Market-Priced Savings: Implications for Households, Banks, and Monetary Policy Transmission

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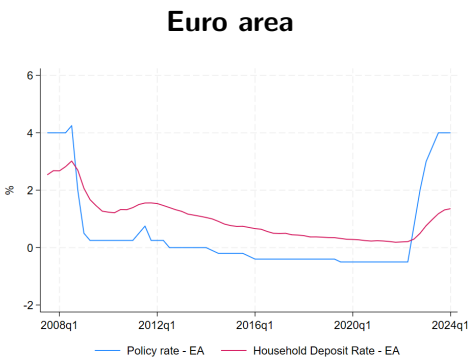
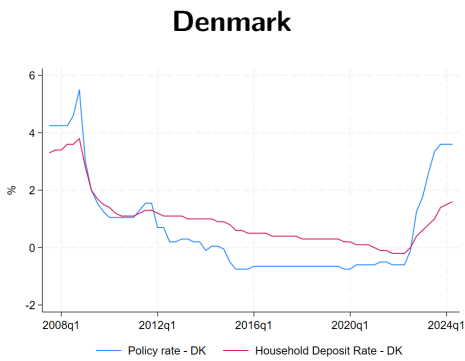
Roadmap

1. **Motivation and Key Take-Aways**
2. **Conceptual Framework**
3. **Micro-evidence from Denmark**
   (a) Data and Strategy
   (b) Evidence on Pass-Through
   (c) Evidence on Deposit and Loan Growth
4. **External validity: euro area**
5. **Conclusion**

1. Motivation and Key Take-Aways

Policy vs deposit rates over time

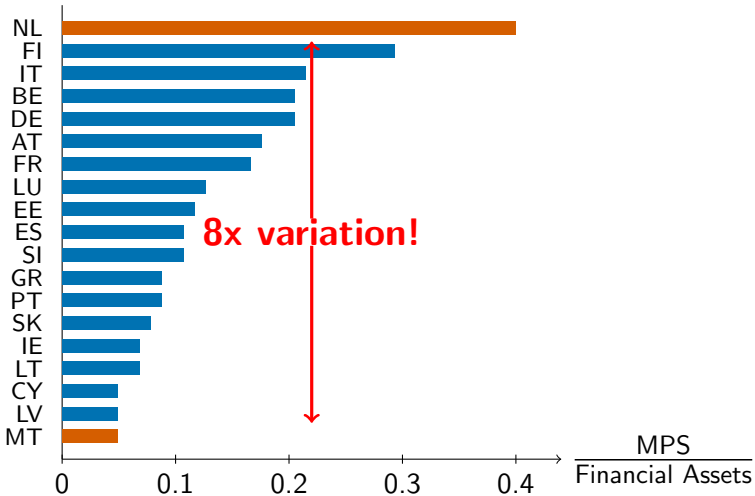




Motivation

- Changes in policy rates are **passed through** to deposit rates **incompletely**
- Explanations:
  - Drechsler-Savov-Schnabl, QJE 2017: **Banks with market power exploit that cash** is a less attractive liquidity alternative at higher policy rates
  - Basten-Juelsrud, ECB WP 2025: Higher policy rates lower **bank incentives to attract new clients**
- Increases **deposit spreads (prices)** following hikes and lowers them following cuts
- May incentivize depositors to look for **non-deposit alternatives** following hikes ...
- So banks can **refinance less lending** following hikes and more following cuts
- **But what if depositors do not use "Market-Priced Savings" (MPS) and do not switch between these and deposits?**

MPS use lower in Europe than in the US and very heterogenous – Does this matter?



Key findings: MPS use strengthens monetary policy transmission

1. Higher MPS use $\rightarrow$ higher **pass-through** ("deposit beta")
2. Also, higher MPS use $\rightarrow$ **deposit volumes more responsive** to monetary policy
3. More responsive deposit volumes $\rightarrow$ more responsive loan volumes

Implications

- **For households:** Investing into alternatives matters not just via returns on those, but also via **returns on deposits**
- **For banks:** Cross-selling MPS to their depositors may diversify income, but does also reduce banks' **deposit market power** (and ability to hedge IRR)
- **For monetary policy transmission:**
  - Transmission possibly **weaker in Europe** than US
  - Transmission **heterogeneous** across population segments, banks, and borrowers

2. Conceptual Framework

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Setup:

- **Banks:** Maximize profits under monopolistic competition in local deposit markets
- **Depositors:** Choose between four options:
  1. Cash
  2. Deposits (possibly in different types of account) at their current bank
  3. Deposits at competing banks
  4. **Market-Priced Savings (stocks, bonds, funds)**

Three Testable Hypotheses

H1: Banks with higher-MPS depositors choose higher pass-through, as their depositors have alternatives.

H2: Yet, deposit volumes or growth of MPS users are more responsive to policy rate changes still associated with deposit spread changes.

H3: Banks with higher-MPS depositors have loan volumes or growth more responsive to policy rate changes, as it is not optimal to compensate all variation in deposit growth by varying other liabilities.

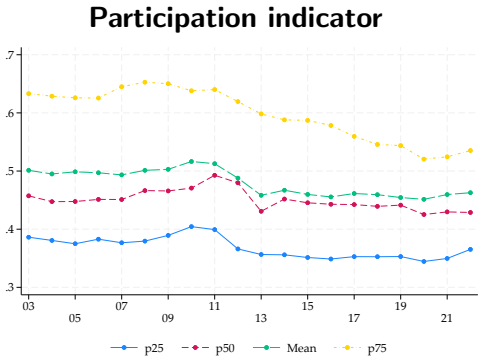
Full derivations in paper appendix

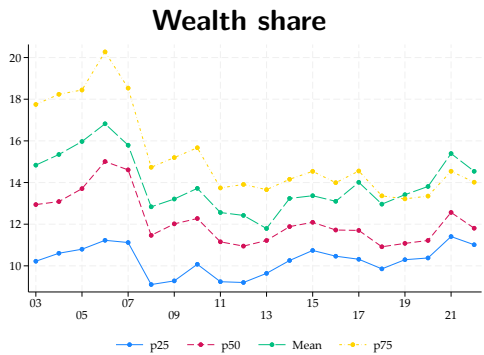
3. Micro-Evidence from Denmark

Denmark: Data

- Annual tax data for every **bank-person** relationship:
  - See end-of-year **deposit balances** & total **interest payments** over past year
  - Sample period: Currently 2003-2022, hoping to add 2023 soon
- Tax-records on each **person**'s wealth & income composition (across all banks)
  - Wealth decomposed into real-estate, stocks, bonds, deposits
  - Two metrics: MPS participation (**binary**) & MPS over financial wealth (**continuous**)
- At **bank** level:
  - Unweighted or deposit-weighted means of MPS metrics
  - Balance sheets
  - Loan volumes and growth

MPS Use varies widely across (individuals and) banks





Key takeaway: Banks face very different depositor clienteles

Empirical Strategy 1: Bank-Level Deposit Rates

Specification:

$$\Delta DR_{b,t} = \alpha_b + \beta_t + \gamma_1 \text{MPS}_{b,t-1} + \gamma_2(\Delta PR_t \times \text{MPS}_{b,t-1}) + X'_{b,t-1}\delta + \varepsilon_{b,t}$$

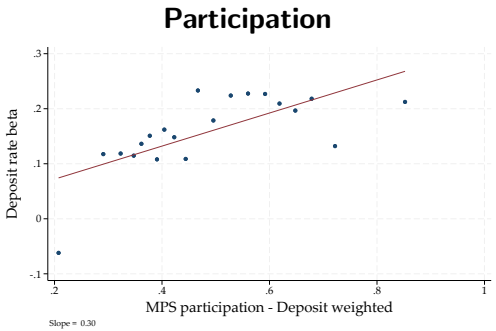
where:

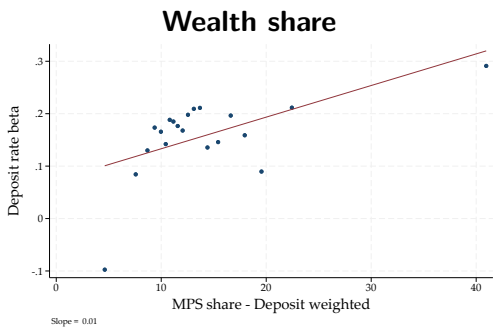
- $\Delta DR_{b,t}$: Change in bank b's average deposit rate
- ΔPR_t: Change in policy rate
- $\text{MPS}_{b,t-1}$: Deposit-weighted average MPS (lagged, standardized)
- γ_2: **Coefficient of interest** - how MPS affects deposit beta
- $X_{b,t-1}$: Bank controls (size, capital, liquidity)

Identification:

- Bank FE: Time-invariant bank characteristics
- Year FE: Common aggregate shocks
- Variation: Banks with different MPS exposure respond differently to policy

Banks with High-MPS Depositors Have Higher Pass-Through





Banks with High-MPS Depositors Pass Through 2x More (H1)

Outcome var: Δ Deposit rate	(1)	(2)	(3)	(4)	(5)
Δ MP rate	0.190***	0.190***	0.190***	0.190***	0.190***
	(0.011)	(0.010)	(0.010)	(0.010)	(0.009)
MPS participation (t-1, wgt, std)		0.006	0.039**		
		(0.007)	(0.017)		
MPS participation (t-1, wgt, std) × Δ MP rate		0.041***	0.042***		
		(0.012)	(0.012)		
MPS wealth share (t-1, wgt, std)				0.008	0.065*
				(0.010)	(0.033)
MPS wealth share (t-1, wgt, std) × Δ MP rate				0.042***	0.048***
				(0.015)	(0.014)
Observations	1,578	1,578	1,578	1,578	1,578
R2	0.29	0.30	0.36	0.31	0.37
Bank controls	Yes	Yes		Yes	
Bank FE			Yes		Yes

Interpretation: 1 SD higher MPS → 4.1-4.8pp higher deposit beta
Baseline pass-through = 19%, so this represents 22-25% increase

Empirical Strategy 2: Individual Deposit Growth

$$\Delta \log D_{i,b,t} = \alpha_{b,t} + \alpha_i + \beta_1 \Delta PR_t + \beta_2 \text{MPS}_{i,t-1} + \beta_3 (\Delta PR_t \times \text{MPS}_{i,t-1}) + \varepsilon_{i,b,t}$$

where:

- $\Delta \log D_{i,b,t}$: Individual i's deposit growth at bank b
- α_i and $\alpha_{b,t}$: Individual FE and Bank-Year FE
- β_3: How MPS affect deposit growth response to rate increases

Identification: Compare individuals with different MPS at same bank in same year

Result 2: MPS Users More Rate-Sensitive (H2 Confirmed)

	(1)	(2)	(3)	(4)	(5)
MPS participation (t-1)	0.695***	0.743***	-0.083	-0.061***	-0.064***
	(0.061)	(0.040)	(0.051)	(0.015)	(0.014)
Δ MP rate	0.049	0.037**	0.025	0.035*	
	(0.031)	(0.017)	(0.032)	(0.019)	
MPS participation (t-1) × Δ MP rate	-0.062	-0.020*	-0.059***	-0.025***	-0.034***
	(0.038)	(0.012)	(0.019)	(0.007)	(0.004)
Observations	78,308,873	78,308,873	78,068,651	78,068,651	78,068,651
R2	0.03	0.06	0.44	0.47	0.47
Bank controls	Yes	Yes	Yes	Yes	Yes
Bank FE		Yes		Yes	
Individual FE			Yes	Yes	Yes
Bank-Year FE					Yes

Focus on column (5) with person and bank-year FE: For 1pp rate hike, person with MPS reduces deposits 3.4 pp more than person without MPS. Similar for MPS shares.

Empirical Strategy 3: Firm-Bank Lending

Does MPS exposure of banks' depositors affect its lending?

$$\text{Loan growth}_{f,b,t} = \alpha_{f,t} + \alpha_b + \beta(\Delta PR_t \times \text{MPS}_{b,t-1}) + \gamma \text{MPS}_{b,t-1} + \varepsilon_{f,b,t}$$

Two approaches to control for loan demand:

1. **Firm-year FE ($\alpha_{f,t}$):** Multi-bank firms only
   - Khwaja, Mian (2008): same firm, different banks
2. **Industry-Location-Size-Time FE (α_{ILST}):** All firms
   - Degryse et al. (2019): Similar firm types $\rightarrow$ similar credit demand

Result 3: Lending Responds to MPS Exposure (H3 Confirmed)

	Loan Growth				Log of New Lending			
	(1)	(2)	(5)	(6)	(1)	(2)	(5)	(6)
MPS Participation (std)	0.091*	0.059*			0.440	0.000		
	(0.048)	(0.035)			(0.367)	(0.159)		
MPS Part. × Δ MP rate	−1.550**	−0.867**			−24.969***	−3.168**		
	(0.681)	(0.400)			(6.129)	(1.378)		
MPS Wealth Share (std)			0.034	0.054			−0.074	−0.056
			(0.035)	(0.041)			(0.274)	(0.291)
MPS Share × Δ MP rate			−0.849	−1.129**			−15.164*	−3.664*
			(0.771)	(0.510)			(7.954)	(2.163)
Observations	80,121	331,414	80,121	331,414	16,618	144,263	16,618	144,263
R^2	0.46	0.17	0.46	0.17	0.61	0.35	0.61	0.35
Bank FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes		Yes		Yes		Yes	
ILST FE		Yes		Yes		Yes		Yes

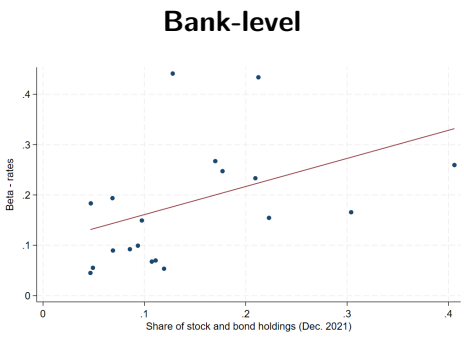
4. External Validity: Euro area

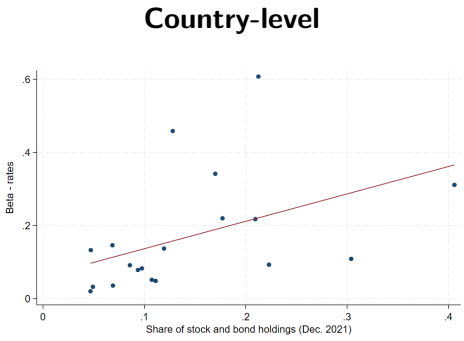
Euro area: Data

- Monthly bank-level data on household deposits and deposit rates
  - Sample period: Jan-2022 to Dec-2023
  - Aggregate deposit volumes across several categories (overnight, fixed maturity, ...) & construct volume-weighted average rates at bank-year level
  - Sources: MFI balance sheet statistics (IBSI) & Individual MFI interest rate statistics (IMIR)

- Quarterly country-level data on bond and stock holdings
  - Available since 2018 & we focus on Dec-2021 data (for now)
  - Source: aggregate Securities Holdings Statistics (SHS)

Higher pass-through in countries with higher MPS use





Euro area: Empirical strategy

- Goal: Are pass-through ("deposit betas") and elasticity of deposit growth to policy and deposit rate changes affected by depositors' utilization of market-priced savings?

- First step: "macro" evidence based on 175 MFIs (b) in Euro-area countries (c) at monthly frequency (t)

$$\begin{aligned}\Delta\text{DepRate}_{bct} =& \alpha_t + \alpha_b + \beta_1 \Delta\text{MPrate}_t + \beta_2 \text{MarketSavingsShare}_{c,12/21} + \\ & \beta_3(\Delta\text{MPrate}_t \times \text{MarketSavingsShare}_{c,12/21}) + \epsilon_{bct}\end{aligned}$$

  - $\text{MarketSavingsShare}_{c,12/21}$: ratio of stock and bond holdings by households over the sum of household deposits, stock and bond holdings in country c as of Dec-2021

Euro area: Bank-level evidence on household deposit rates

	ΔDeposit rate			
	(1)	(2)	(3)	(4)
Δ MPrate	0.197***	0.108***		
	(0.0130)	(0.0277)		
Δ MPrate x MarketSavingsShare		0.547***	0.550***	0.478***
		(0.173)	(0.173)	(0.178)
MarketSavingsShare		-0.0447		
		(0.0928)		
Δ MPrate x HHI - Household deposits				-0.384**
				(0.167)
Observations	4,100	4,100	4,100	4,100
R-squared	0.295	0.330	0.698	0.704
Bank FE	N	N	Y	Y
Month FE	N	N	Y	Y

Note: The sample contains monthly, bank-level data from January 2022 until December 2023. Δ MPrate is the year-over-year change in the ECB's Deposit Facility Rate. Δ Deposit rate is the year-over-year change in the deposit rate on household deposits. The deposit rate on household deposits is a weighted average of a rate on overnight deposits and agreed maturity deposits. The *MarketSavingsShare* is the ratio of stock and bond holdings by households over the sum of household deposits, stock and bond holdings. This ratio is calculated at the country level in December 2021.

Summary statistics

Euro area: Bank-level evidence on household deposit growth

	Δ Log(deposits)			
	(1)	(2)	(3)	(4)
Δ MPrate	-0.0120***	0.0262**		
	(0.00258)	(0.0113)		
MarketSavingsShare		0.446***		
		(0.140)		
Δ MPrate x MarketSavingsShare		-0.212***	-0.171***	-0.165***
		(0.0569)	(0.0555)	(0.0529)
Δ MPrate x HHI - Household deposits				0.0177
				(0.0406)
Observations	31,743	31,556	31,547	31,547
R-squared	0.004	0.007	0.484	0.484
Bank FE	N	N	Y	Y
Month FE	N	N	Y	Y

5. Conclusion

Conclusion

- Key Findings
  - Pass-through to deposit rates increases in MPS use
  - And so does transmission to deposit and loan volumes
- Implications
  - For households: MPS use can improve deposit returns
  - For banks: Cross-selling MPS helps diversify income, but can reduce deposit market power
  - For central banks: Lower MPS use may weaken monetary policy transmission through banks, and MPS use heterogeneity may lead to heterogeneous transmission across sectors, regions or countries (in currency unions)