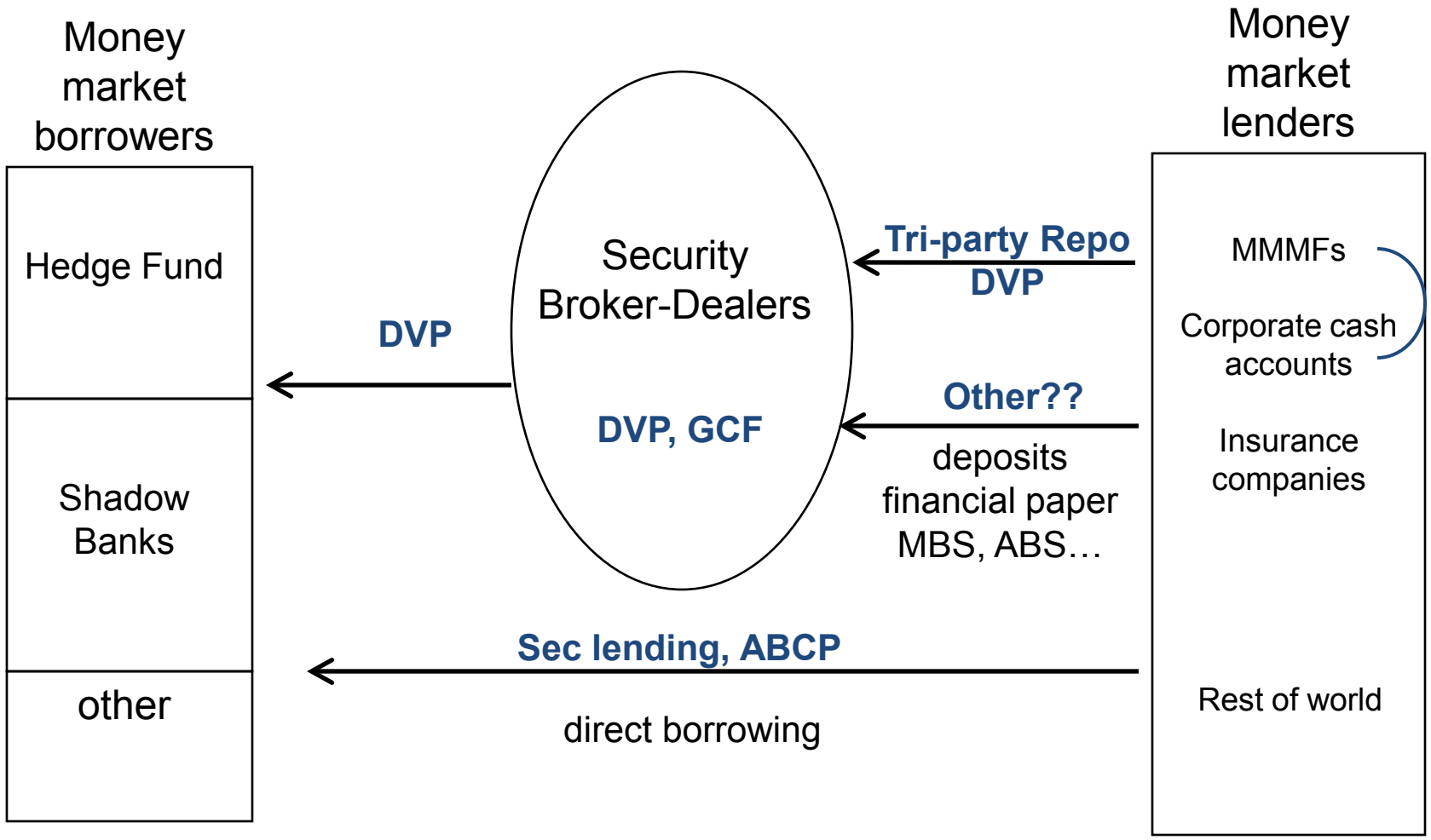
Repo and Sec Lending Data: What do we Have and What do we Need?

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

Money Market Overview



Fragility of Short-term Funding

- "Science" is well understood, the ingredients are standard
  - Run dynamic: Maturity/liquidity transformation and "demandability"
  - Amplification: Fire Sales

- "Engineering" is not understood as well and every case is different
  - Demand for structures/securities that resemble "demand deposits": MMMFs, CDs, O/N repos, O/N CP, ARS, TOBs, etc
  - Design features of these structures/securities can affect fragility. Examples:
    - Unwind in tri-party repo market exacerbates fragility
    - Lack of backstop influences fragility (various liquidity facilities were designed to address structural weaknesses)

➢ Institutional features are key pieces of "data"

Understanding how these markets work

- Symptoms of disorderly deleveraging can be very different:
  - In DvP market, unwinding was gradual and sometimes preceded acute stress, e.g. unwinding of CCC in Feb 2008, rise in haircuts throughout
  - In tri-party market, the decision seems to be funding or not funding: haircuts do not increase gradually

- This was largely unexpected

➢ Data is needed to understand how the markets react to shocks **BUT** the data may allow us to identify problems early
  ➢ Haircut data may not have help anticipate the Lehman bankruptcy

Which data should we look at?

- Haircut levels do not appear to reveal stress in tri-party.
  - Adjustment took place via exclusion of borrowers, not haircut levels.

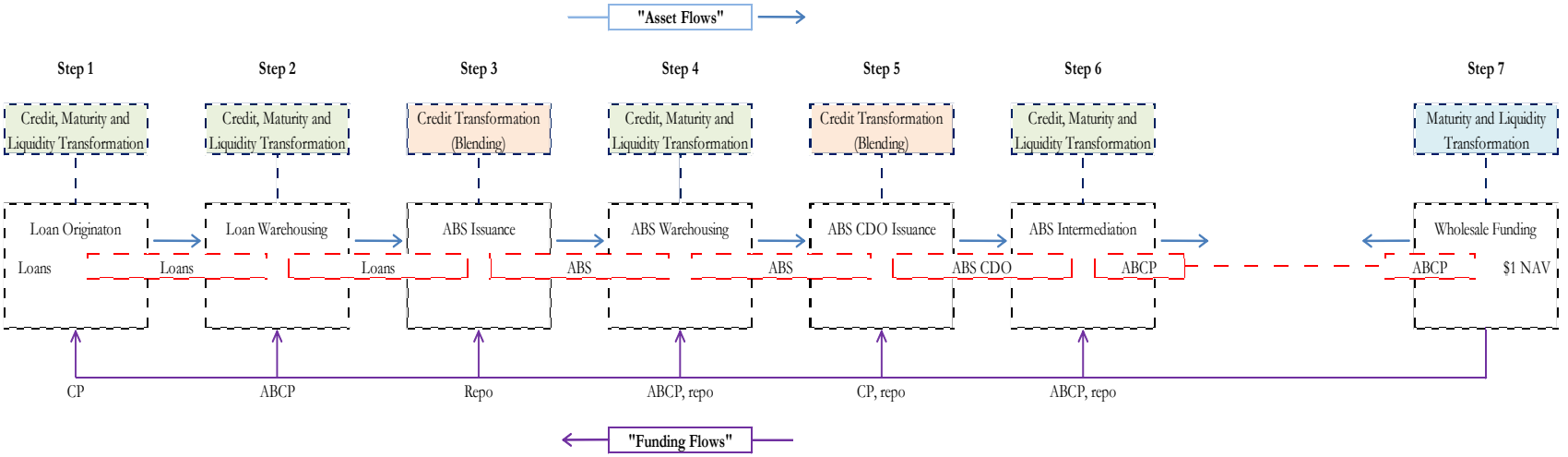
- Would other data help?

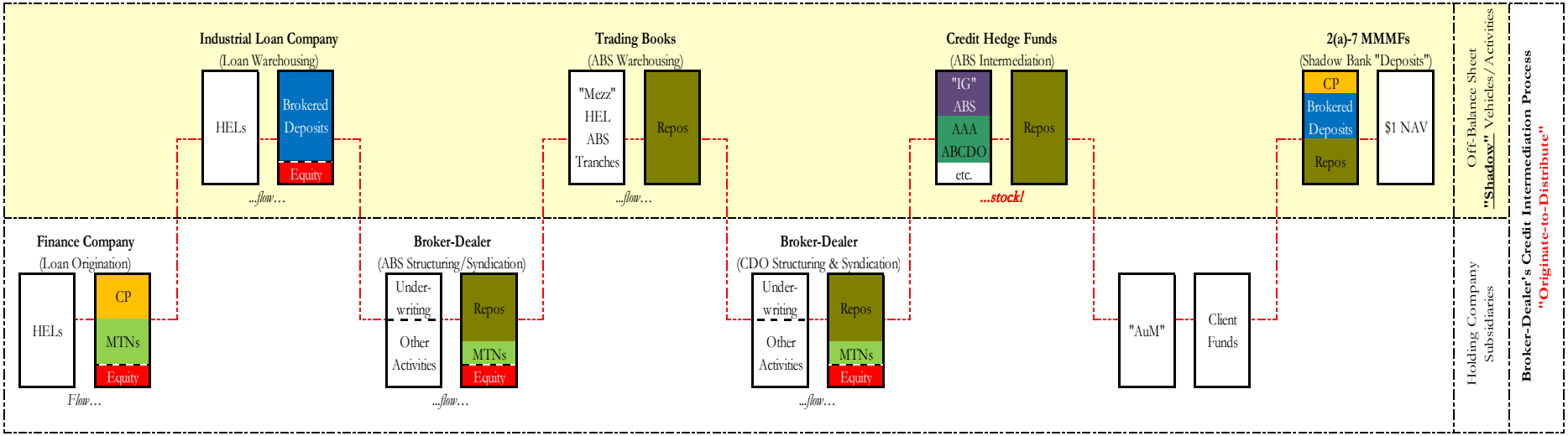
➢ Models help us understand which data is relevant to monitor a specific market or instrument.

- Some factors that could be important:
  - Long-term relationships between borrowers and lenders.
  - Risk appetite, size, concentration, and sophistication of borrowers.
  - Availability of backstops.

- Measurement is difficult: How do we measure credit transformation, maturity/liquidity mismatch, market functioning?

Repo Intermediation Chains





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

Repo Intermediation Chains

- Repo funding is used in many steps along the intermediation chain.
- Each step of the chain gives rise to fragility, which in turn has repercussions to all the other parts in the chain.
- Along the intermediation chain, ABCP can be substituted by repo funding, which in turn can be substituted by unsecured money market funding.
- Understanding the spreading of fragility along the intermediation chain is a key ingredient to understanding systemic risk.
- Explicit and implicit put options, as well as legal structures are necessary to understand intermediation chains => data requirements beyond numbers, understanding of legal structures required.

What are Current Data Sources?

- Haircuts and margins:
  - Surveys: voluntary as part of trading relationship
  - Tri-party: voluntary and supervisory
  - Exchanges: publicly available
- Quantities:
  - FR2004: voluntary as part of trading relationship
  - 2a-7 money funds: regulatory SEC filings
  - Focus /Fog reports: regulatory SEC filings (also Flow of Funds)
  - Sec lending
- Supervisory:
  - High frequency funding data
- Rates:
  - Market surveys by commercial providers
  - Fed funds data provided by the Federal Reserve
- New SCOOS: Potentially a substitute for haircut data?
  - Senior Credit Officer Opinion Survey on Dealer Financing Terms

Key Data Gaps

- In which market is funding obtained and who are the counterparties?
  - Understanding interconnectedness is crucial
  - Diversification should occur across both markets and counterparties
  - How substitutable are markets and counterparties?

- Tenor of funding:
  - Early warning when tenor starts to shrink
  - Longer tenor buys time to make adjustments
  - Gives us a indication of maturity transformation
  - High frequency supervisory data collection under construction

Secondary Data Gaps

- Type of collateral being financed:
  - May provide information about changes in risk appetite.

- Haircuts and rates:
  - Interesting information but may not tell us as much as we think ➔ tri-party versus DvP repo.
  - May be more relevant as cross-sectional information, but raises disclosure issues.

What Next?

- What can be done to enhance systemic risk monitoring related to the repo and securities lending markets?

- Follow the money: Where are large investors (such as MMMFs, shadow banks, etc.) going, what are they investing in?
  - What types of risks are compensated for return generation?
  - Because of their size alone, an instrument in which such investors concentrate becomes a systemic risk.

- Understand new markets/instruments at they become large/popular
  - Are incentives set appropriately?
  - Is maturity transformation conducted that might become unstable?
  - Are there design flaws?