New banking regulations and the liquidity of financial markets

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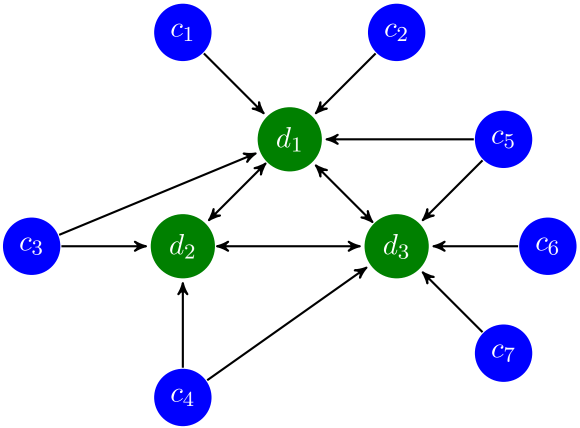
Are We Ready for the Next Financial Crisis? Lessons Yet To Be Learned
Rotman School, University of Toronto, March 22, 2018

Based in part on research with Leif Andersen, Antje Berndt, and Yang Song

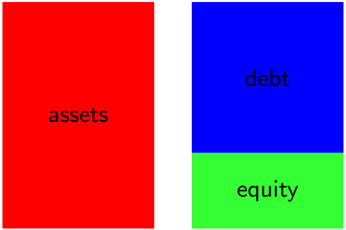
A bank-intermediated over-the-counter market



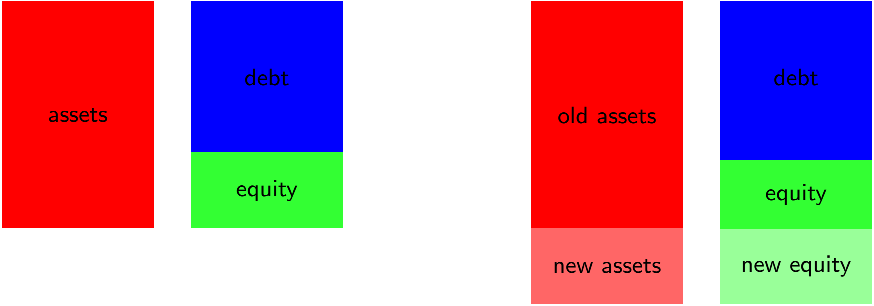
Implications of post-crisis regulations for market efficiency

1. More financial stability from higher bank capitalization and bail-in failure resolution.
2. Increased cost of access to bank balance sheets.
   - The leverage-ratio rule has reduced incentives to intermediate safe assets.
   - Bail-in failure resolution has significantly increased bank funding costs.
3. Market infrastructure and new competition rules lower the need for balance-sheet space.

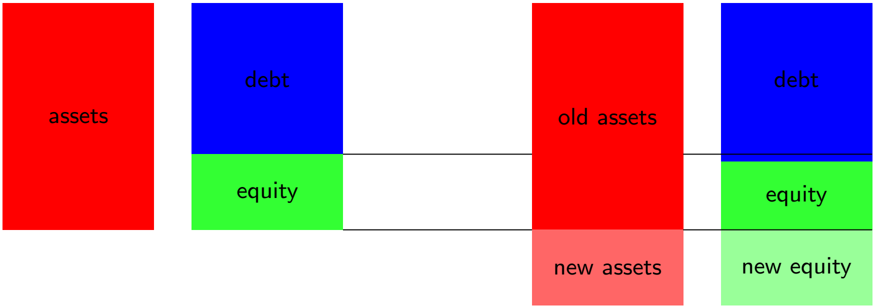
Dealer balance sheet



More equity to fund more assets

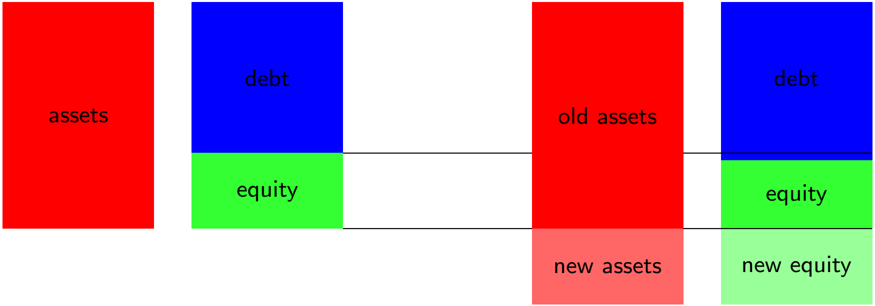


Legacy shareholders have subsidized creditors



Higher capitalization implies a value transfer from legacy shareholders to creditors.

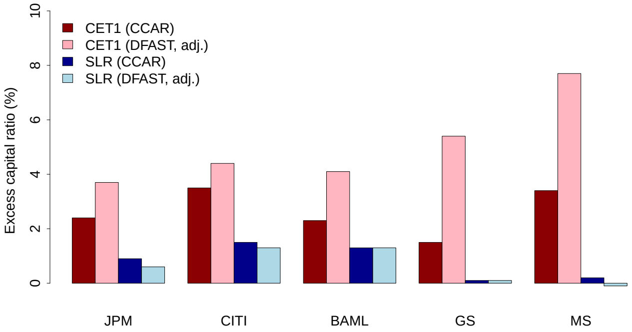
Debt overhang



For shareholders to break even, the new assets must be purchased at a profit that exceeds the value transfer to creditors. (Myers, 1977)

SLR is more binding than risk-based capital ratios

Results of the Fed's 2017 stress tests for the largest US dealer banks



CCAR: stressed CET1 after assumed payouts, less 4.5%; stressed SLR less 3.0%.
DFAST, adjusted: stressed CET1 (no payouts) less (4.5% + G-SIB surcharge); stressed SLR less the G-SIB minimum of 5%.

European banks reduce their balance sheets at quarter ends

Daily collateral outstanding in the tri-party repo market and the Federal Reserve's overnight reverse repo (ON RRP) facility

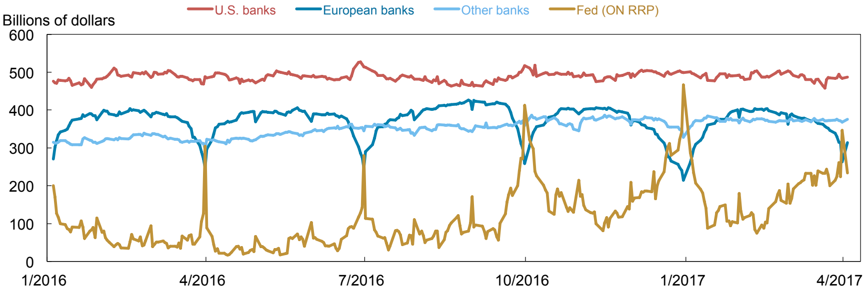
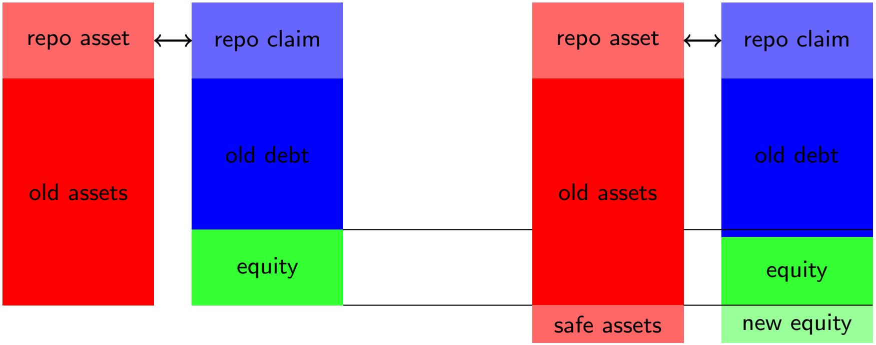


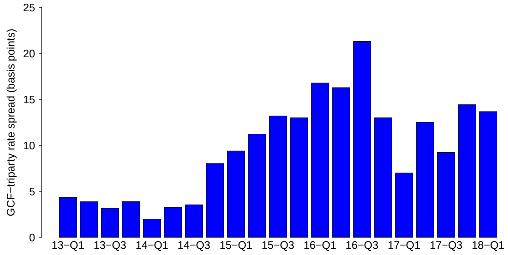
Figure Source: Egelhov, Martin, Zinsmeister, Federal Reserve Bank of New York, August, 2017.

Notes: Banks headquartered in the euro area and Switzerland report leverage ratios as a snapshot of their value on the last day of each quarter, while their U.S. counterparts report quarterly averages. Totals only include trades backed by Fedwire-eligible securities–that is, U.S. Treasury and agency securities.

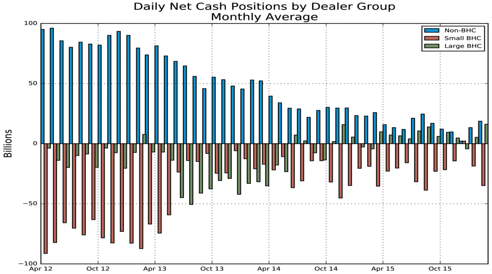
Impact of the leverage-ratio regulation on repo intermediation costs to legacy shareholders



Impact of SLR on UST repo market efficiency



(a) bid-ask spreads up

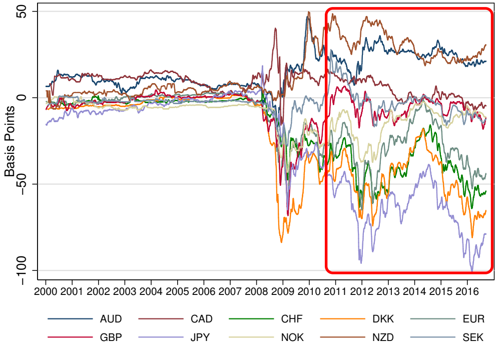


(b) inter-dealer positions down

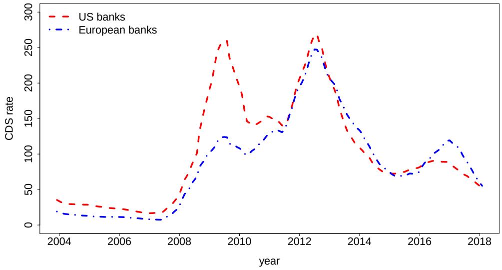
Figure: (a) Average within-quarter difference between overnight GCF and Tri-party repo rates. Data sources: Bloomberg and BNY-Mellon. (b) Figure source: Antoine Martin, FRBNY (2016).

Cross-currency basis and bank funding costs

Funding value adjustments now leave wider arbitrage bounds on the basis



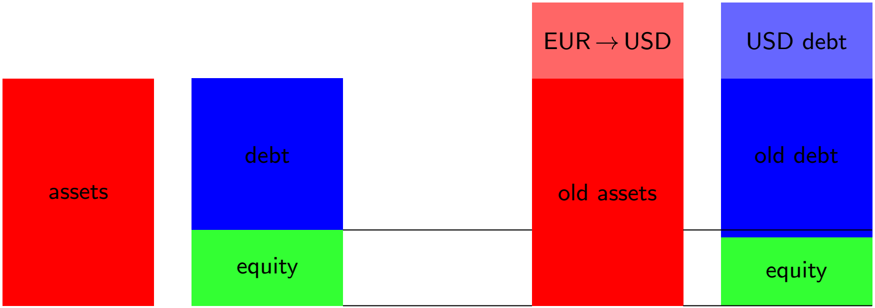
(a) 5-year USD cross-currency basis. Source: Du, Tepper, and Verdelhan (2017).



(b) 5-year dealer credit spreads

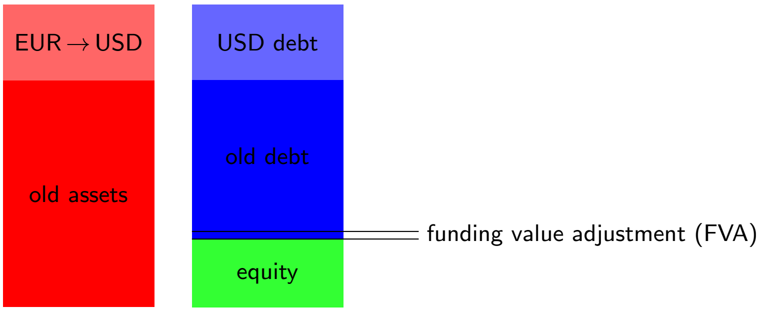
CIP arbitrage can be costly to dealer shareholders

Debt overhang cost for funding synthetic dollar deposits



To benefit shareholders, the trade profit must exceed the funding value adjustment (FVA), a debt-overhang cost.

Funding cost to shareholders



A debt-funded safe arbitrage is not valuable to bank shareholders unless it's excess yield is above the bank's credit spread. Source: Andersen, Duffie, Song (2018)

Credit spreads: funding-cost wedge and arbitrage bounds

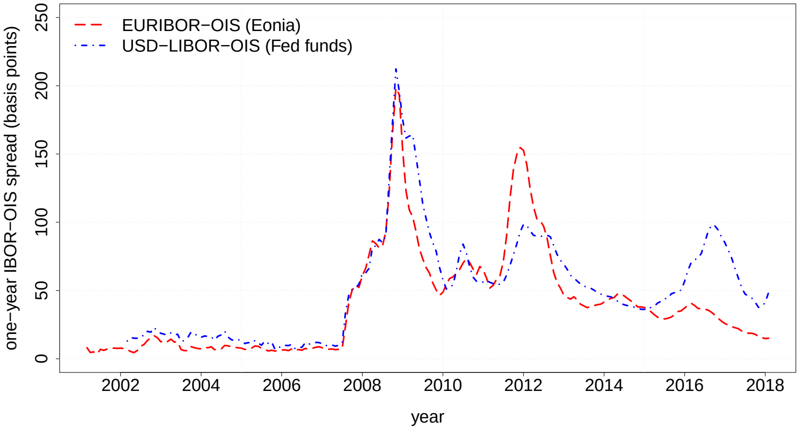


Figure: Spreads between one-year IBOR and OIS rates. Data source: Bloomberg.

At a given solvency level, big-bank credit spreads are higher

Time fixed-effects in the relationship between CDS rates and distance to default

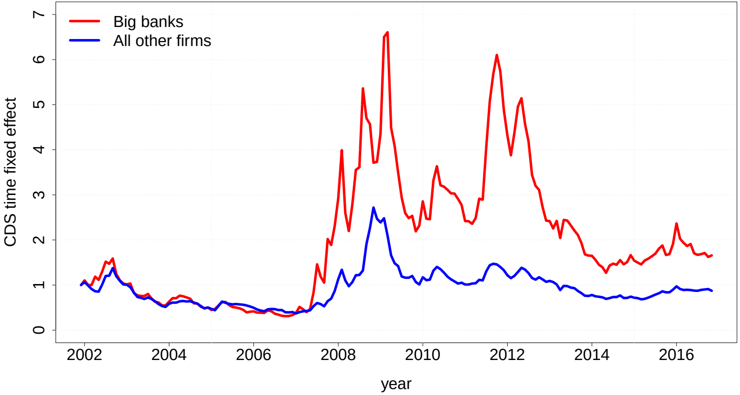
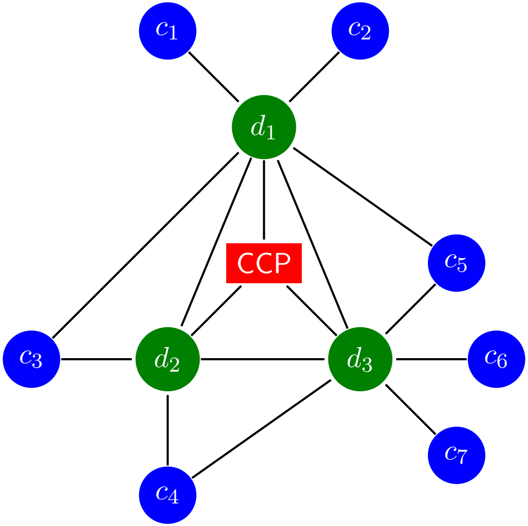


Figure: From work in progress with Antje Berndt.

Central counterparties reduce need for balance-sheet space



Compression eliminates space used for redundant swaps

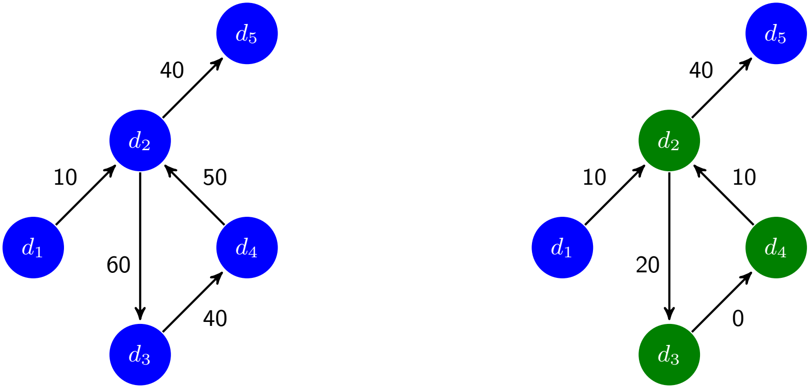
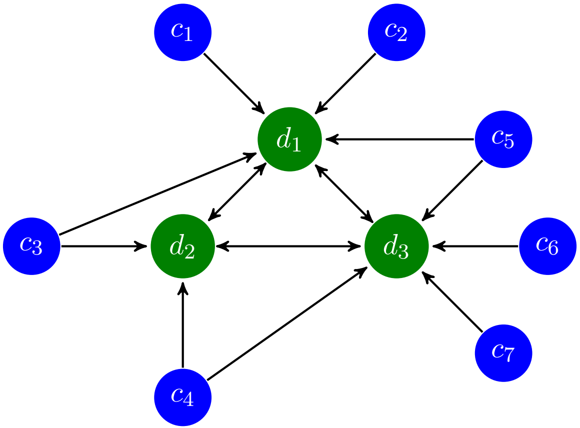


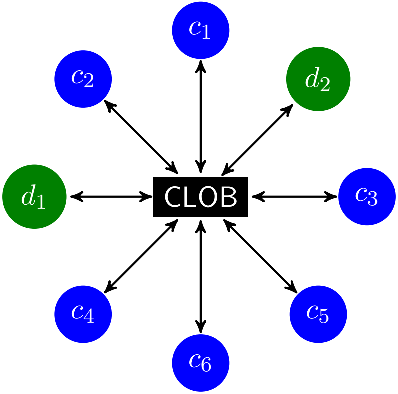
Figure: Counterparty exposures and initial margin are reduced without changing market exposures. Providers include TriOptima, which has eliminated over $1 quadrillion notional of swaps.

A bank-intermediated bilateral OTC market



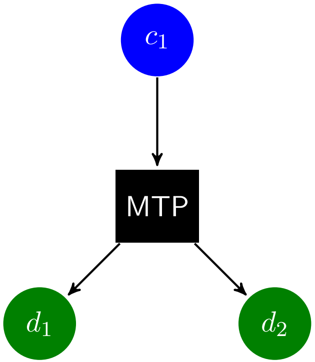
Improving trade competition

Objective: Migration of actively traded products to all-to-all trade platforms

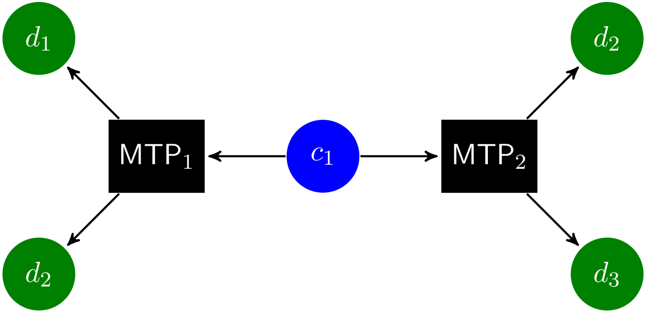


OTC competition after Dodd-Frank and MiFID

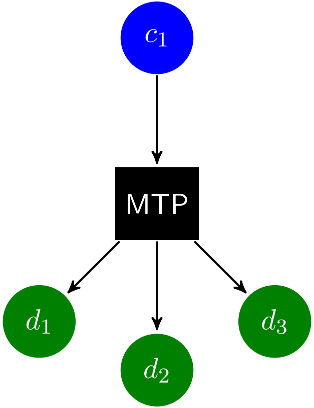
Buy-side firms request quotes at multilateral trading platforms



Excessive fragmentation across platforms



Reducing fragmentation improves competition



At corporate bond platforms
Dealer competition lowers buy-side trade costs

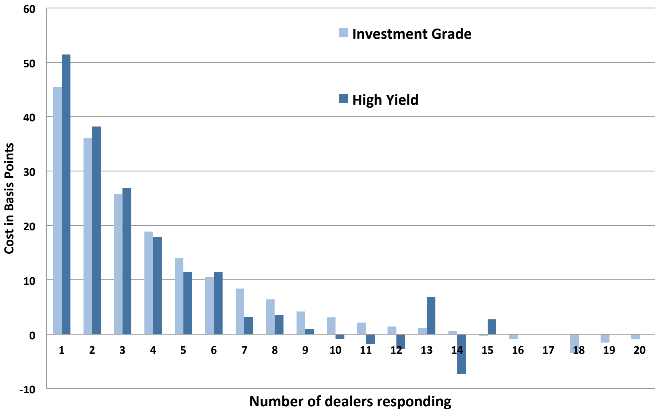


Figure: Source: Hendershott and Madhavan (2016)

Now typical fragmented two-tiered OTC markets