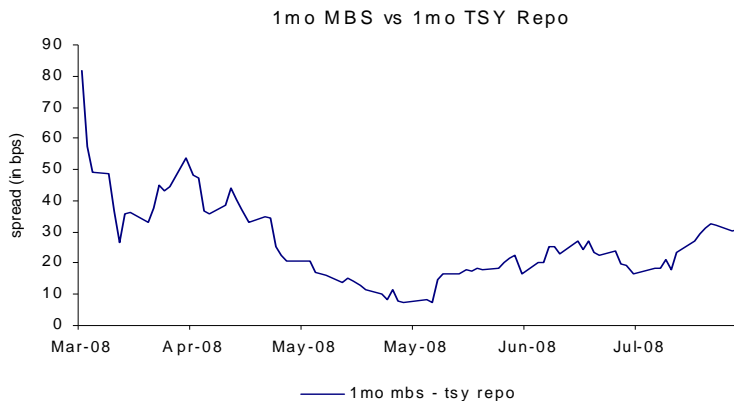
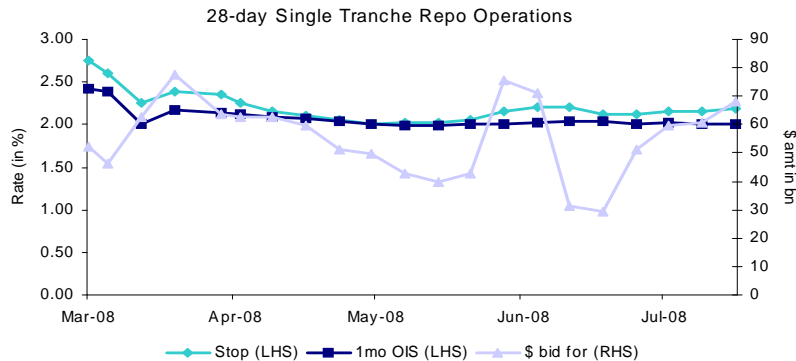


# The impact on TSY repo



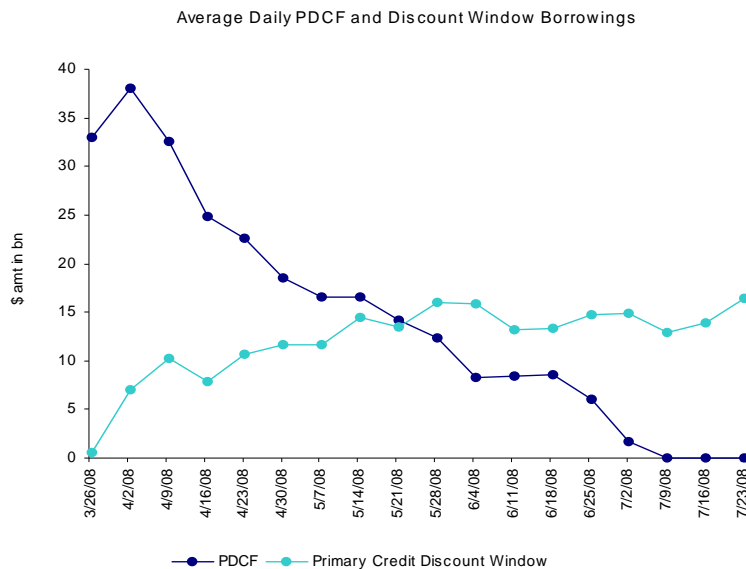
- The cheapening of overnight TSY repo caused by the sterilization of the Fed's liquidity platforms and the introduction of TSLF decreased the term premium in TSY repo.
- The Fed's outright sales caused some disruption to relative value trades and in the near-term increased the float of many securities.
- As a result the number of securities trading special declined as evidenced by a drop in SOMA borrowings, which had peaked above 20bn in both March and May. Treasuries continue to trade special around month-ends, but the increase in market TSY supply has broadly cheapened TSY repo.

# Assessing the 28-day Repo Operations



- The Fed's 28-day single tranche repo operations continue to be more popular than the Fed's Schedule 1 TSLF simply because primary dealers find more value to receiving cash from the Fed.
- As the spread between TSY and MBS repo narrowed during May, the amount of money bid for in the 28-day operations declined suggesting that financing conditions & liquidity for other asset classes was improving. However, the latest GSE inspired flight-to-quality bid has made the 28-day repo operations an attractive alternative for GSE MBS funding.

# Assessing the PDCF



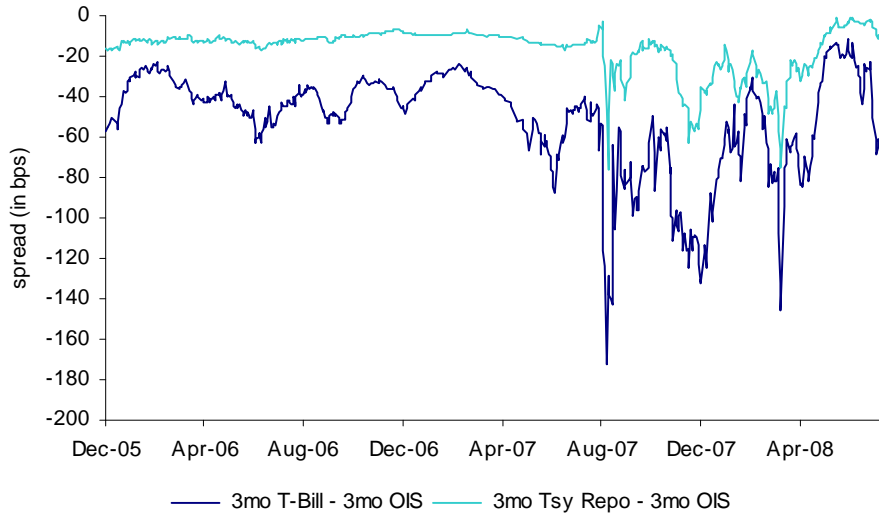
- The PDCF and Primary Credit Discount Window borrowings continue to show that the dealer community's funding position is improving while the bank community's needs have stabilized.
- The introduction of the PDCF realized an immediate contraction in Libor/OIS spreads in late March. However, as write-down concerns continued into April, those spreads widened out. It seems as if May's TAF size increase has had more of a lasting impact on Libor/OIS spreads than the PDCF. Yet, it is difficult to assess how the presence of the PDCF might have prevented Libor/OIS spreads from widening back to the December highs.

## Risk Premium in T-Bills and Repo

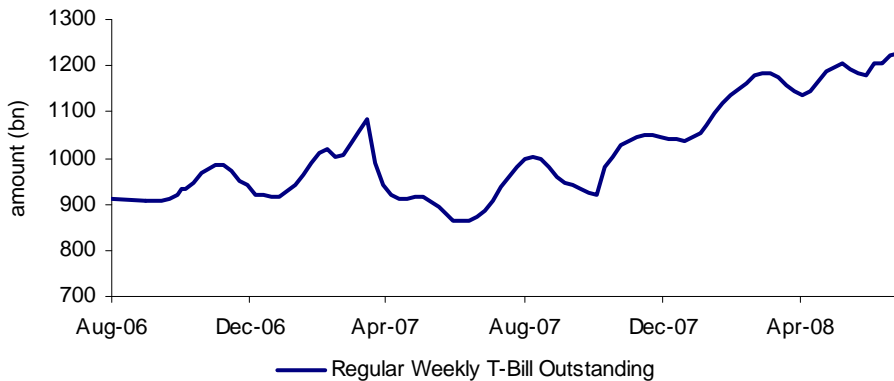
- The sterilization of the Fed's liquidity platforms and the introduction of the TSLF have brought approximately 400bn in TSY supply to the market. In addition to this, Treasury issuance remains at record levels, both of which served to cheapen T-Bills and TSY repo dramatically vs. OIS during May and June (3-month T-Bills traded at a 12bp spread to OIS and 3-month repo at flat to OIS).
- That being said, the most recent wave of flight-to-quality buying in the wake of uncertainty over the GSE's has seen T-Bills and TSY repo richen again. However, we currently trade at levels far cheaper than we did in March and also at levels that are not extremely rich versus 2006. This indicates that the array of liquidity provisions that the Fed has instituted are certainly helping to stabilize the market. Conditions generally feel better now than they did in March despite the fact that the GSE issue has the potential to be much larger and more complicated in scope than the Bear crisis.

# Risk Premium in T-Bills and Repo

Relative Value of T-Bills & Tsy Repo vs OIS

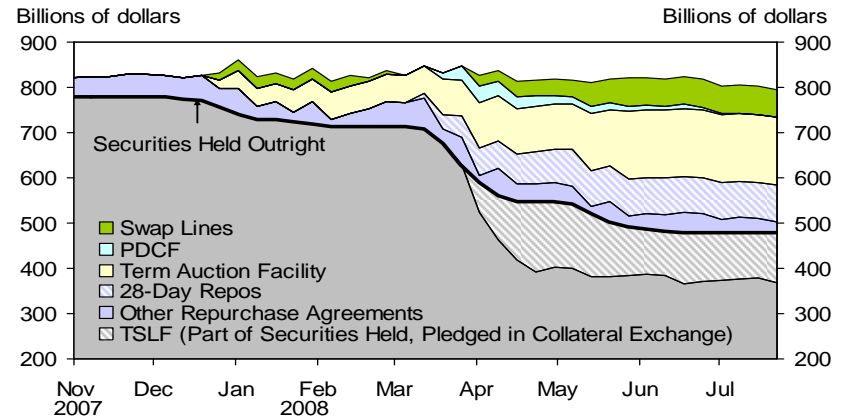


Regular Weekly T-Bill Outstanding (does not include CM Bills)

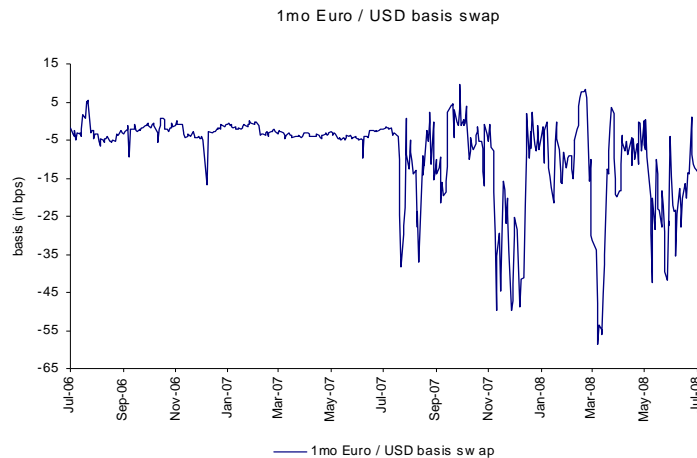


## • Where are the TSYs coming from?

- YoY T-Bill Outstanding : +350bn
  - TSLF Collateral Swap : +123bn
  - Sterilizing Liquidity Facilities:
    - + TAF: 150bn
    - + Swap Lines to ECB/SNB: 62bn
    - + PDCF @ zero presently
    - + Discount Window: 17.8bn
    - + Single Tranche Repo: 80bn
- TOTAL = 782.8bn** \*data as of 7/23/08



# Demand for USD



- Lastly, the euro/usd basis swap also demonstrates that the Fed's liquidity measures are helping to stabilize the USD financing markets, as the basis swap has tightened since TAF was increased in May with no real reaction to the latest round of flight-to-quality buying in TSY. (This is the spread to Euribor at which you can lend euros to borrow usd at Libor flat – a negative spread indicates stronger USD demand)

- **III. Investor Activity**



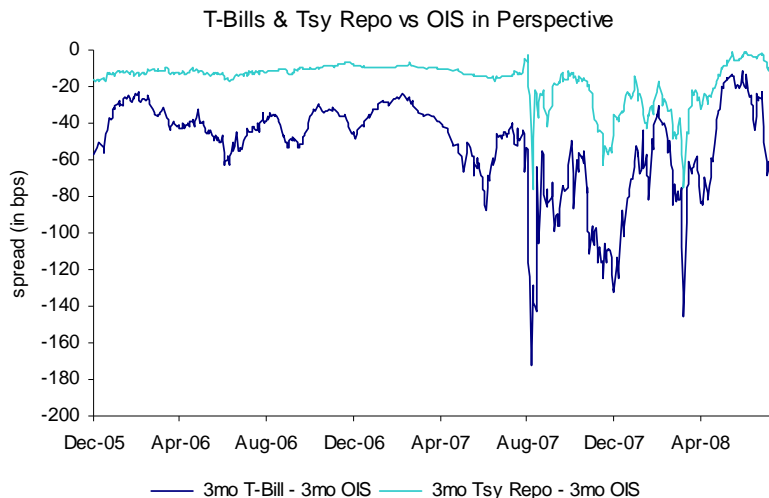
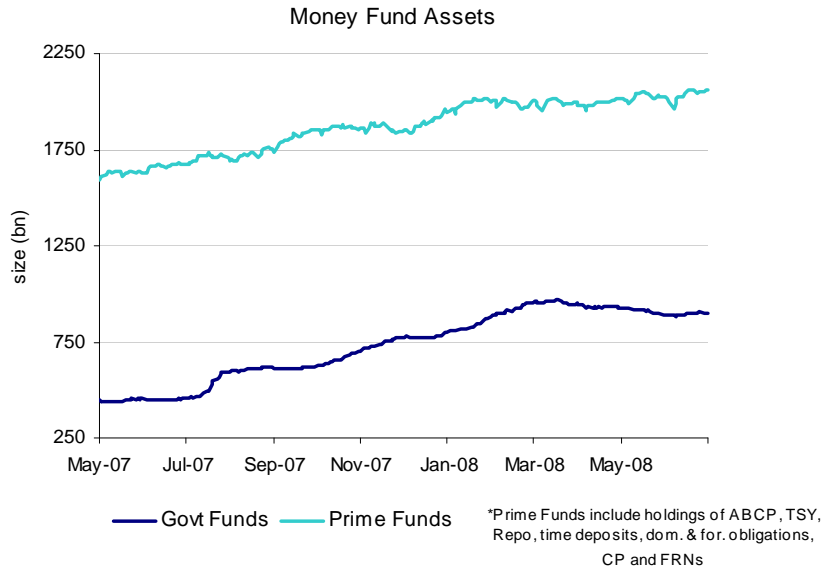
## Investor Activity : Repo

- The general trend has been for clients to assess their counterparty risks and to act in a more deliberate, if not conservative, fashion.
- In Repo, we have seen a variety of reactions from our client-base including:
  - » Business as usual
  - » Execution of term repo to capture larger spreads
  - » Shortening repo duration
  - » Shying away from certain asset types
  - » Increasing haircuts on certain asset types

## Issues Surrounding Tri-Party Repo

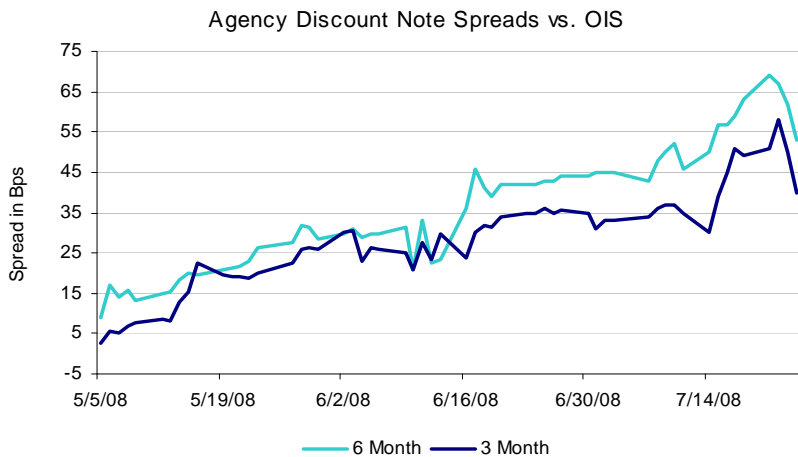
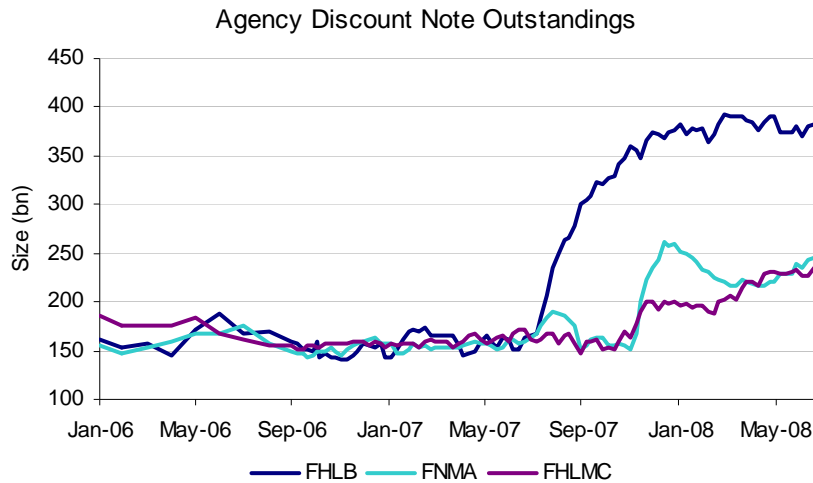
- In our opinion, the recent concern over the potential for tri-party repo to cause systemic failure is a bit misplaced as a sensible approach to developing 'best practices for liquidity management' would counter-act these concerns.
- The main issue is that the tri-party clearing agents bear intra-day credit exposure against their clients which could cause problems if one of these clients were unable to roll their funding or if one of the agents themselves were to have a liquidity problem.
- This implies that the issue can be resolved if the clearing agents are prudent in their analysis of and willingness to provide intra-day credit.
- Assessing the Net-Free Equity position of a client, hair-cutting appropriately for the collateral type and credit quality of the counterpart, and avoiding large maturity dates (i.e. staggering maturities across various term dates) will mitigate the risks that the clearing agents are assuming.
- The benefits of the financing liquidity provided by the tri-party repo system are maintained and safe-guarded by employing a conservative approach to liquidity management.

# Investor Activity : T-Bills



- In T-Bills, we saw flight-to-quality investing from all account types including Central Banks, Money Funds, Hedge Funds and Corporations. As cash poured into Money Funds and was re-allocated to All-Government Funds, T-Bills richened dramatically vs. OIS last August. As All-Government Fund assets reached record levels, a significant bid to T-Bills remained constant.
- The sterilization of the Fed's Liquidity Facilities and record TSY issuance began to weigh on the market in April. In addition, as TSY repo cheapened the negative carry in short-dated T-Bills was also a driving force behind their sell-off. A steady bid eventually absorbed the supply increase and T-Bills have since richened on renewed flight-to-quality buying. Domestic Money Funds have preferred to invest in 3-month and shorter T-Bills in order to keep their WAMs between 35 – 40 days. This caused 6month T-Bills to trade cheaper vs. OIS. Duration restrictions have also caused the new 1yr T-Bill to be largely dealer supported with light real money interest.
- Re-distribution of Money Fund assets, re-allocation into Equities and TSY issuance levels will be important drivers for T-Bill valuations going forward. In addition, an explicit Government backing of GSE debt could cause a large re-pricing as 800bn of Discount Notes could drive prices lower on supply fundamentals. The final theme that is likely to emerge at some point in the future will be TSY buy-backs. If the Fed winds down its liquidity platforms the T-Bill market will likely rally in anticipation of T-Bill buy-backs.

# Investor Activity : Discount Notes



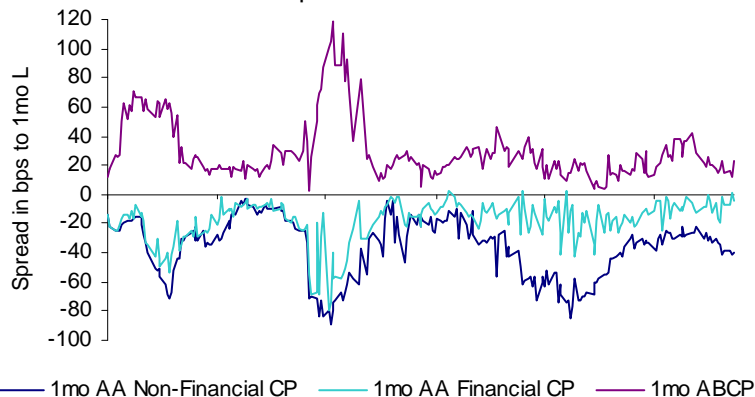
- The ongoing theme in Discount Notes this year was supply as FHLB, FNMA and FHLMC all reached record issuance levels. FHLB issuance rose dramatically due to increasing RMBS funding needs and balance sheet constraints.
- In May, 3-month and 6-month Discount Notes cheapened 30bps vs. OIS. Further uncertainty over the fate of the GSE's saw substantial widening in mid-July.
- Very recent indications point towards full Government backing of their debt which has prompted Dealers, Money Funds and Central Banks to buy; tightening spreads. It has been difficult to place 6-month paper, thus we have seen better issuance to mid-December. As such, the Agencies appear to be accumulating larger Year-End roll-over risk.

## Investor Activity : Credit

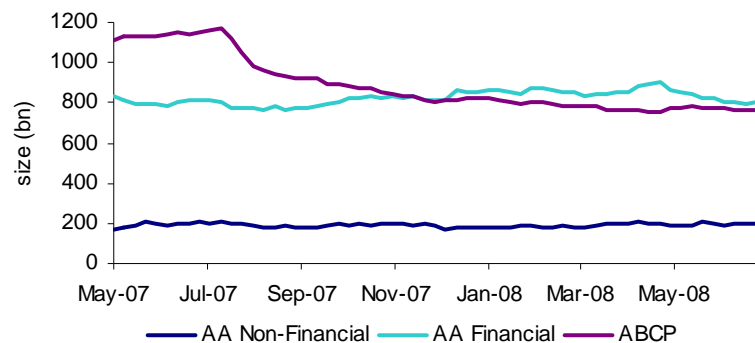
- The defining theme in credit has been spread widening and credit differentiation. In 1yr paper, top-tier banks now trade as much as 75bps tighter than weaker names (L+25 vs. L+100). Many investors went through a credit cleansing, rebuilding and reducing their 'approved lists' while generally preferring industrials over financials.
- Securities Lenders with SIVs exposure are maintaining more cash to compensate for potential withdrawals. This has shifted significant investment into 1-month and shorter investments. As the 2- and 3-yr FRN market dried up, extra funding demand rolled down the curve to meet smaller 'approved lists' thereby widening spreads.
- As we look forward, expanding 'approved lists', increasing duration and a shift back to focusing on returns will help to normalize shorter dated credit markets.

# Investor Activity : Credit

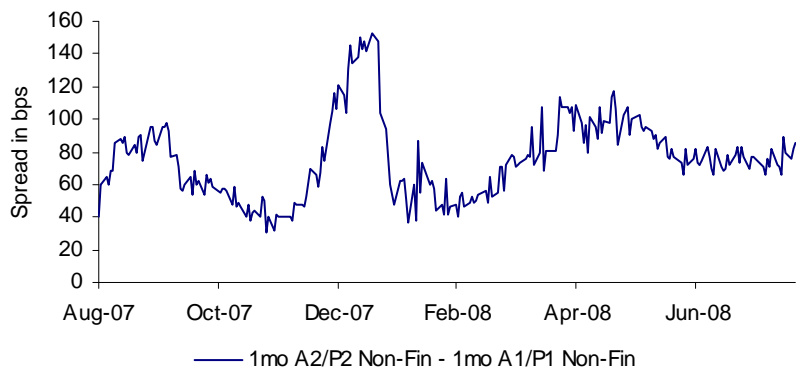
Financial, Non-Financial, and Asset-Backed CP  
Spreads to 1mo Libor



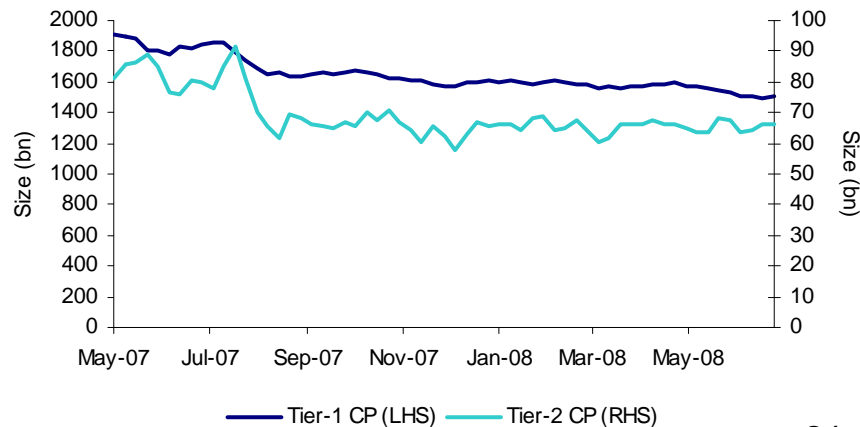
Weekly Outstandings : AA Non-Financial, AA Financial, ABCP



Credit Differentiation Amongst Industrials:  
Spread Between A1/P1 Non-Financials and A2/P2 Non-Financials



Tier-1 vs Tier-2 Weekly CP Outstandings



## Conclusions

- Increasing TAF to 150bn narrowed the 1-month Libor/OIS spread by approximately 40bps; stabilizing 1-month spreads and auction results. Providing a 3-month TAF would likely facilitate tightening in 1-month/3-month Libor spreads and 3-month Libor/OIS.
- Liquidity in T-Bills and TSY repo has improved dramatically in the last four months, in large part due to the increase in supply.
- In addition, a decline in the volatility of the daily Fed Funds effective rate has also made it easier to price OIS based money-market products such as term TSY repo.
- A gradual shift towards a focus on returns will further normalize Money Markets. In the meantime, the Fed's new facilities, their sterilization and an increase in T-Bill issuance have all helped to bring needed stability and liquidity back to the risk-free assets: T-Bills and TSY repo.

# Treasury Borrowing Advisory Committee Presentation to the U.S. Treasury

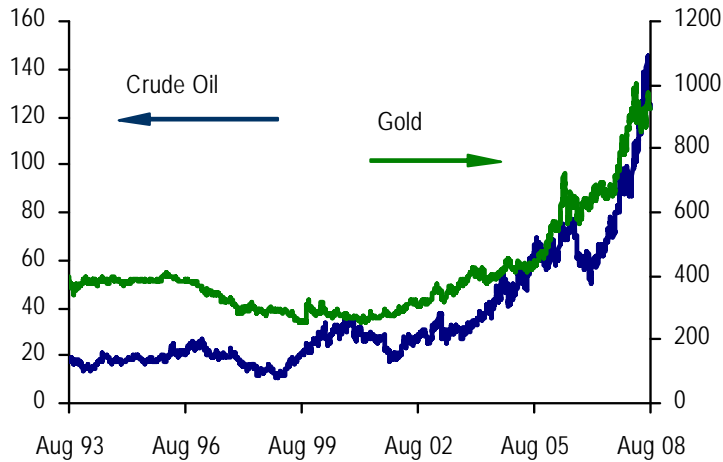
## TIPS and Inflation Trends

July 28, 2008

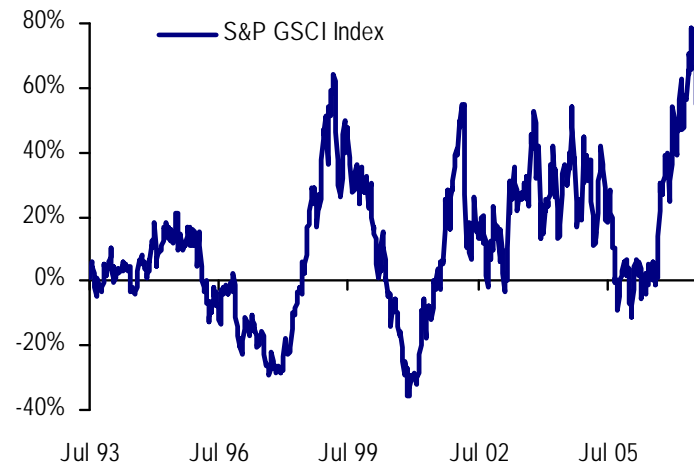


# Commodity prices have increased significantly over the past year bringing headline inflation to a pace last seen in the early '90s

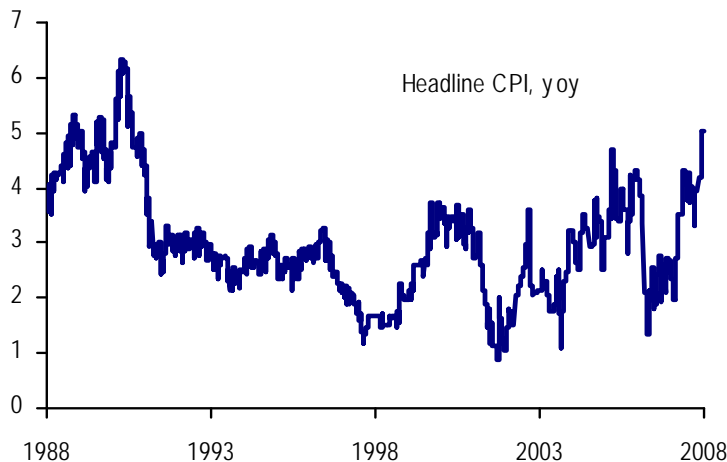
Crude oil and gold prices



1-year rolling percentage change of the S&P GS Commodity index (%)



Headline yoy CPI-U nsa (%)



Components of headline CPI versus their weighted contribution to headline CPI yoy

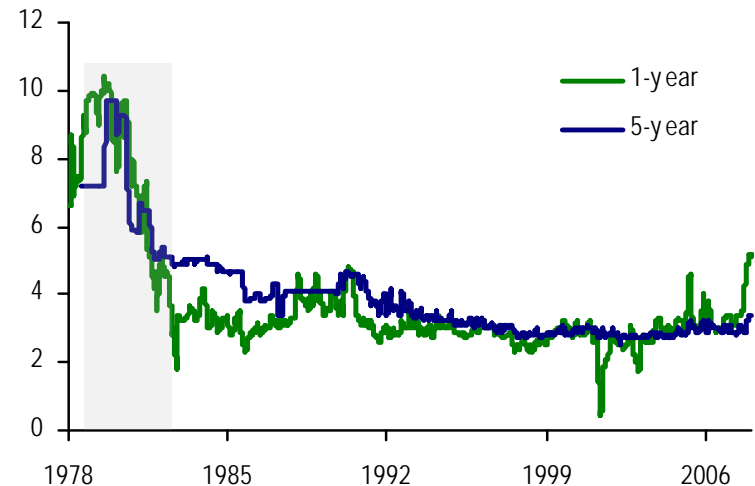
	Current Weight in Headline CPI	Weighted contribution to headline CPI (yoy)
Core	76.5%	1.8%
Housing	42.4%	1.5%
Medical Care	6.2%	0.3%
Education and communication	6.1%	0.2%
Food and beverages	14.9%	0.8%
Energy	9.7%	2.4%

# Survey based inflation measures are surging, but history suggests that these measures are more reactive than predictive

1-year and 5-year Univ. of Michigan inflation expectations regressed against realized yoy headline CPI over past year and 6-month percentage change in oil prices

Driver	Chg in driver	Impact on inflation expectations (% points)	
		1Y forward	5Y forward
Oil price	10%	0.08	0.00
Realized inflation (yoy)	1% point	0.43	0.08

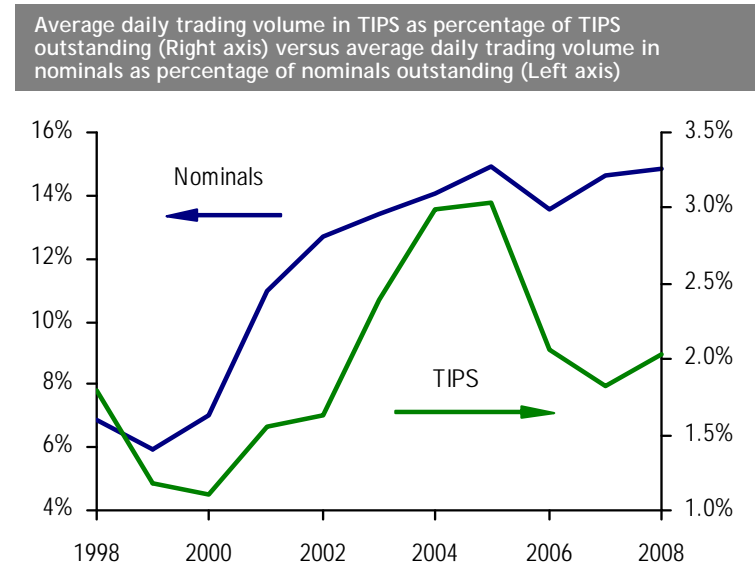
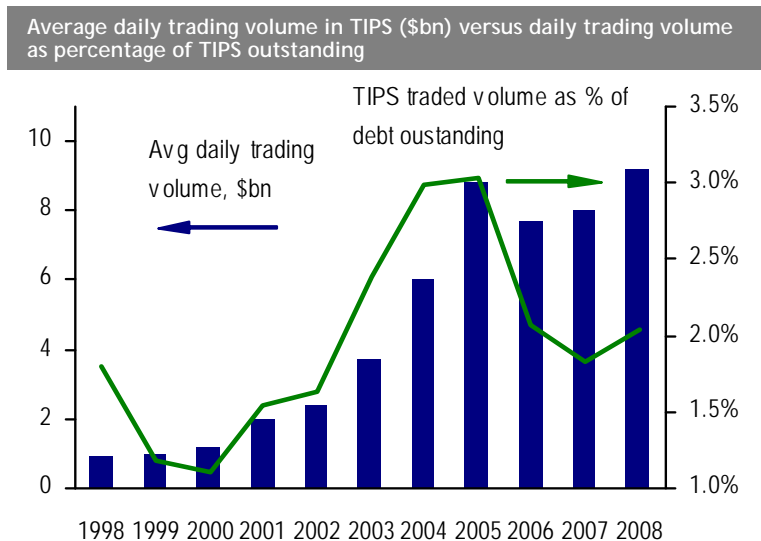
1- and 5-year University of Michigan inflation expectations



- Near term inflation expectations have historically increased as realized inflation has increased and oil prices have risen
- Long term forward survey based inflation expectations are sticky, reacting to realized inflation with a lag ...
- ... but eventually rise 1-for-1 with near term inflation expectations
- The University of Michigan 5-year forward inflation expectations lagged the 1-year ahead expectations on the way up as well as down in the 1980 experience, but reached similar peak levels

# TIPS trading volumes versus nominals

- Trading volumes in TIPS seem to have reached a plateau, despite a continued increase in the size of the market indicating that TIPS is more of an investor's market than a trader's market
- Daily turnover in the TIPS market as a percentage of total outstandings is approximately 13% that of nominals

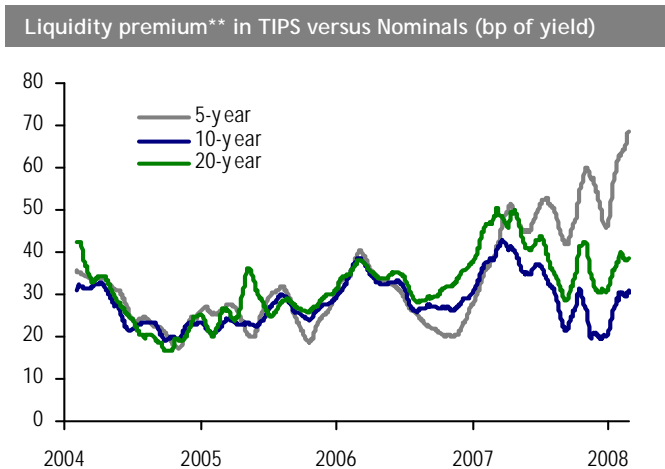
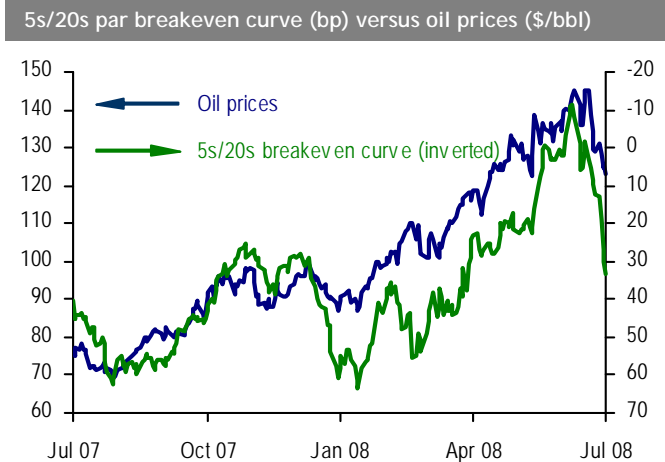


Source: SIFMA

\* 2008 numbers till May

# Inflation linked market landscape

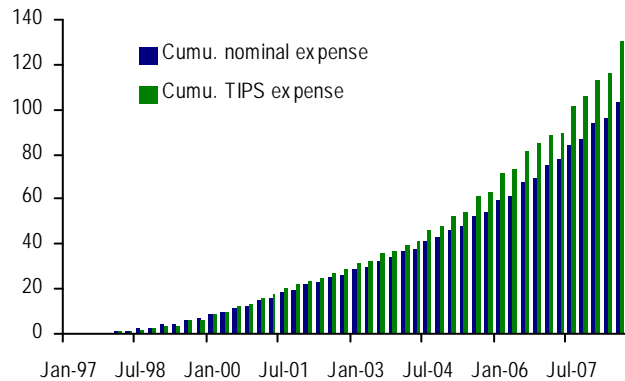
- TIPS allow investors to diversify inflation risk in their fixed income portfolios
- Additionally, the TIPS curve allows investors to express views on realized inflation as well as longer term inflation expectations
- The key residual risk in TIPS is illiquidity and associated premiums
  - TIPS have not realized the same benefit of flight to quality that nominal Treasuries have
- Private issuers have not embraced inflation linked funding due to lack of depth in demand and FAS 133-related issues
- TIPS can help reduce Treasury borrowing costs, especially in an environment where inflation expectations increase
  - Diversifies the investor base for Treasuries



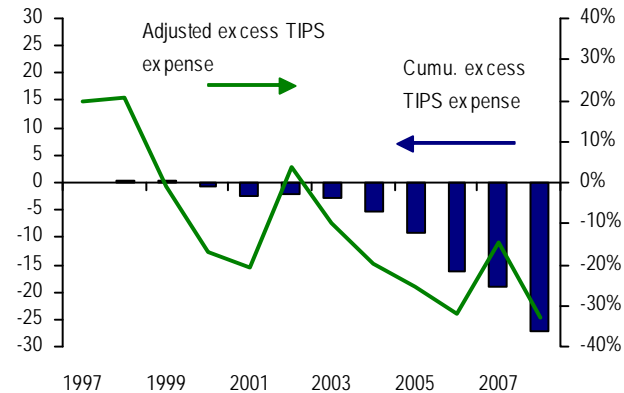
\*\* we use the TIPS asset-swap spread versus maturity matched nominal asset swap spread differential as a metric for the liquidity differential. Positive number denotes cost (to the Treasury) of issuing TIPS versus nominals, assuming inflation expectations are realized.

# The aggregate cost of the TIPS program has increased in recent years, primarily because realized inflation has been higher than expectations

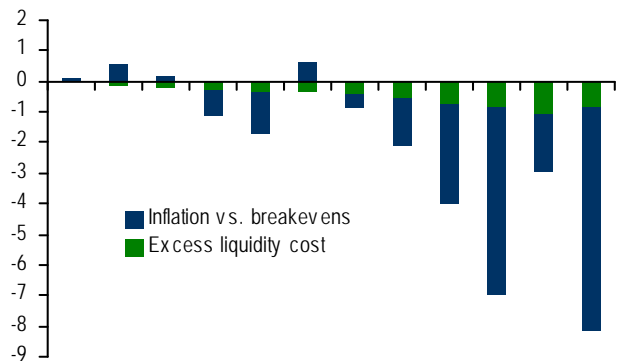
Estimated cumulative expense till July 2008 on all TIPS issued (\$bn) versus estimated cumulative expense if similar maturity nominals had been issued instead (\$bn)



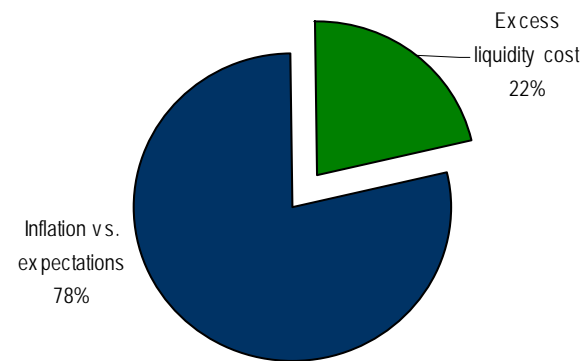
Estimated excess cumulative expense till July 2008 on TIPS versus nominals (\$bn, left axis) versus the excess TIPS expense/ total TIPS expense by year (% , Right axis)



Estimated annual expense on TIPS versus nominals as attributed to liquidity\* and the difference between realized inflation and inflation expectations (\$bn)



Estimated cumulative excess expense on TIPS versus nominals that may be attributed to liquidity premium of TIPS and the difference between realized inflation and breakevens

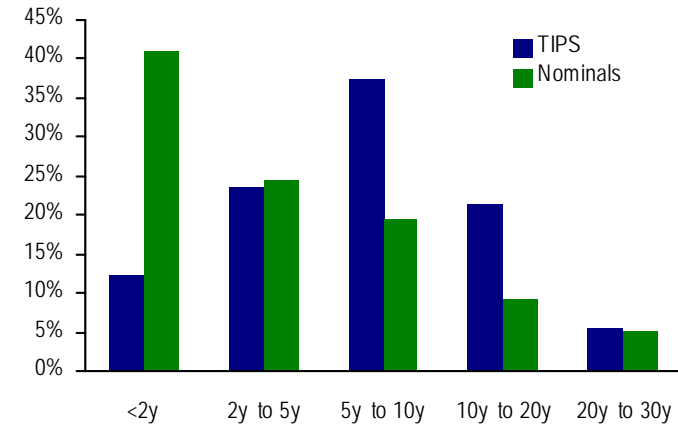


\* We use the TIPS asset-swap spread versus maturity matched nominal asset swap spread differential at time of issue as a metric for the liquidity differential. For the period prior to 2004, we use the 2004-2008 average for asset swap differential. \*\* 2008 numbers have been calculated through July 15, and are not annualized.

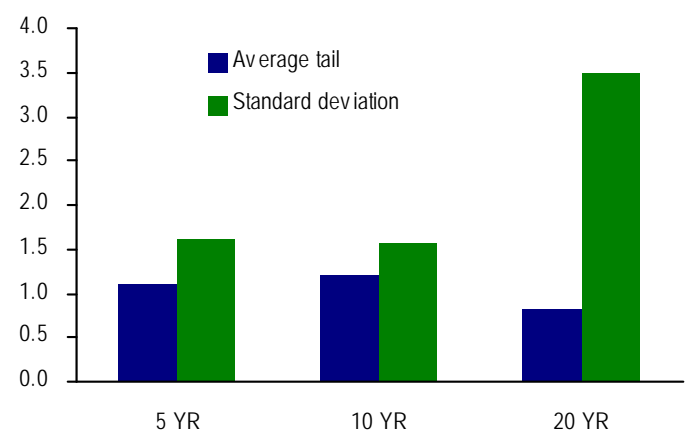
# Maturity profile of the TIPS market versus nominals

- A balance of nominal and TIPS issuance should, in the long run, reduce Treasury's borrowing costs
  - The maturity profile of TIPS issuance should approximate that of nominals, and it currently largely does
- Auction statistics suggest that demand for 20-year TIPS is driven by a small number of investors and it would be difficult to significantly increase borrowing at the long end of the TIPS curve

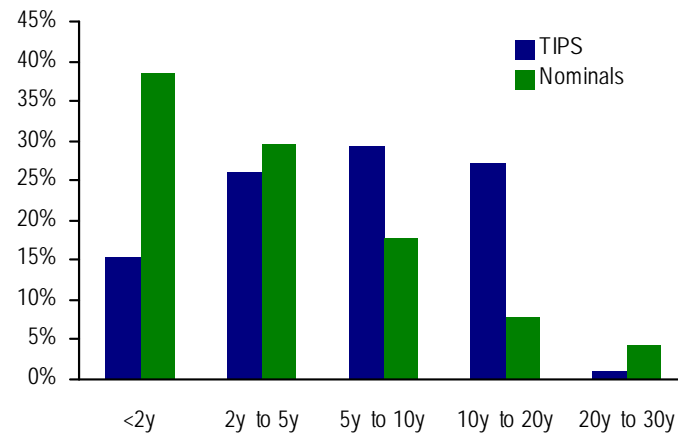
Current maturity profile of TIPS versus Nominals (\$bn)



Average and standard deviation of auction tails since 2006 by maturity (\$bn)



Projected\* maturity profile of TIPS versus Nominals in 2-years (\$bn)



\* Assuming that the Treasury keeps current issuance calendar unchanged, but increases size of the 2-year nominal auction by \$1bn, 5-year by \$4bn, 10-year by \$1bn and 30-year by \$1bn. Sizes are assumed to be unchanged for TIPS.