



FEDERAL RESERVE BANK *of* NEW YORK

Monitoring Risks in the Shadow Banking System

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*The views expressed in this presentation are those of the authors and do not necessarily reflect those of the Federal Reserve Bank of New York or the Federal Reserve System.

What are Shadow Banks?

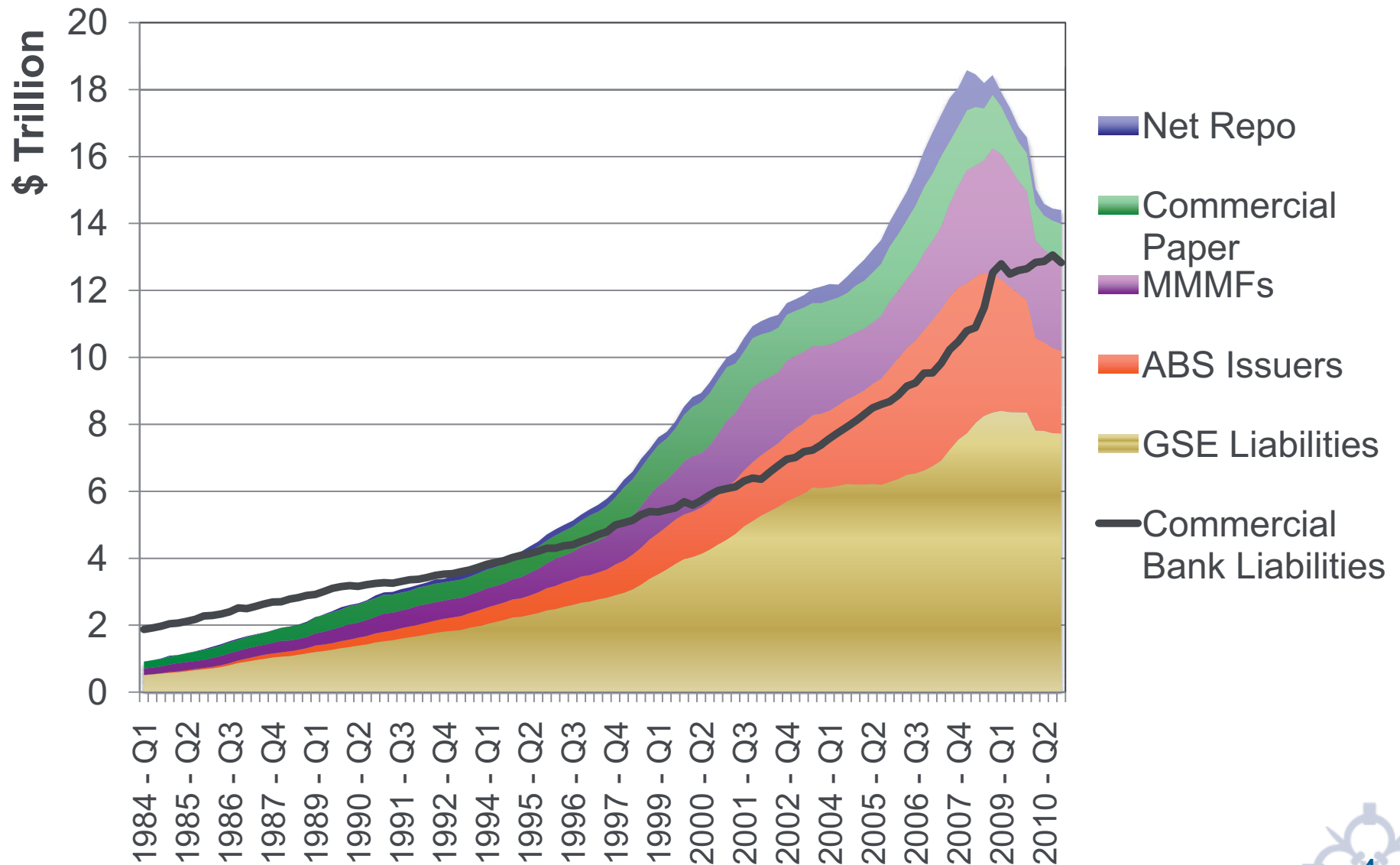
- Shadow banks are financial entities that conduct either all three or any one of the classic bank functions:
 1. **Credit transformation:** enhancement through priority and guarantees
 2. **Maturity transformation:** long term assets, short term liabilities
 3. **Liquidity transformation:** illiquid assets funded by illiquid liabilities
- But without the liquidity and credit puts provided by the discount window and deposit insurance.
- Much of the interaction between financial intermediaries and financial markets is conducted by these “shadow banks.”



Shadow Banking System and Official Enhancement

1. **Direct and implicit:** Debt issued by GSEs; local government investment pools
2. **Indirect and explicit:** Off-balance sheet activities of depository institutions (unfunded loan commitments, lines of credit, and trading liabilities) and GSEs where there is contractual obligation to fund
3. **Indirect and implicit:** Asset management activities of depository institutions where there is no obligation to fund but reputational risks of not funding
4. **Unenhanced:** Non-bank finance companies, Investment banks, Monolines and private mortgage insurers; re-insurance, REITs, Hedge funds, Limited purpose finance companies, Stand-alone money market funds, Securities lenders

Shadow Banking and Commercial Banking Liabilities



The 7 Steps of Shadow Banking

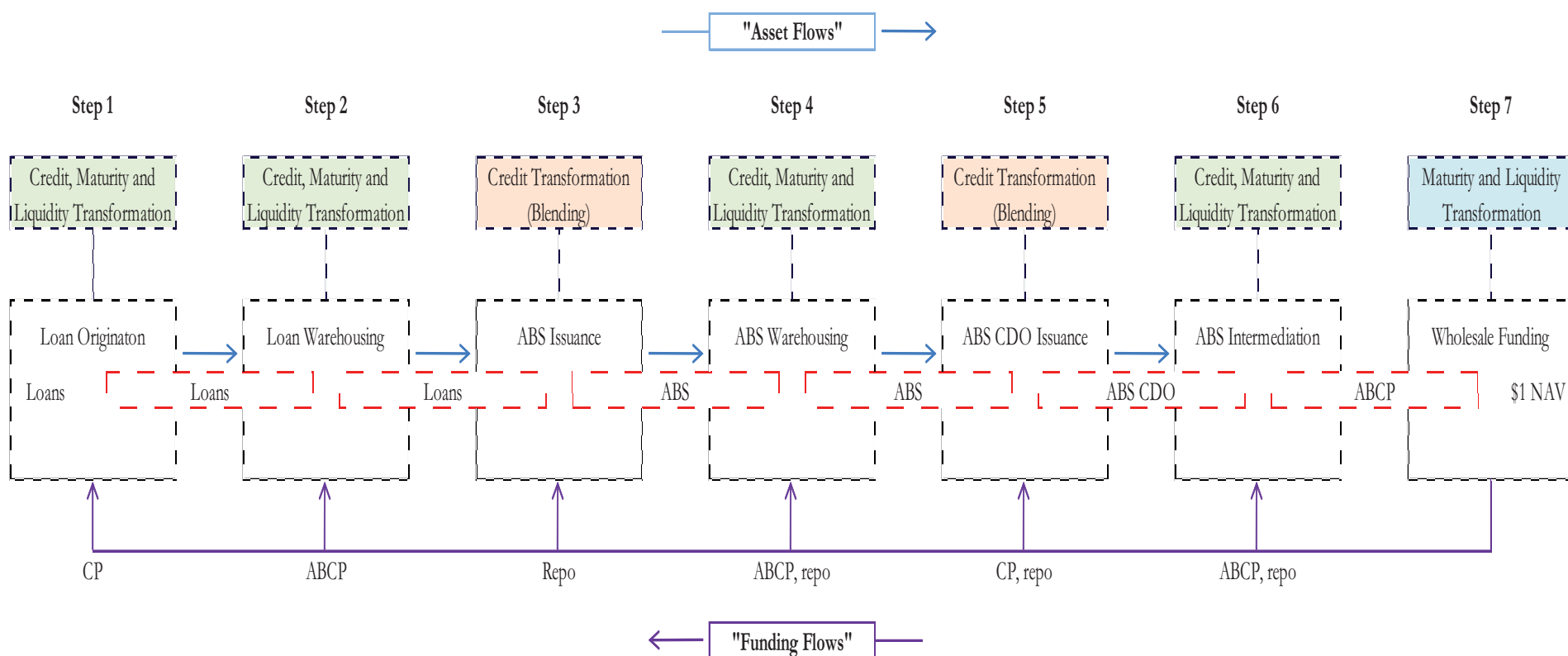
- 1. Loan Origination:** (ex: FinCos, ILCs, CBs)
- 2. Loan Warehousing:** (ex: Conduits)
- 3. ABS Issuance:** (ex: RMBS, CMBS, ABS)
- 4. ABS Warehousing:** (ex: broker-dealer warehousing)
- 5. ABS CDO Issuance:** (ex: ABSCDO)
- 6. ABS Intermediation:** (ex: SIV, TOB, HF, foreign entities)
- 7. Wholesale Funding:** (ex: 2(a)-7 fund, enhanced cash fund)



Exhibit: Shadow Credit Intermediation

Exhibit 3: The Shadow Credit Intermediation Process

The shadow credit intermediation process consists of distinct steps. These steps for a credit intermediation chain that depending on the type and quality of credit involved may involve as little as 3 steps and as much as 7 or more steps. The shadow banking system conducts these steps in a strict sequential order. Each step is conducted by specific types of financial entities, which are funded by specific types of liabilities (see Table 2).



Source: Shadow Banking (Pozsar, Adrian, Ashcraft, Boesky (2010))



Shadow Banking Sub-systems

- **Government sponsored shadow banking system**
 - Fannie Mae, Freddie Mac, and Federal Home Loan Bank System
- **Internal shadow banking system**
 - Off balance sheet activities of US Financial Holding Companies
 - Off balance sheet activities of European banks
- **External shadow banking system**
 - Diversified broker-dealers
 - Independent specialists
 - Private credit risk repositories: insurance companies
- **The parallel banking system**
 - Motivation for many shadow banking activities is capital, accounting, or tax arbitrage some of which will disappear due to regulatory reform



Shadow Banks and Core FI's

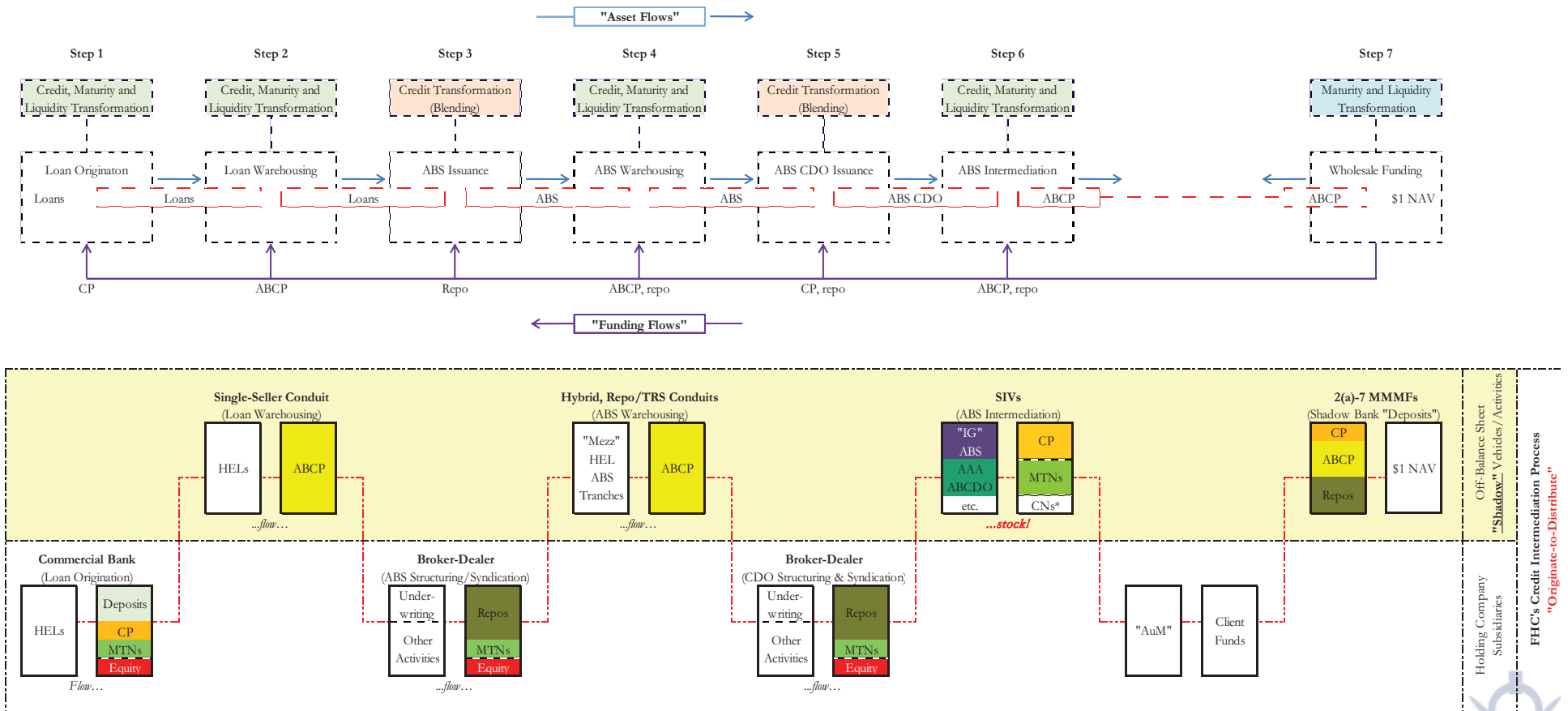
- Shadow banks are intertwined with core regulated institutions
 - Commercial banks provide credit and liquidity lines
 - Broker-dealers securitize and warehouse
 - Insurance companies provide credit insurance
 - Money market funds provide short term funding
- The exposures of core regulated institutions via the shadow banking system creates systemic inter-linkages
- **Indirect supervision of shadow banking in regulated institutions**



BHCs and Shadow Banking

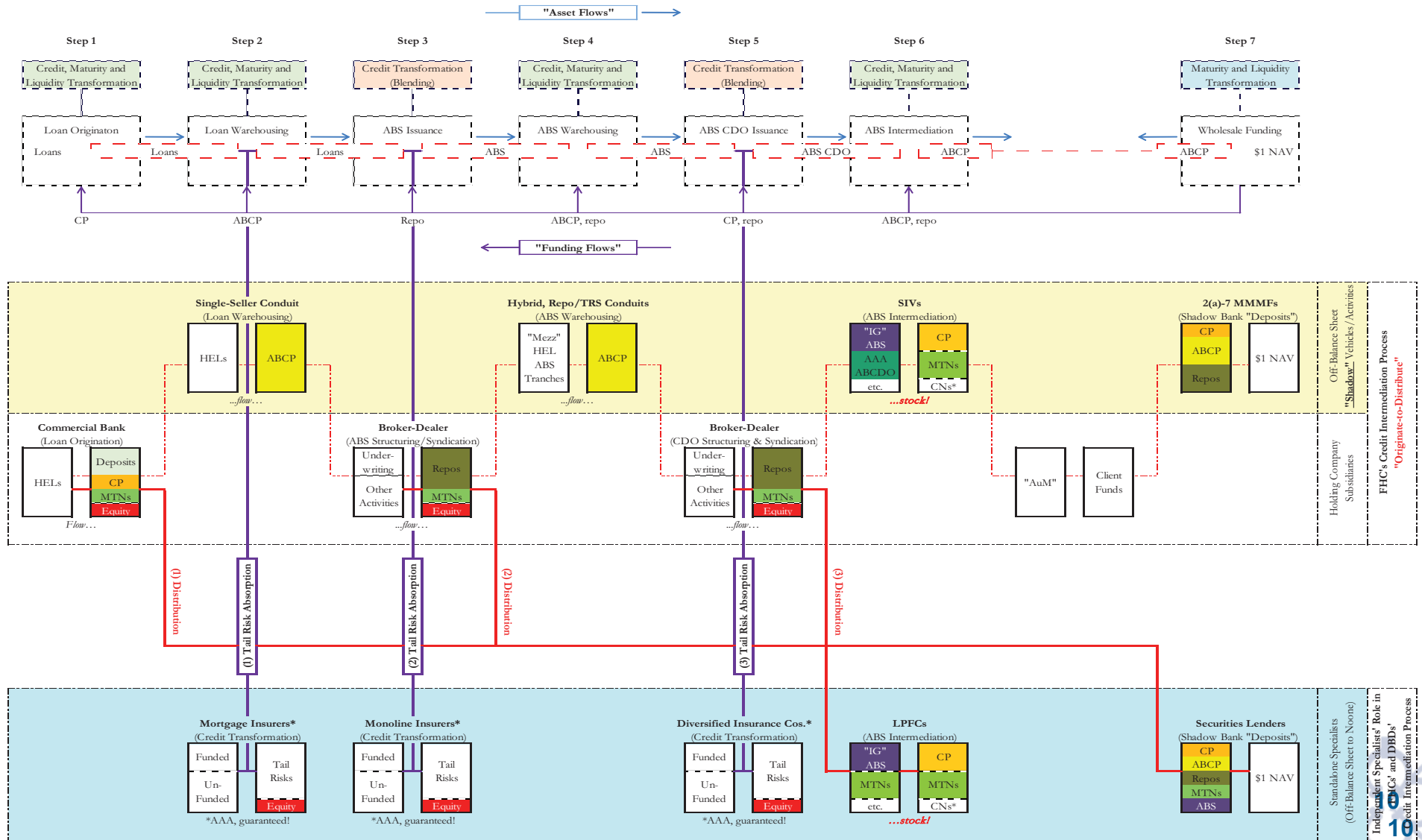
Exhibit 9: The Credit Intermediation Process of Bank Holding Companies

The credit intermediation process of Financial Holding Companies flows through a chain of subsidiaries and off-balance sheet vehicles (shadow banks), and is funded in capital markets. This intermediation chain enhances the efficiency of bank equity for various reasons. If markets freeze and the FHC's subsidiaries have to "onboard" their normally off-balance sheet assets and activities, capital **efficiency** can quickly become capital **deficiency**, with systemic consequences. The process described here is an **originate-to-distribute** model of non-conforming mortgages, where the originating banks and the broker-dealers that slice and dice mortgages into ABS and ABS CDOs do not retain any first loss pieces along the intermediation chain.



Source: Shadow Banking (Pozsar, Adrian, Ashcraft, Boesky (2010))

Tail Risk Insurance



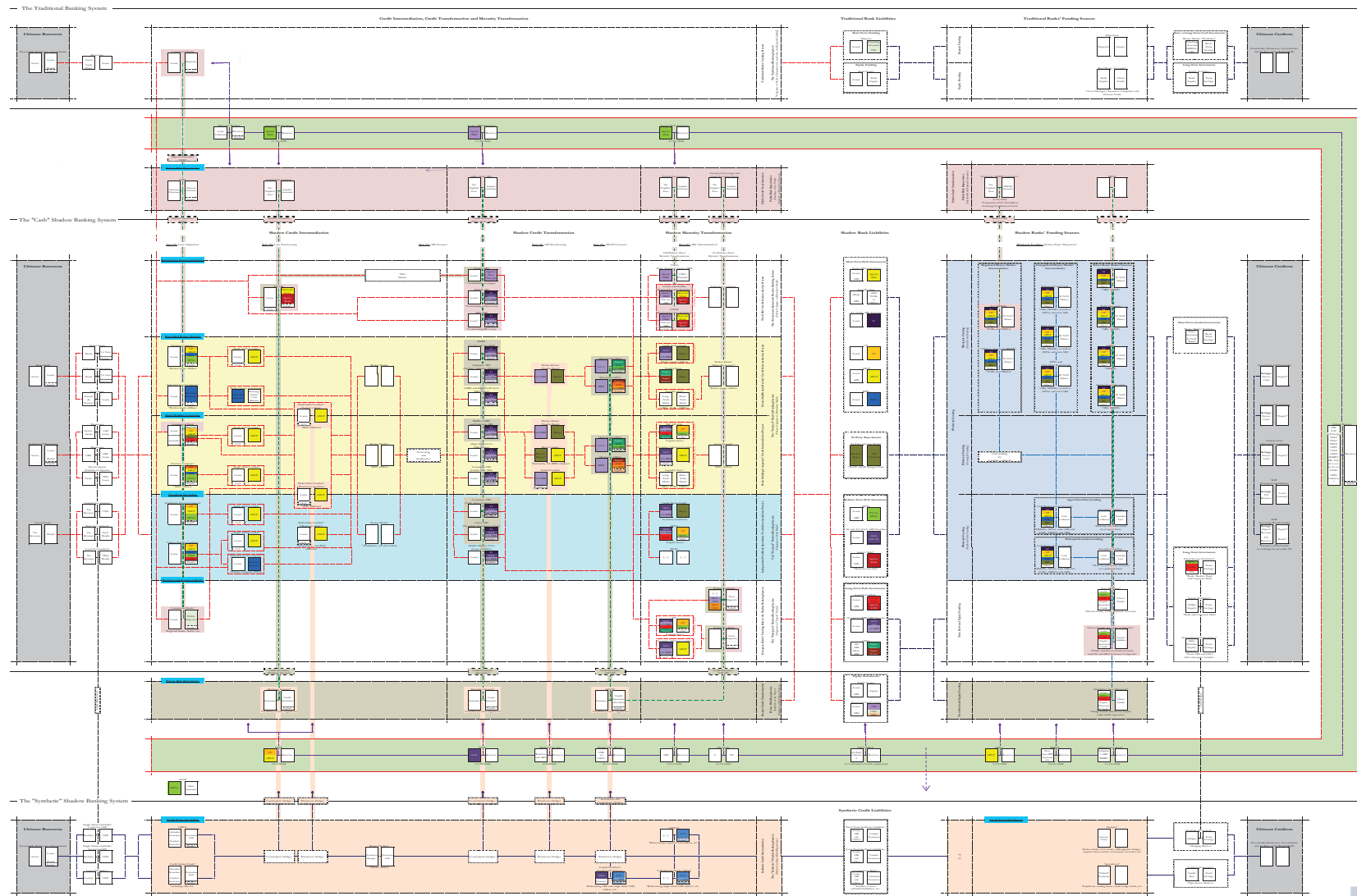
Shadow Banking Supervision

- Macroprudential supervision includes the interaction of supervised institutions with shadow banking activities
- Much of the external shadow banking system can be supervised indirectly via banks or dealers
 - Hedge fund leverage, off balance sheet maturity transformation
- SIFI designation of non-banks potentially captures additional shadow banking activities
- Major broker-dealers have all been absorbed or have become BHCs
- Reporting requirements and data collection has been expanded

Regulatory Reform

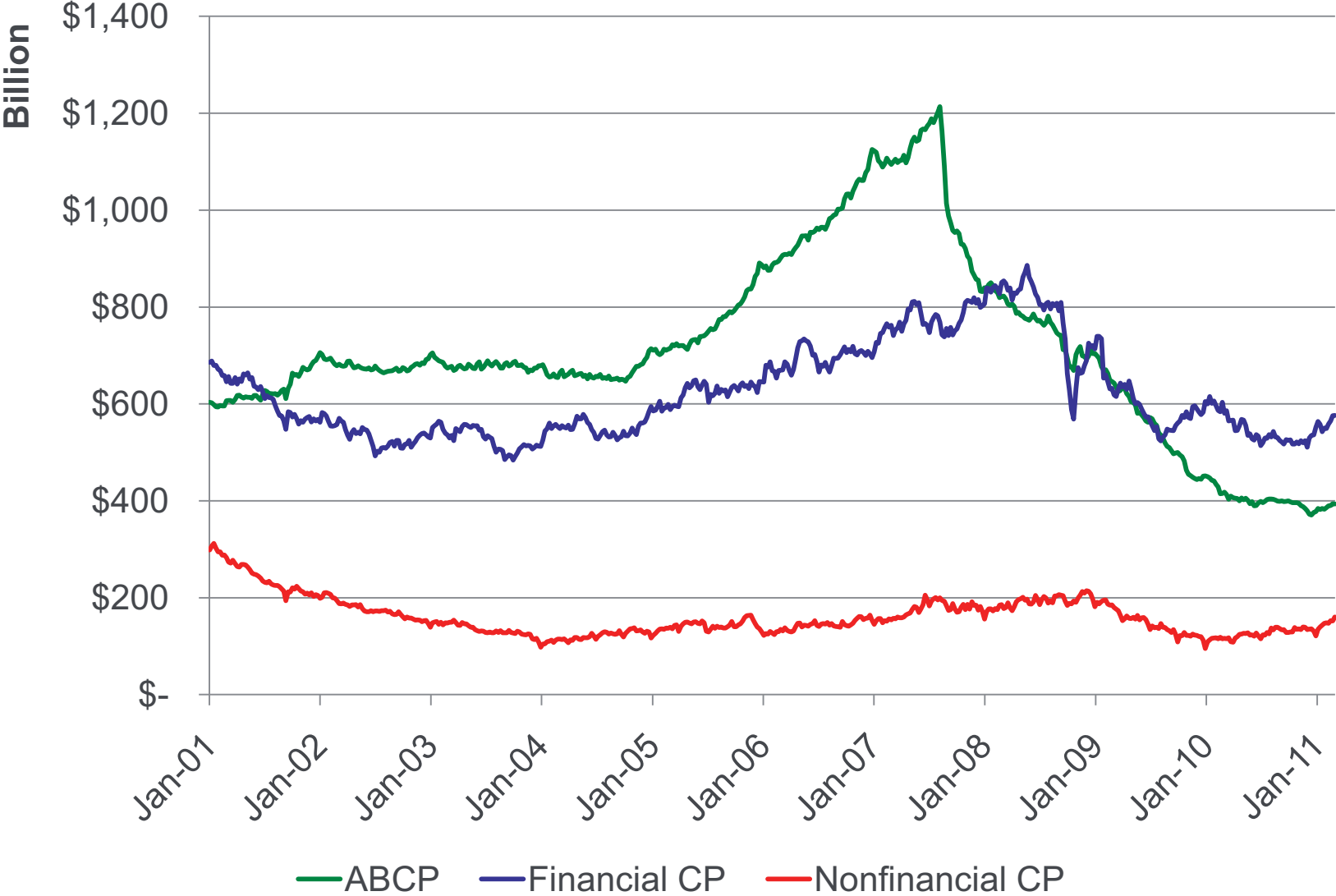
- **ABCP:** accounting and capital regulation reduces appeal of conduits
- **SIVs:** independent and bank sponsored pretty much stopped
- **Repo:** triparty repo reform aims at better intraday liquidity provision
- **Securitization:** risk retention, capital charges
- **GSEs:** various proposals, likely more capital, less risk taking
- **MMMFs:** focus on lower risk and stronger liquidity
- **Credit Hedge Funds:** reporting requirements
- **CDS:** move to central clearing, higher margins, backstop of CCPs

The Shadow Banking Map

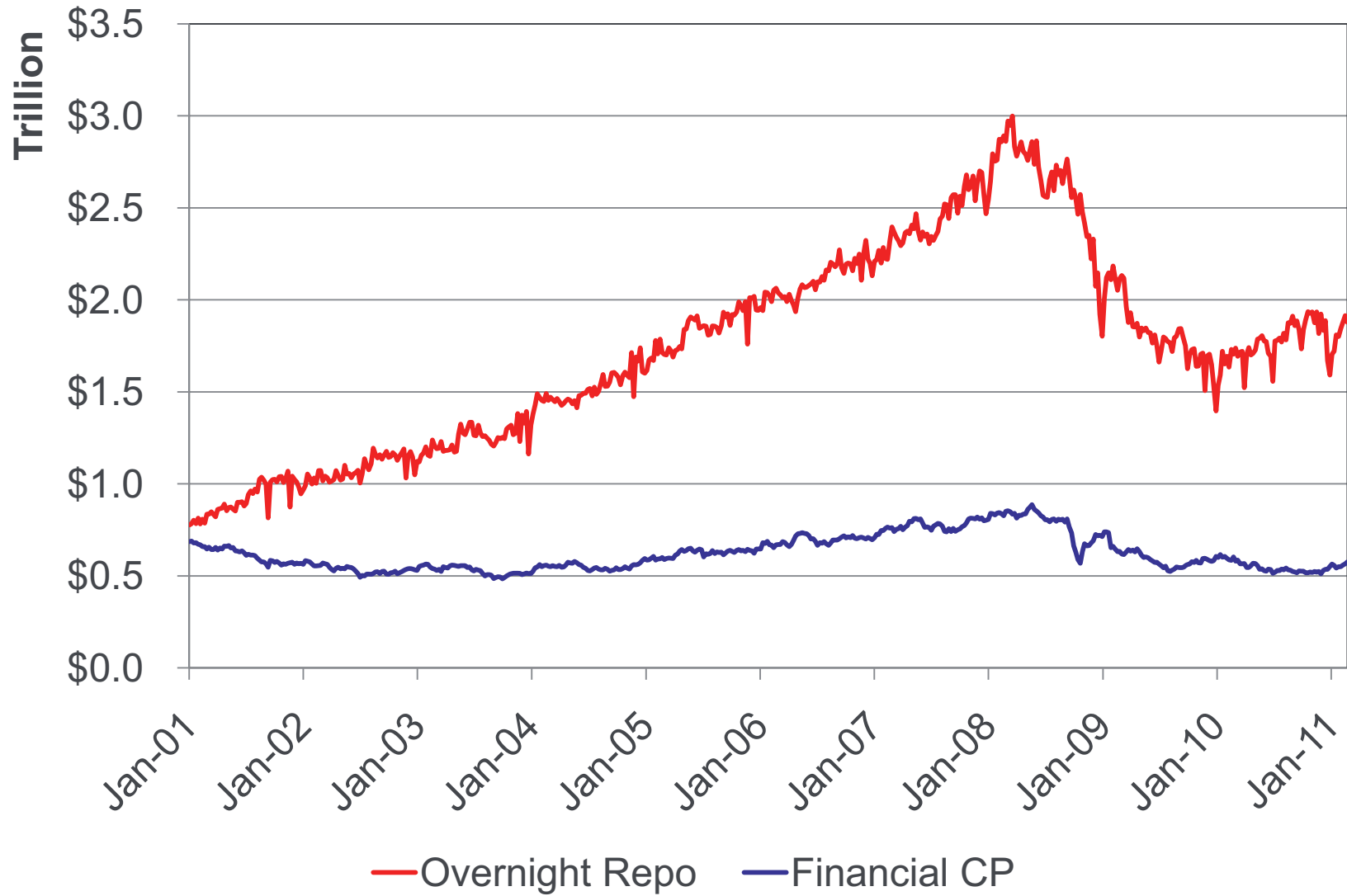


Source: Shadow Banking (Adrian, Ashcraft, Passar (2010))

ABCP

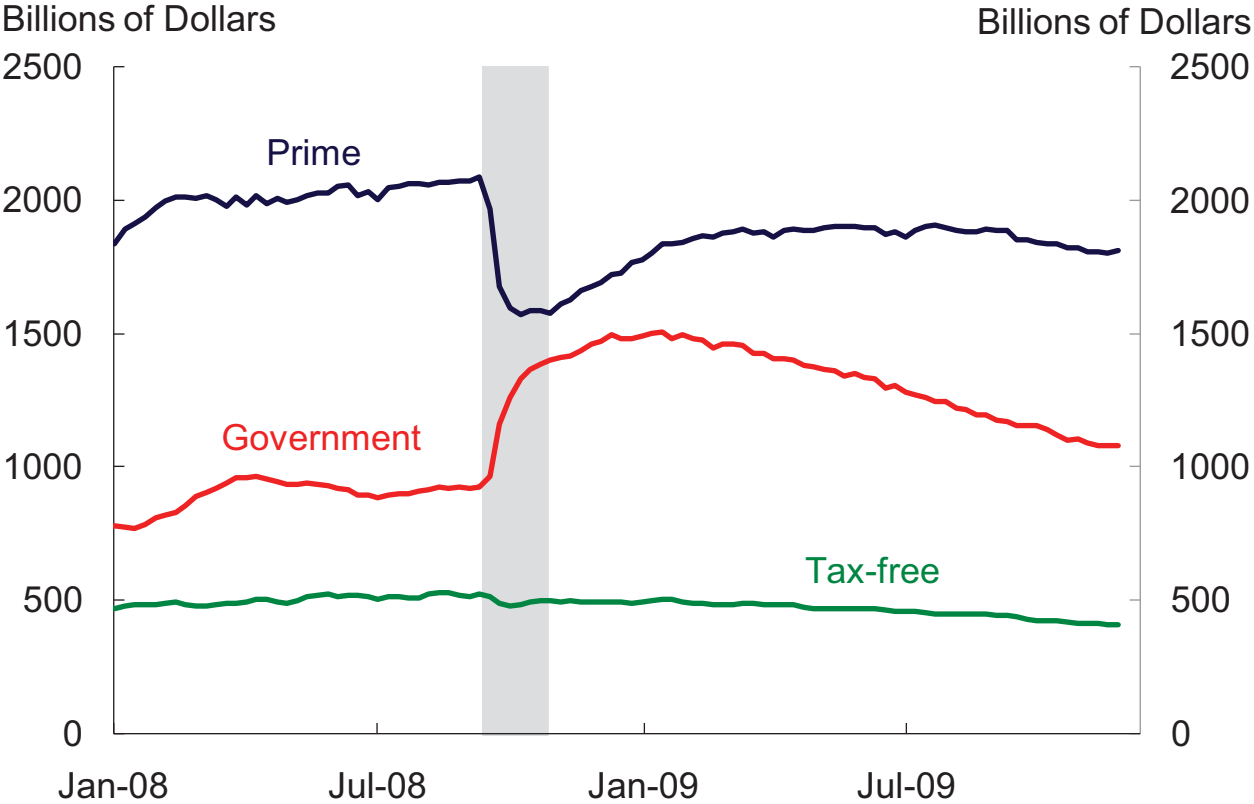


Repo Market



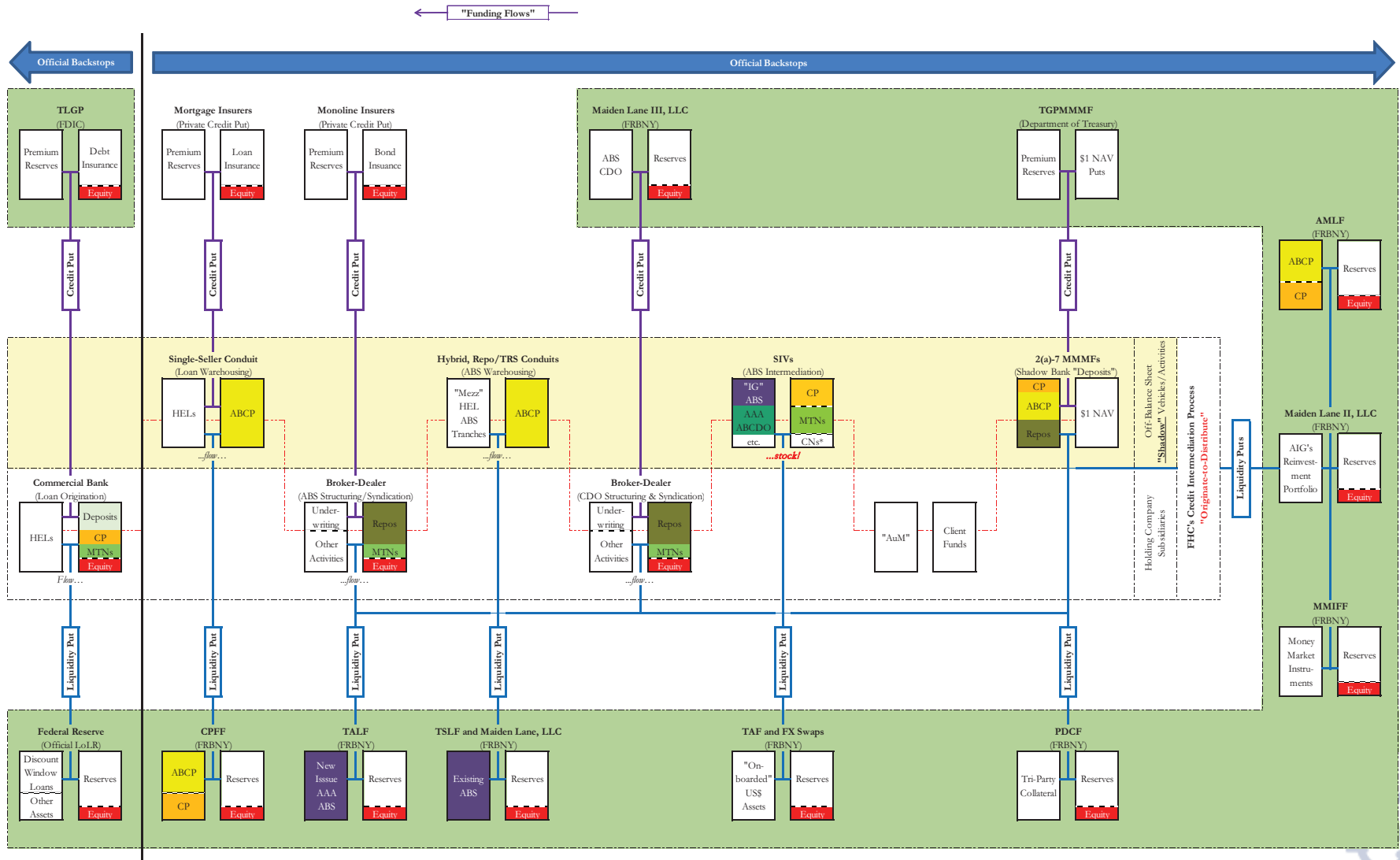
Money Market Funds

Figure 5: U.S. Money Market Fund Assets by Fund Type



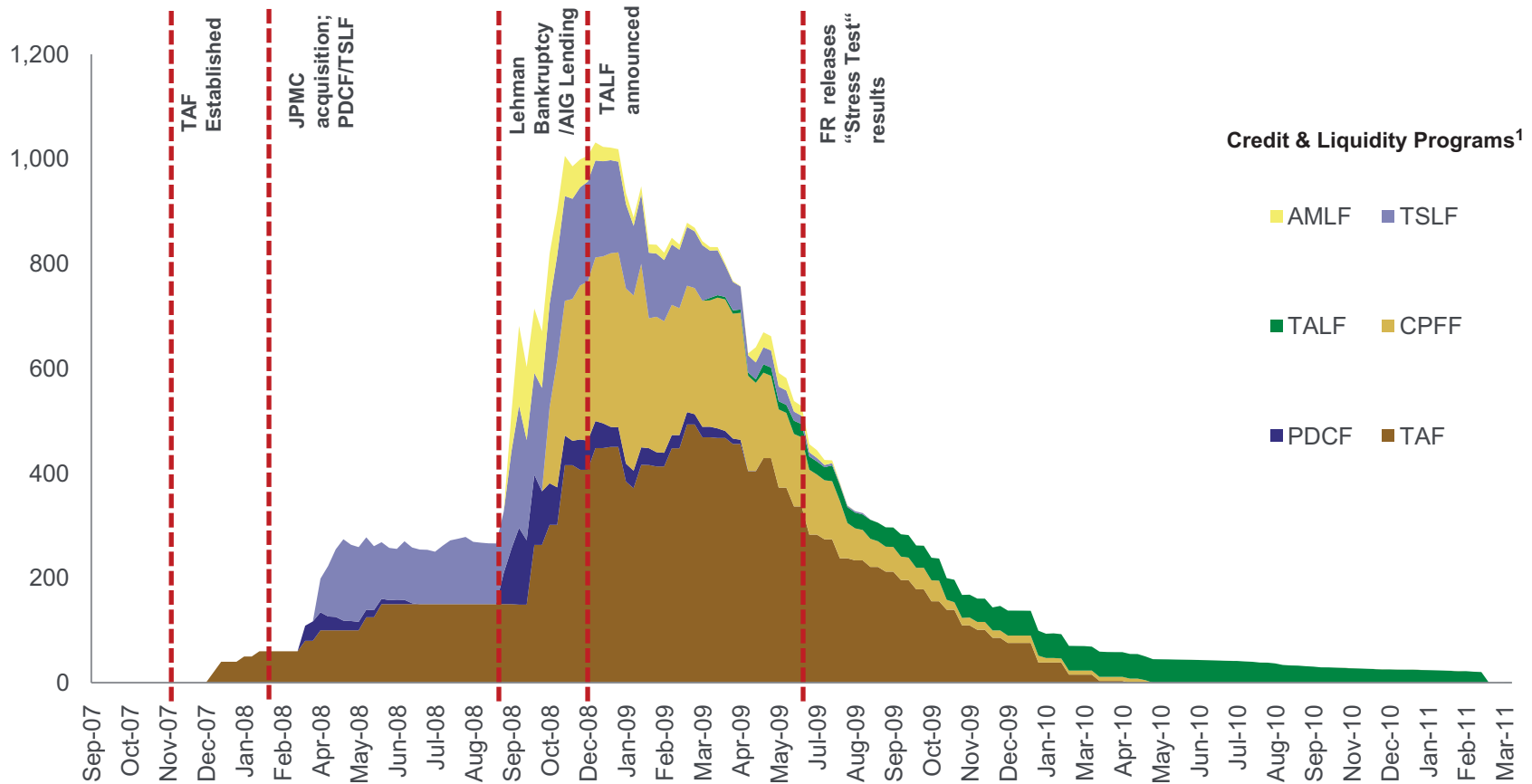
Source: Moneyfundanalyzer Note: Shaded area September 16 - October 21

Liquidity Backstops to the Shadow Banking System



Fed Liquidity Facilities

September 2007 to March 3, 2011



Source: March 3, 2011 H.4.1 release. Differences in balances compared to other material in this presentation may be due to differences in timing or metrics

1. AMLF - Asset-Backed Commercial Paper Money Market Fund (ABCP MMMF) Liquidity Facility; TSLF- Term Securities Lending Facility; TALF - Term Asset-Backed Securities Loan Facility; CPFF -Commercial Paper Funding Facility; PDCF- Primary Dealer Credit Facility; and TAF - Term Auction Facility.
2. Assets of the portfolio are exhibited and not the loans.

ABCP Regulation

- FAS 166/167 leads to consolidation of conduits on balance sheet
 - If the bank sponsors and provides backup liquidity to a conduit, it must consolidate the loans or securities of the conduit onto its balance sheet, resulting in increased risk-based and leverage ratio capital requirements as well higher loan loss reserves
- Basel rules may significantly increase liquidity and capital requirements for bank backup lines of credit for conduits
- However, if the bank provides backup liquidity to a conduit sponsored by third-party, it can use an internal-model based approach (IAA) of the securitization framework

Triparty Repo Market Monitoring

- Industry Tri-Party Task Force focuses on the following areas:
 - Operational Arrangements
 - Dealer Liquidity Risk Management
 - Margining Practices
 - Contingency Planning
 - Transparency
- Supervision is improved due to data collection on:
 - Haircuts
 - Amount and type of repo funding by institutions
 - Collateral tracking in the triparty market

Money Market Fund Monitoring

Regulatory reform through new SEC 2a7 rules:

- Risk-limiting conditions: Liquidity, Securities, Repo
- New Procedural Requirements: Stress Testing, NRSRO diligence
- Transparency: Monthly filing of holdings and shadow NAV
- Operational Changes: Provisions for sponsor support, new rules on suspensions
- Study of floating-rate NAV