

Safe Assets, Collateralized Lending and Monetary Policy

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SAFETY, LIQUIDITY, AND THE MACROECONOMY

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The views do not necessarily reflect official positions of the Federal Reserve Bank of St. Louis, the Federal Reserve System, or the Board of Governors.

Safe Assets, Collateralized Lending and Monetary Policy

- ▶ **Heterogeneous investors** trade safe and risky assets & collateral lending
- ▶ **Market segmentation**
 - ▶ Short-maturity safe assets held by most risk-averse
 - ▶ Long-maturity safe assets held by most risk-tolerant
- ▶ **Exogenous quantities** of safe assets affect the **production of private** safe assets
- ▶ **Collateral premium** for long safe assets due to usefulness as collateral

Comments: *Who is Who in Financial Markets*

1. The risk aversion groups in the model represent financial institutions
 - ▶ Compare model with Financial Accounts of the US
 - 1.1 Wealth shares: Relevant for quantity of assets
 - 1.2 Balance sheets of financial institutions: Relevant for market segmentation
2. Time-varying risk aversion

Wealth Shares: Model

Wealth:
$$W_m = p_m \left(Y + \sum_{j \in J \setminus \{N\}} \bar{a}^j Q^j \right) + p_m Q_m^N$$

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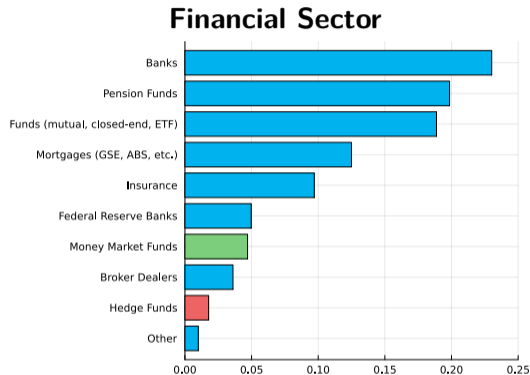
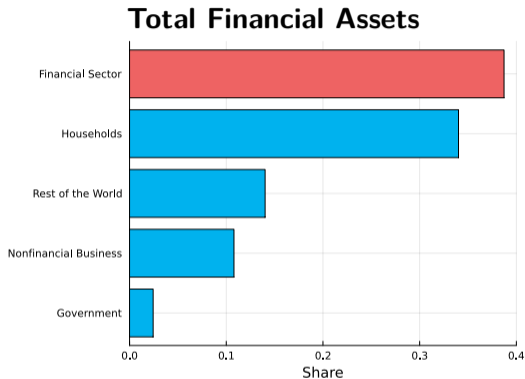
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Model calibration

Type	γ	Probability	Financial institution
1	0.25	0.001	Hedge funds
2	30	0.932	Large majority of investors
3	80	0.026	Money market funds
4	120	0.041	Never the marginal investor for any asset

Which institutions are 2 and 4? Banks, pension funds, mutual funds, ETF, GSE, insurance, broker dealers...

Wealth shares: Data



Hedge funds and money market funds are larger in the data than the model

- ▶ **Hedge funds:** 1.8% (data) vs 0.1% (model)
- ▶ **Money market funds:** 5% (data) vs 2.6% (model)
- ▶ They only account for less than 7% (data) or less than 3% (model)

Source: Financial Accounts of the United States, 2023

Wealth Shares: Suggestion

- ▶ Wealth shares across institutions are relevant for the **quantity of assets**
- ▶ Match institutions 2 and 3 with the corresponding data

Balance Sheets: Model

Table 6: Average portfolio holdings 1990-2015

Asset	Risk aversion types				$E[r]$
	γ_1	γ_2	γ_3	γ_4	
Repo	-3388%	0%	15%	100%	-0.5%
Short safe	0%	0%	36%	0%	0.1%
Medium safe	0%	0%	44%	0%	1.5%
Long safe	2609%	0%	0%	0%	2.7%
Equity	0%	92%	0%	0%	4.9%
Corp. bond	879%	8%	5%	0%	4.8%

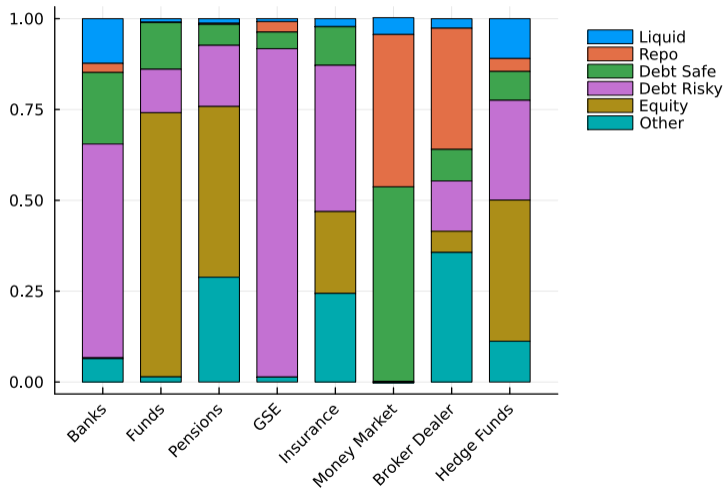
- ▶ **Hedge funds** (group 1, 0.1%)
 - ▶ Long safe and corporate bonds
 - ▶ Very short on repo
- ▶ **Most of investors** (group 2, 93.2%)
 - ▶ Equity and corporate bonds
 - ▶ No safe assets
- ▶ **Money market** (group 3, 2.6%)
 - ▶ Repo, safe, corp. bond
 - ▶ No equity, no long-safe
- ▶ **Group 4, 4.1%: Who is this?**
 - ▶ Only repo

Financial Assets: Map Model to Data

Z1 series	Group	Model
Deposits, currency	Liquid	Short-safe
MMF shares	Liquid	Short-safe
Treasuries, Municipal, etc	Debt Safe	Medium and long-safe
Corporate bonds, etc	Debt Risky	Corporate bonds
Equity	Equity	Equity
Miscellaneous assets, etc	Other	

Source: Tables L.109, L.110, L.115, L.116, L.117, L.121, L.122, L.123, L.124, L.125, L.126, L.127, L.128, L.129, L.130, L.131, L.132, and B.101.F. Non-trivial map of financial assets in Z1 data to assets in the model.

Balance Sheet: Data



Market Segmentation: Model vs Data

	Money Market Model	Market Data	Hedge Model	Funds Data	
Repo	Yes	Yes	Short	long	see B.101.F
Short & Medium Safe	Yes	Yes	No	Yes	
Long Safe	Yes	Yes	Yes	Yes	
Equity	No	No	No	Yes	
Corporate bonds	Yes	No	Yes	Yes	

Model should match balance sheets both **qualitatively** and **quantitatively**

- ▶ Relevant for market segmentation
- ▶ What about the other 2 financial institutions?

Time-varying risk aversion

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- ▶ Weekly calibration... every week a money market changes to be a mutual fund?
- ▶ Alternative: Fixed types with an i.i.d. probability of surviving (e.g. Gertler and Kiyotaki, 2015)

Summary

Very nice paper on collateralized lending:

- ▶ *Quantitative model of heterogeneous financial institutions with many assets*
- ▶ Moritz makes progress in our understanding of collateralized lending

Suggestions

- ▶ This is a **quantitative** model of heterogeneous financial institutions
- ▶ Map wealth shares and balance sheets with institutions on the Financial Accounts
- ▶ Consider alternative assumptions about shocks to type of institution

B.101.f Balance Sheet of Domestic Hedge Funds

Assets	2557.7	Liabilities	735.1
Nonfinancial assets (real estate)	149.5	Security repurchase agreements	60.5
Financial assets	2408.2	Domestic institutions	41.4
Foreign currency	24.2	Foreign institutions	19.1
Deposits	40	Loans	571.6
Other cash and cash equivalents	110.4	Secured borrowing via prime brokerage	397.6
Money market fund shares	89.7	From domestic institutions	348.1
Security repurchase agreements	85.7	From foreign institutions	49.5
Debt securities	641.1	Other secured borrowing	153.4
Treasury securities	172.7	From domestic institutions	122.8
Agency- and GSE-backed securities	5.8	From foreign institutions	30.6
Municipal securities	12.7	Unsecured borrowing	20.6
Corporate and foreign bonds	449.9	Miscellaneous liabilities	103
Loans	211.4		
Leveraged loans	139.5		
Other loans	71.9		
Corporate equities	935.6		
Mutual fund shares	11.3		
Miscellaneous assets	258.9		

Note: Billions of dollars, 2022.

References

- [] Mark Gertler and Nobuhiro Kiyotaki. Banking, liquidity, and bank runs in an infinite horizon economy. *American Economic Review*, 105(7):2011–43, July 2015. doi: 10.1257/aer.20130665. URL <https://www.aeaweb.org/articles?id=10.1257/aer.20130665>.