Synthetic, but How Much Risk Transfer?

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[2]European Central Bank

Fifth Conference on Financial Stability — Banco de España & CEMFI
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The views expressed do not necessarily reflect those of the ECB or the Eurosystem.

Banks' Hot New Trade...

Banks' hot new trade could burn others, for once

Reuters

By John Foley

March 1, 2024 1:59 PM GMT+1 · Updated 3 months ago

FINANCIAL TIMES

IMF warns of 'round-tripping' fears

Bloomberg

If you're unfamiliar with synthetic risk transfers, there's a chance you'll hear all about them when the next financial crisis hits.

THE WALL STREET JOURNAL.

Watch Out: Wall Street Is Finding New Ways to Slice and Dice Loans

The people who brought you CDOs and other financing esoterica are back with SRTs, NAV loans and more

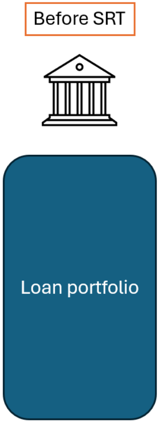
Banks Transfer Risk to Themselves

By Matt Levine

Banks' Hot New Trade...

...is Getting a Lot of Media Attention

What is it?



⇒ Objective: capital relief

Numerical example

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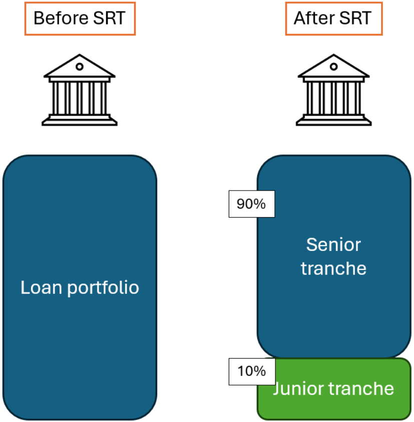

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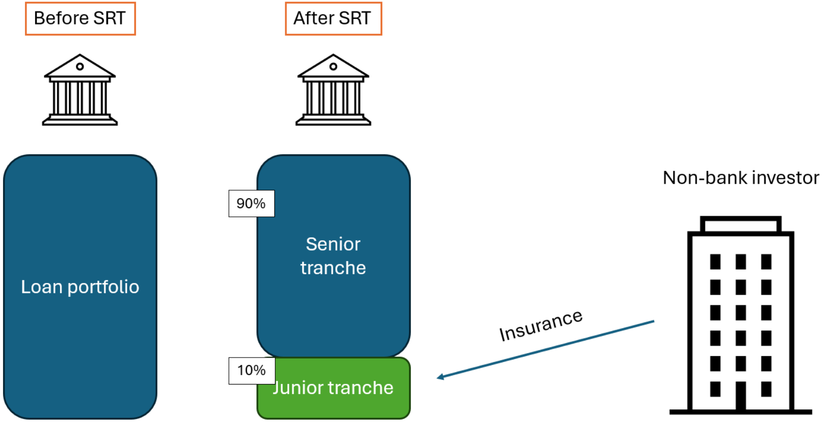

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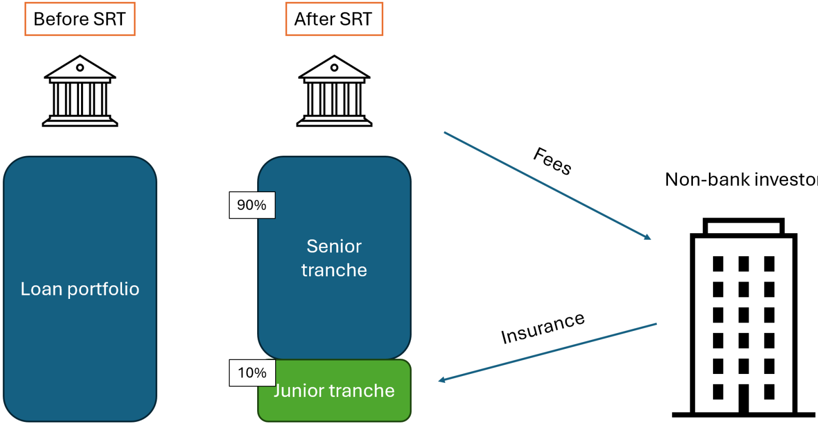

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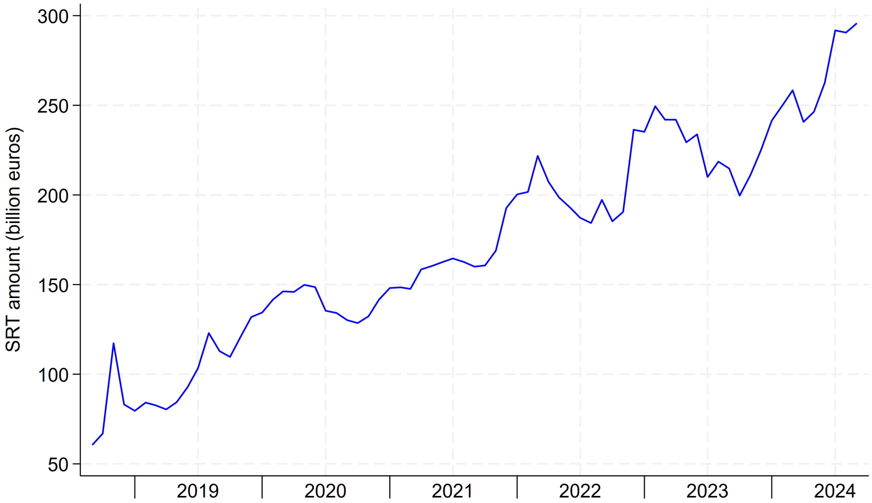
Numerical example

Stock of SRTs in Europe (corporate loans)



... and in the US: < $100 billion, but + 400% in 2024 | Share of loan portfolio by country | Share of loan portfolio euro area

Research Questions and Results

What are the risks to financial stability?

1. **Selection of SRT loans**
   - All else equal, banks choose capital-expensive loans
   - Banks deploy the freed-up capital and become less capitalized relative to the economic riskiness of their portfolio
2. **Monitoring**
   - Novel monitoring measure
   - Banks reduce monitoring relative to other banks lending to the same firm
3. **Interconnectedness of banks and non-banks**
   - Banks are more likely to sell to non-bank SRT investors to which they also grant credit
   - On average 26 percent of the SRT investment is funded by banks ⇒ "round-tripping"

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Capital "optimization"

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Credit risk transfers and financial stability

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⇒ Novel monitoring measure & context of SME and corporate loans

Bank - non-bank interconnectedness

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⇒ Loan- and investment-level evidence

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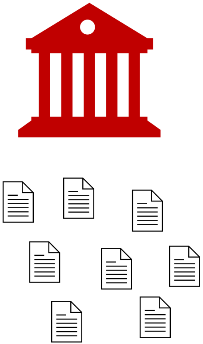

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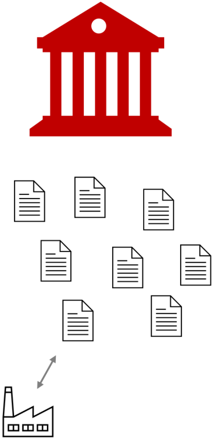

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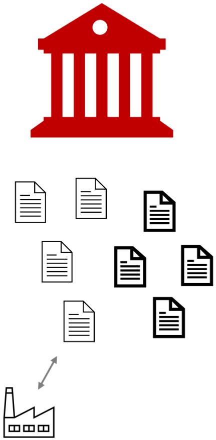

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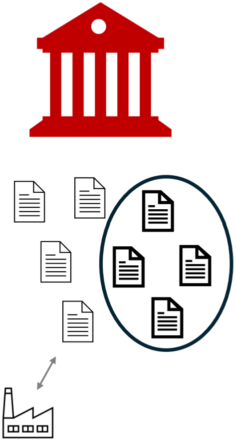

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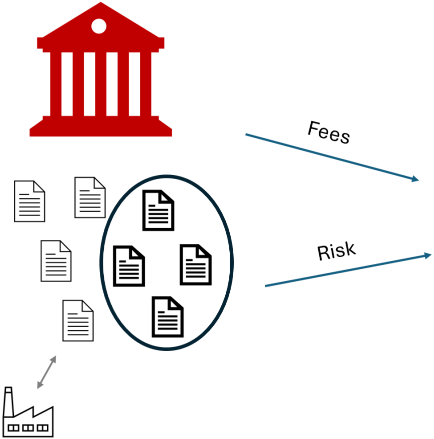

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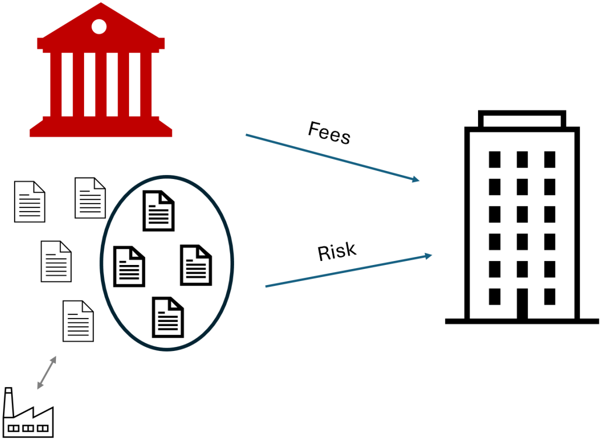

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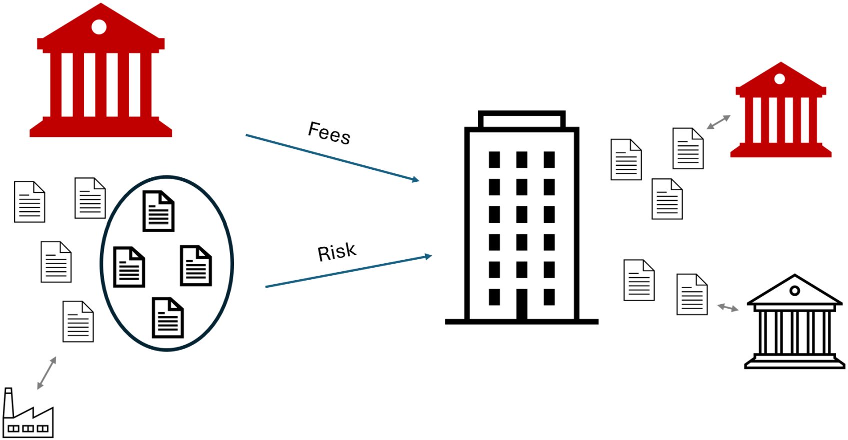
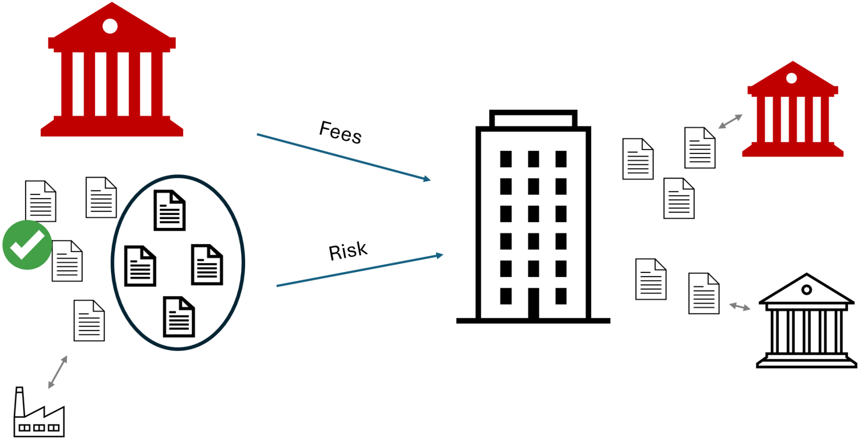


Data – what we have (AnaCredit & COREP)



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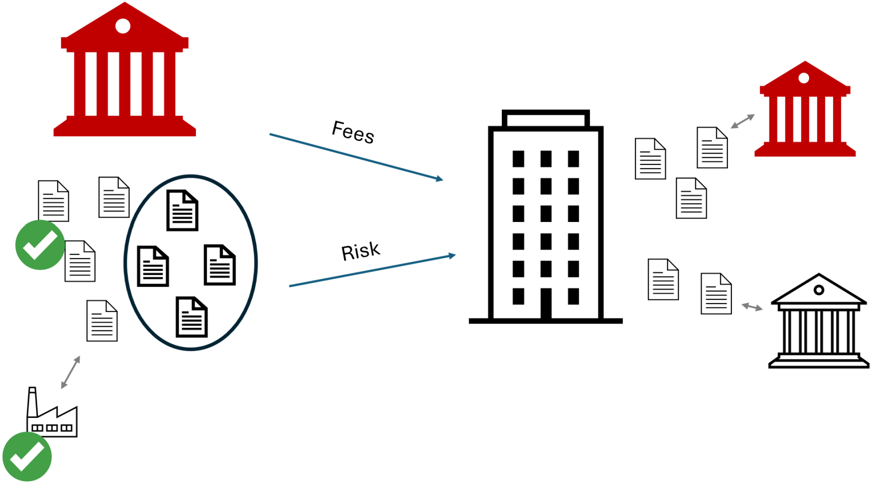

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Sample

- Sample period: Sept 2018 – Sept 2024, monthly
- 71 banks that use SRTs Riskiness of SRT banks
- 352 SRTs
- 171,506 SRT loans Loan characteristics
- €260 billion notional value
- 91 non-bank investors, 65 ultimate investors Investor types Investor types over time Descriptives

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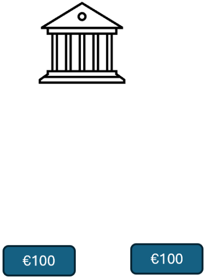
Loan selection

Loan selection — argument



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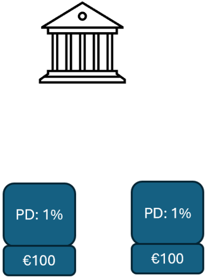

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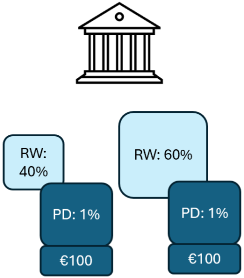

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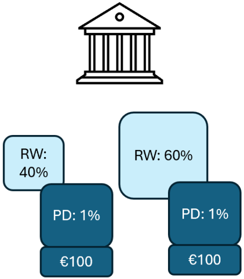

- Standardized Approach
- PD/LGD underestimation
- Regulation

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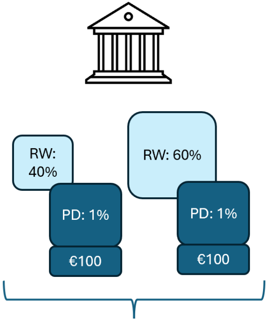

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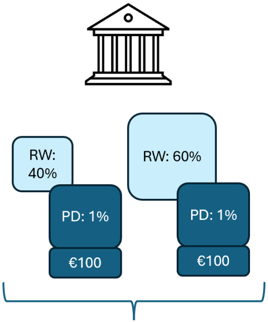

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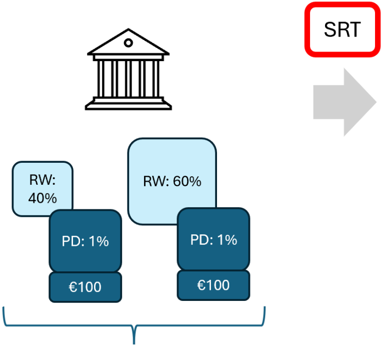

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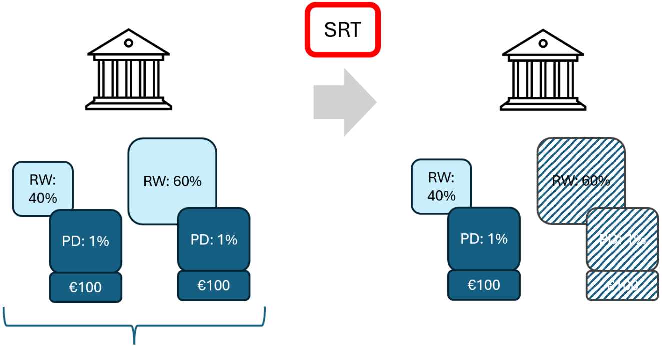

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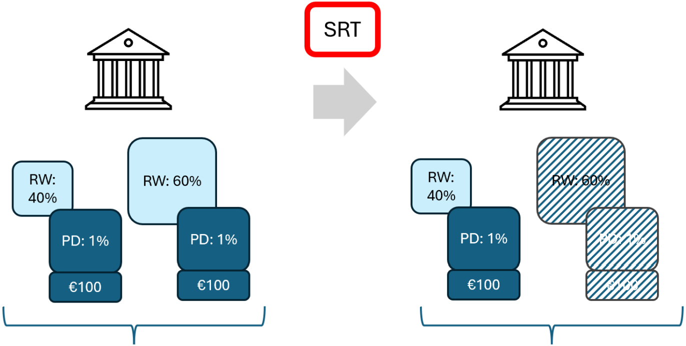

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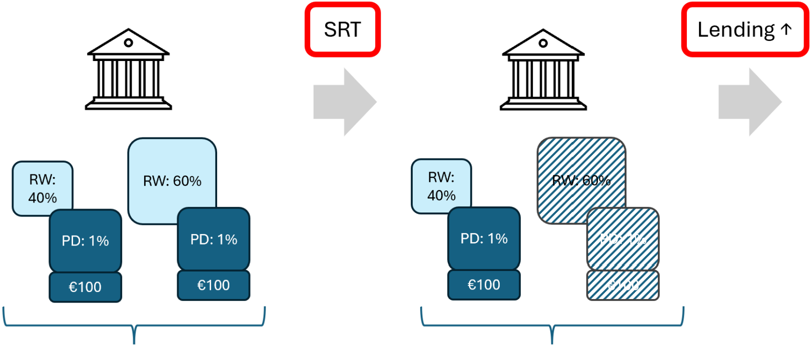

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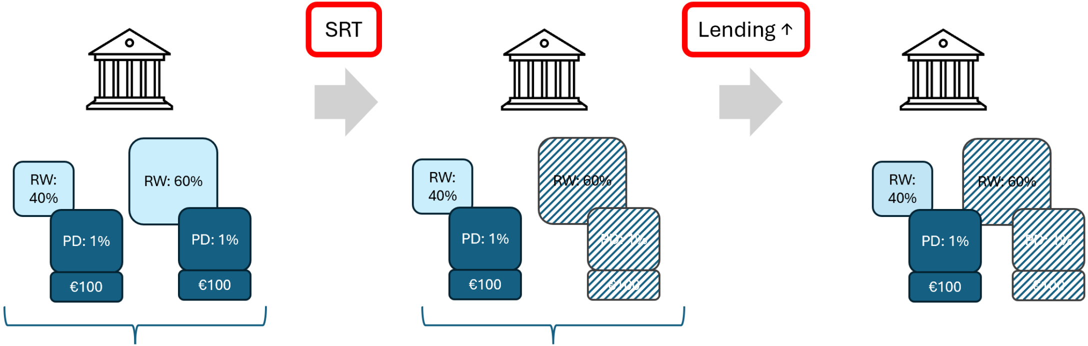

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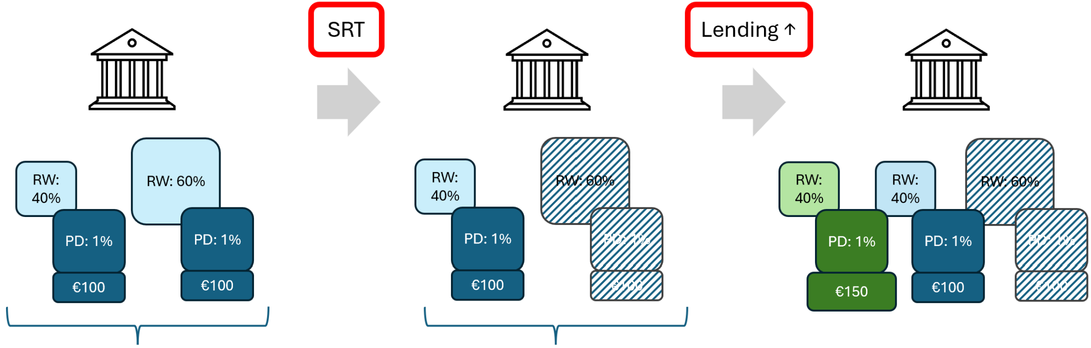

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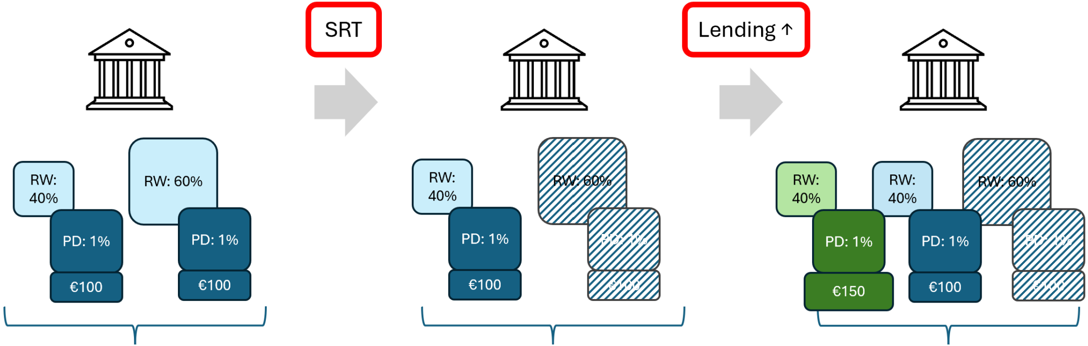

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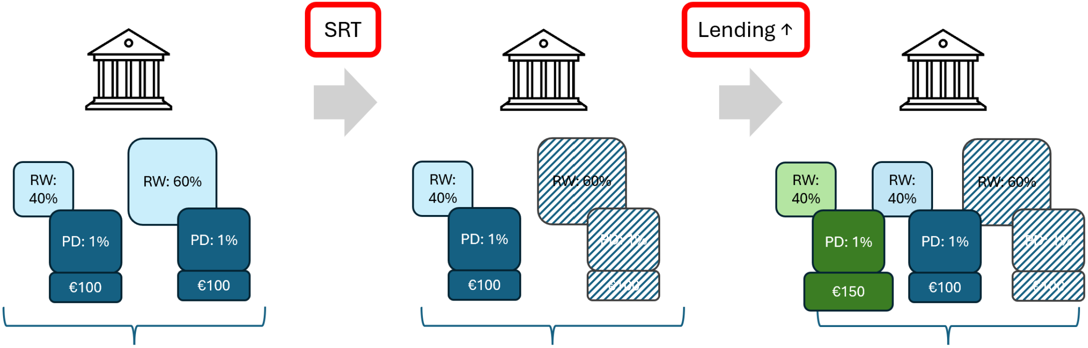
$$\text{Tier 1} = \frac{10}{0.4*100+0.4*150} = 10\%$$

Loan selection — argument



Tier 1 $= \frac{Tier\ 1\ Capital}{RW\ Assets} = \frac{10}{0.4*100+0.6*100} = 10\%$

Leverage $= \frac{Tier\ 1\ Capital}{Assets} = \frac{10}{100+100} = 5\%$

Tier 1 $= \frac{10}{0.4*100} = 25\%$

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Tier 1 $= \frac{10}{0.4*100+0.4*150} = 10\%$

Leverage $= \frac{10}{150+100+100} = 3\%$

Loan selection — laboratory

Problem: Diff. in economic and assigned riskiness endogenous to loan characteristics

Solution: Discontinuity in assigned riskiness (SME supporting factor)

IRBA formula   Smoothness of covariates

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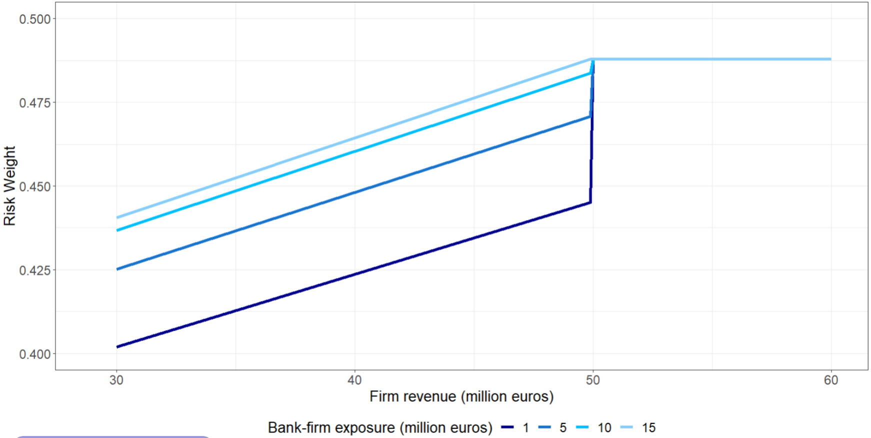

IRBA formula

Smoothness of covariates

Banks choose capital-expensive loans

$$SRT\text{-}loan_{i,t} = \beta_1 Borrower\ revenue\ bins_{i,t} + \delta X_{i,t} + \varepsilon_{i,t}$$

Control: PD, loan rate, log loan size. FE: *Bank* × *year* × *loan type* × *interest rate type* × *loan purpose* × *borrower industry* × *residual maturity above 1 year.* SE: wild-bootstrapped at bank-level.

This matters for all firms with revenues < €50 million

Placebo tests with €40 and €60 million threshold

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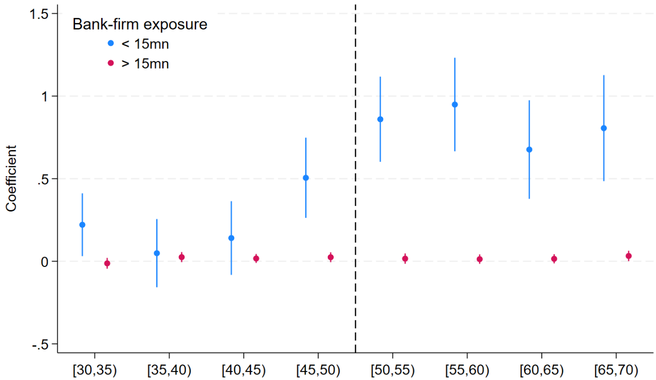

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This matters for all firms with revenues < €50 million   Placebo tests with €40 and €60 million threshold

Capital deployment

$$Y_{b,t} = \beta_1 SRT\text{-}intensity_{b,t} + \beta_2 X_{b,t} + \delta_b + \gamma_t + \varepsilon_{b,t}.$$

	(1) Loan growth	(2) Loan growth	(3) Leverage ratio (percent)	(4) Tier 1 capital ratio (percent)
SRT intensity [t]	4.497**	3.389*	-5.345**	0.00660
	(2.098)	(1.917)	(2.174)	(0.0322)
SRT intensity [$t-1$]		5.167***		
		(1.547)		
Mean	3.350	3.337	7.665	0.202
Fixed effects	Bank, quarter	Bank, quarter	Bank, year	Bank, year
Frequency	Quarterly	Quarterly	Yearly	Yearly
Controls	Size bins × bank size capital ratio	Size bins × bank size capital ratio	Size bins × bank size	Size bins × bank size
SE cluster	Bank	Bank	Bank	Bank
Adj. R-squared	0.395	0.393	0.801	0.925
N	10,660	10,651	1,949	2,119

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

New lending is not particularly capital-expensive

Quantification

Capital deployment

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Quantification

Moral hazard

Monitoring measure

Assumptions

1. Firm PD fluctuates over time
2. Higher monitoring $\Rightarrow$ closer mapping of actual PD fluctuations into PD estimates

Quarterly monitoring measure

1. PD update
2. SD(PD)

Validation

- PD-updating banks (i.e., monitoring banks) are better at predicting actual default one year ahead Evidence

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SRT ⇒ decline in monitoring by 15-30%

$$Monitoring_{f,b,t} = SRT\ loan_{f,b,t-1} \times Post\ SRT_{f,b,t-1} + \gamma_f + \delta_b + \omega_t + \varepsilon_{f,b,t}$$

	(1)	(2)	(3)	(4)
	PD update	PD update	SD(PD)	SD(PD)
SRT loan=1 × Post SRT=1	-0.0495**	-0.0458**	-0.0356**	-0.0323**
	(0.0209)	(0.0231)	(0.0162)	(0.0157)
Average PD	0.00782*	0.00153	0.0571***	0.0488***
	(0.00470)	(0.00377)	(0.0187)	(0.0118)
Mean	0.332	0.315	0.116	0.108
Fixed effects	Firm, quarter, bank	Firm × quarter, bank	Firm, quarter, bank	Firm × quarter, bank
SE cluster	Bank	Bank	Bank	Bank
Controls	Firm revenue	Firm revenue	Firm revenue	Firm revenue
Adj. R-squared	0.356	0.510	0.209	0.433
N	4,086,342	3,396,856	4,007,636	3,321,116

Standard errors in parentheses

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Bank-non-bank nexus

Are banks and non-bank SRT investors interconnected?

Reuters

Banks' hot new trade could burn others, for once

By John Foley

March 1, 2024 1:59 PM GMT+1 · Updated 3 months ago

FINANCIAL TIMES

IMF warns of 'round-tripping' fears

Banks Transfer Risk to Themselves

By Matt Levine

Banks sell SRTs to familiar investors

- $SRT\ investment\ dummy_{i,b,j,t} = \beta_0 + \beta_1 Credit\ rel.\ dummy_{b,j,t} + \delta_b + \eta_j + \omega_t + \varepsilon_{i,b,j,t}$
- i: SRT issue; b: bank; j: investor; t: year

	(1) SRT investment	(2) SRT investment	(3) SRT investment
Credit rel.	0.0853**	0.0743**	
	(0.0372)	(0.0291)	
Credit rel. (group)			0.0855**
			(0.0384)
Mean	0.135	0.130	0.130
Fixed effects	Year	Bank, investor, year	Bank, investor, year
Restriction	No Government/ EIF	No Government/ EIF	No Government/ EIF
SE cluster		Bank	Bank
Adj. R-squared	0.0248	0.153	0.154
N	1,055	1,050	1,050

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Debt dynamics of non-bank SRT investors

$$\textit{Log debt amount outstanding}_{i,j,t} = \beta_0 + \beta_1 \textit{Months to SRT investment}_{i,j,t} + \theta_i + \omega_t + \varepsilon_{i,j,t}$$

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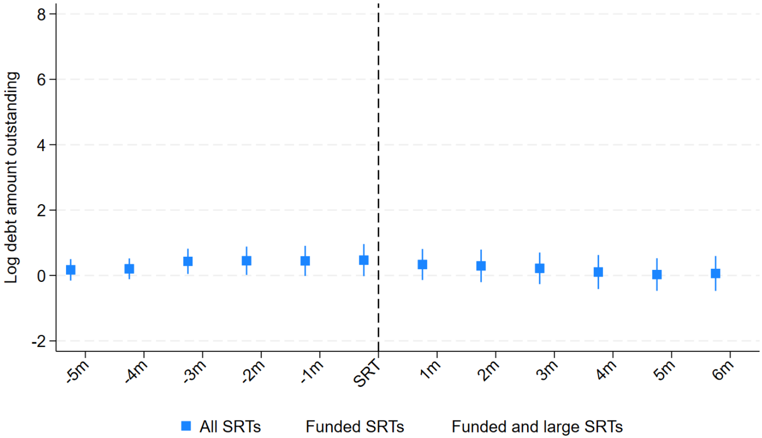

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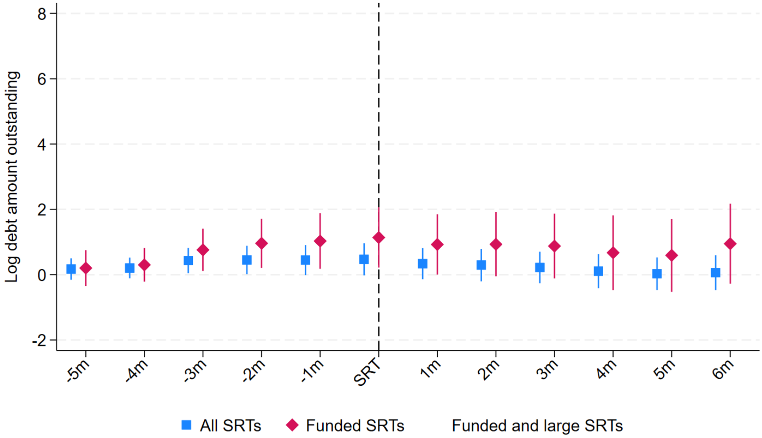

Pre-trends

Debt dynamics of non-bank SRT investors

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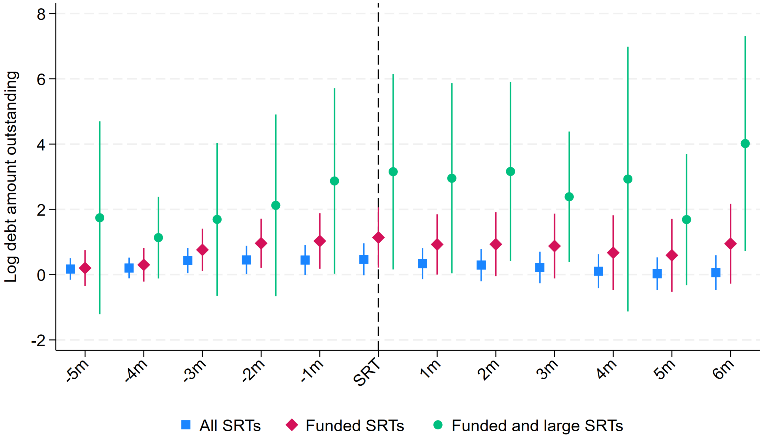

Pre-trends

Conclusion

1. Objective: capital relief ⇒ loan selection "optimizes" effective ex-post capitalization

   ⇒ capital saving of 315 million euros for the average bank

   ⇒ New floor on risk weights could be "traded away" with SRTs

2. Decline in monitoring

3. 26 percent of SRT financing comes from banks Higher in the US?

   ⇒ Could make SRTs procyclical

⇒ The amount of capital relief for SRTs should account for these three channels

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Appendix

Literature I

- Acharya, Viral, Nicola Cetorelli, and Bruce Tuckman (2024). "Where Do Banks End and NBFIs Begin?" In: *National Bureau of Economic Research* 32316.
- Acharya, Viral, Philipp Schnabl, and Gustavo Suarez (2013). "Securitization without risk transfer". In: *Journal of Financial Economics* 107.3, pp. 515–536.
- Albertazzi, Ugo et al. (2021). "Asymmetric information and the securitization of SME loans". In: *Swiss Finance Institute Research Paper* 21-13.
- Allen, Franklin and Elena Carletti (2006). "Credit risk transfer and contagion". In: *Journal of Monetary Economics* 53.1, pp. 89–111.
- Begley, Taylor A, Amiyatosh Purnanandam, and Kuncheng Zheng (2017). "The strategic underreporting of bank risk". In: *The Review of Financial Studies* 30.10, pp. 3376–3415.
- Behn, Markus, Rainer Haselmann, and Vikrant Vig (2022). "The limits of model-based regulation". In: *The Journal of Finance* 77.3, pp. 1635–1684.

Literature II

- Benmelech, Efraim, Jennifer Dlugosz, and Victoria Ivashina (2012). "Securitization without adverse selection: The case of CLOs". In: *Journal of Financial Economics* 106.1, pp. 91–113.
- Berg, Tobias and Philipp Koziol (2017). "An analysis of the consistency of banks' internal ratings". In: *Journal of Banking & Finance* 78, pp. 27–41.
- Dell'Ariccia, Giovanni, Deniz Igan, and Luc UC Laeven (2012). "Credit booms and lending standards: Evidence from the subprime mortgage market". In: *Journal of Money, Credit and Banking* 44.2-3, pp. 367–384.
- Griffin, John M and Gonzalo Maturana (2016). "Who facilitated misreporting in securitized loans?" In: *The Review of Financial Studies* 29.2, pp. 384–419.

Literature III

Jacewitz, Stefan, Haluk Unal, and Chengjun Wu (2022). "Shadow insurance? Money market fund investors and bank sponsorship". In: *The Review of Corporate Finance Studies* 11.2, pp. 414–456.

Keys, Benjamin J et al. (2010). "Did securitization lead to lax screening? Evidence from subprime loans". In: *The Quarterly Journal of Economics* 125.1, pp. 307–362.

Piskorski, Tomasz, Amit Seru, and James Witkin (2015). "Asset quality misrepresentation by financial intermediaries: Evidence from the RMBS market". In: *The Journal of Finance* 70.6, pp. 2635–2678.

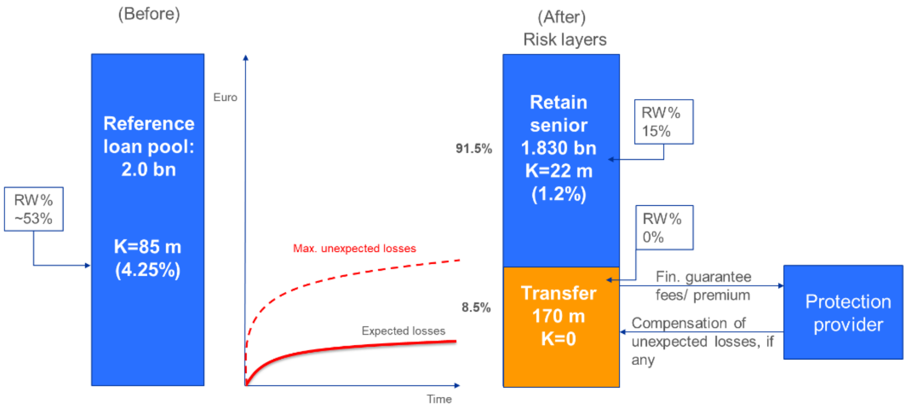
Plosser, Matthew C and Joao AC Santos (2018). "Banks' incentives and inconsistent risk models". In: *The Review of Financial Studies* 31.6, pp. 2080–2112.

Literature IV

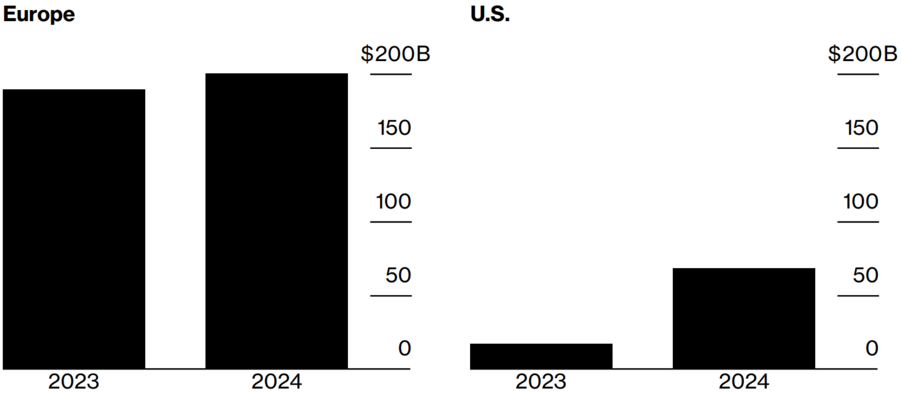
Rajan, Uday, Amit Seru, and Vikrant Vig (2015). "The failure of models that predict failure: Distance, incentives, and defaults". In: *Journal of Financial Economics* 115.2, pp. 237–260.

Wang, Yihui and Han Xia (2014). "Do lenders still monitor when they can securitize loans?" In: *The Review of Financial Studies* 27.8, pp. 2354–2391.

Numerical example from Gonzalez & Triandafil (2023)

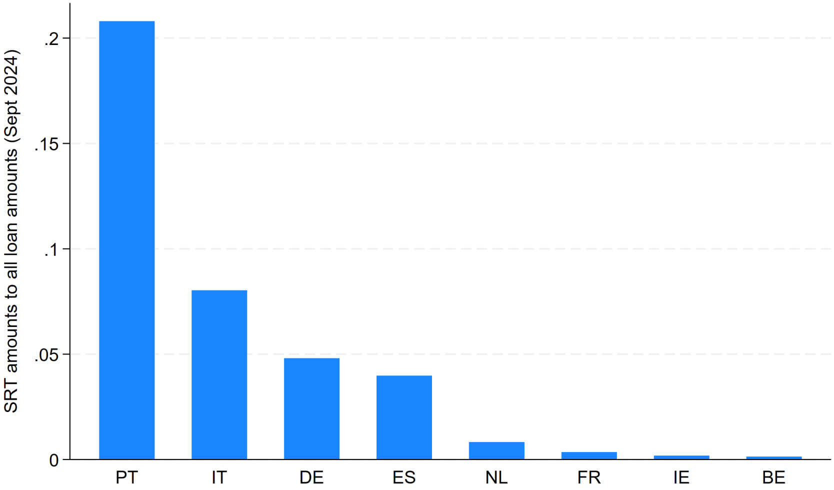


Market size in the U.S.

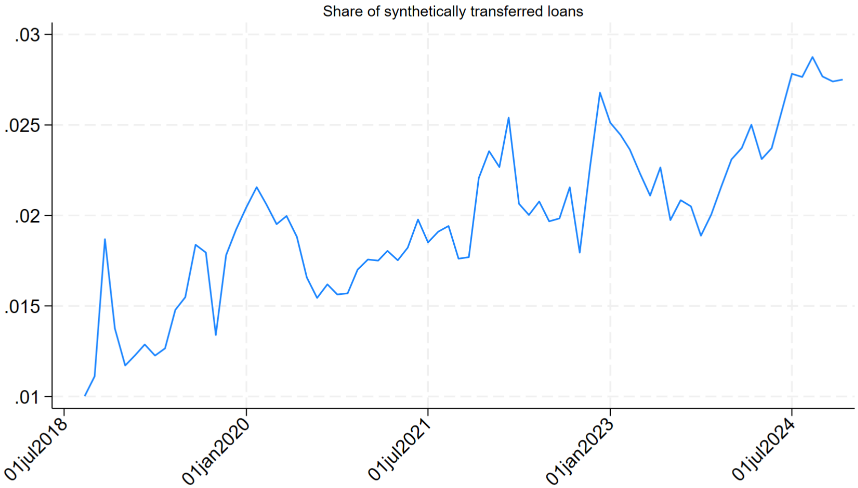


Source: KKR & Co., Bank of America estimates as of March 2024
Note: Figures refer to assets securitized. 2024 numbers are estimated volume.

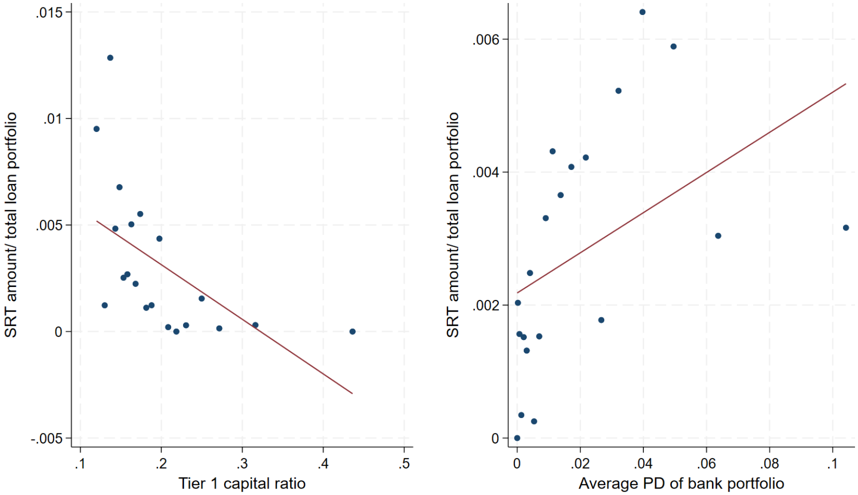
Share of all corporate loans by country



Share of synthetically transferred loans – euro area



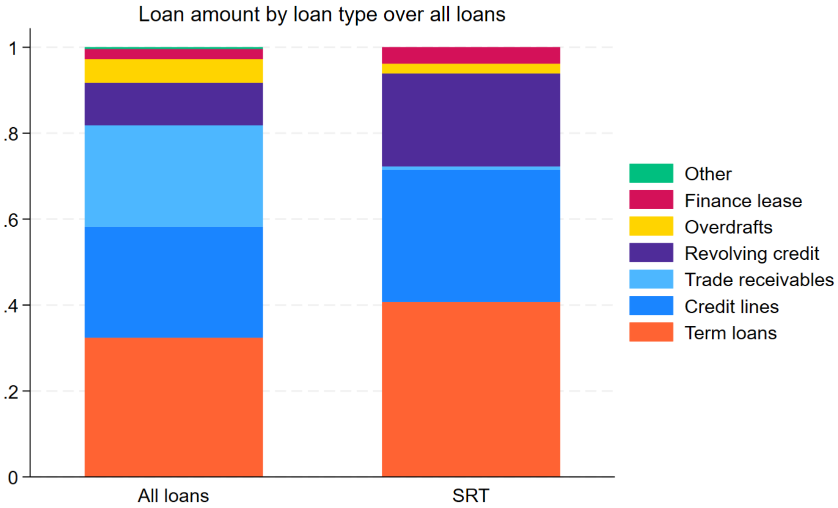
SRT banks


SRT amount/ total loan portfolio
.015
.01
.005
0
-.005
.1
.2
.3
.4
.5
Tier 1 capital ratio
SRT amount/ total loan portfolio
.006
.004
.002
0
0
.02
.04
.06
.08
.1
Average PD of bank portfolio

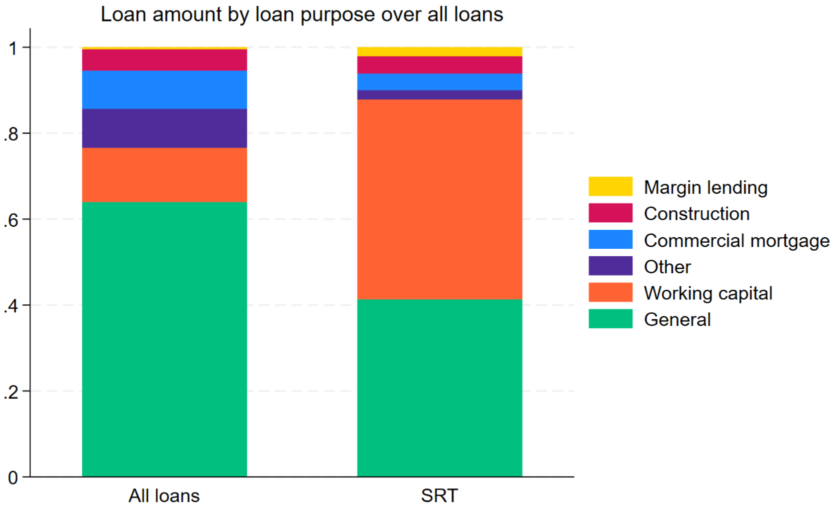
Sample: synthetically transferred loans

	Synthetically transferred loans *171,506*					All loans *June 2024: 13,600,000*				
	Mean	SD	10^{th}	Median	90^{th}	Mean	SD	10^{th}	Median	90^{th}
Loan amount	943,665	2,860,711	38,772	200,000	2,000,000	364,597	937,721	30,000	100,000	750,000
Loan maturity (years)	5.6	3.6	2.0	5.0	10.0	8.2	6.5	1.0	6.0	18.0
Loan rate	0.028	0.019	0.008	0.023	0.059	0.039	0.028	0.007	0.040	0.074
Borrower revenue (mn.)	45	209	0.2	4	74	27	105	0.04	1.6	53
Borrower PD	0.014	0.020	0.002	0.008	0.032	0.080	0.230	0.001	0.009	0.115
Loan payments are overdue	0.014					0.045				
Loan is delinquent	0.009					0.028				
Share fixed rate	0.61					0.40				

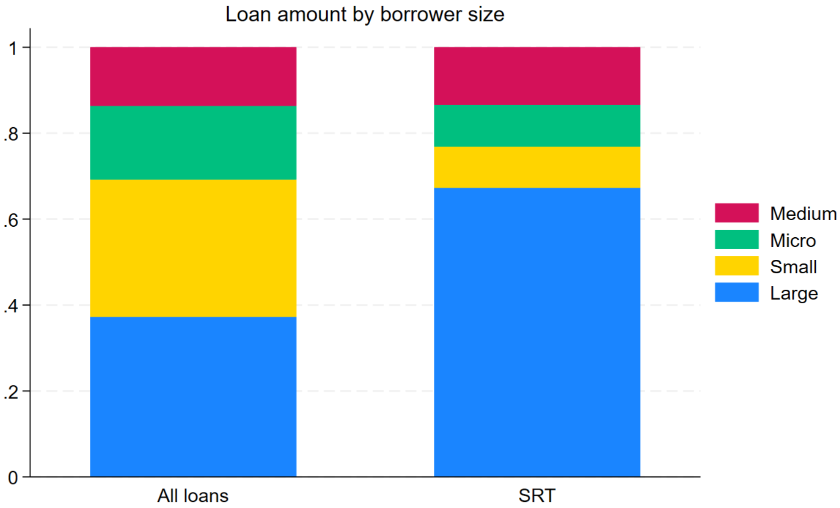
Which loan types get synthetically transferred?



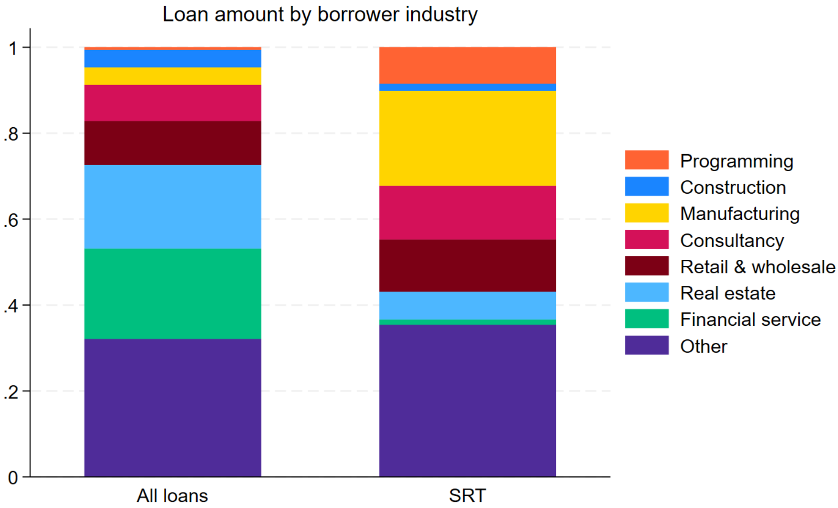
Of which loan purpose?



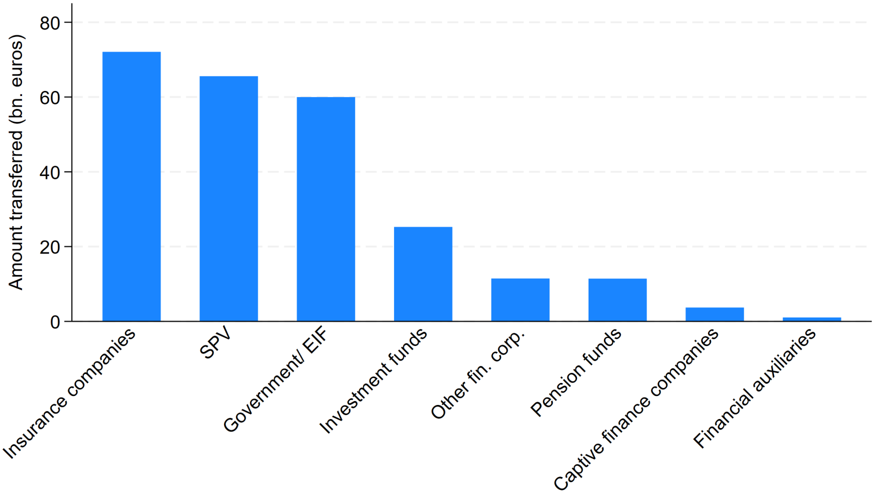
To which debtor size?



Of which debtor industries?



Who are the non-bank SRT investors?



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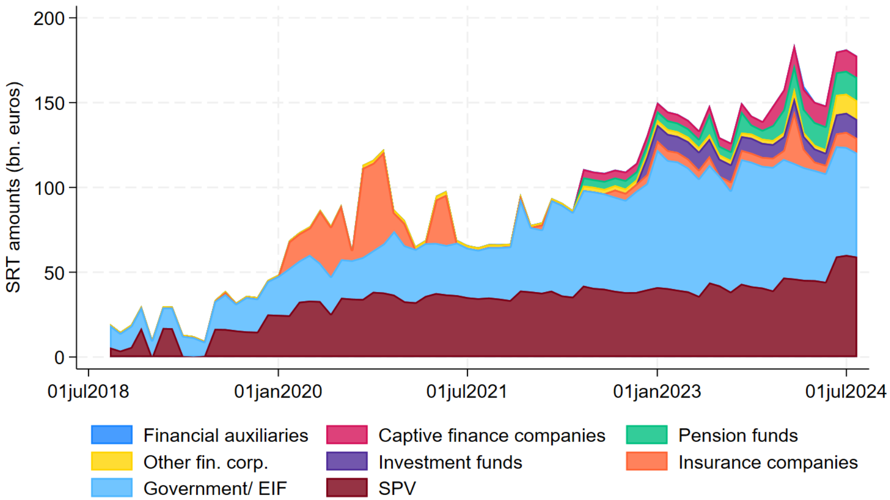


Descriptive statistics of SRT investor

	All SRT investments 282						SRT investments excl. Government / EIF 142					
	Mean	SD	10^{th}	Median	90^{th}	N	Mean	SD	10^{th}	Median	90^{th}	N
Group level												
Total assets (mn. euros)*	168,000	309,000	32	3,040	5,690	133	134,000	393,000	9	23	220,000	34
Bank loans outstanding (mn.)	6,130	30,200	0	386	5,090	282	5,500	45,100	0	0.1	56	142
Bank loans committed (mn.)	6,550	30,200	0	1,250	6,070	282	5,190	40,500	0	0.5	146	142
Bank debt outstanding to assets*	0.25	0.32	0	0.06	0.79	282	0.04	0.07	0	0.02	0.17	142
SRT investment (first losses) to assets*	0.03	0.04	0	0	0.07	105	0.04	0.07	0	0.01	0.07	28
Number of bank relationships	18.2	33.6	1	7	28	282	7.3	31.0	1	1	3	142
Number of bank relationships during sample	35.4	60.3	2	10	55	282	12.8	52.6	2	3	7	142
Share of investors that receive credit from SRT-bank during sample	0.50					282	0.22					142
Unconsolidated level												
Total assets (mn. euros)	36,000	199,000	9	2,490	2,490	112	92,900	342,000	5	37	781,000	33
Bank loans outstanding (mn.)	505	1,690	0	0.6	381	282	21	135	0	0.1	8	142
Bank loans committed (mn.)	678	2,910	0	2	394	282	23	126	0	0.2	22	142
Loans & securities (mn.)	20,300	211,000	0	5	381	282	49	193	0	0.2	61	142
Liabilities to assets	0.08	0.12	0	0.05	0.15	102	0.04	0.10	0	0	0.12	30
SRT investment (first losses) to assets	0.06	0.11	0	0.02	0.13	103	0.10	0.15	0	0.05	0.36	29
Number of bank relationships	4.6	7.6	1	1	8	282	1.4	0.9	1	1	2	142
Number of bank relationships during sample	8.2	11.2	2	3	12	282	3.0	2.0	1	3	4	142
Share of investors that receive credit from SRT-bank during sample	0.18					282	0.15					142

Internal Ratings Based Approach Formula

For loans to firms with annual revenues < 50 million euros:

$$RW = \mathscr{F}\left(PD\uparrow, M\uparrow, LGD\uparrow, \frac{\min\{\max\{5, S\}, 50\} - 5}{45}\uparrow\right)$$
$$\times \frac{\min\{E; €2,500,000\} \cdot 0.7619 + \max\{E - €2,500,000; 0\} \cdot 0.85}{E}$$

PD: probability of default

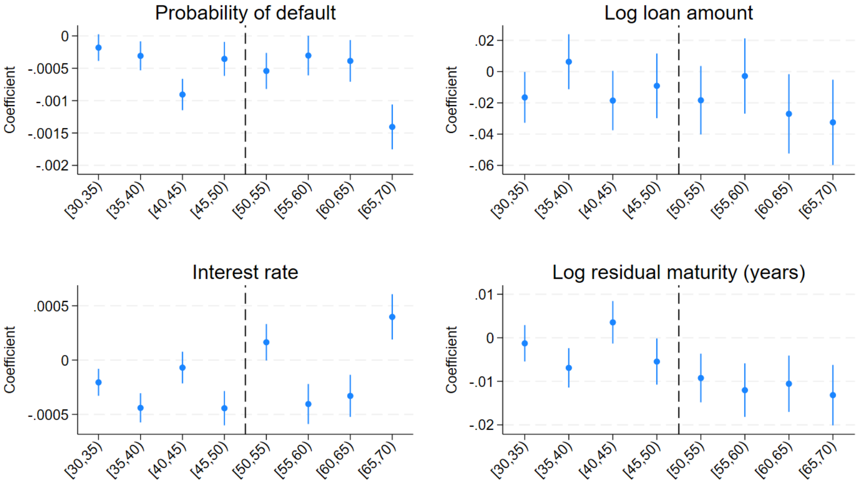
M: maturity

LGD: loss given default

S: annual revenue

E: bank-firm exposure

Covariates are smooth



Correlational result

$$SRT\text{-}loan_{i,t} = \beta_1 Revenue_{i,t} + \beta_2 Log\ bank\ firm\ exposure_{i,t} + \delta X_{i,t} + \varepsilon_{i,t}$$

	(1) SRT loan (= 100)	(2) SRT loan (= 100)	(3) SRT loan (= 100)	(4) SRT loan (= 100)
Revenue (million euros)	0.00608***	0.00608***	-0.000392	-0.000392
	(0.000131)	(0.00205)	(0.000267)	(0.000723)
Log bank firm exposure	0.0210***	0.0210**	-0.00391	-0.00391
	(0.000662)	(0.00965)	(0.00277)	(0.00507)
Mean	0.359	0.359	0.344	0.344
Revenue (million)	[0,50)	[0,50)	[50,100)	[50,100)
Fixed effects	FE	FE	FE	FE
SE cluster		Bank		Bank
Controls	PD, Loan rate, loan size bins × log loan amount	PD, Loan rate, loan size bins × log loan amount	PD, Loan rate, loan size bins × log loan amount	PD, Loan rate, loan size bins × log loan amount
Adj. R-squared	0.173	0.173	0.365	0.365
N	31,282,991	31,282,991	1,993,606	1,993,606
Frequency	Yearly	Yearly	Yearly	Yearly

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

FE: *Bank* × *year* × *loan type* × *interest rate type* × *loan purpose* × *borrower industry* × *residual maturity above 1 year*

Placebo tests

$$SRT\text{-}loan_{i,t} = \beta_1 \mathbb{1}(revenue \geq €50\ mn)_{i,t} \times Log\ bank\ firm\ exposure_{i,t} + \delta X_{i,t} + \varepsilon_{i,t}$$

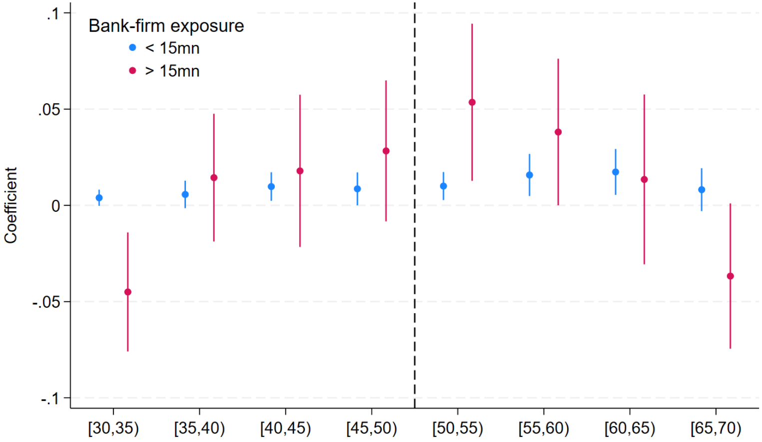
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	SRT loan (=100)	SRT loan (=100)	SRT loan (=100)	SRT loan (=100)	SRT loan (=100)	SRT loan (=100)	SRT loan (=100)	SRT loan (=100)
Revenue > 50 mn=1	0.0389^{**}	0.231^{**}			0.0346^{***}	0.245^{***}		
	(0.0156)	(0.101)			(0.0102)	(0.0642)		
Revenue > 50 mn=1 × Log bank firm exposure		-0.0116^{*}				-0.0127^{***}		
		(0.00600)				(0.00381)		
Revenue > 40 mn=1			-0.135				0.0116	
			(0.0853)				(0.0640)	
Revenue > 40 mn=1 × Log bank firm exposure			0.00782				0.000564	
			(0.00521)				(0.00398)	
Revenue > 60 mn=1				-0.00266				-0.146^{**}
				(0.0962)				(0.0710)
Revenue > 60 mn=1 × Log bank firm exposure				-0.000427				0.00720^{*}
				(0.00547)				(0.00413)
Mean	0.387	0.387	0.00389	0.301	0.364	0.364	0.431	0.330
Revenue (million)	[45,55]	[45,55]	[35,45]	[55,65]	[40,60]	[40,60]	[30,50]	[50,70]
Fixed effects	FE	FE	FE	FE	FE	FE	FE	FE
SE cluster	WCR: Bank	WCR: Bank	WCR: Bank	WCR: Bank	WCR: Bank	WCR: Bank	WCR: Bank	WCR: Bank
Controls	PD, loan rate loan size bins × log loan amount	PD, loan rate loan size bins × log loan amount	PD, loan rate loan size bins × log loan amount	PD, loan rate loan size bins × log loan amount	PD, loan rate loan size bins × log loan amount	PD, loan rate loan size bins × log loan amount	PD, loan rate loan size bins × log loan amount	PD, loan rate loan size bins × log loan amount
Adj. R-squared	0.450	0.450	0.400	0.448	0.393	0.393	0.366	0.406
N	615,408	615,408	794,296	530,886	1,295,035	1,295,035	1,618,225	1,021,100
Frequency	Yearly	Yearly	Yearly	Yearly	Yearly	Yearly	Yearly	Yearly

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

New lending is not particularly capital-expensive

Capital-expense of firms that receive net increase in lending



Strategic loan selection – quantification

Calculate the *additional* benefit from the SME supporting factor with and without SRT:

$$
\begin{aligned}
\Delta\text{Cap. benefit}_{b,t} &= \text{Cap. benefit}_{b,t}^{\textit{with SRT}} - \text{Cap. benefit}_{b,t}^{\textit{without SRT}} \cdot \text{scaling factor}_{b,t} \\
&= \left(\widehat{CAP}_{b,t}^{\textit{with SRT}} - \widetilde{CAP}_{b,t}^{\textit{with SRT}} \right) \\
&\qquad - \left(\widehat{CAP}_{b,t}^{\textit{without SRT}} - \widetilde{CAP}_{b,t}^{\textit{without SRT}} \right) \cdot \frac{\widehat{CAP}_{b,t}^{\textit{with SRT}}}{\widehat{CAP}_{b,t}^{\textit{without SRT}}} \\
&= \widetilde{CAP}_{b,t}^{\textit{without SRT}} \cdot \frac{\widehat{CAP}_{b,t}^{\textit{with SRT}}}{\widehat{CAP}_{b,t}^{\textit{without SRT}}} - \widetilde{CAP}_{b,t}^{\textit{with SRT}}.
\end{aligned}
$$

$\Rightarrow$ Additional capital savings: 315 million euros (mean bank); 7.2 billion euros (all SRT banks)

Back

PD-updating banks are better at predicting default

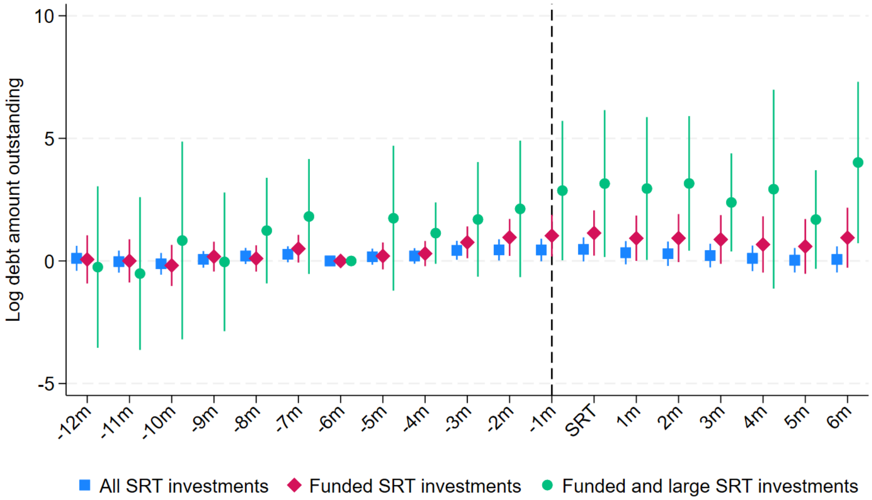
$$Firm\ defaults_{f,b,t} = Average\ PD_{f,b,t-4} \times Monitoring\ measure_{f,b,t-4} + \gamma_f + \delta_b + \omega_t + \varepsilon_{f,b,t}$$

	(1) Firm defaults	(2) Firm defaults	(3) Firm defaults	(4) Firm defaults
Average PD × PD update=1	0.00656***	0.0162***		
	(0.00223)	(0.00442)		
Average PD × SD(PD)			0.155*	0.301***
			(0.0936)	(0.0941)
Average PD	0.0173***	0.0135***	0.0407***	0.0186***
	(0.00311)	(0.00233)	(0.00762)	(0.00340)
PD update=1	0.000252*	-0.0000160		
	(0.000130)	(0.000193)		
SD(PD)			0.0862***	0.0233**
			(0.0141)	(0.0106)
Fixed effects	Firm, quarter, bank	Firm × quarter, bank	Firm, quarter, bank	Firm × quarter, bank
SE cluster	Bank	Bank	Bank	Bank
Adj. R-squared	0.156	0.701	0.278	0.703
N	71,585,011	24,198,394	70,568,226	23,811,546
Frequency	Quarterly	Quarterly	Quarterly	Quarterly

Standard errors in parentheses

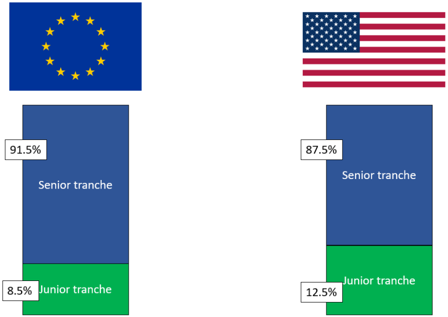
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Debt dynamics: pre-trends



Predictions for the U.S.

Collins Amendment to the Dodd-Frank Act $\Rightarrow$ lower bound to the risk weights on assets

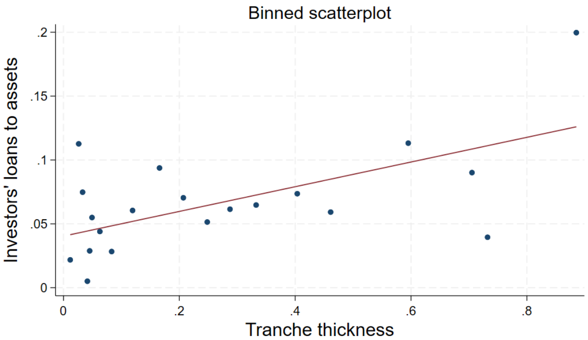


To get the same return

1. investors have to be more leveraged.
2. SRTs have to contain riskier loans.

Thicker first-loss tranches are bought by more leveraged investors

- $Debt\ (loans)\ to\ assets_{s,b,j} = \beta_0 + \beta_1\ Thickness\ tranche\ sold_{s,b,j} + \varepsilon_{s,b,j}$
- s: SRT issue; b: bank; j: investor



	(1) Bank debt to assets	(2) Bank debt to assets
Thickness of tranche sold	0.0969***	0.127
	(0.0290)	(0.0847)
Mean	0.0643	0.0295
Fixed effects	Investor type, country	Investor type, country
Restriction		No Gvrnmt/ EIF
SE cluster	Bank	Bank
Controls	SRT size, Avg PD	SRT size, Avg PD
Adj. R-squared	0.437	0.850
N	102	37

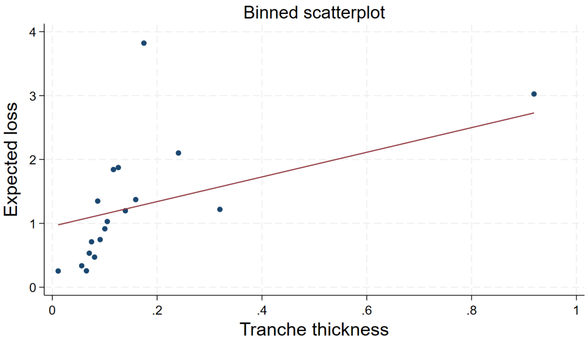
Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Thickness of tranche sold ↑ by 1 SD → *bank debt over assets* ↑ 48 percent. Back

Thicker tranches are associated with riskier underlying loans

- $Expected\ loss_{s,b,j} = \beta_0 + \beta_1\, Thickness\ tranche\ sold_{s,b,j} + \varepsilon_{s,b,j}$
- s: SRT issue; b: bank; j: investor



	(1)	(2)
	Expected losses	Expected losses
Thickness of tranche sold (COREP)	0.114***	0.119***
	(0.0297)	(0.0200)
Mean	0.0141	0.0151
Fixed effects		Bank, year
Restriction		
SE cluster	Bank	Bank
Controls		SRT size
Adj. R-squared	0.405	0.761
N	103	92

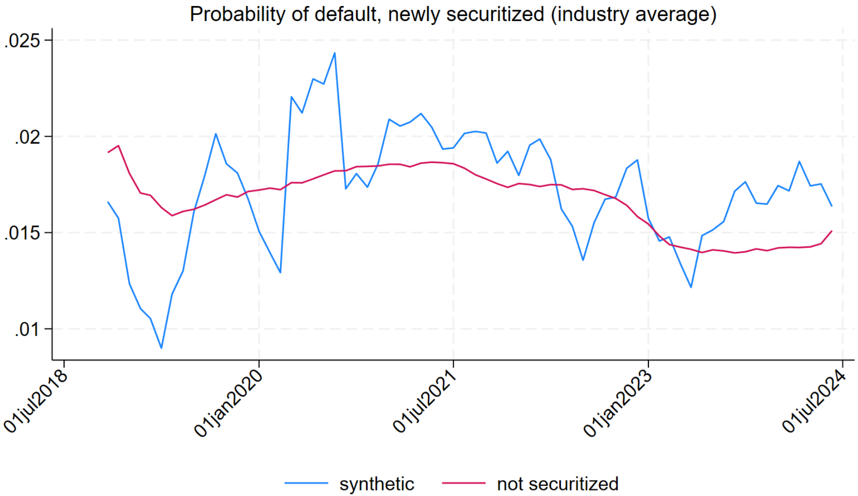
Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Back

Other

Riskiness of synthetically securitized loans



From April 2021, SRT banks received more capital relief