

The Value of Words: Evidence from Non-Financial Disclosure Regulation

Antonio Accetturo **Audinga Baltrunaite** Gianmarco Cariola
Annalisa Frigo Marco Gallo

Bank of Italy

Disclaimer: opinions do not necessarily reflect those of the Bank of Italy.

Bordeaux, 25 August 2025

European Economic Association Congress

Introduction

- ▶ Reducing information asymmetries plays a crucial role in corporate activity
 - ▶ Alleviate adverse selection between firms and investors (Leuz and Verrecchia, 2000)
 - ▶ Enhance market efficiency and boost liquidity (Goldstein and Yang, 2017)
 - ▶ Increase monitoring by stakeholders (Lambert et al., 2007)
- ▶ Financial statements are the main source of hard information, due to standardization and auditability
- ▶ Corporate accounts now also include non-financial information, that complement and provide additional information on accounting assumptions and projections.
 - ▶ Further increase in transparency, efficiency, and accountability ...
 - ▶ ...with higher costs: (i) direct administrative costs; (ii) indirect costs: providing information to competitors/customers/suppliers (Berger et al., 2024); demand of higher remuneration by managers (Hermalin and Weisbach, 2012)

In a nutshell

- ▶ **The aim of this paper is to analyze the role of qualitative information in balance sheets on firm performance**
- ▶ We exploit a 2016 reform that relaxed accounting standards in Italy:
 - ▶ auxiliary report filing with the balance sheet no longer mandatory for micro firms
 - ▶ applies for companies below certain size thresholds
 - ▶ causal identification based on a fuzzy RDD with multiple cut-offs (two-sided imperfect compliance)
- ▶ Analyze the effects of looser regulation on firm costs and access to external financing

Preview of the results

- ▶ No detectable effects on costs
- ▶ Temporary negative effects on ownership changes
- ▶ Medium-run negative effects on the access to the credit market
 - ▶ Driven by firms with no previous banking relationships
 - ▶ No effects on the amount of loans for firms already in the credit market
- ▶ Which firms were taking-up the policy more often?
 - ▶ Older, more productive firms
 - ▶ Sector less reliant on external finance (RZ definition)
 - ▶ Areas with higher market share of small banks
- ▶ Firms under-(over-) estimated the costs (benefits) of qualitative information

Outline

1. **Institutional setting and data**
2. Identification strategy
3. Results and discussion

Institutional setting

- ▶ D.Lgs. 139/2015 introduced the **micro-firm balance sheet (MFBS)**:
 - ▶ removed the obligation to redact *Note integrative*, a textual document that recounts various aspects on the firm management BS Regulation
- ▶ Micro firms - i.e., those below the relevant size thresholds - eligible to file MFBS (but it remains **optional**)
- ▶ Micro firms have to meet at least two of the following requirements, in the previous two consecutive years:
 1. # employees ≤ 5
 2. sales $\leq 350,000$ euro
 3. assets $\leq 175,000$ euro
- ▶ The reform applicable starting from f.y. 2016 → eligibility based on 2014-15 balance sheet data

Data sources

1. Firm accounts:

- ▶ balance-sheets (Cerved Group) & employment (INPS)
- ▶ universe of limited liability companies filing a balance sheet, 2012-2019 firm characteristics

2. Ownership structure:

- ▶ identity of the shareholders of Italian firms (Infocamere)

3. Credit information:

- ▶ information on individual borrowers with an outstanding exposure with a single intermediary over €30,000 (Italian Central Credit Registry, *Centrale dei Rischi*)
- ▶ assume that if a firm is not observed in *Centrale dei Rischi*, it has 0 debt

- ▶ Data cleaning estimation sample

Outcomes of interest

- ▶ **Costs:**

- ▶ total costs over sales
- ▶ focus on two components: cost of services & cost of labour

- ▶ **Changes in equity holdings:**

- ▶ any change in equity holders

- ▶ **Access to credit:**

- ▶ extensive margin: existence of at least one credit relationship
- ▶ sub-extensive margin: number of credit relationships
- ▶ intensive margin: total amount of credit over assets

Outline

1. Institutional setting and data
2. **Identification strategy**
3. Results and discussion

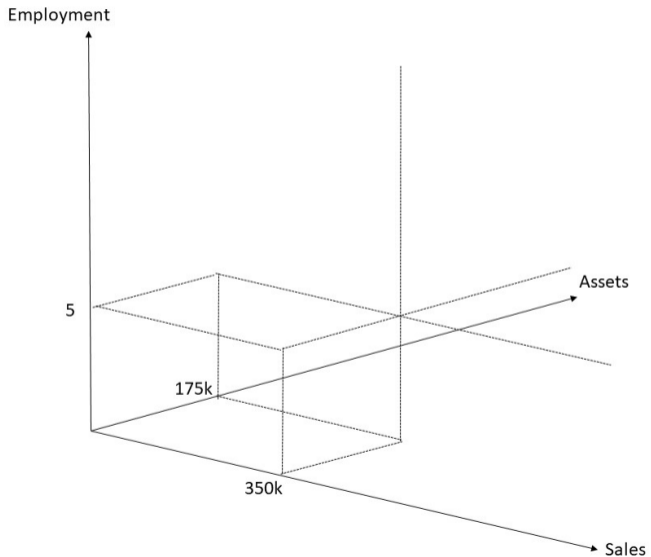
Identification

Micro firms have to meet at least two of the following requirements, in the previous two consecutive years:

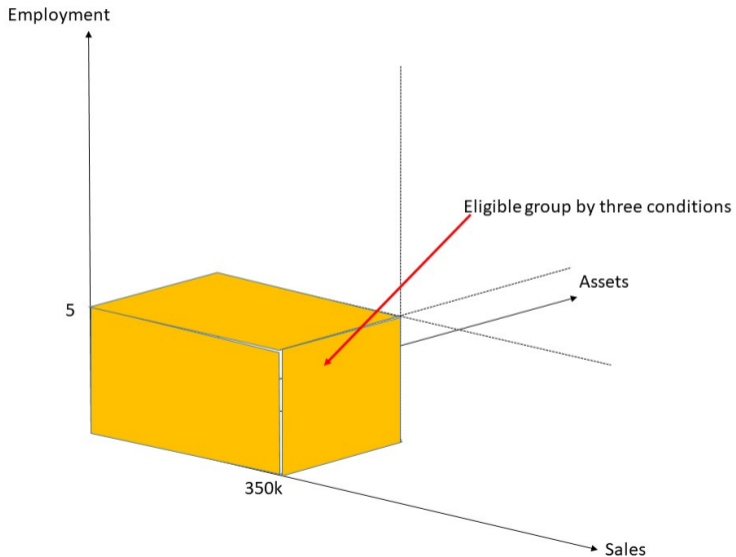
1. # employees ≤ 5
2. sales $\leq 350,000$ euro
3. assets $\leq 175,000$ euro

We have to identify a (number of) *marginal* group(s), for which passing one of the thresholds determines the eligibility status

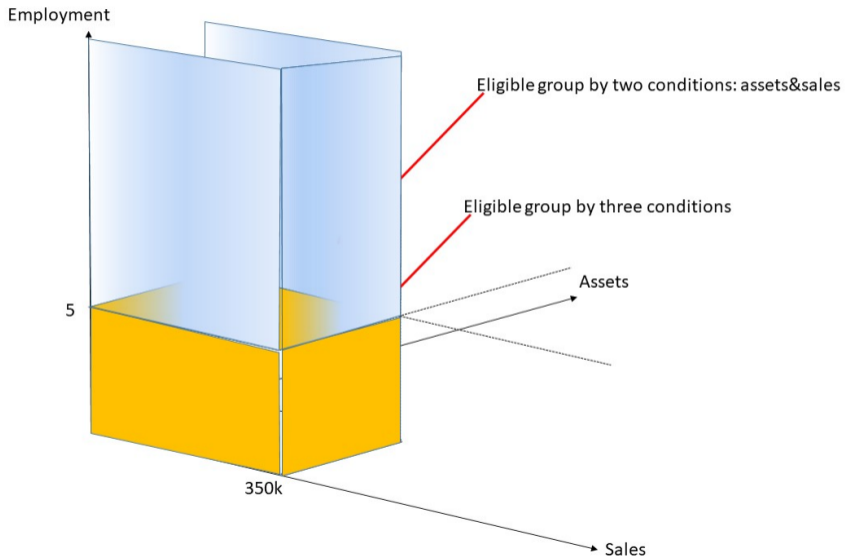
Identification



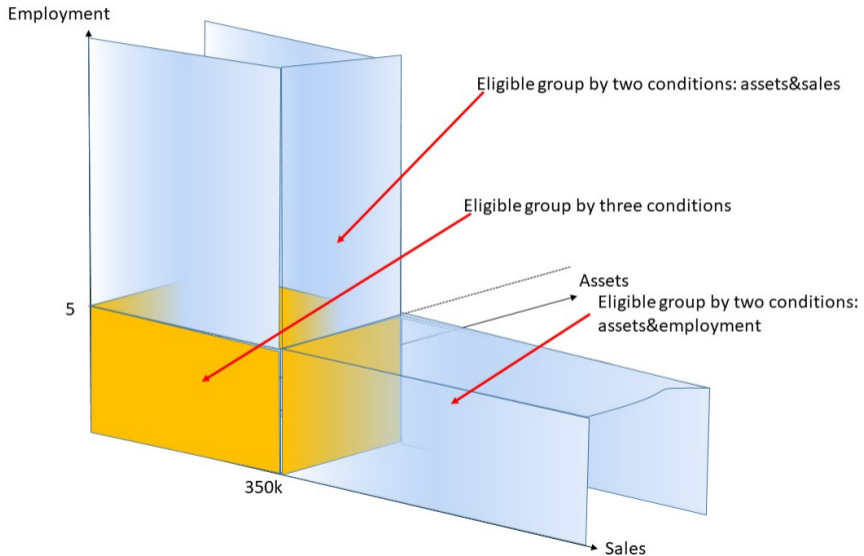
Identification



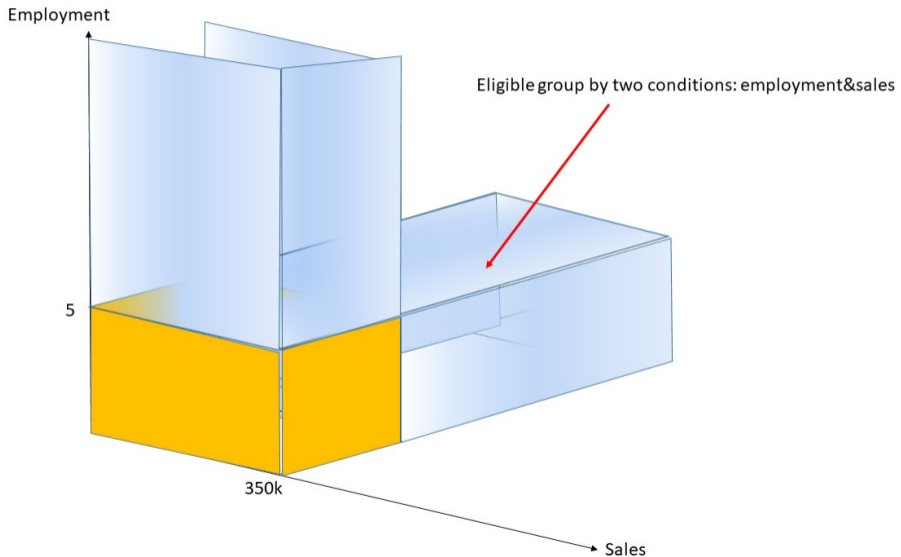
Identification



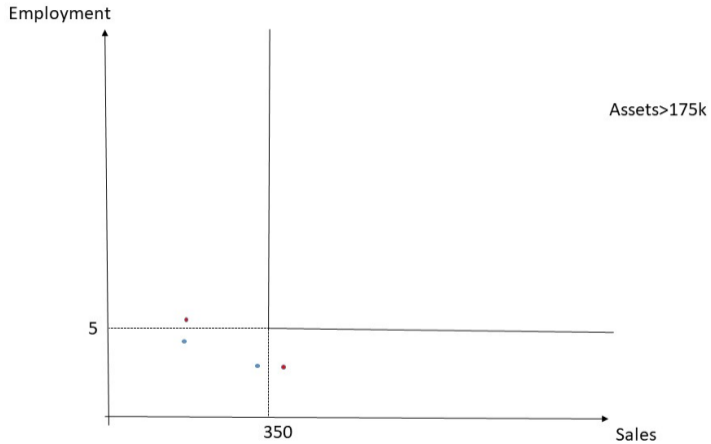
Identification



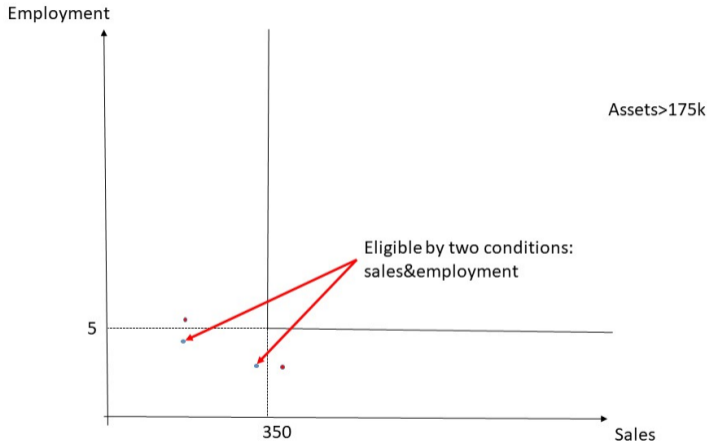
Identification



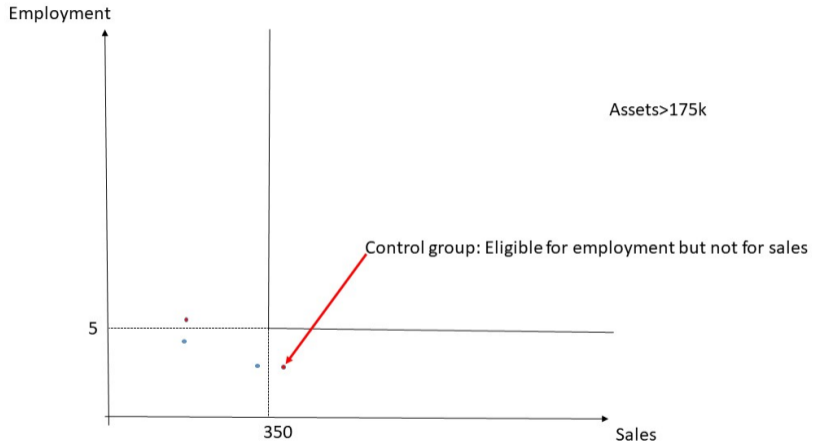
Identification



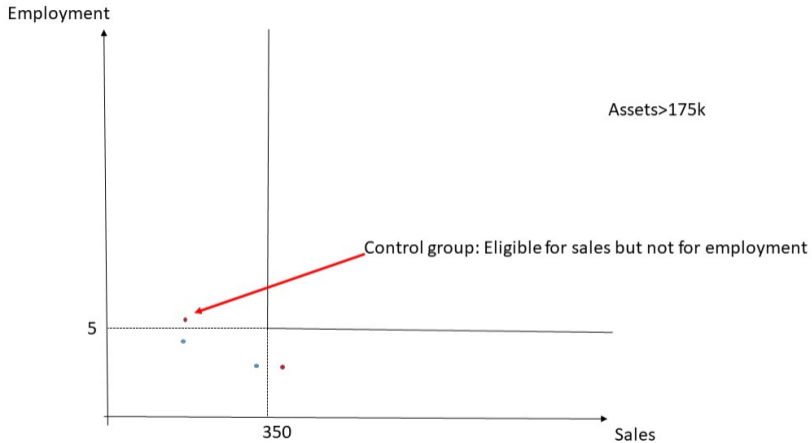
Identification



Identification



Identification



Identification

Let us consider **sales** as a forcing variable. Our estimation sample will be made of all firms with:

- ▶ **either** # employees ≤ 5 & assets $> 175,000$ euro
- ▶ **or** # employees > 5 & assets $\leq 175,000$ euro

This procedure is done iteratively for the other two forcing variables.

Identification samples

Identification: Fuzzy RD

Treatment - i.e. filing a MFBS - instrumented with eligibility:

$$Y_i = \theta + \rho MFBS_i + f(Sales_i) + X_i\gamma + \varepsilon_i$$
$$MFBS_i = \alpha + \beta Eligible_i + f(Sales_i) + X_i\delta + \varepsilon_i$$

where eligibility is based on the sales' cut-off, conditional on the employment under the cut-off and assets above the cut-off and vice-versa.

- ▶ Eligibility conditions measured in 2014 and 2015; treatment measured in 2016
- ▶ For eligible firms, treatment is voluntary and compliance is incomplete
- ▶ Use the optimal bandwidth, triangular kernel, and first order polynomial
- ▶ X_i is a vector of controls (sector and conditioning set fixed effects)

Identifying assumptions

Continuity framework (Hahn et al., 2001):

- ▶ No manipulation in the forcing variable → **Check continuity of the density function**
- ▶ Continuity of the potential outcomes → **Check continuity of outcomes before 2016**

Classic IV assumptions:

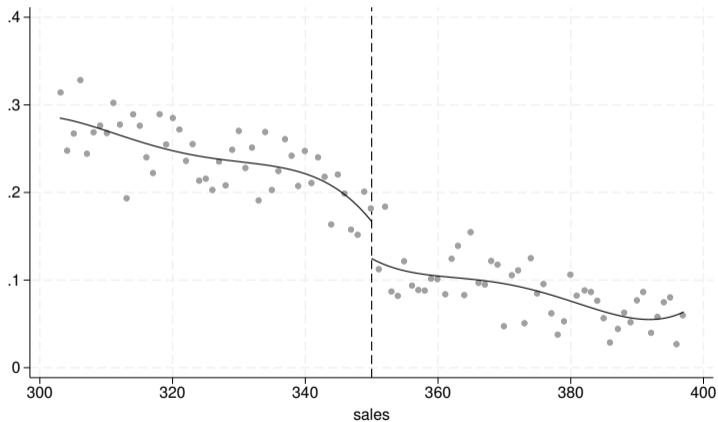
- ▶ First-stage → **Check in the data**
- ▶ Exclusion restriction → **No other policies use the same thresholds**
- ▶ Monotonicity

Results outline

1. First-stage in 2016
2. Reduced form: graphical evidence year-by-year
3. Characterization of the compliers

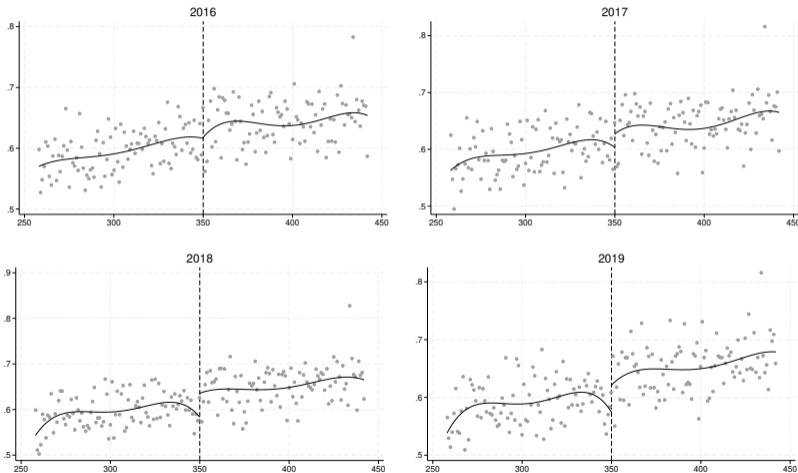
First-stage

Most numerous eligibility threshold: sales in 2016



Reduced form: access to credit 2016-19

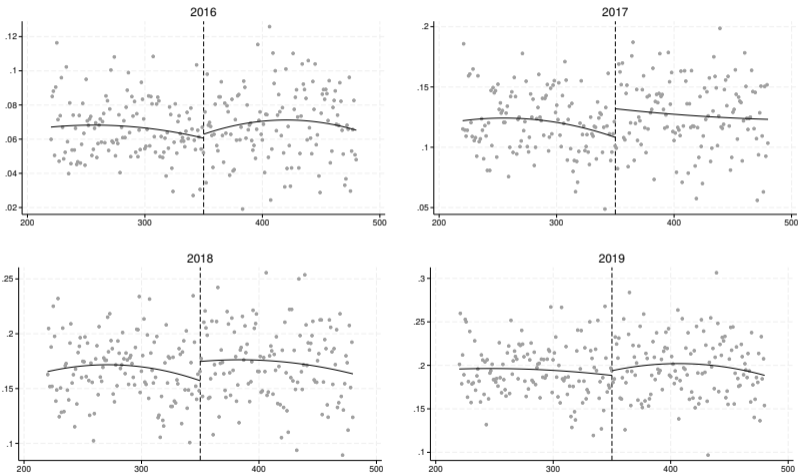
Most numerous eligibility threshold: sales **falsification**



⇒ Probability of having at least one credit relationship with a bank diminishes

Reduced form: change in shareholders 2016-19

Most numerous eligibility threshold: sales **falsification**



⇒ Temporary slow-down of ownership vitality

Quantifying the impact

Using fuzzy RD estimates, a standard deviation increase in the probability to be treated at the cutoff (0.39 pp) reduces:

- ▶ the probability to observe a change in shareholders composition by 10 pp after two years (i.e. 1/4 s.d. of the outcome variable)
- ▶ the probability for a firm to be on the credit market by 17 pp (i.e. 1/3 s.d. of the outcome variable)
 - ▶ the effect becomes 3/4 of a s.d. for firms without a credit history

Take-aways

Main findings:

- ▶ Lower disclosure does not impact firms' costs and (as a consequence) profitability ...
- ▶ ...but it reduces firms' ability to secure bank credit and the entry of new shareholders
- ▶ the intensive lending margin for existing bank relationships unaffected

Characterization of the compliers: who are they?

- ▶ Angrist and Pischke (2009): we analyze whether compliance rates are higher in certain groups (observable characteristics)
- ▶ We re-estimate first stage in 2SLS regressions and interact the eligibility dummy with observable characteristics
- ▶ Different dimensions:
 - ▶ Characteristics of the market
 - ▶ Characteristics of the firm (age, productivity, governance)
 - ▶ Characteristics of external financial conditions

Characterization of the compliers

Characteristics:	Eligibility dummy	Interaction term
1.a) Markup manuf. only, 2 digit NACE	0.1024 (0.1989)	-0.0252 (0.1846)
1.b) Average age of shareholders	0.0036 (0.0318)	0.0013** (0.0006)
1.c) Age of the firm	0.0517*** (0.0142)	0.0013** (0.0006)
1.d) Number of shareholders	0.1144** (0.0193)	-0.0186** (0.0075)
1.e) log VA per employee	0.0017 (0.0380)	0.0193** (0.0095)
2.a) External finance dependence 2 digit NACE	0.0558*** (0.0123)	-0.0372*** (0.0114)
2.b) Liquidity index	0.0702*** (0.0115)	-0.0000 (0.0000)
2.c) Prevalence of local banks	0.0633*** (0.0120)	0.0224* (0.0132)

Note: Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Conclusions

- ▶ We study the effects of lower non-financial disclosure regulation on the trade-off between internal costs and access to external financing for a large sample of small limited liability companies in Italy.
- ▶ Results reveal no tangible effects on firms' operating costs. Withholding non-financial information reduces the firm's capacity to access to bank credit, especially for new entrants in the credit market. Non-financial disclosure documents can accelerate the entry in the equity market.
- ▶ Disclosing qualitative information helps firms to secure external financing, relaxing their credit constraints and potentially boosting their growth prospects.
- ▶ Our findings inform policy-making by illustrating potential benefits of regulation or by indirectly showing that non-financial reporting goes beyond the "cheap talk" and carries value in economic exchanges.

Thank you

audinga.baltrunaite@bancaditalia.it

Back-up slides

Balance sheet regulation

	Micro (MFBS) (optional)	Abbreviato (optional)	Ordinario
Items	Income statement* Balance sheet*	Income statement* Balance sheet* Nota integrativa*	Income statement Balance sheet Nota integrativa Financial statement Management report
Firm size	Employees ≤ 5 Sales $\leq 350\text{k€}$ Assets $\leq 175\text{k€}$	$5 < \text{Employees} \leq 50$ $350\text{k€} < \text{Sales} \leq 8800\text{k€}$ $175\text{k€} < \text{Assets} \leq 4400\text{k€}$	Employees > 50 Sales $> 8800\text{k€}$ Assets $> 4400\text{k€}$

* with some streamlining compared to the "ordinario" one. [Back](#)

Eligibility rule

$$\text{Eligible}_i = \begin{cases} 0 & \text{if } t \geq 2016 \text{ \& } \\ & \{ \mathbb{1}[\max(\text{empl}_{i,2014}; \text{empl}_{i,2015}) \leq 5] \\ & + \mathbb{1}[\max(\text{asset}_{i,2014}; \text{asset}_{i,2015}) \leq 175] \\ & + \mathbb{1}[\max(\text{sales}_{i,2014}; \text{sales}_{i,2015}) \leq 350] \} = 1 \\ 1 & \text{if } t \geq 2016 \text{ \& } \\ & \{ \mathbb{1}[\max(\text{empl}_{i,2014}; \text{empl}_{i,2015}) \leq 5] \\ & + \mathbb{1}[\max(\text{asset}_{i,2014}; \text{asset}_{i,2015}) \leq 175] \\ & + \mathbb{1}[\max(\text{sales}_{i,2014}; \text{sales}_{i,2015}) \leq 350] \} = 2 \\ . & \text{otherwise} \end{cases}$$

Descriptives: firm characteristics [back](#)

	(1)		(2)		(3)	
	Non-micro		Micro		Difference	
	mean	sd	mean	sd	b	t
Firm age	15.55	10.90	14.98	10.78	0.56***	(10.43)
Location						
Center	0.22	0.42	0.25	0.44	-0.03***	(-13.74)
South and Islands	0.25	0.43	0.32	0.47	-0.07***	(-32.80)
North-East	0.22	0.42	0.19	0.39	0.04***	(18.65)
North-West	0.30	0.46	0.24	0.43	0.07***	(29.80)
Observations	86740		75136		161876	

Notes: Firms defined *micro* along all three dimensions are not included; Firms that exceed at least one of the EU-mandated thresholds (assets: €350 000; sales: €700 000; employees: 10) are also dropped. Significance: ***=.01, **=.05, *=.1. Errors are robust.

Descriptives: firm characteristics (2) [back](#)

	(1)		(2)		(3)	
	Non-micro		Micro		b	Difference
	mean	sd	mean	sd		
Sector						
Construction (F)	0.14	0.35	0.19	0.39	-0.05***	(-24.55)
Manufacturing (C)	0.16	0.37	0.12	0.32	0.05***	(27.80)
Services (E, G-S)	0.67	0.47	0.65	0.48	0.02***	(8.52)
Other activities (A, B, D)	0.02	0.15	0.04	0.21	-0.02***	(-24.82)
Observations	86740		75136		161876	

Notes: Firms defined *micro* along all three dimensions are not included; Firms that exceed at least one of the EU-mandated thresholds (assets: €350 000; sales: €700 000; employees: 10) are also dropped. Significance: ***=.01, **=.05, *=.1. Errors are robust.

Estimation sample

Data cleaning:

- ▶ drop if negative value added
- ▶ for analysis of credit outcomes, drop if the firm has a bad loan

Sample restrictions:

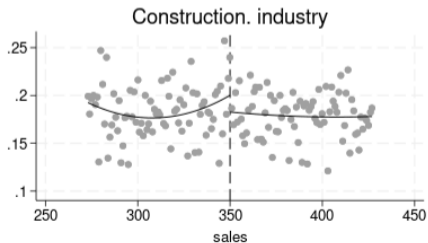
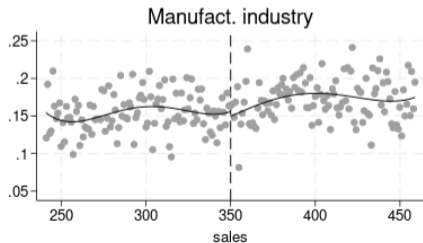
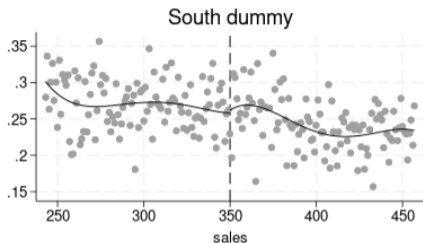
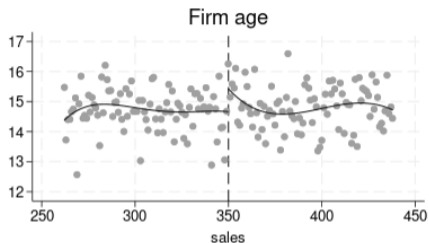
- ▶ small companies below the standard balance-sheet thresholds (assets: €4,400k; sales: €8,800k; employees: 50)
- ▶ stand-alone companies: manipulation more likely and measurement of outcomes more cumbersome under the holding structure [back](#)

Descriptives: outcomes in 2015

	N	min	max	mean	sd
total cost /sales	160,079	0.11	2.00	0.88	0.26
cost services /sales	160,079	0.00	2869.00	0.45	9.13
cost labour /sales	160,079	0.00	209.00	0.21	1.15
any change in shareholders	149,900	0	1	0.07	0.26
entry of new shareholders, excluding family members	149,900	0	1	0.04	0.18
at least one banking relationship	161,876	0	1	0.63	0.48
more than one banking relationship (not in CR == .)	101,974	0	1	0.46	0.50
number of banking relationships (not in CR == 0)	101,974	1	8	1.79	1.13
granted credit /assets	98,553	0.00	39.75	0.07	0.21
collateral > 0	101,974	0.00	1.00	0.31	0.46

Notes: variables are winsorized at top/bottom 1%. Sample is restricted to firms in the relevant comparison group. Namely, we drop firms that enter the micro-firm definition according to all three dimensions (never used in our regressions) and those that are required to file the ordinary balance sheet (exceed at least one of the following thresholds: €4,400k in assets; €8,800k in sales; 50 in employees).

Firm characteristics: zooming in on the threshold [back](#)



Descriptives: forcing vars in 2016 [back](#)

	min	max	mean	sd
Assets (K€)	3	4400	726.85	748.24
Assets below cutoff	0	1	0.07	0.26
Sales (K€)	0	8795	631.31	839.44
Sales below cutoff	0	1	0.47	0.50
Employees	0	50	2.58	2.79
Employees below cutoff	0	1	0.92	0.27
Eligible	0	1	0.46	0.50
Treated	0	1	0.16	0.37

Notes: All data refer to 2016. Firms defined micro along all three dimensions are not included; Firms that exceed at least one of the simplified balance-sheet thresholds (assets: €4,400k; sales: €8,800k; employees: 50) are also dropped.

Identification

Observations:		Non Eligible	Eligible	<i>of which:</i> Treated
	Conditioning vars:	Forcing var:		
150,945	Assets: ✓ Empl.: ✗	Sales: ✗	Sales: ✓	
	Assets: ✗ Empl.: ✓	2,210	5,913	1,617
77,046	Assets: ✓ Sales: ✗	78,963	63,859	23,245
	Assets: ✗ Sales: ✓	Empl.: ✗ Empl.: ✓		
95,853	Empl.: ✓ Sales: ✗	2,210	4,692	1,115
	Empl.: ✗ Sales: ✓	6,285	63,859	23,245
		Assets: ✗ Assets: ✓		
		78,963	4,692	1,115
		6,285	5,913	1,617

Notes: Firms defined micro along all three dimensions or in any of the three dimensions are not included. ✓ (✗) indicates that the MFBS eligibility condition based on the specific variable is (not) satisfied. [Back](#)

The effect of MFBS on firm outcomes (sharp)

Most numerous eligibility threshold: sales

Specification	Linear				Quadratic			
	2016	2017	2018	2019	2016	2017	2018	2019
Outcome measured in								
Panel A: Total costs over sales								
Coefficient	-0.0014 (0.0045)	-0.0040 (0.0048)	0.0003 (0.0049)	-0.0051 (0.0051)	-0.0009 (0.0059)	-0.0025 (0.0063)	0.0006 (0.0065)	-0.0041 (0.0067)
Obs. elig	20465	18690	17632	16662	25384	23183	21835	20607
Obs. not elig	16258	15093	14301	13528	19329	17945	16998	16108
Panel B: Indicator change in shareholders								
Coefficient	-0.0038 (0.0051)	-0.0209*** (0.0070)	-0.0172** (0.0083)	-0.0088 (0.0090)	-0.0056 (0.0061)	-0.0248*** (0.0084)	-0.0211** (0.0099)	-0.0113 (0.0107)
Obs. elig	25253	23042	21761	20487	38413	34863	32697	30646
Obs. no elig	19481	18076	17159	16288	27117	25139	23881	22744

Notes: Conventional RD. T-statistics in parentheses. *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

The effect of MFBS on firm outcomes (2SLS)

Most numerous eligibility threshold: sales

Specification	Linear				Quadratic			
	2016	2017	2018	2019	2016	2017	2018	2019
Outcome measured in								
Panel A: Total costs over sales								
Coefficient	-0.0139 (0.0632)	-0.0468 (0.0690)	0.0119 (0.0704)	-0.0625 (0.0697)	-0.0186 (0.0939)	-0.0555 (0.1007)	-0.0005 (0.1076)	-0.0732 (0.1023)
Obs. elig	16289	14877	14055	13290	23172	21147	19955	18847
Obs. not elig	13470	12507	11850	11162	17948	16675	15783	14947
Panel B: Indicator change in shareholders								
Coefficient	-0.0896 (0.0807)	-0.3167*** (0.1169)	-0.2700** (0.1341)	-0.1293 (0.1376)	-0.0879 (0.0978)	-0.3694** (0.1473)	-0.3238* (0.1683)	-0.1568 (0.1705)
Obs. elig	15784	14405	13650	12896	29340	26718	25186	23678
Obs. no elig	13138	12200	11594	10937	21952	20350	19311	18382
First stage								
β	-0.0707*** (0.0114)	-0.0724*** (0.0118)	-0.0695*** (0.0121)	-0.0744*** (0.0123)	-0.0685*** (0.0106)	-0.0668*** (0.0110)	-0.0659*** (0.0113)	-0.0704*** (0.0115)

Notes: Conventional RD, sales threshold. *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Specification	Linear				Quadratic			
	2016	2017	2018	2019	2016	2017	2018	2019
Panel C: Indicator banking linkage								
Coefficient	-0.1688 (0.1805)	-0.2883 (0.1921)	-0.4482** (0.2028)	-0.4536** (0.1983)	-0.2048 (0.1727)	-0.2919 (0.1928)	-0.4439** (0.1981)	-0.4826** (0.1979)
Obs. elig	13063	11902	11238	10667	33956	30905	29076	27298
Obs. not elig	11066	10264	9737	9159	24208	22427	21249	20200
Panel D: Number of banks								
Coefficient	-0.2006 (0.2668)	-0.1033 (0.3079)	-0.0620 (0.3015)	-0.0661 (0.3183)	-0.2312 (0.3184)	-0.1558 (0.3714)	-0.1438 (0.3559)	-0.0934 (0.3760)
Obs. elig	12347	11306	10658	9941	22505	20453	19084	17630
Obs. not elig	10610	9875	9444	8957	18086	16889	16111	15388
Panel E: Bank loans over assets								
Coefficient	0.1038 (0.1103)	0.1031 (0.1195)	0.1023 (0.1227)	-0.0507 (0.1118)	0.0602 (0.1121)	0.0495 (0.1245)	0.0347 (0.1223)	-0.1148 (0.1169)
Obs. elig	9468	8674	8192	7685	21316	19439	18142	16806
Obs. not elig	8401	7802	7516	7106	17447	16304	15590	14889

Notes: Conventional RD, sales threshold. *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

The effect of MFBS on firm outcomes (sharp)

Most numerous eligibility threshold: sales

Specification	Linear				Quadratic			
	2016	2017	2018	2019	2016	2017	2018	2019
Panel C: Indicator banking linkage								
Coefficient	-0.0112 (0.0113)	-0.0155 (0.0118)	-0.0265** (0.0121)	-0.0311** (0.0125)	-0.0144 (0.0116)	-0.0172 (0.0122)	-0.0283** (0.0125)	-0.0329** (0.0129)
Obs. elig	18710	17104	16145	15255	39467	35855	33593	31507
Obs. not elig	15124	14050	13310	12571	27210	25219	23904	22732
Panel D: Number of banks								
Coefficient	-0.0191 (0.0252)	-0.0093 (0.0269)	-0.0055 (0.0278)	-0.0062 (0.0304)	-0.0178 (0.0267)	-0.0102 (0.0285)	-0.0103 (0.0295)	-0.0056 (0.0322)
Obs. elig	12347	11308	10662	9949	23340	21189	19754	18245
Obs. not elig	10610	9876	9447	8959	18708	17462	16677	15926
Panel E: Bank loans over assets								
Coefficient	0.0044 (0.0080)	0.0044 (0.0083)	0.0034 (0.0085)	-0.0080 (0.0084)	0.0047 (0.0095)	0.0043 (0.0098)	0.0030 (0.0101)	-0.0097 (0.0100)
Obs. elig	14650	13411	12619	11806	22107	20147	18763	17378
Obs. not elig	12365	11531	11066	10541	18065	16873	16156	15432

Notes: Conventional RD. T-statistics in parentheses. *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.

Falsification (reduced form in 2014-15)

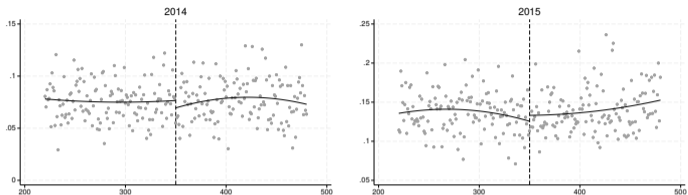


Figure: $p(\text{change in shareholders})$

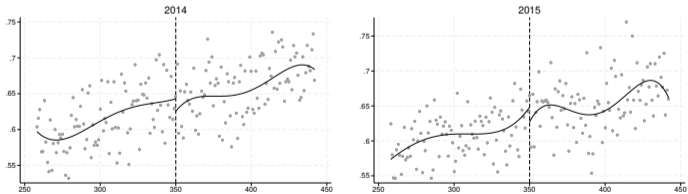


Figure: $p(\text{at least one bank relationship})$

Table: Entry and exit in the credit market

Outcome measured in:	2016	2017	2018	2019
Panel A: Entry (no banking relations before 2016)				
Coefficient	-0.1355 (0.2127)	-0.4039 (0.2664)	-0.5725* (0.3155)	-0.6387* (0.3588)
Obs. elig	4418	3991	3726	3505
Obs. not elig	3380	3118	2936	2707
Panel B: Exit (At least one banking relation before 2016)				
Coefficient	0.1655 (0.1491)	0.2451 (0.1712)	-0.0298 (0.1760)	0.0173 (0.1674)
Obs. elig	7892	7175	6779	6434
Obs. no elig	7113	6577	6231	5898

Notes: Linear polynomial specification. Regressions control for sector fixed effects and a dummy variable for the type of conditioning variable (i.e. assets or employment). *** p-value < 0.01, ** p-value < 0.05, * p-value < 0.1.