

# Time and (shadow) money

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# Managing Shadow Money

## MONEY & BANKING

This research project explores the process of modern (shadow) money creation in hierarchical and interconnected monetary systems. In theorizing the dynamic instability of shadow money, it provides a comparative account of the structural and institutional specifics of shadow money in the US, Eurozone and China, and the policy challenges thereof.

### LEADERS



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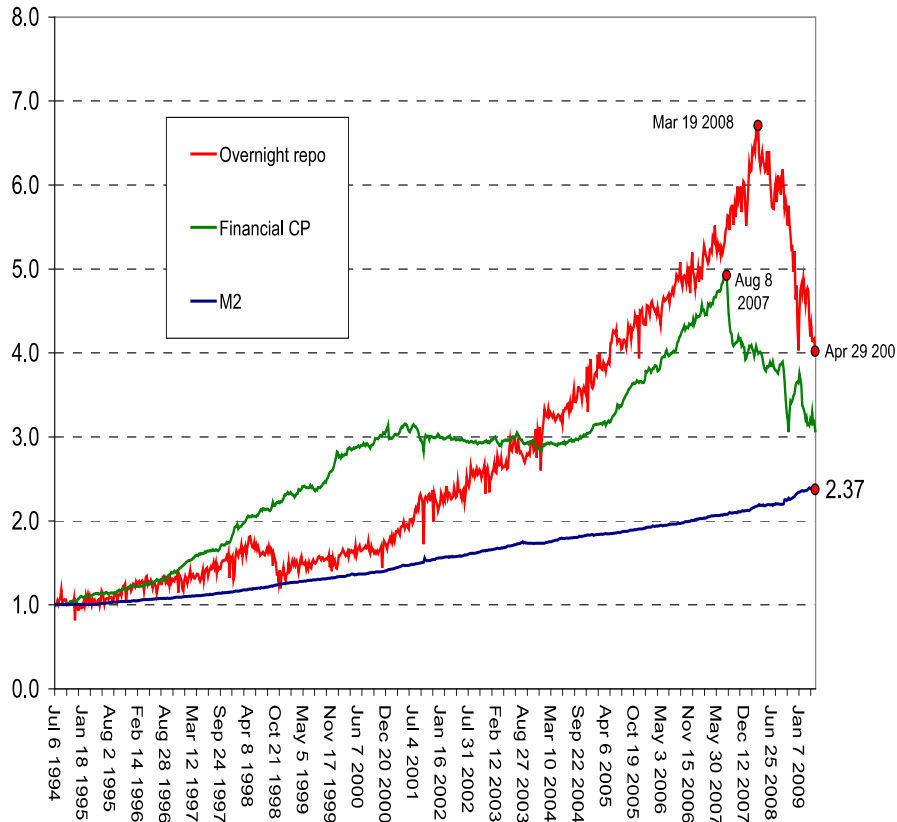
Senior Researcher, Danish Institute for International Studies

**Years granted:** 2015

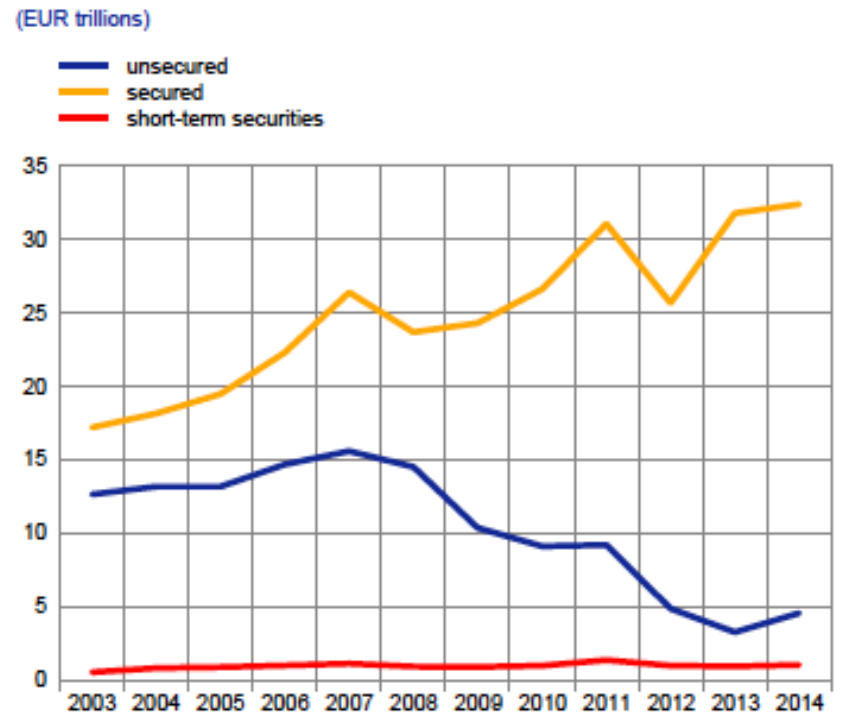
# Shadow money

- Bank money arise from credit creation via relationship banking, funding assets held to maturity
- Shadow money arise from credit creation through capital markets, funding securities continuously re-priced via repo transactions
  - money hierarchy approach drawing on Keynes (1930), Minsky (1978), Chick (2013), Bell-Kelton (2001), Wray(2001), Mehrling (2006, 2012), Pozsar (2014, 2015) and in conversation with Michell (2016) and financial economics (Brunnermeier and Pedersen 2009, Adrian and Shin 2010)

**Figure 7. Overnight Repos and M2 (weekly data)**  
 (Normalized to 1 on July 6<sup>th</sup> 1994. Source: Federal Reserve)



**Chart 8**  
 Cumulative volumes in cash money market



Source: ECB Money Market Survey 2014.

# Four propositions about shadow money

P1: moneyness = continuous re-pricing of collateral

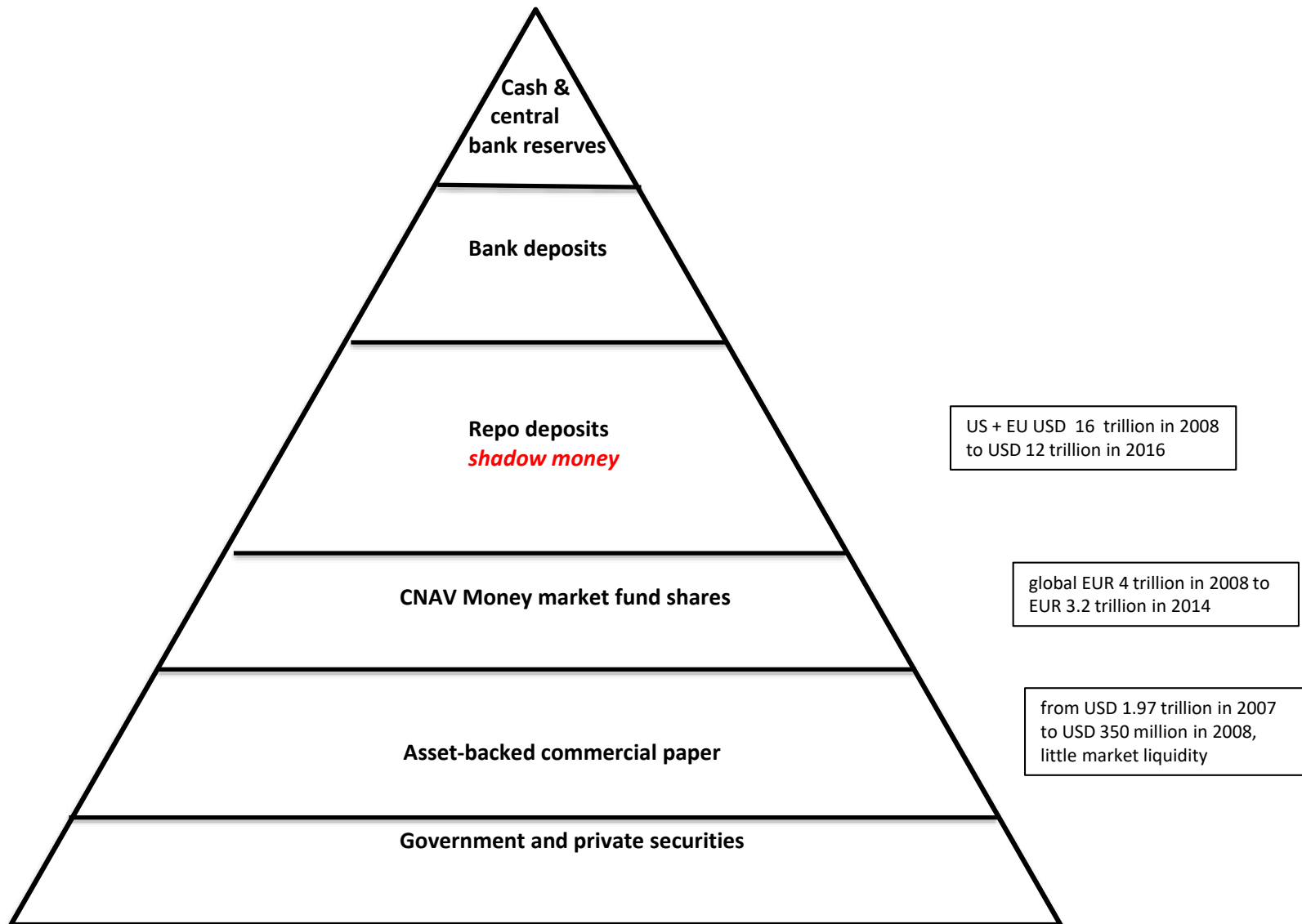
P2: broader range of institutions that create money, but **via** bank balance sheets

P3: state critical to ***endogenous*** shadow money creation

- via central bank collateral framework
- via providing base asset – sovereign collateral

P4: crises of shadow money = continuous repricing leads to crises of collateral market liquidity

Repo = promise to pay higher money at par



Money fund

Bank A

Hedge fund

Assets

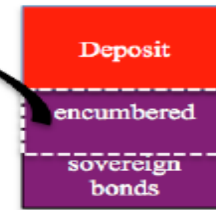
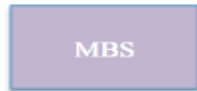
Liabilities

Assets

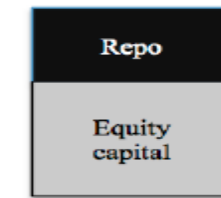
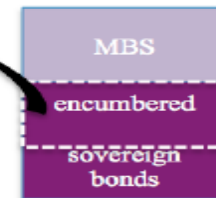
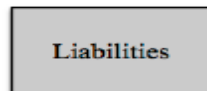
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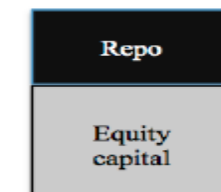
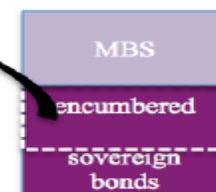
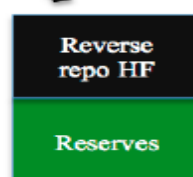
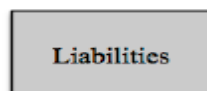
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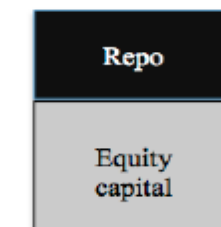
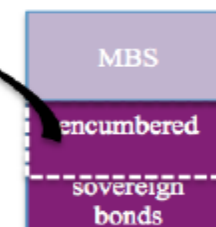
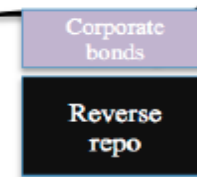
1



2



3



4

Collateral received

Collateral posted

Collateral received

Collateral posted

Collateral received

Collateral posted

collateral

collateral

collateral

# Shadow monies

## 1. US shadow money: the time of money

- how to order time on balance sheets
- a double temporality – *cash and securities* moving across balance sheets of private & public institutions

## 2. European shadow money: the politics of money

- supranational shadow money as failed technocratic project to address (political) flaws in Euroarea monetary architecture

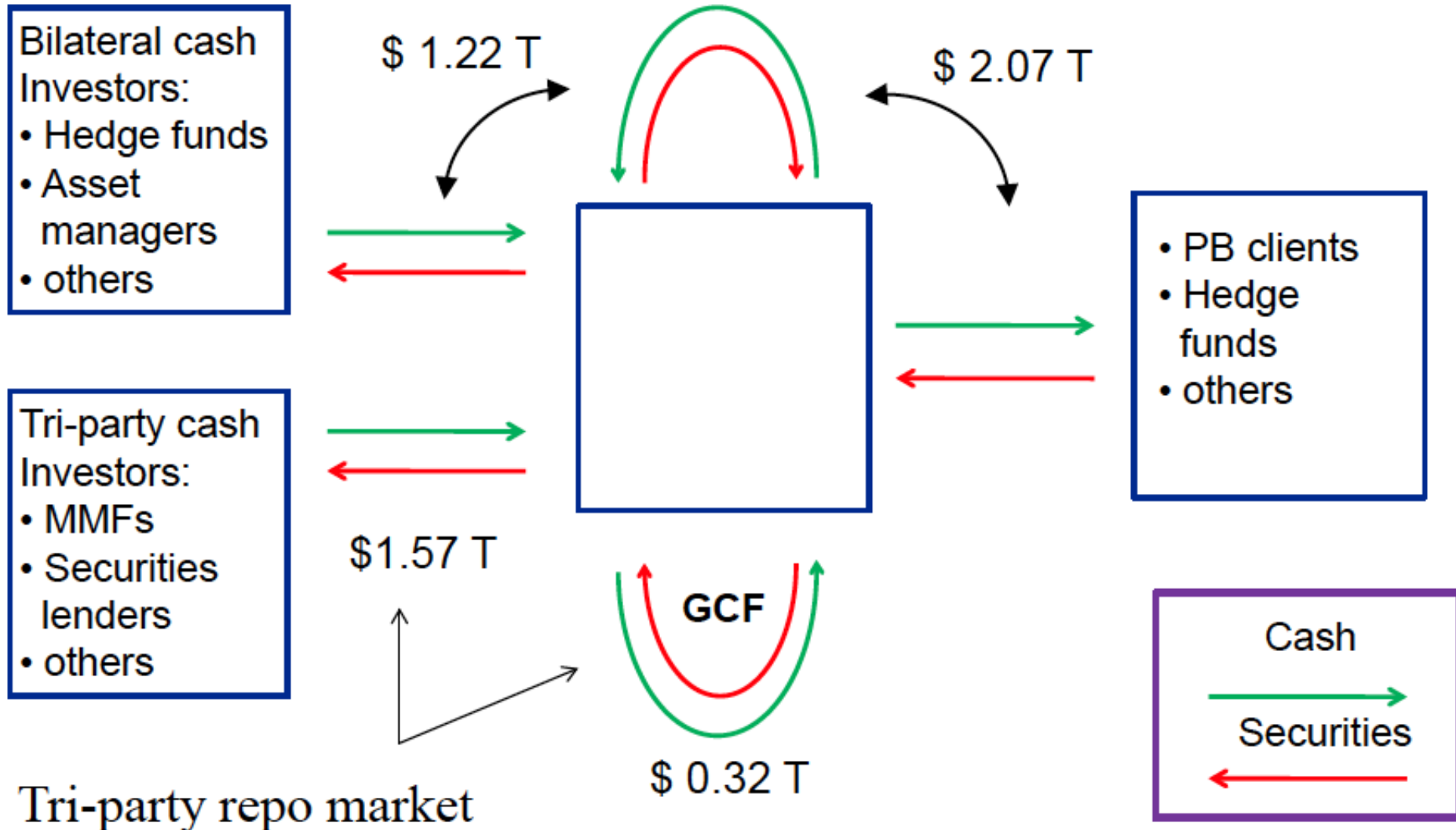
## 3. Chinese shadow money: the sovereignty of money

- RMB internationalization via re-organization of state debt to capital markets



# Segments of the U.S. repo market

Volumes as of February 2015



# Time and money

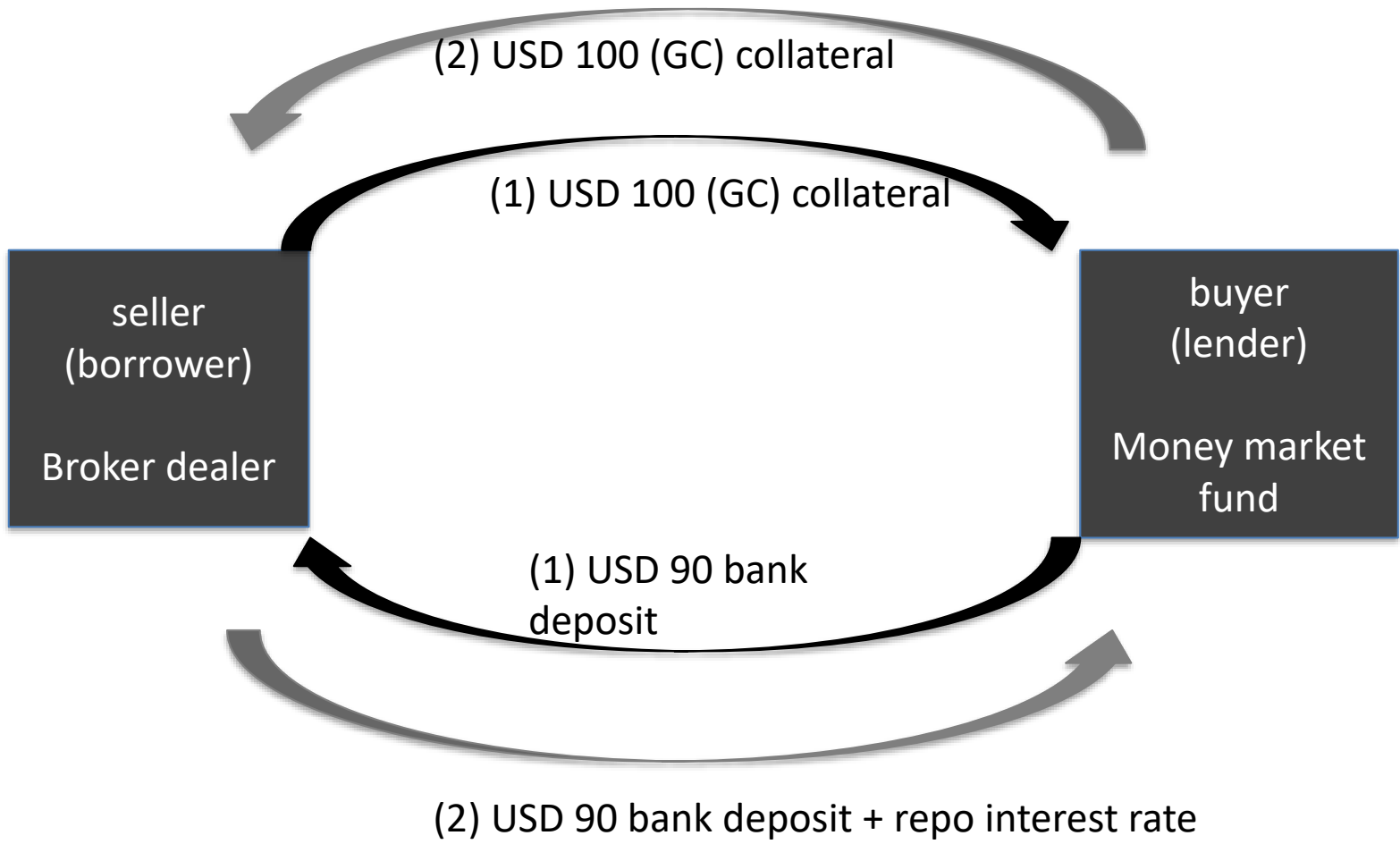
- Keynes (1936): ‘the importance of money essentially flows from it being a link between the present and the future’.
- Money acts as a ‘time machine’, connecting irreversible past to uncertain future
  - promise to pay at par *on demand*

# Money as a time machine

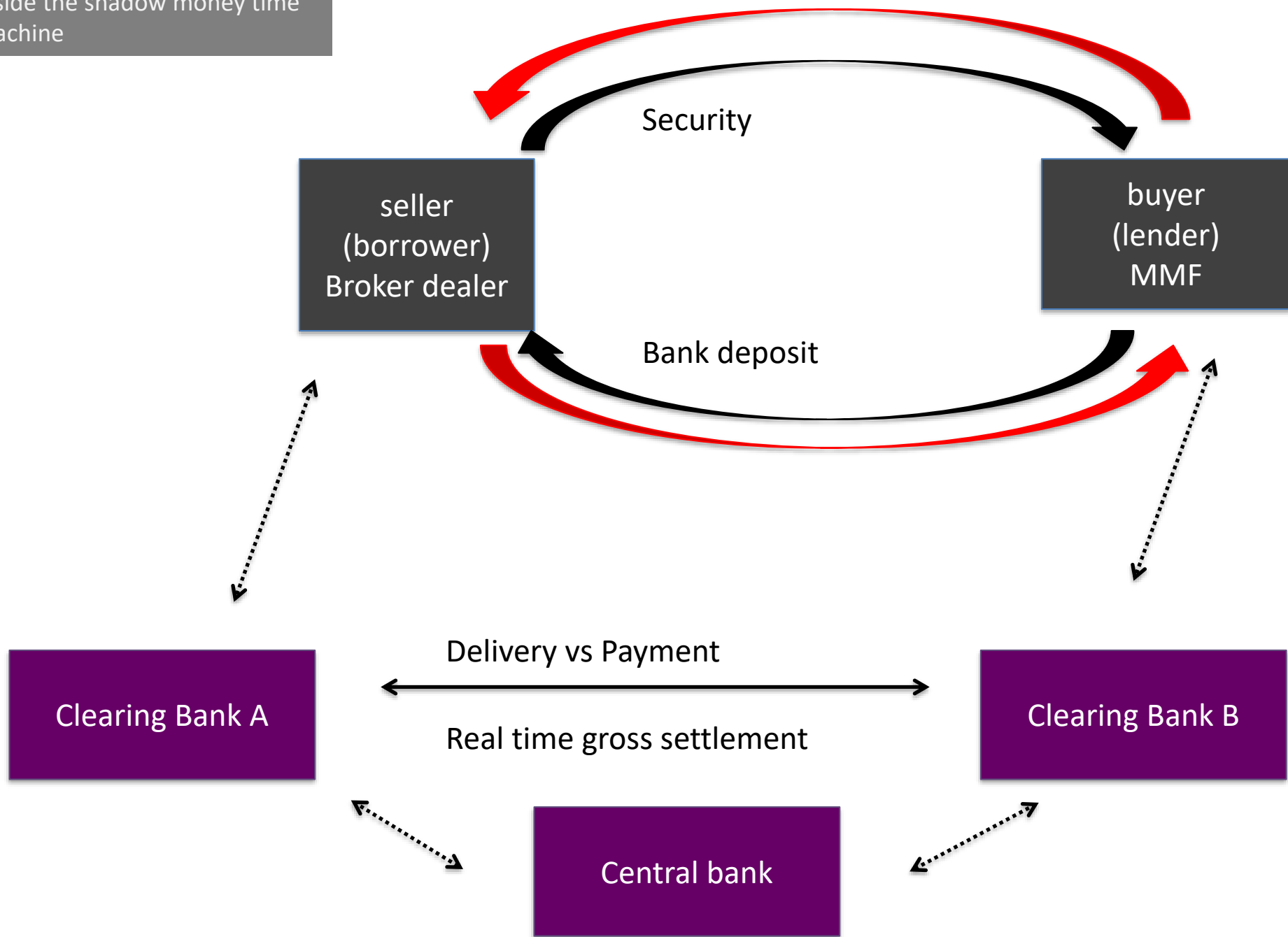
- Bank money arise from credit creation via relationship banking, funding assets held to maturity
- Shadow money arise from credit creation via capital markets, funding securities **continuously** re-priced
  - (and business models that take advantage of *daily* fluctuations in market price of securities)

*at par (on demand)*

- Haircuts (10%)
- Mark to market
- Margin calls (on repos>o/n)



Inside the shadow money time machine



# Game of ordering time on balance sheets

- *Time of shadow money* (moneyness from continuous repricing of collateral)
- *Time of state money* – how central banks order time on balance sheets (RTGS/DvP)
- *Time of securities dealers* (temporal demands of securities trading, market making and settlement)

a settlement payment, delivery of securities, or transfer of collateral must be made *at a particular location, in a particular currency (or securities issue), and in a precise time frame measured not in days, but in hours or even minutes'* (Marshall and Stegerwald 2013, p. 30)

# Shadow money time machines

Long history of organizing the temporality of collateral valuation to create 'safe' promises to pay:

- in NY call market before Fed creation (Myers 1931, Peer 2016)
- growth of an active US securities market in the late 19<sup>th</sup> century intimately linked to the temporality of call loans

# Shadow money time machines

Long history of organizing the temporality of collateral valuation to create 'safe' promises to pay:

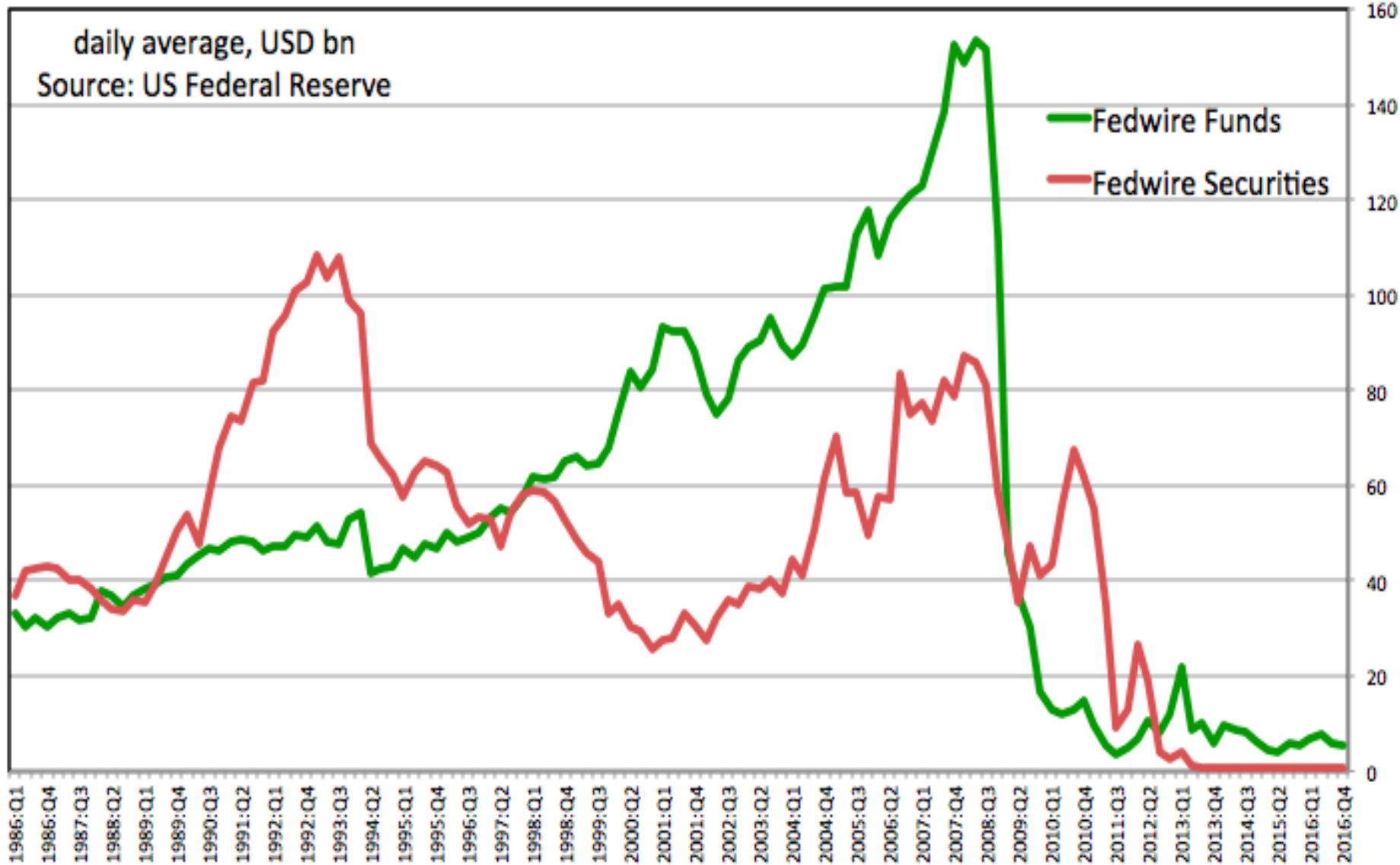
- in NY call market before Fed creation (Myers 1931, Peer 2016)
- With Fed/Treasury support
  - 1984 Volcker: safe harbor exception for UST repos
  - 1991: Fed/US Treasury report into Salomon Brothers manipulation UST/repo – measures to reduce market squeeze
  - 1999/2000 - shortage of UST safe assets (Fleming 2000, FOMC 2001) – 2005 safe harbor exception for ABS/MBS repo collateral
  - 1997/98 Asian/Russian crisis: international consensus that financial stability = daily collateral valuation (CGFS/BIS 1999)



# Fighting over time

1. RTGS = increasingly large intraday overdrafts (USD 60 bn by mid 1980s, heyday of Volcker's 'monetarist' experiments)
2. Over-drafts generated by transfers of securities via Fedwire (Richards 1995)

# Fedwire intraday overdrafts



# Fighting over time

1. RTGS - increasingly large intraday overdrafts (USD 60 bn by mid 1980s, heyday of Volcker's 'monetarist' experiments)
2. Over-drafts increasingly generated by transfers of securities via Fedwire (Richards 1995)
3. Temporality of securities dealers – overnight fund securities in repos, intraday fund securities free in Fed overdrafts
4. US Fed - charge for intraday overdraft (1994)

# Fighting over time

1. The Salomon Brothers solution: time machine from Fed to clearing bank balance sheet
2. Unwind tri-party repos in the morning, rewind in the evening
3. Increasing tri-party concentration – JP Morgan and BNY Mellon (USD 2.8 trillion intraday credit by 2008)

# Crises of shadow moneyyness

- Temporality changes nature of financial fragility: liquidity spirals (Brunnermeier and Pedersen 2009)
- Ongoing reforms of the shadow money time machine: tri-party in the US, shift to CCPs in Europe
- Broader re-negotiation of the social contract around money

*The new social contract*

Fiscal authority



Safe asset



Liquid collateral

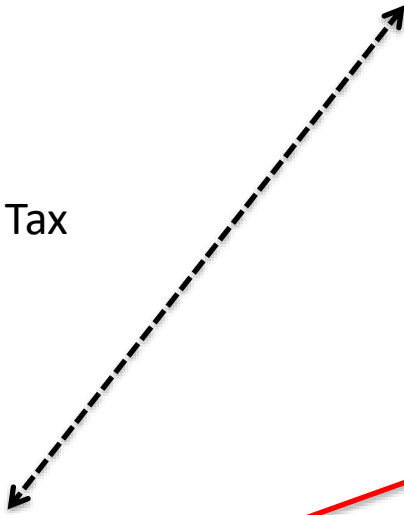
**Market maker of last resort**

(ECB OMT, BoE)

Capital Markets Union  
(STS securitisation)  
+ China securitisation



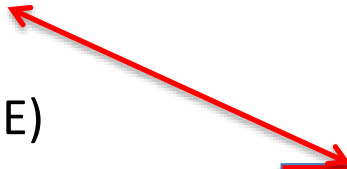
Financial Transactions Tax



repo market



Financial stability



FSB, ESRB, Basel III  
(EMIR, LCR, NSFR, LR, SFTR)

# Questions

- Banks reducing footprint in global shadow money-dealing space?
- Moneyiness – continuous repricing now in derivative space too.
  - Time critical liquidity?
  - Structural demand for collateral: economics of fx swaps passes through shadow money?

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