

Fundamentals of Shadow Banking

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Discipline and Elasticity, Prices

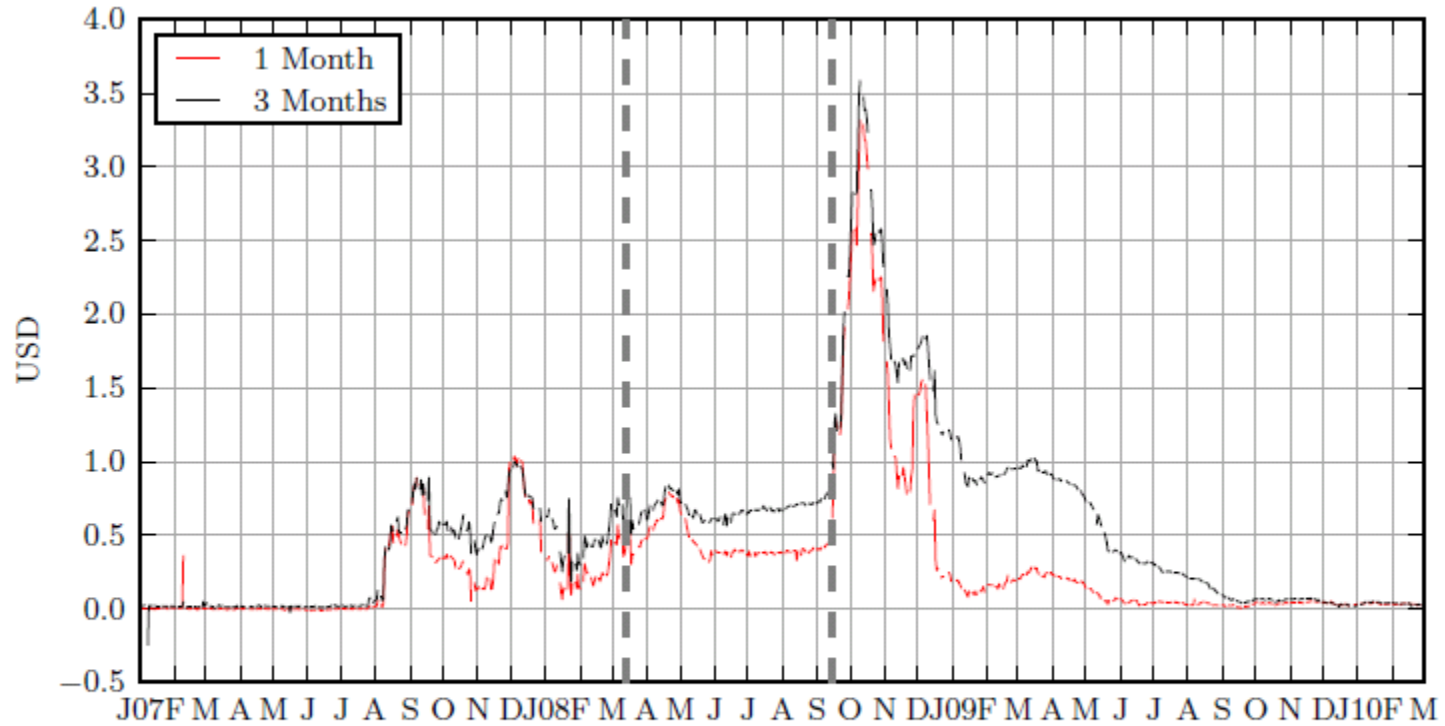
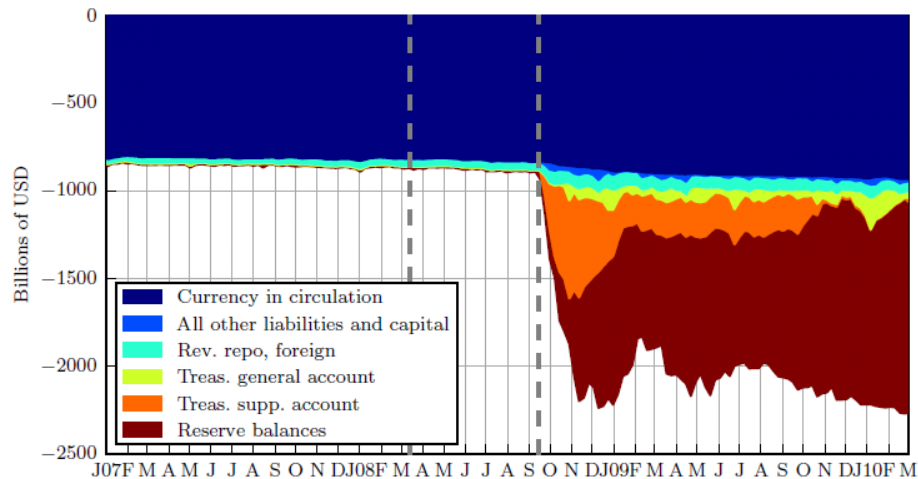
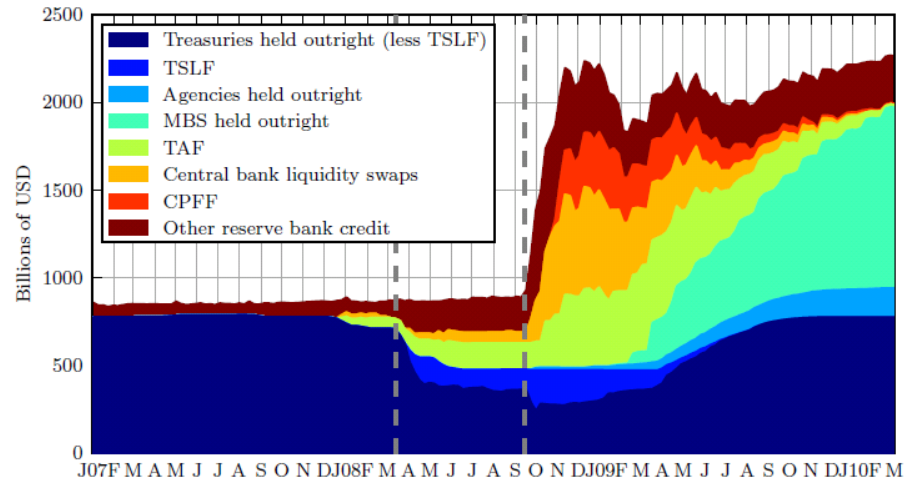


Figure 6: USD OIS-LIBOR spread, 1 and 3 months.

Discipline and Elasticity, Quantities



Financial Globalization

- Financial
 - Post WWII, rise of private capital markets
 - Post Bretton Woods, private money markets
- Globalization
 - Extension across globe
 - Integration across globe
- Shadow Banking
 - From loan-based credit to market-based credit
 - From funding liquidity to market liquidity
 - Quintessential institutional form for modern day

Inherent Instability of Credit

“Money **will not manage itself**, and Lombard Street has a great deal of money to manage.”

Bagehot (1873)

- irrational exuberance?
- flawed lending, flawed regulation?
- Wall Street wizardry, regulatory arbitrage?
- excess leverage ratio, insufficient capital?
- run on repo, insufficient liquidity?
- stress test of shadow banking, and financial globalization**

What is shadow banking?

“**Money market funding**
of
Capital market lending”

- **Global** (dollar) funding of **local** lending
- **Market pricing**, both money and capital
- Key role of **market-making** institutions
- Key role of **central bank as backstop**

Shadow Banking as Global Finance

Shadow Bank

Asset Manager

Assets	Liabilities	Assets	Liabilities
FX Risky Asset Credit Default Swap Interest Rate Swap FX Swap	\$ Repo	\$ Repo	Capital Credit Default Swap Interest Rate Swap FX Swap

Note: Treat “insurance” as contingent asset and liability; alternatively, treat “risk exposure” as contingent asset and liability

“Making” Markets, Money and Risk

Capital Funding Bank **Global Money Dealer** Asset Manager

Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
RMBS CDS IRS FXS	MM funding	MM funding	“deposits”	“deposits”	Capital CDS IRS FXS

Derivative Dealer

Assets	Liabilities
Credit Default Swaps Interest Rate Swaps FX Swaps	Credit Default Swaps Interest Rate Swaps FX Swaps

Backstopping Market Making, First Resort

Capital Funding Bank Global Money Dealer Asset Manager

Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
RMBS CDS IRS FXS	MM funding	MM funding Reserves	“deposits” Capital	“deposits”	Capital CDS IRS FXS

Derivative Dealer

Assets	Liabilities
CDS IRS FXS Reserves	CDS IRS FXS Capital

Backstopping Market-making, Last Resort

- Global Money Dealer

Assets	Liabilities
MM funding Reserves Liquidity put (funding)	“deposits”

- Derivative Dealer

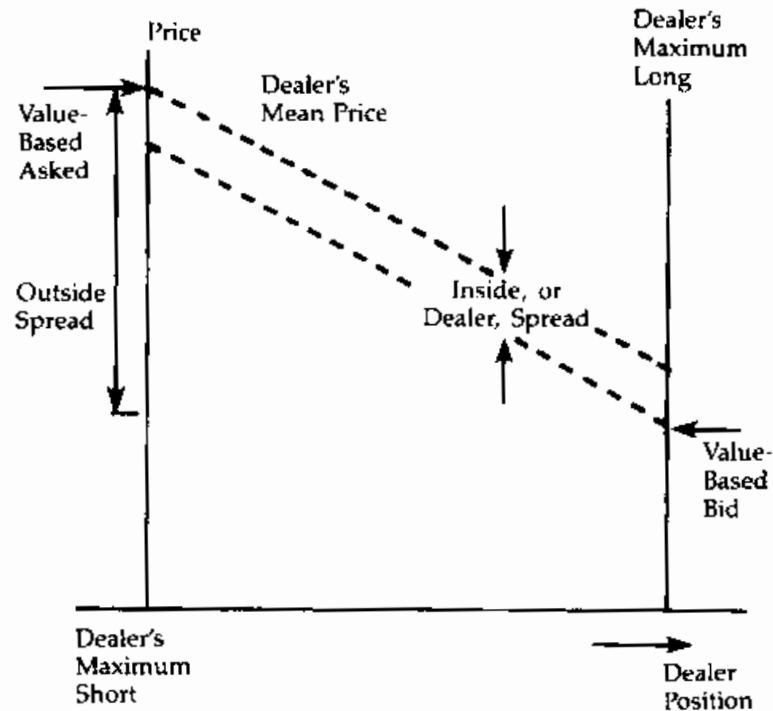
Assets	Liabilities
CDS IRS FXS Reserves Liquidity put (market)	CDS IRS FXS

- **Central Bank (or C5)**

Assets	Liabilities
	Reserves Liquidity put (funding) Liquidity put (market)

Economics of the Dealer Function

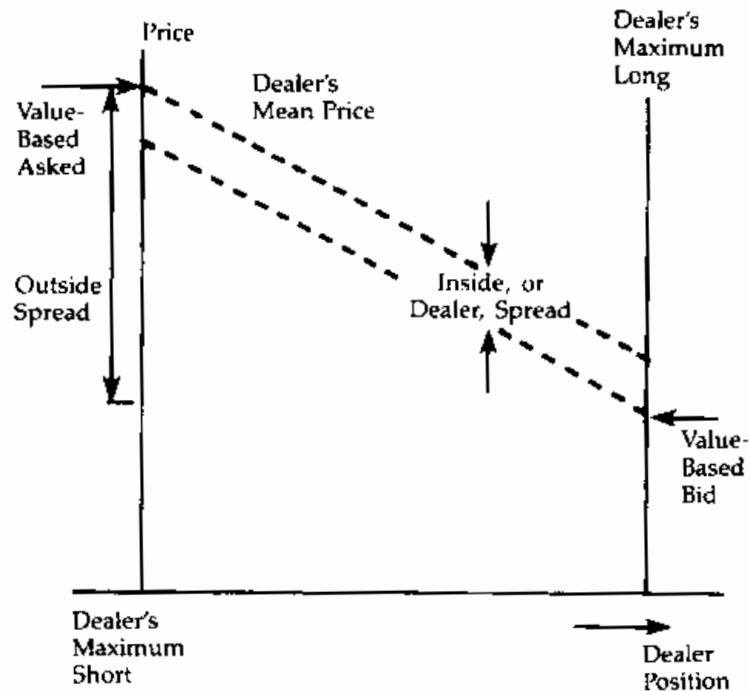
Figure A Dealer's Spread and Maximum Position



- Treynor, 1987

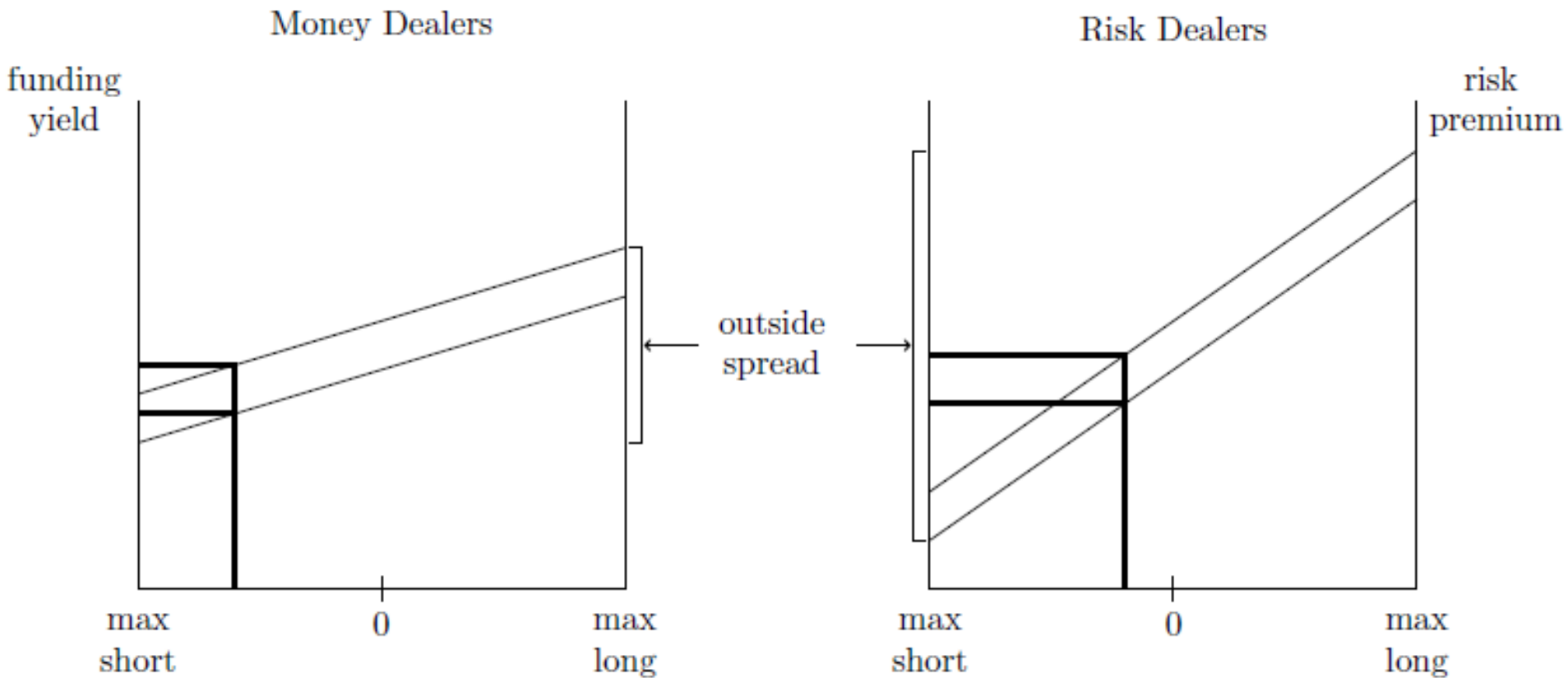
Funding Liquidity and Market Liquidity

Figure A Dealer's Spread and Maximum Position



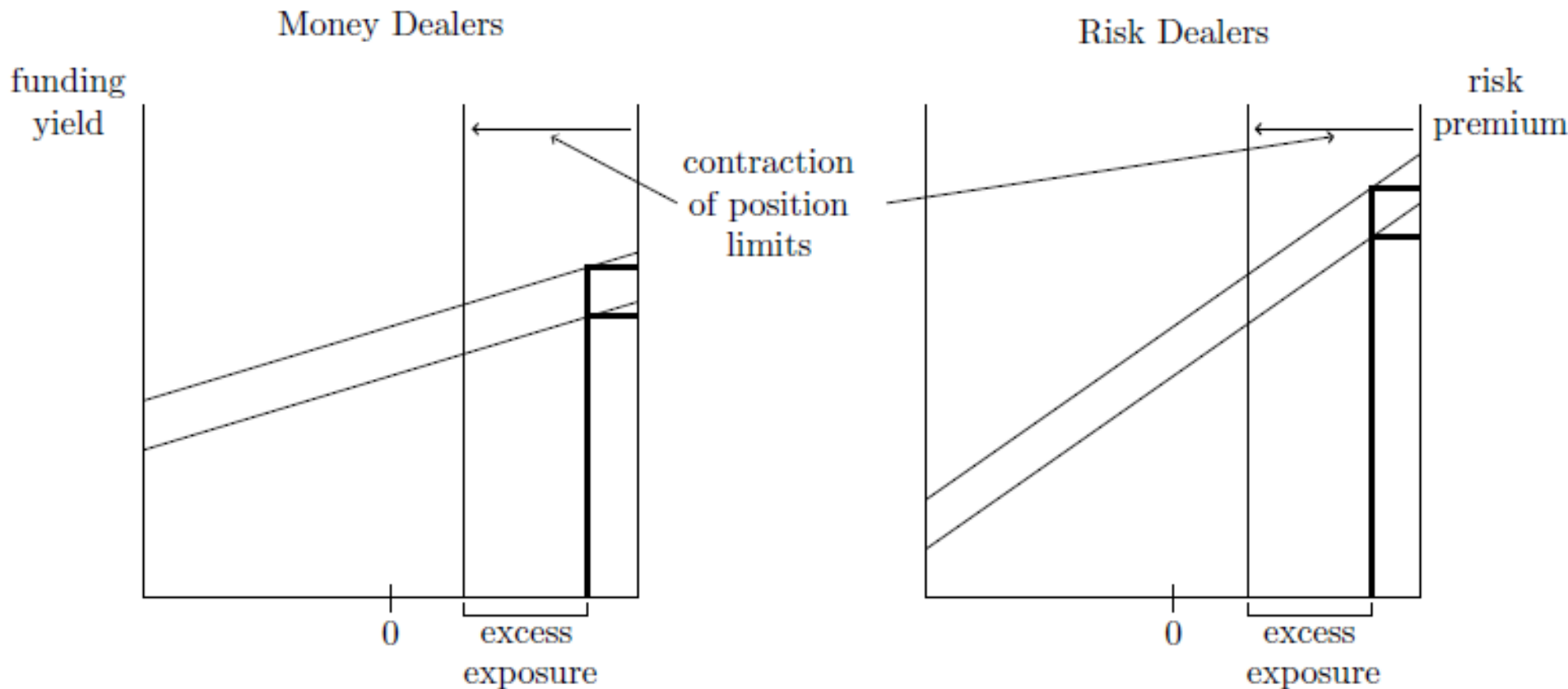
Shadow Banking Boom

- Absorbing net order flow from Asset Manager distorts funding cost, risk premium → **BOOM**



Shadow Banking Bust

- Absorbing new order flow from Shadow Bank distorts funding cost, risk premium → **CRISIS**



Central Bank as Market Backstop

Dec 15, 2011

Dec 15, 2011 (restated)

Assets		Liabilities		Assets		Liabilities	
Treasuries	\$1.7	Currency	\$1.0	[TBill	\$2.6	Curr./Res.	\$2.6]
MBS/GSE	.9	Reserves	1.6	[Tbond	2.6	Tbill	2.6]
Other	.3	Other	.3	[Risky Secs	.9	Tbond	.9]
				Other	.3	Other	.3
TOTAL	2.9	TOTAL	2.9	TOTAL	6.4?	TOTAL	6.4?

- Fed as Dealer of Last Resort
 - Global Money Dealer (OIS) [and FX swap]
 - Global Derivative Dealer (IRS, CDS)

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Unfinished business

- International last resort cooperation (C5)
 - Markets, not banks (TBTF)
- Robust first resort infrastructure
 - Outside spread, not inside spread
 - Risk spreads, as well as money spreads
- Prudential regulation, micro and macro
 - Beyond Capital Adequacy
- Monetary policy
 - Beyond QE