

## Research Question

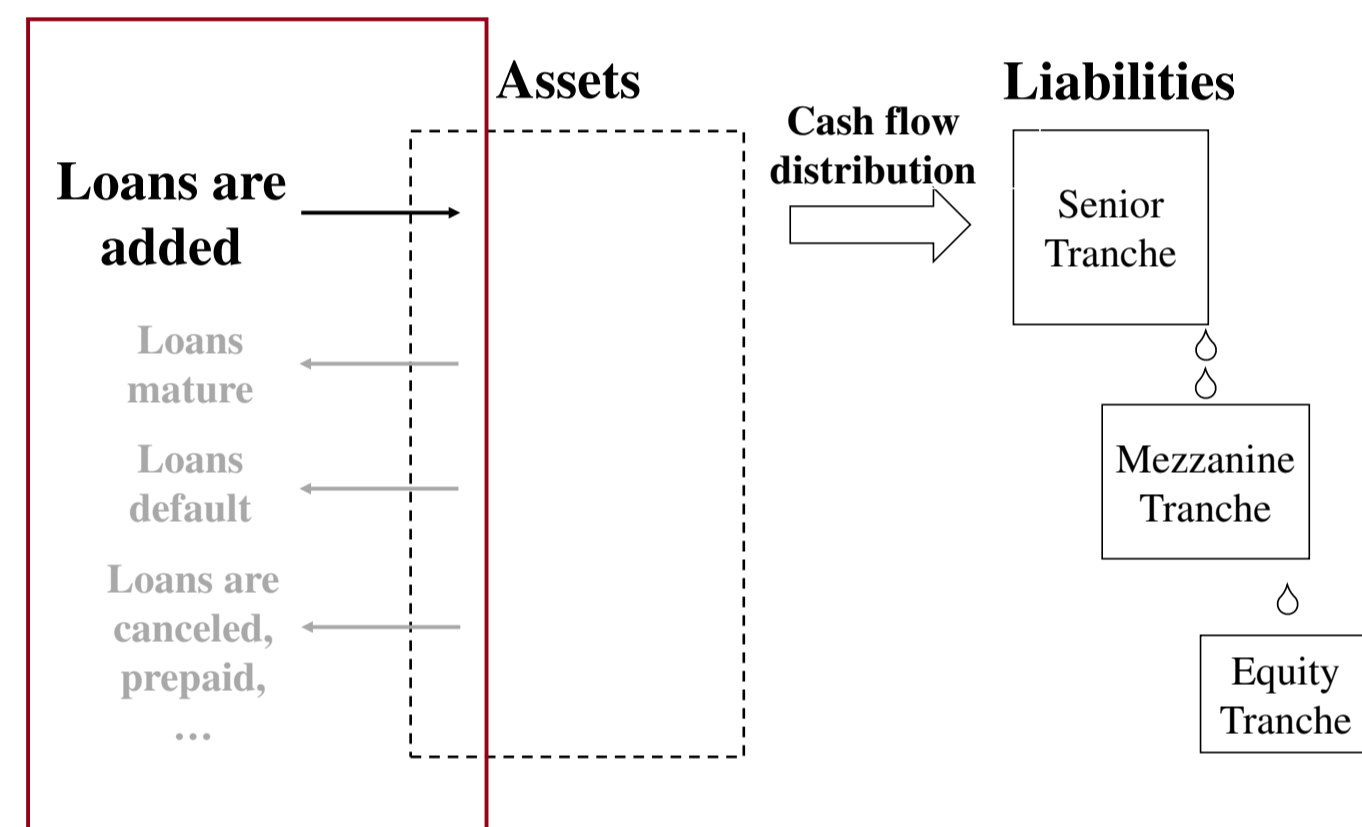
Does **portfolio replenishment** in ABS backed by SME loans **enable originators to exploit agency conflicts** in securitization?

## Take-Home Insights

Originators select loans to add them to the loan portfolio after transactions' closing...

- A** ...which **perform worse** after securitization.
  - B** ...which are of **lower quality** at the time of securitization.
  - C** Originators' **reputation** concerns and increasing **transparency** in the ABS market are **effective mitigating factors**.
- ⇒ **Portfolio replenishment is an unexplored channel enabling originators to exploit their information advantages in securitization.**

## 1. Motivation



### Portfolio Replenishment

- "...the amount of **repaid principal is typically reinvested in loans**, until the end of the replenishing period, when the bonds are repaid as the portfolio amortises." (EUROPEAN DATAWAREHOUSE, 2019)
- **Main reason:** ∅ **Loan term: 8 years vs. ∅ ABS term: 31 years**

## 2. Agency Conflicts in Securitization

### Originators' Incentive Structure

- Originators select loans for securitization (DOWNING ET AL., 2009; AN ET AL., 2011).
  - Originators have an information advantage over investors since their behavior is, at least partly, not observable.
  - Information asymmetries induce uncertainty for investors regarding loan quality (HOLMSTROM AND TIROLE, 1997; VANASCO, 2017).
  - Loan default risk is shifted to the ABS investors.
- ⇒ **Originators have low incentives to build up and maintain high-quality securitized loan portfolios** (GORTON AND PENNACCHI, 1995).

### Contractual Limitations

- Conditions for loans added after transaction's closing are for example:
  - "No receivable is a defaulted receivable."
  - "No receivable is a delinquent receivable."
  - "Purchase of the receivable does not result in a violation of any concentration limit."
- ⇒ **Prospectuses provide originators with considerable leeway in the loan selection process.**

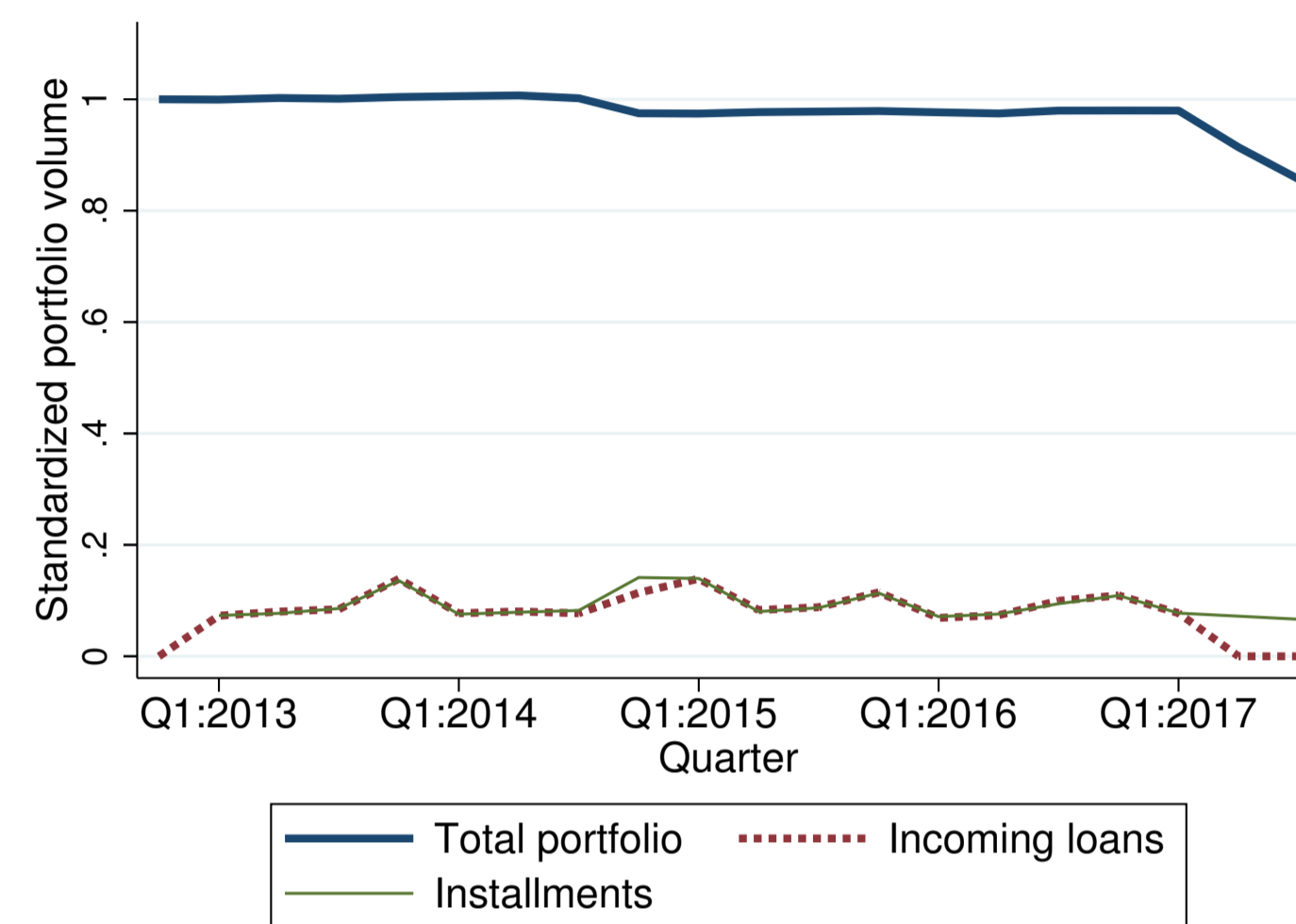
## 3. Identification Strategy

### Incoming Loan

A loan added to the securitized loan portfolio after the transaction's closing:

Indicator variable which is equal to one if the first reporting quarter of a loan is chronologically after the closing of the corresponding ABS transaction.

⇒ ∅ **46% Incoming Loan observations in our dataset**



Source: OWN CALCULATION, EUROPEAN DATAWAREHOUSE.

⇒ **Portfolio replenishment fundamentally changes portfolio composition after the transactions' closing.**

## 4. Data and Empirical Strategy

### Data Source: European Datawarehouse

**First and only** centralized securitization repository in Europe

1400+ deals

119 mm loans

> 2 bn loan records

### Sample Description

- **Asset class:** SME securitizations, especially affected by asymmetric information  
⇒ Underlying loans clearly differ from large, syndicated, rated, and only partially securitized corporate loans in CLOs (BENMELECH ET AL., 2012)
- **Observation period:** 2012 – 2017
- **Final sample:** 9,186,606 loan-quarter observations from 1,715,641 loans to 1,013,220 borrowers pooled in 102 portfolios

### Loan Performance and Loan Quality Measures

- **Loan performance measures:** Default, Default Amount, Delinquency, Delinquent Amount, Number of Days in Delinquency
- **Loan quality measures:** PD, LGD, PD x LGD

### Estimation Procedure

- **Estimation method:** Ordinary least squares regression models (Incidental parameter problem)
- **Model specifications:** Robust SE that are clustered with respect to the Quarter x ABS Pool
- **Controls:** Loan and borrower characteristics, as well as Quarter x ABS Pool, Loan Origination Year, Industry, Loan Type, and Borrower Type FE

## 5. Empirical Results

### A Incoming Loans Perform Worse than other Loans

	Default	Default Amount	Delinquency	Delinquent Amount	Number of Days in Del.
<b>Incoming Loan</b>	<b>0.0048***</b> (0.0014)	<b>0.0424***</b> (0.0136)	<b>0.0109***</b> (0.0028)	<b>0.0782***</b> (0.0230)	<b>0.0211**</b> (0.0091)
Controls & FE	Yes	Yes	Yes	Yes	Yes
N	9,186,606	9,186,606	9,186,606	9,186,606	9,186,606
Adj. R <sup>2</sup>	0.28	0.07	0.17	0.18	0.11

Robust SE that are clustered w.r.t. Quarter x ABS Pool are in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

### B Originators Add Low-Quality Loans as Incoming Loans

	Incoming Loan	Incoming Loan	Incoming Loan
<b>PD</b>	<b>1.163***</b> (0.1116)		
<b>PD x LGD</b>		<b>1.525***</b> (0.1363)	
<b>PD x Default</b>			<b>0.502***</b> (0.0694)
Controls & FE	Yes	Yes	Yes
N	9,183,327	9,183,327	9,183,327
Adj. R <sup>2</sup>	0.70	0.70	0.70

Robust SE that are clustered w.r.t. Quarter x ABS Pool are in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

### C Mitigation Factors: Reputation Concerns and Transparency

	Incoming Loan	Incoming Loan	Incoming Loan
<b>PD x LGD</b>	<b>1.664***</b> (0.1421)	<b>1.799***</b> (0.1307)	<b>1.670***</b> (0.1257)
<b>PD x LGD x Reputation</b>	<b>-0.597***</b> (0.1960)		
<b>PD x LGD x Transparency</b>		<b>-3.515***</b> (0.4154)	
<b>PD x LGD x Rep. x Transp.</b>			<b>-9.477***</b> (1.0003)
Controls & FE	Yes	Yes	Yes
N	9,183,327	9,183,327	9,183,327
Adj. R <sup>2</sup>	0.70	0.71	0.71

Robust SE that are clustered w.r.t. Quarter x ABS Pool are in parentheses. \* p < 0.1, \*\* p < 0.05, \*\*\* p < 0.01.

### Robustness Checks

- Subsample analysis ✓
- Pool perspective analysis (Propensity score matching) ✓
- Different estimation strategies ✓
- Further controls ✓

### Contact Details

