Drivers of Liquidity: A Dealer’s Perspective

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I. Definition of Liquidity and its Importance

II. Characteristics of Markets where there is a High Degree of Liquidity Provided by Market Makers

III. Market Making in the New Capital and Regulatory Environment

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Definition of Liquidity

Liquidity is the ability to transact at a low cost, on demand, without significantly affecting the price of the traded asset

Importance:
Market Liquidity ←→ Funding Liquidity

“Liquidity is like confidence. And, like confidence, liquidity plays a critical role both in establishing the conditions than can lead to a financial shock, and in determining whether that shock becomes acute, threatening broader damage to the functioning of financial and credit markets.”

“What role can policy play in reducing the vulnerability of markets to this type of dynamic?”

-Timothy F Geithner

II. Characteristics of markets where there is a high degree of liquidity provided by market makers

Depth of liquidity tends to be much greater in larger markets

Government bond market Bid/Offer width

	10mm	100mm	250mm	Mkt Size
US	1c	2c	3c	11,416
Japan	<1c	1c	2c	9,446
UK	1c	4c	7c	2,203
Germany	<1c	3c	5c	1,468
France	<1c	4c	12c	1,820
Italy	8c	25c	200c	2,488
Spain	15c	50c	300c	956

*JGBs for 1bn, 10bn and 25bn Yen, Japan Market Size in US$ equivalent

Source: Credit Suisse, Official Sources, as of May 24, 2013

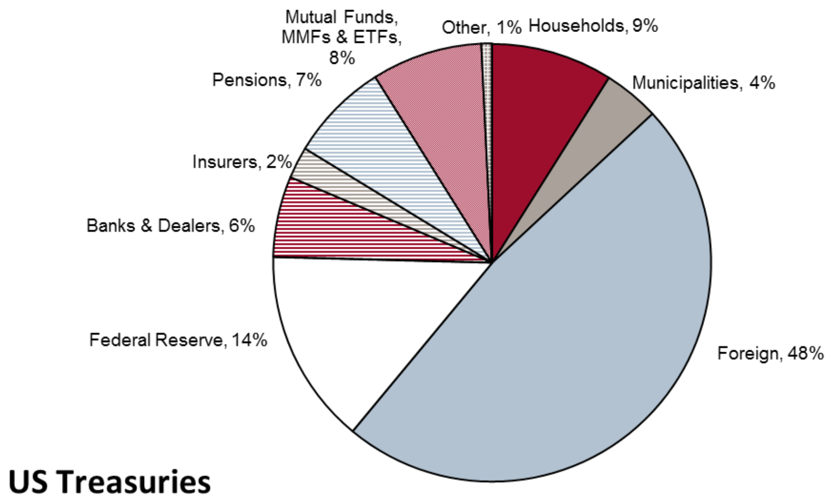
Markets with greater volume/turnover tend to have tighter bid/offer spreads

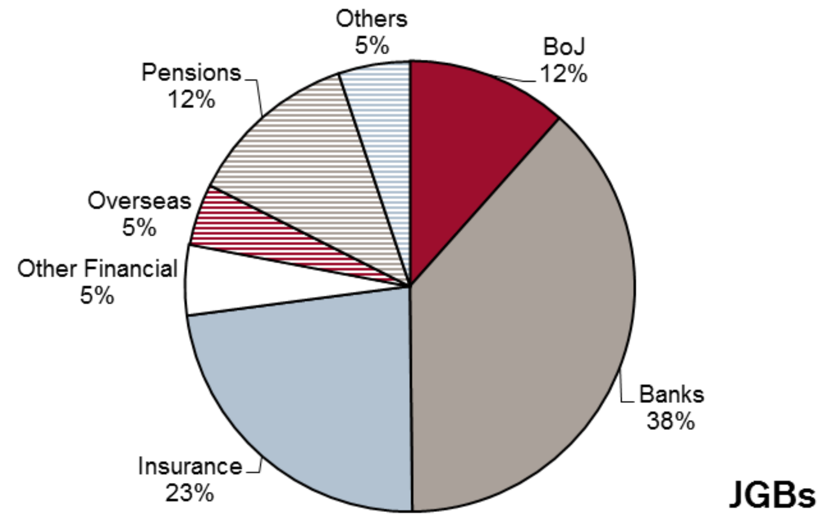
	March 2013 Turnover (Volume % of Market)	10y Bid/ Offer on 100mm
US	25%	2c
Germany	48%	3c
France	31%	4c
Italy	3%	25c
Spain	7%	50c

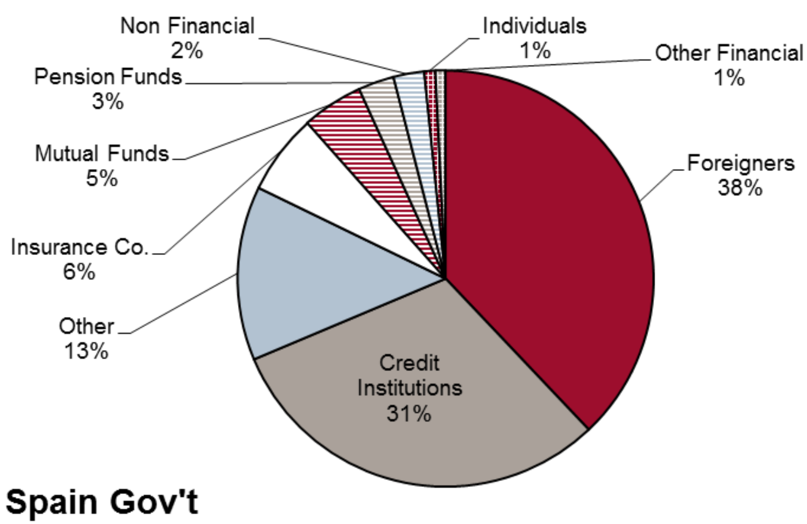
*JGBs for 10bn Yen

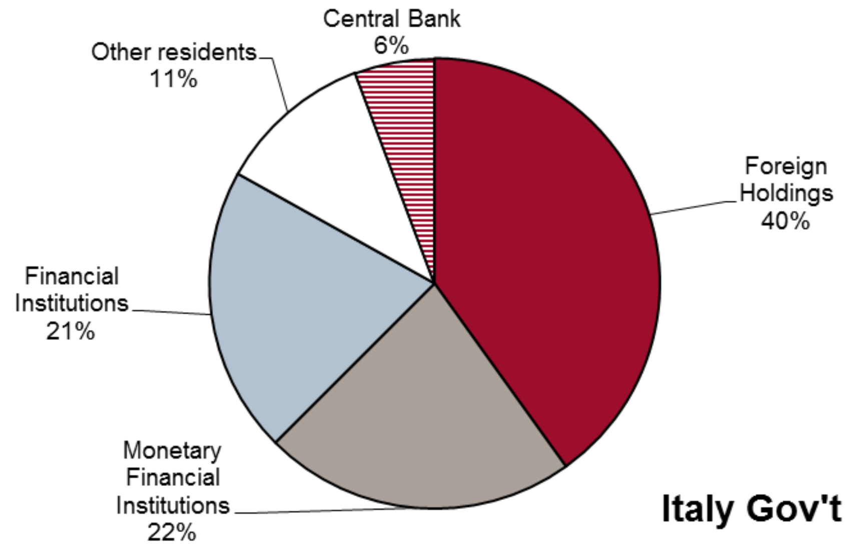
Source: Credit Suisse, as of May 24, 2013

Liquid two way markets need a diversified ecosystem of market participants









Government Securities Ownership by Investor Type

Source: Credit Suisse, Official Sources

Both Issuer behavior and issue characteristics can have large impacts on security liquidity

Issuer:

-Few surprises in announcements

-Strong communication and easily observable policy

Issue:

-Large issues tend to be more liquid, allow tighter bid/offer

-Known issuance calendar

Bonds w/similar characteristics, different sizes

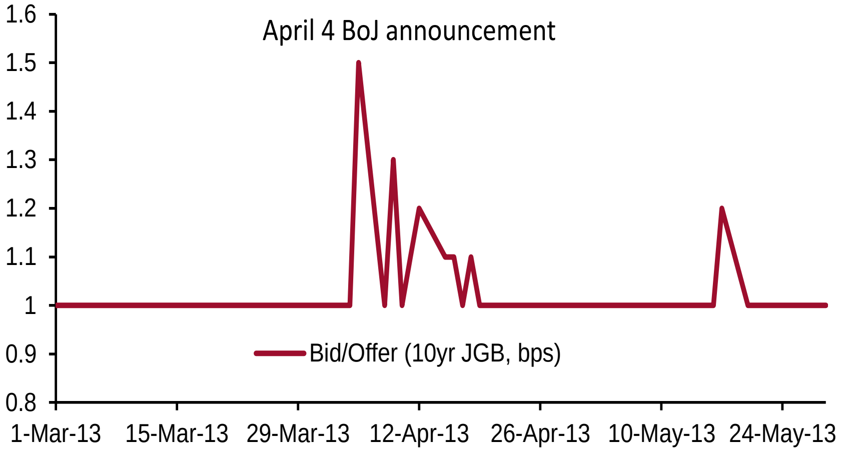
Bid/Offer width

	Size (mm)	25mm	50mm	100mm
FHLMC 1.25 8/19	3,500	1.00bps	1.25bps	1.50bps
FHLMC 1.25 10/19	6,000	1.00bps	1.00bps	1.25bps

	Size (mm)	25mm
DBR 6.00 6/16	3,750	25c
DBR 4.00 7/16	23,000	7c

Source: Credit Suisse, as of May 17, 2013

Bid/offer widened after surprise Bank of Japan announcement of large asset purchase program



Deep funding markets provide dealers the confidence to show two way markets, allowing participants to finance positions or borrow securities

	Bid/ Offer (bps)	Repo as % of Sovereign Bond Market	Repo Haircut
US	2c	24%	1.0%
UK	4c	22%	1.0%
Germany	3c	42%	1.0%
France	4c	22%	1.0%
Spain	50c	16%	5.0%
Italy	25c	12%	4.5%

*Bid/Offer on 100mm US or Euro

Source: Credit Suisse, Official Sources, as of May 24, 2013

The more alternatives for hedging and managing risk, the greater the comfort in providing liquidity and holding positions on the balance sheet

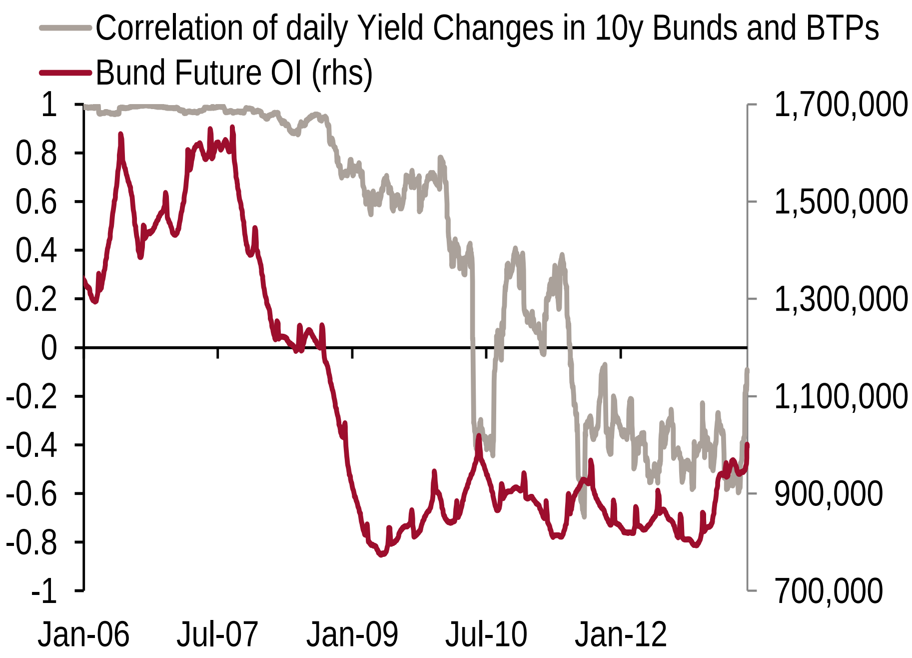
Bid/Offer Width for TIPS, Treasuries and Their Hedges

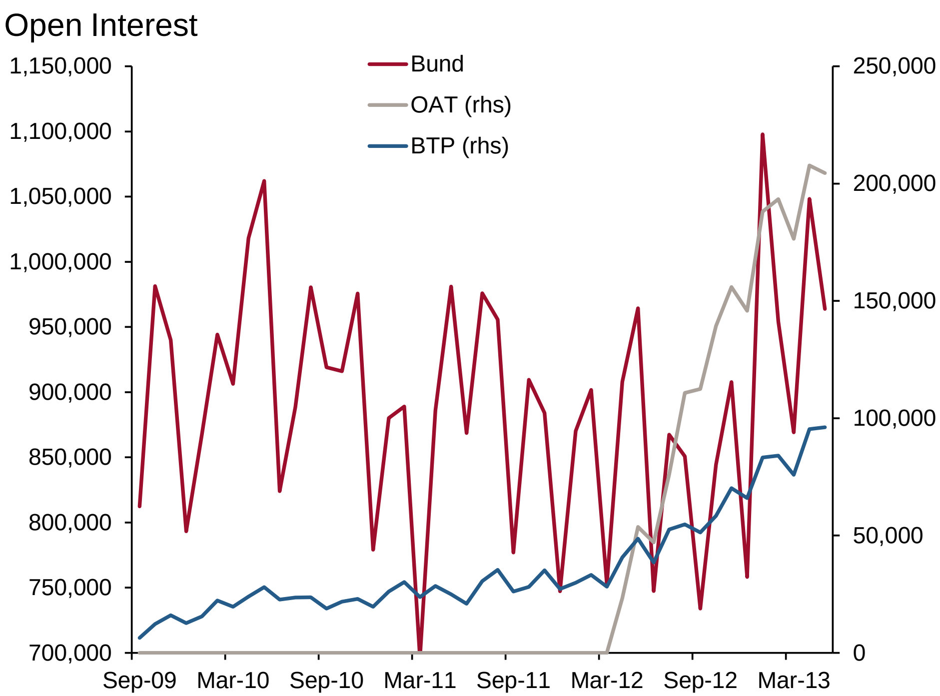
	10mm	100mm	250mm
US TIPS	0.50bps	1.25bps	2.25bps
Inflation Swaps	0.80bps	2.25bps	3.50bps
US Treasuries	0.14bps	0.30bps	0.40bps
Vanilla Swaps	0.25bps	0.40bps	0.50bps
Treasury Futures	0.10bps	0.16bps	0.24bps
Eurodollar Futures	0.06bps	0.06bps	0.13bps
UST Options	0.65bps	0.65bps	0.97bps
Swaptions	.75bps	1.5bps	2.5bps

Options on above also provide risk management tools

Source: Credit Suisse, as of June 11, 2013

The correlation breakdown between bunds and other European bonds led to new instruments being created.

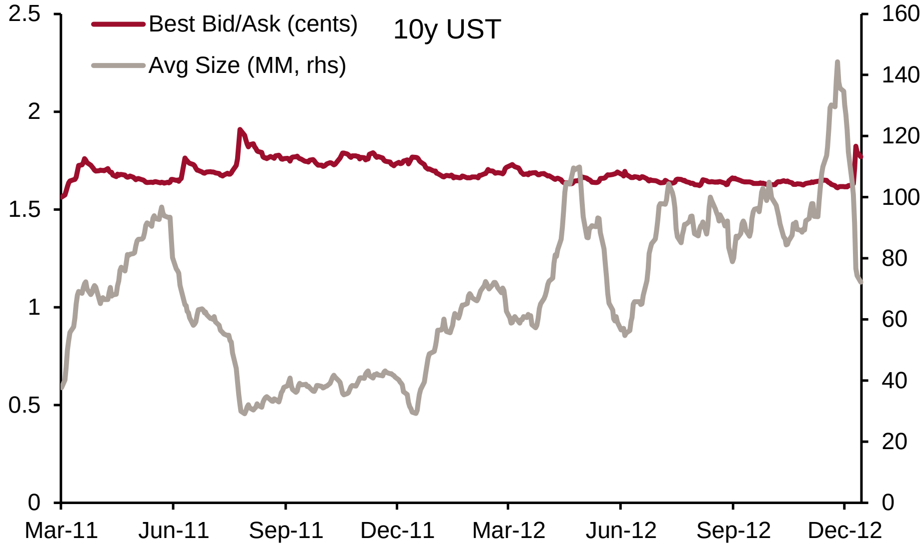


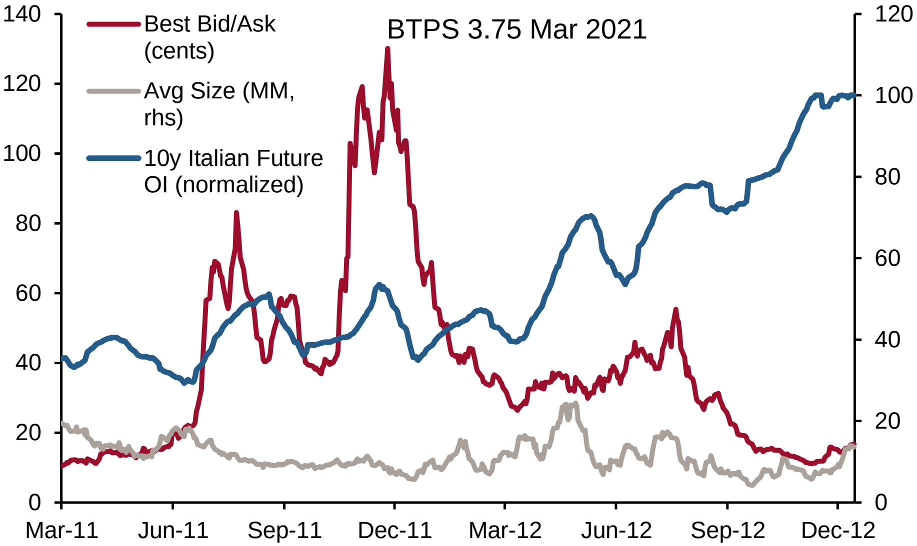


Source: Credit Suisse, the BLOOMBERG PROFESSIONAL™ service

Treasury bid/offer spreads have remained stable, whereas instruments with less liquid hedges tend to be more volatile, such as BTPs

Bid/offer for BTPs have tightened as open interest in hedging instruments grows





Source: Credit Suisse, Trade Web

IV. Market Making in the New Capital and Regulatory Environment

The capital cost of market making in sovereign debt has increased significantly post crisis

(US$ millions)	Pre-Crisis	Post-Crisis (Basel II/ II.5)	New World (Basel III/ Dodd-Frank)
US Treasury/ Bund/ JGB	$0.0	$1.6	$9.0
US Agencies	$16.0	$16.0	$32.2
IBRD	$0.0	$4.0	$9.0
CADES	$0.0	$4.0	$9.0
Italian Gov't Bond	$0.0	$16.0	$78.7
Spanish Gov't Bond	$0.0	$40.0	$78.7
10yr US$ swap (uncleared)	$0.20	$0.40	$0.60
10yr US$ swap (cleared)	N/A	$0.03	$0.10
TY Futures	$0.00	$0.03	$0.10

Approximate Equity Capital required to own $1 billion position, assumes single A non-Bank Financial counterparty, bonds financed by repo, for one way trade without the benefit of margin or portfolio netting.

Basel I □ Basel II Additions:

-RWA (Internal Ratings Based/Standardized)

Basel II □ Basel III Additions:

-RWA Calcs using Value at Risk (VaR)

-Incremental Risk Capital (IRC) charge

-Increased Capital Requirements (8% □ 15%)

-Credit Valuation Adjustment (CVA)

-Counterparty Credit Risk (CCR)

Source: Credit Suisse

A Financial Transaction Tax could have significant impacts on liquidity for all market participants as dealers will pass along FTT costs

	Bid/Offer	Transaction Tax	% Increase
HY Bond (5y, 1pt)	21.2bps	10bps	147%
IG Bond (5y, 5bps)	5.0bps	10bps	300%
France (5y, 5c)	1.1bps	10bps	1009%
Repo (O/N, 2bps)	2.0bps	10bps	600%

- Many bid/offer spread could widen 3x to 7x and as much as 18x for the most liquid instruments with the tightest bid/offer spreads (FX market estimate)
- Financial Transaction Taxes will also have significant impacts on financing markets

Source: Credit Suisse, as of June 11, 2013, Oliver Wyman

The adoption of Dodd-Frank and Prudential Regulation may impact the funding market

This may have material negative implications for sovereign liquidity in stressed situations.

New margin and capital rules will increase demand for high quality assets, which could become acute during periods of stress reducing government bond market liquidity and creating problems in Repo markets

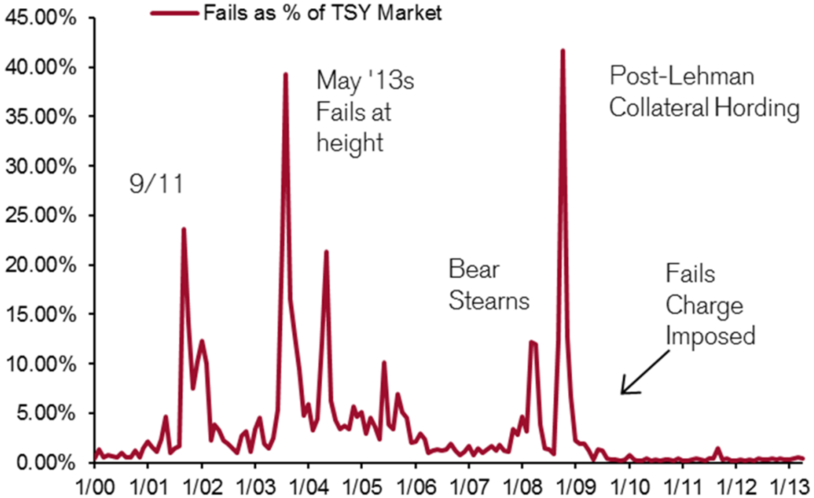
Incremental drivers of HQC demand include the following:

Incremental HQC Demand[1]	=	1. Prudential Regulation		2. Market Regulation (Derivative Clearing)		3. Market Regulation (Bilateral Margin)		4. Economic Environment / Uncertainty
		Increased prudential liquidity requirements	+	Increased IM requirements for cleared derivatives	+	Increased IM requirements for non-cleared derivatives	+	Cyclical HQC investment demand (FTQ flows)
		$1.0-2.5tt		• **$0.8-2.0tt (normal)** • **$1.8-4.6tt (stressed)**		• **$0.8-1.2tt (normal)** • **$1.8-4.1tt (stressed)**		**Varies (multi-$trillions)**

Total "phased-in" potential incremental HQC demand (*normal market conditions*): $2.6-5.7tt
Total "phased-in" potential incremental HQC demand (*stressed market conditions*): $4.6-11.2tt + FTQ Flows

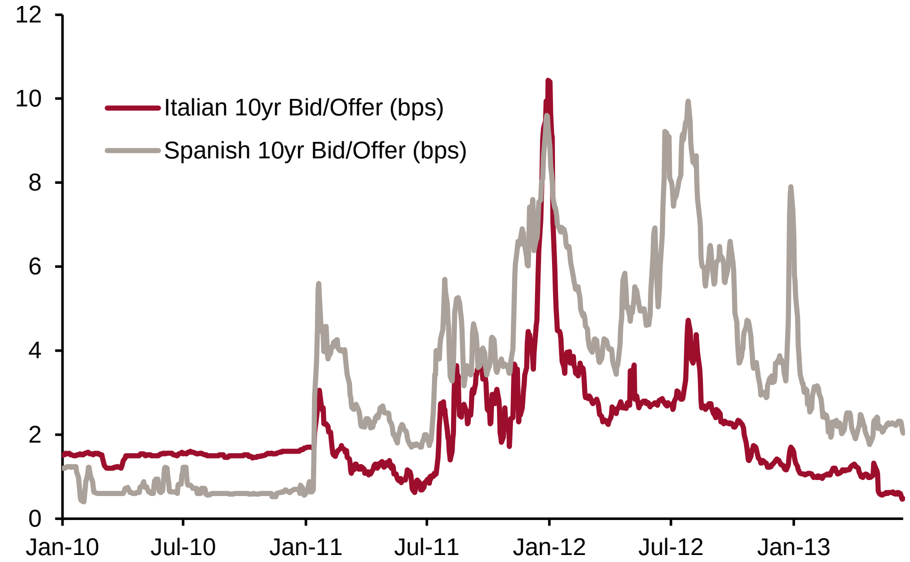
Source: TBAC

When collateral is horded, repo market fails can increase dramatically.



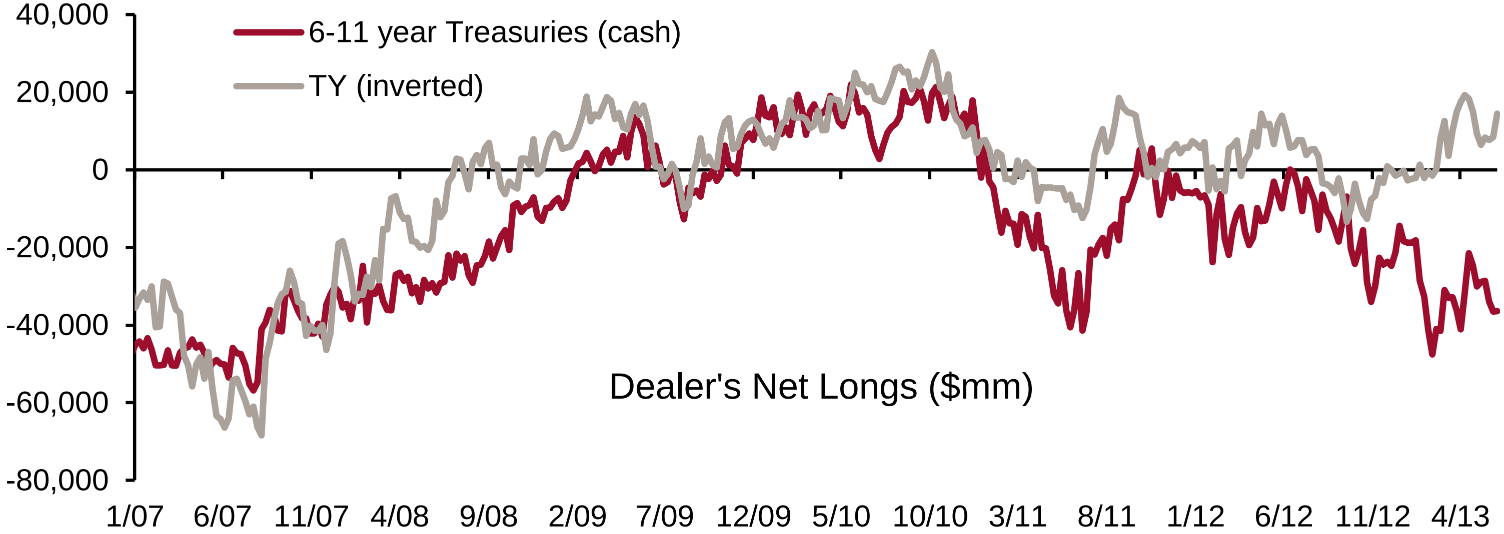
Source: NYFRB, Credit Suisse

In periods of stress, the depth and resilience of funding markets is critical to liquidity.



Dodd-Frank: Volcker Rule

• The Volcker Rule may negate the benefits of alternative hedges.



• A large numbers of issues inherently fragments liquidity, Volcker could increase this fragmentation by reducing ability to inventory positions

Source: Credit Suisse, Federal Reserve, Oliver Wyman

Other Prudential Regulations that Impact Liquidity:

Balkanization of Regulatory and Capital Environment

Multiple regulatory regimes globally, some banks operate under home capital rules that are much stricter than the peers with which they compete

Country	Basel Rules	Regulations (both implimented and pending)
USA	1, 2 & 2.5	Swap Clearing/Margining/SEFs, Volcker, CFPB, FSOC, Bi-laterial Margining
Switzerland	3	OTC derivatives rules pending, Bi-laterial Margining
EU	2.5	OTC Clearing/Margining Short Sale Regulation, Derivatives Standardization, FTT
Japan	3	Nearly all rules implemented except SIFI capital buffers, Bi-laterial Margining

Basel III Leverage Ratio

Potential Wholesale Funding Changes

SEFS for Swap Trading

Trade Reporting for Swaps

Source: BIS April 2013 Basel 3 Progress Report, Official Sources

V. Conclusion

Conclusions

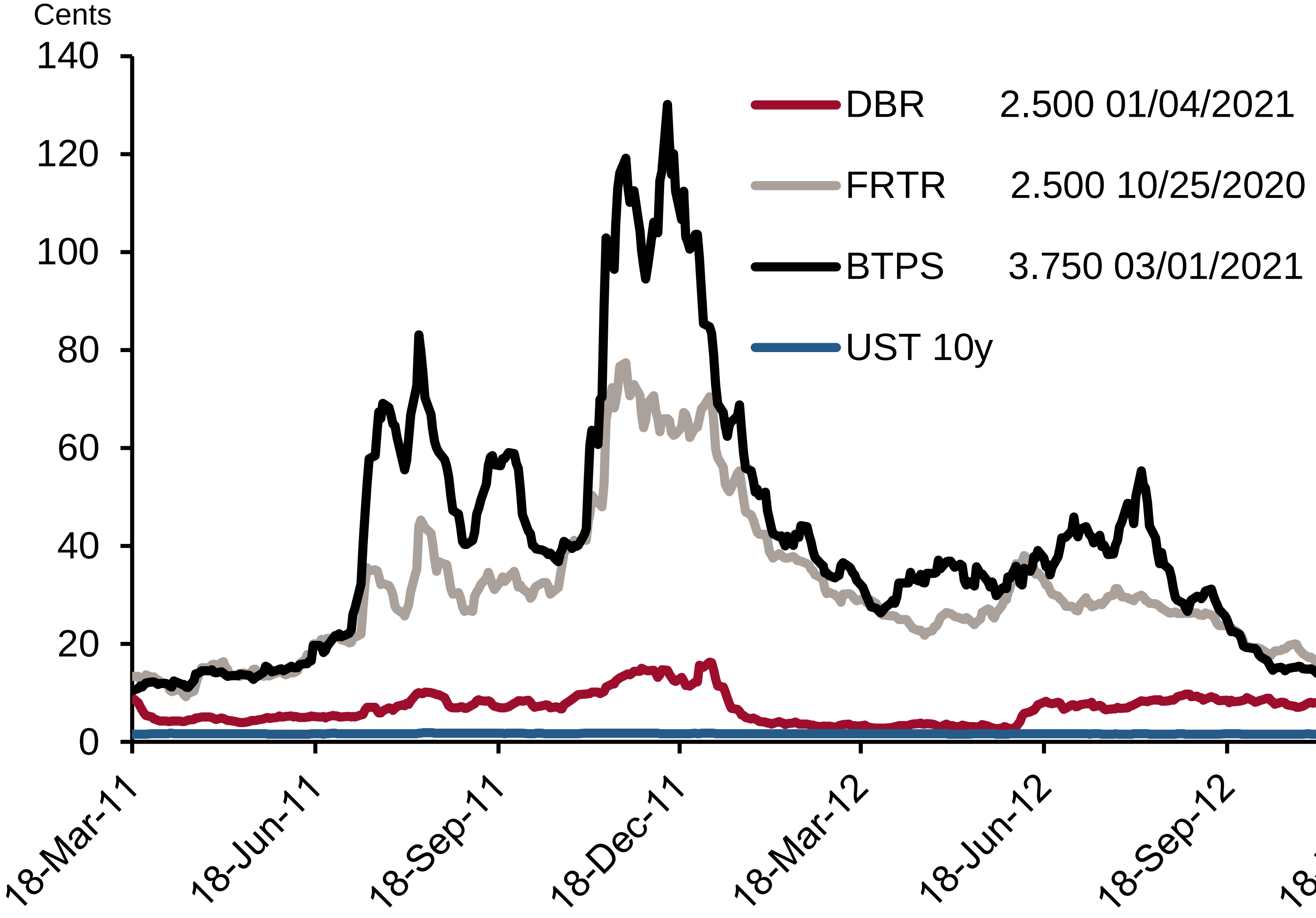
- The greater the texture of a market the greater the liquidity.

- The mix of new prudential and market regulatory requirements could incent behavior that may be detrimental to liquidity

- In stressed periods the markets are more susceptible to the pro-cyclical nature of liquidity. This can cause increased reliance on public institutions for liquidity, requiring faster and deeper policy response.

Source: Credit Suisse, Federal Reserve, Oliver Wyman

Liquidity of various government markets



Source: Credit Suisse