

Liquidity and Interest Rates

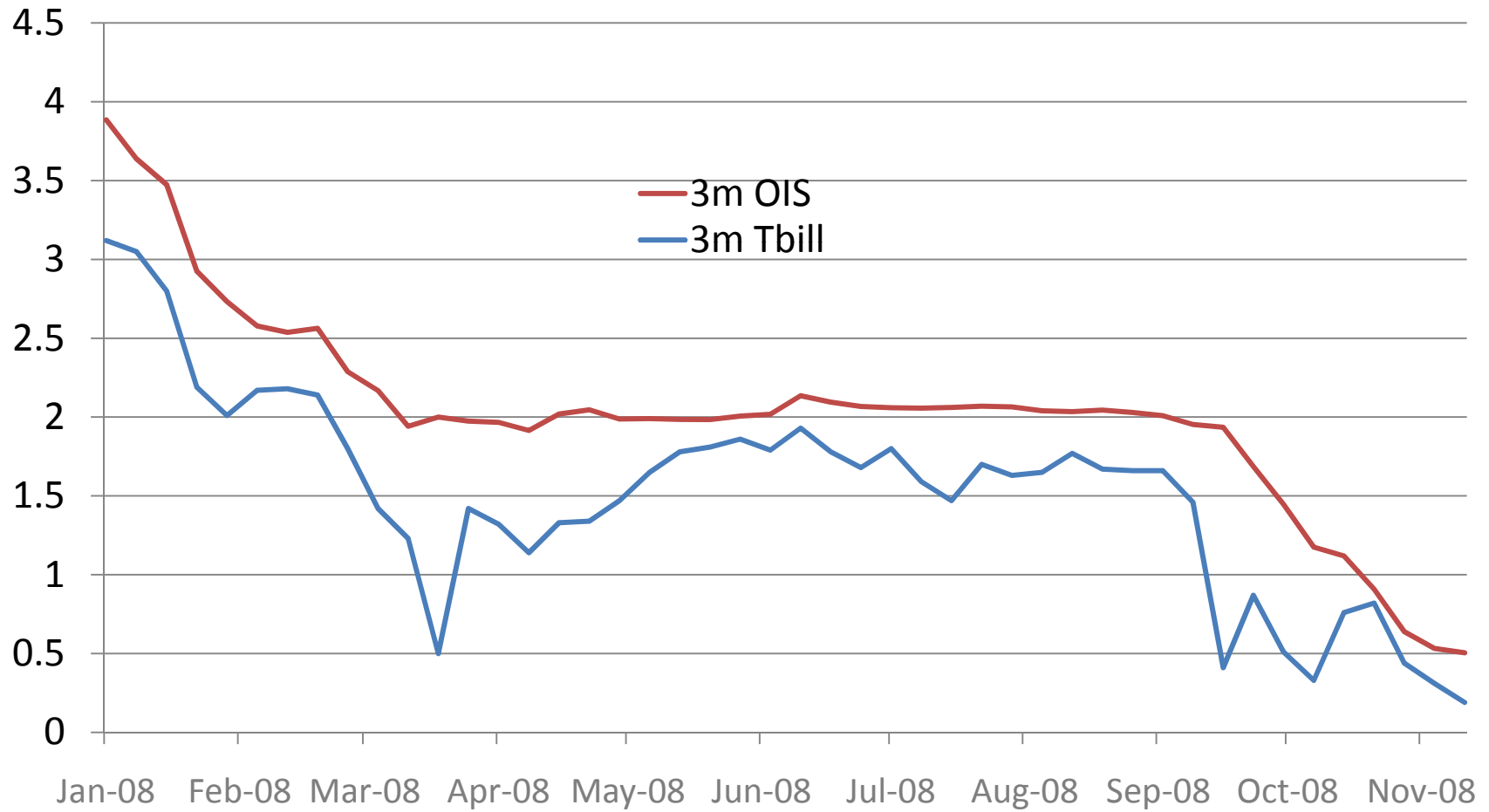
Arvind Krishnamurthy, Northwestern University
(joint work with Annette-Vissing Jorgensen)

AEA Meetings, January 4, 2009

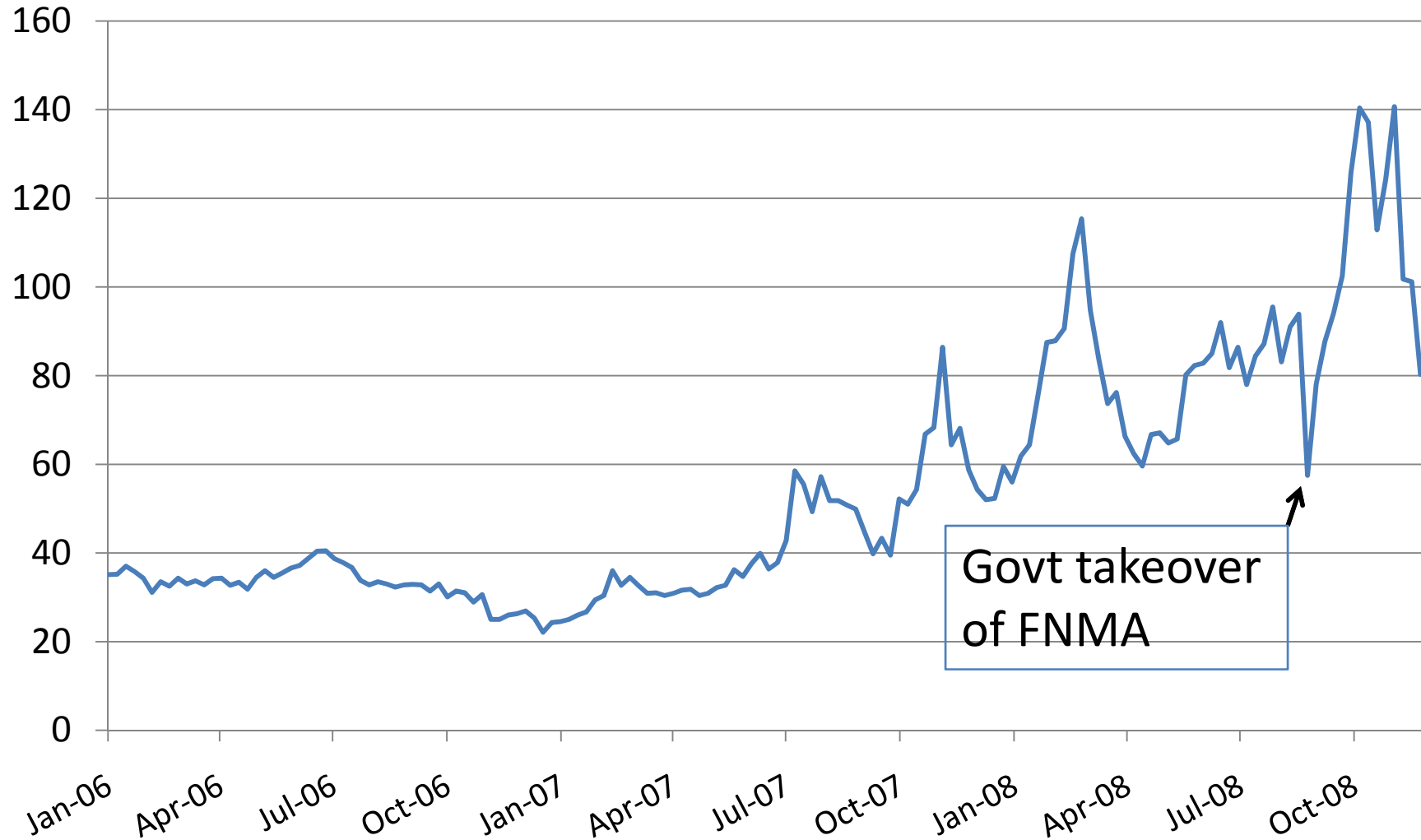
Moneyness of Treasuries

- Treasury yields are lower than $E[1/m]$
 - Surety
 - Liquidity
- Valuation equation analogous to Money
- Effects are large: 1% on average
- I will present data on spreads of other assets to Treasuries
- Can also affect within Treasury comparisons
 - On-the-run/off-the-run spreads
 - Term premia

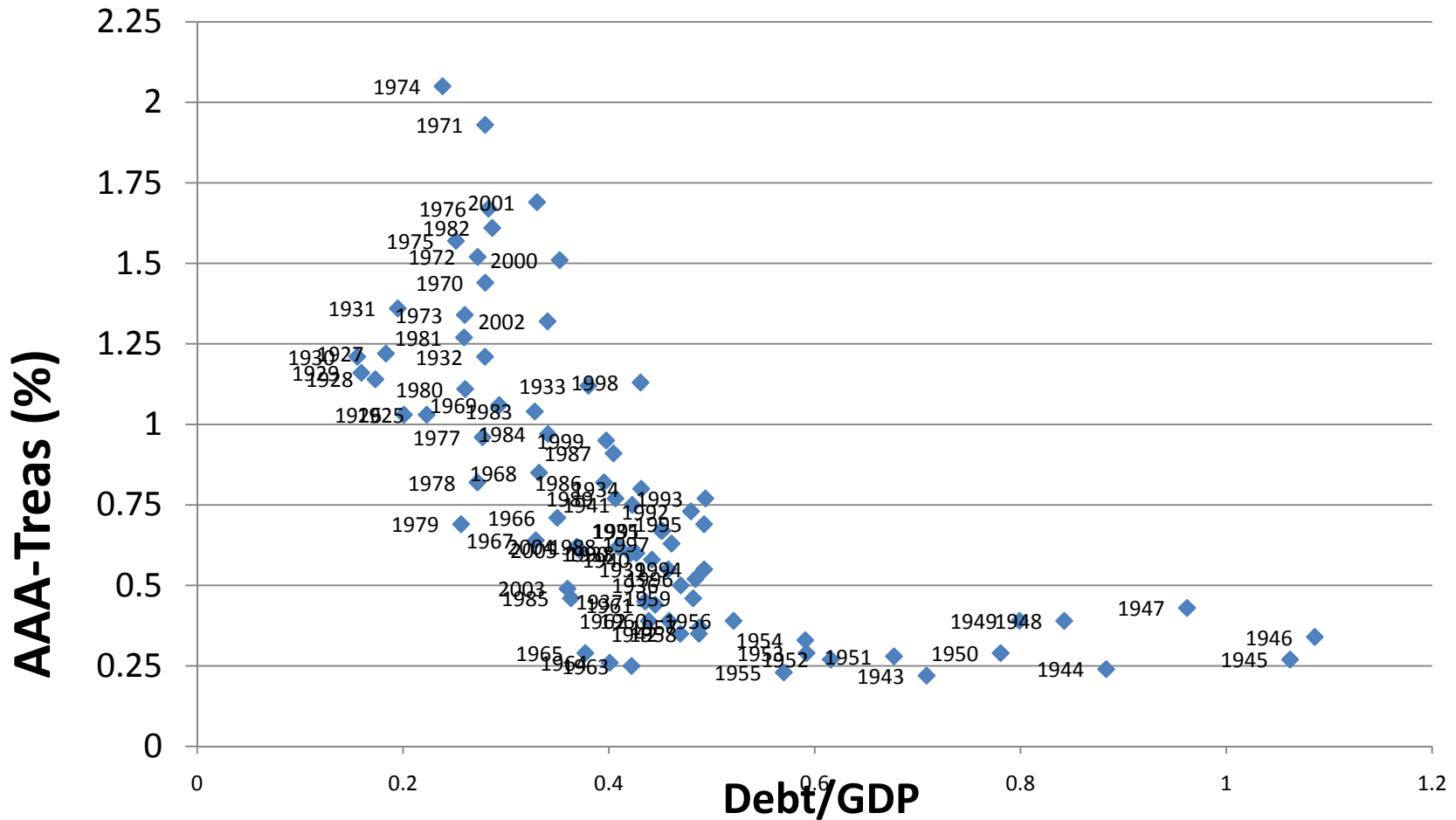
Recent events: OIS-TBill



5 Year FNMA-Treasury (bps)



Treasury “demand” function

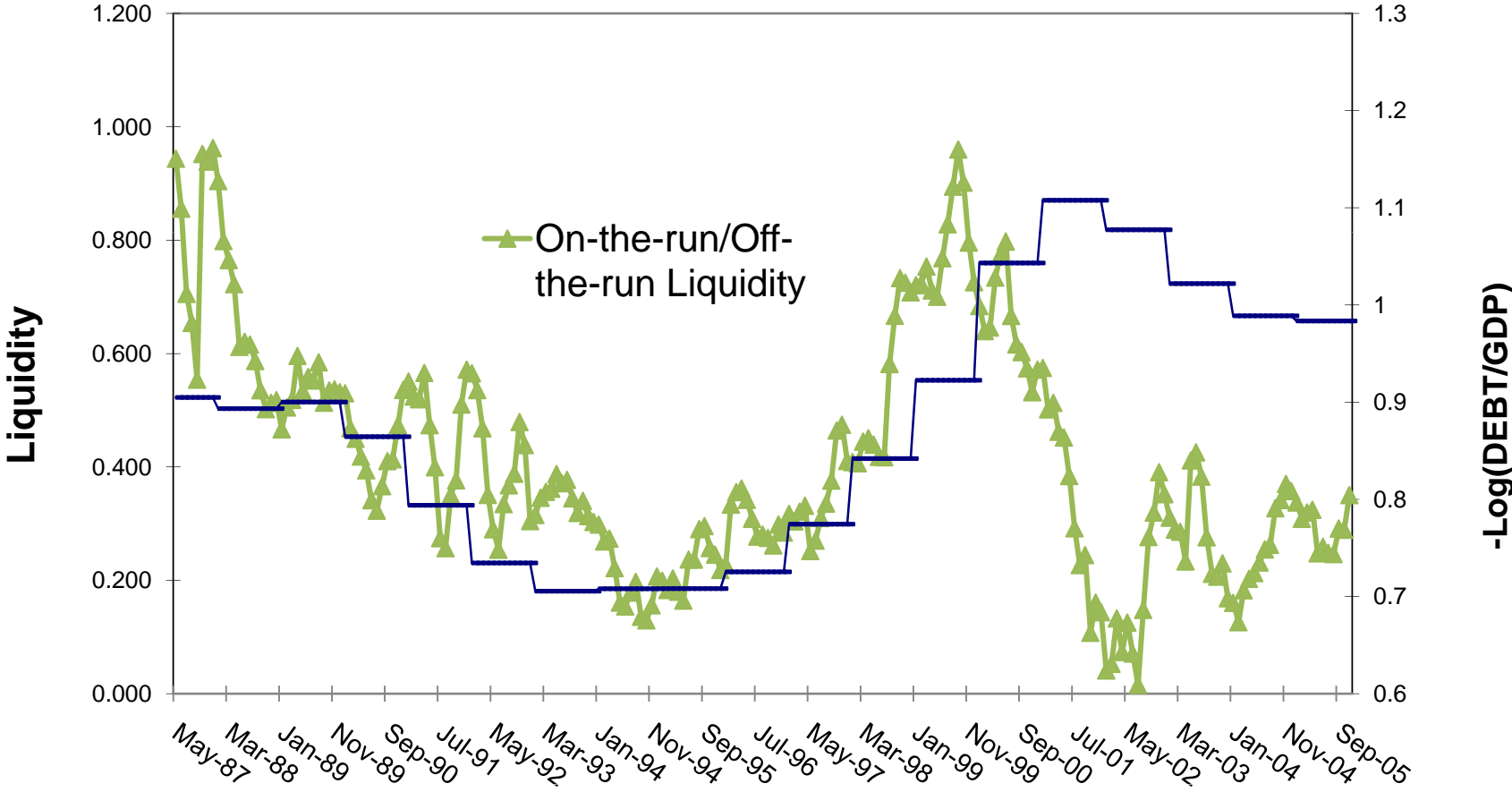


Annual Data from 1925 to 2005, as analyzed in Krishnamurthy and Vissing-Jorgensen (2008)

What is driving the demand?

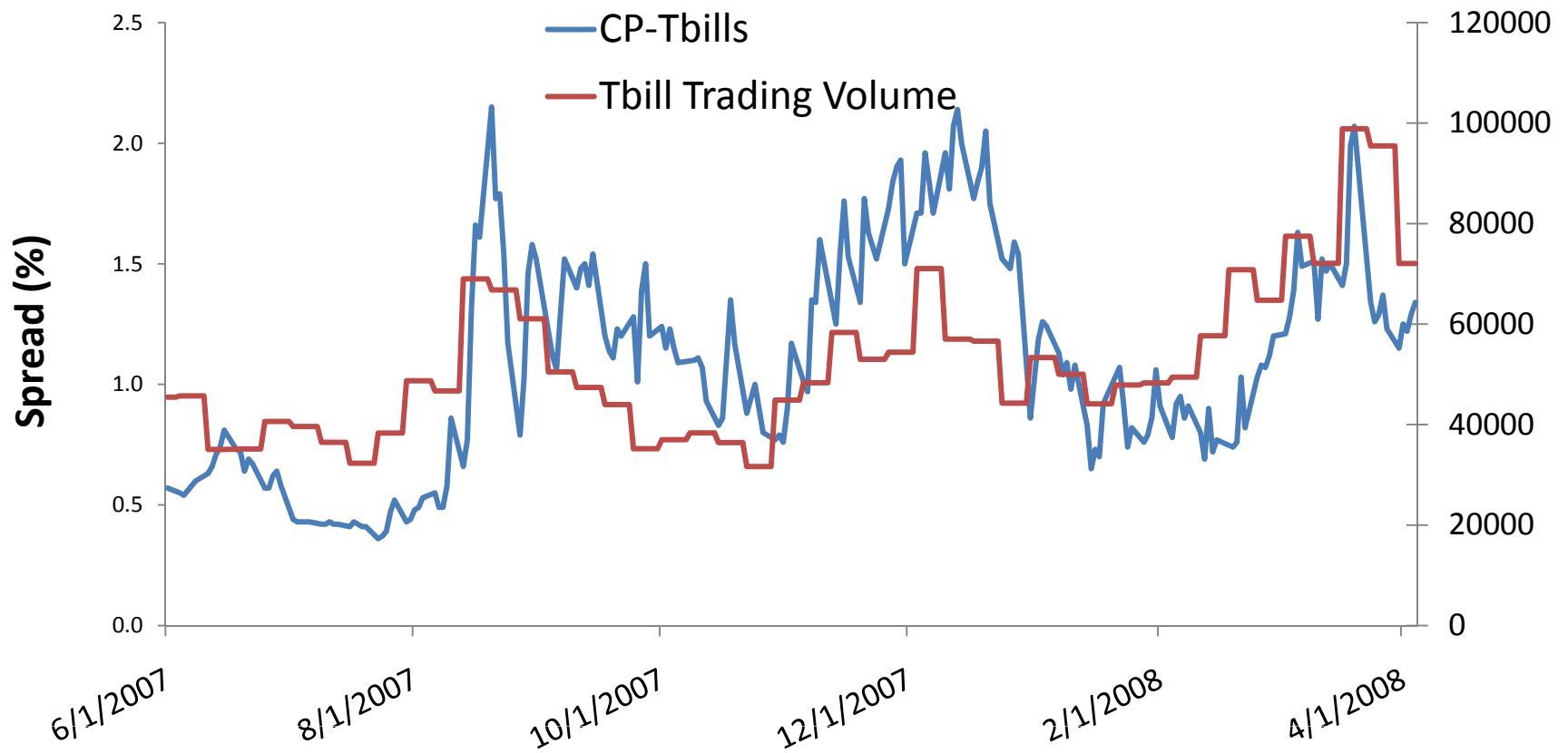
- Trading Liquidity
 - Absolute advantage over other assets
 - Good “liquidity risk:” Treasury becomes more liquid when other markets turn illiquid
- Surety
 - “Idiot-proof”
 - Institutional demand for a very safe asset
 - Money market funds
 - Non-financial corporates cash holdings

Comparison to OTR/OFR

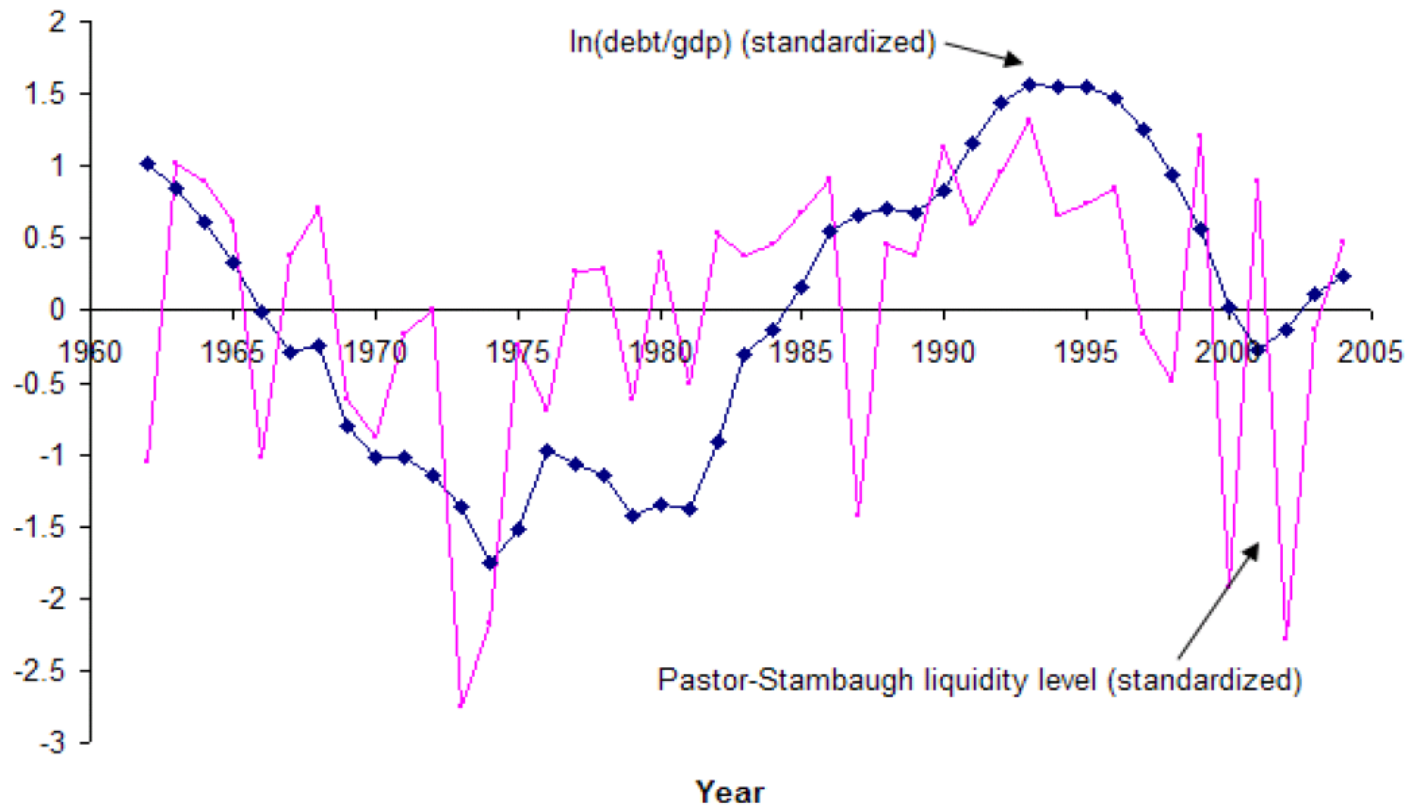


Source for OTR/OFR: Fontaine and Garcia (2007)

Treasury Bill Liquidity



Comparison to Stock Market Liquidity



Correlation = 0.49

AAA Surety

$$\text{Corp} - \text{Treas} = A + B \log(\text{Debt} / \text{GDP}) + \text{Controls}$$

Newey-West t -stats in parentheses.

	Aaa-Treasury	Baa-Treasury	Baa-Aaa
	(1)	(2)	(3)
<i>log(Debt / GDP)</i>	-0.81 (6.91)	-1.38 (7.76)	-0.57 (4.44)
<i>stockmkt volatility</i>	0.96(1.22)	9.77(6.57)	8.82 (8.09)
<i>slope</i>	0.05(1.38)	0.24 (3.75)	0.19 (3.60)
R^2	0.56	0.73	0.65
N	80	80	80

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- ▶ $\text{Baa} - \text{Treas}$: One standard deviation change in $\log(\text{Debt} / \text{GDP})$
 \Rightarrow 58 bps change in spread.

Who is driving the demand?

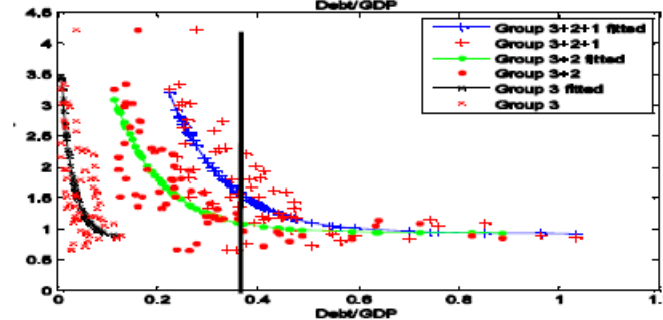
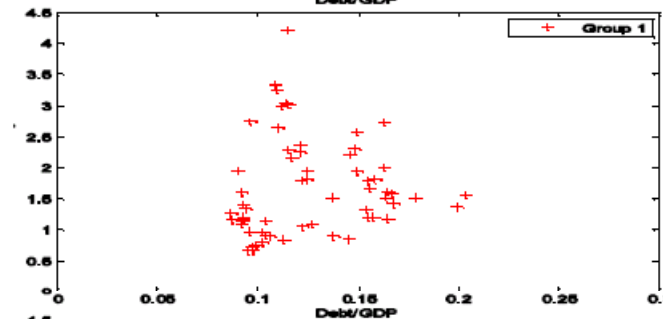
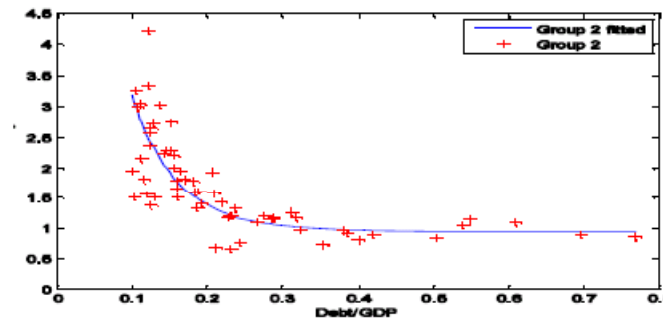
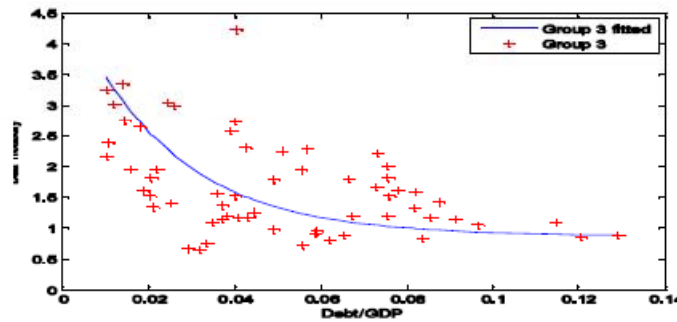
1. Liquidity-driven buyers (banks, etc.)
2. Long-term holders (insurance companies,)
3. Regulatory buyers (foreign central banks)

Long-term holders:
Insurance Cos
Retirement Funds

Short-term holders:
Household
Bond Mutual Funds
Banks

Governmental holders:
Federal Reserve
State/Local Govts
Foreign Official Holders

DEMAND DECOMPOSITION



Difference b/w
green and blue =
50 bps

Some Implications

- Helps resolve some risk premium puzzles
- Need to reinterpret what a “credit spread” means (i.e. current crisis)
 - It is substantially not default
- Spreads between TIPS (illiquid) and nominal Treasuries (liquid) are not exp. inflation
- How will Treasury issuance affect yields?
 - Although, we are also in a high demand episode