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UNRESTRICTED

CREDIT CONSTRAINTS, FIRM INVESTMENT AND EMPLOYMENT: EVIDENCE FROM SURVEY DATA.

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13TH EDITION OF THE SEMINAR ON FINANCIAL STABILITY ISSUES

BUCAREST
13 September 2019

MACRO-FINANCIAL ANALYSIS AND MONETARY POLICY DEPARTMENT.
BANCO DE ESPAÑA

Motivation

Modigliani-Miller theorem (1958):

-under certain conditions, a firm's capital structure is irrelevant to its value.

-in perfect capital markets, a firm's **financing decisions** are **independent** from its **investment decisions**.

-internal and external funds are **perfect substitutes**.

In practice, transaction costs, tax advantages, costs of financial distress, asymmetric information… lead to an imperfect substitutability between internal and external funds: **external finance premium**.

Hence, **financial constraints** may have important effects on **real variables** such as investment, working capital and firm growth.

Sample

Rounds 11 to 16 of Survey on the Access to Finance of Enterprises (**SAFE): 2014-2017.**

19,375 non-missing **observations.**

10,774 firms (most SMEs).

12 European **countries**.

Credit constraints

constrained=1 if

-rejected application

-a firm only received a limited part of what it applied for (i.e., quantity rationing)

-borrowing costs too high (i.e., price rationing)

-discouraged borrower.

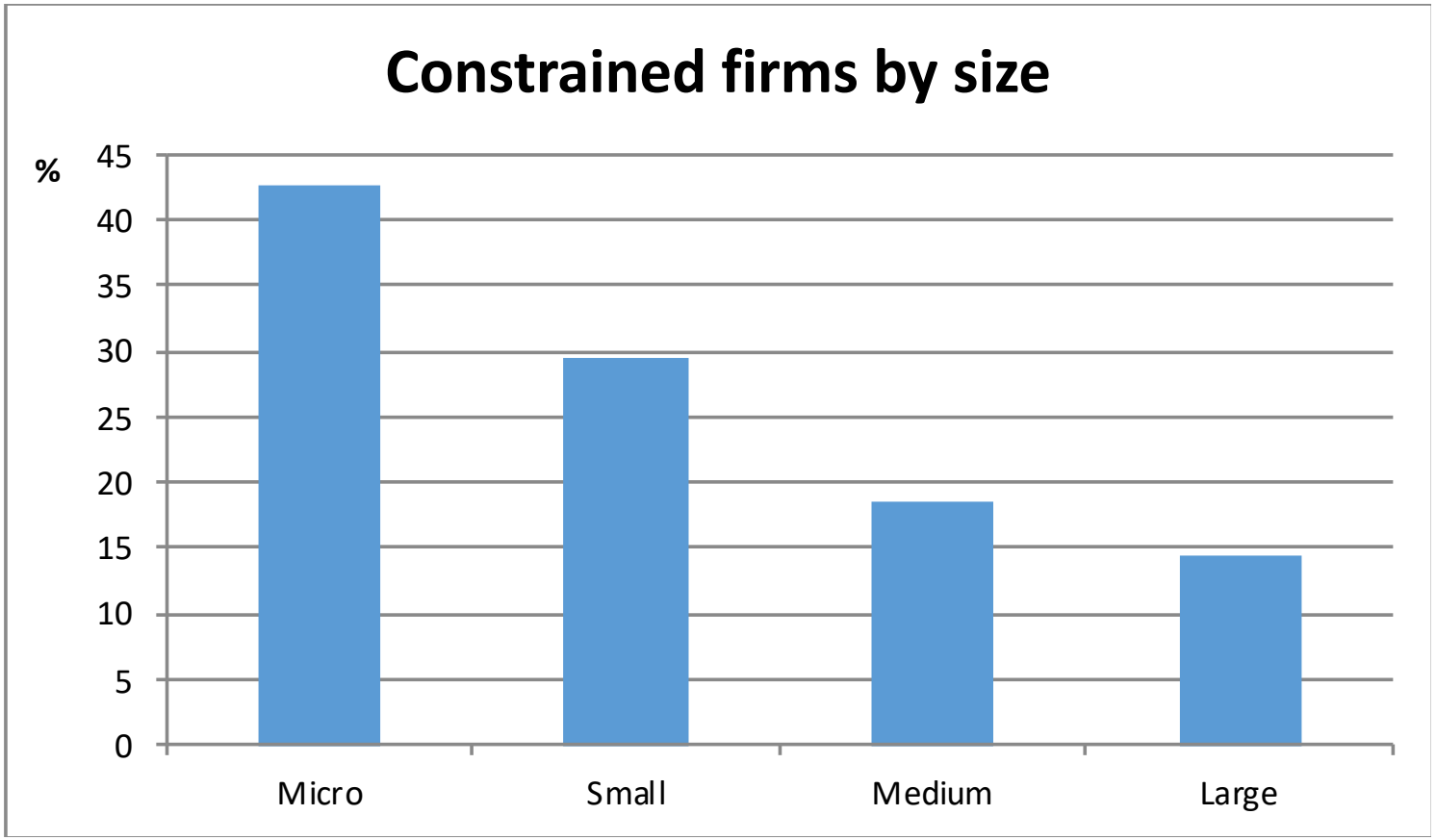
Constraints in:

-**bank** financing (bank loans & credit lines)

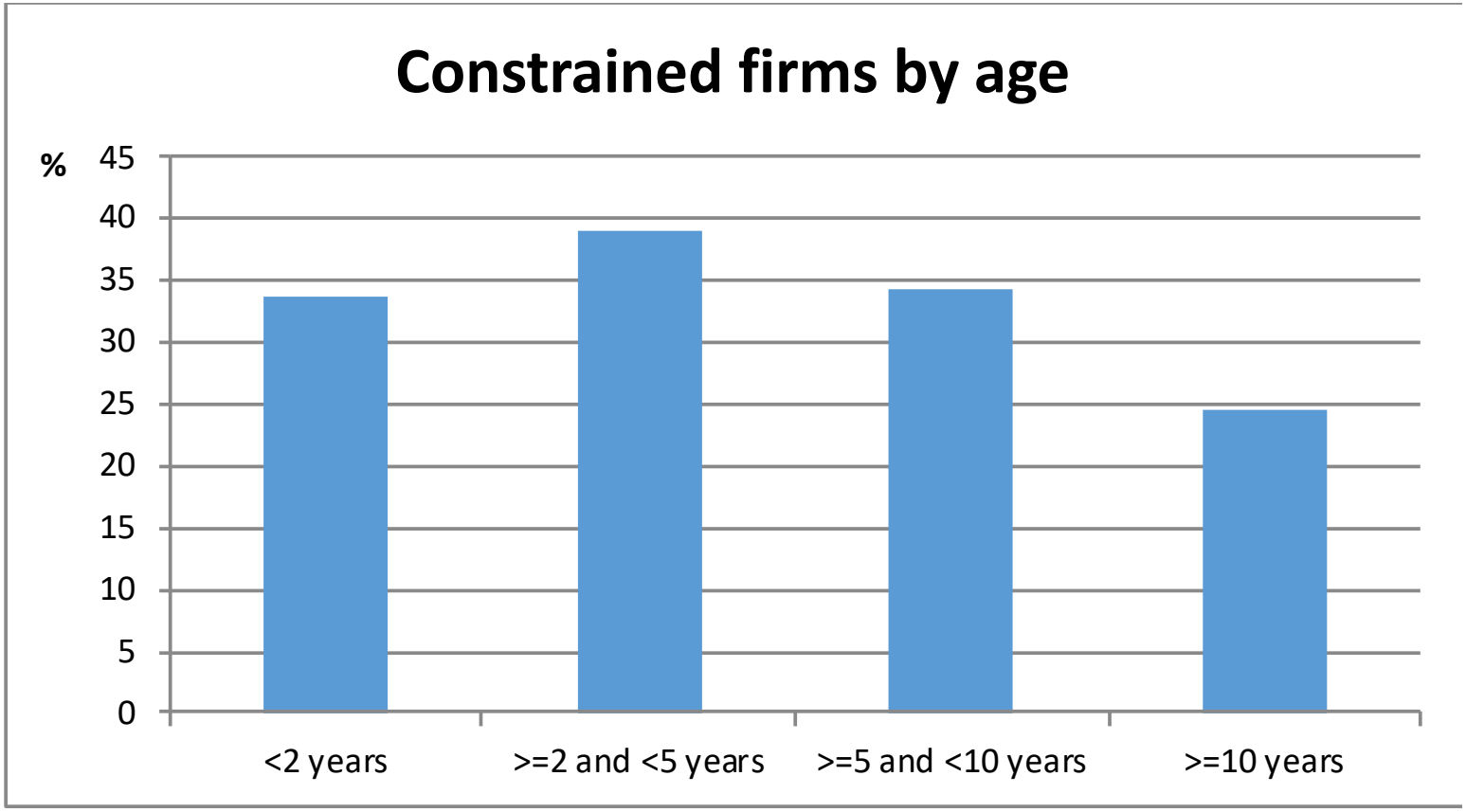
-**trade credit**

-**other financing** (leasing, factoring, debt and equity securities)

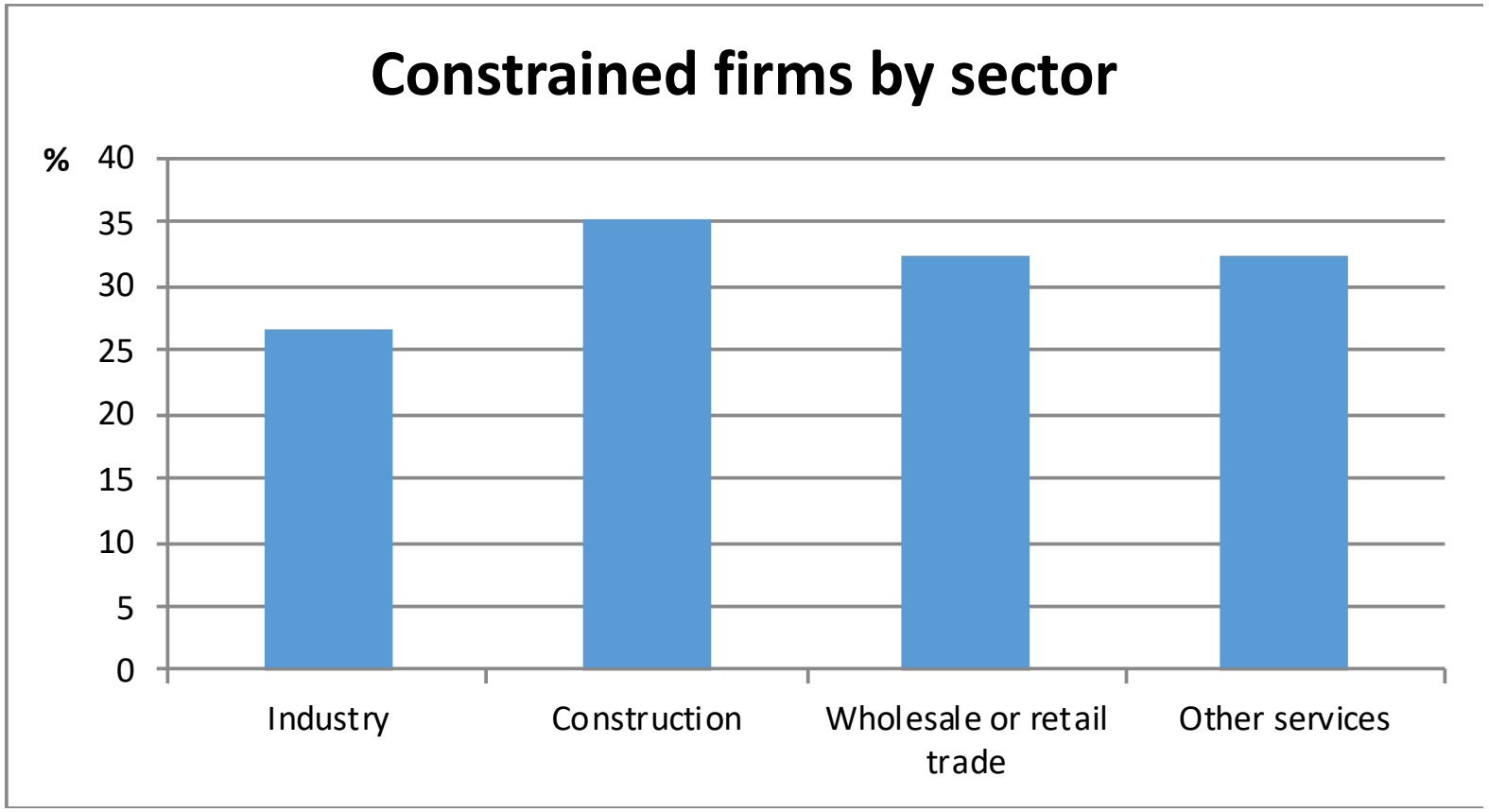
Credit constraints



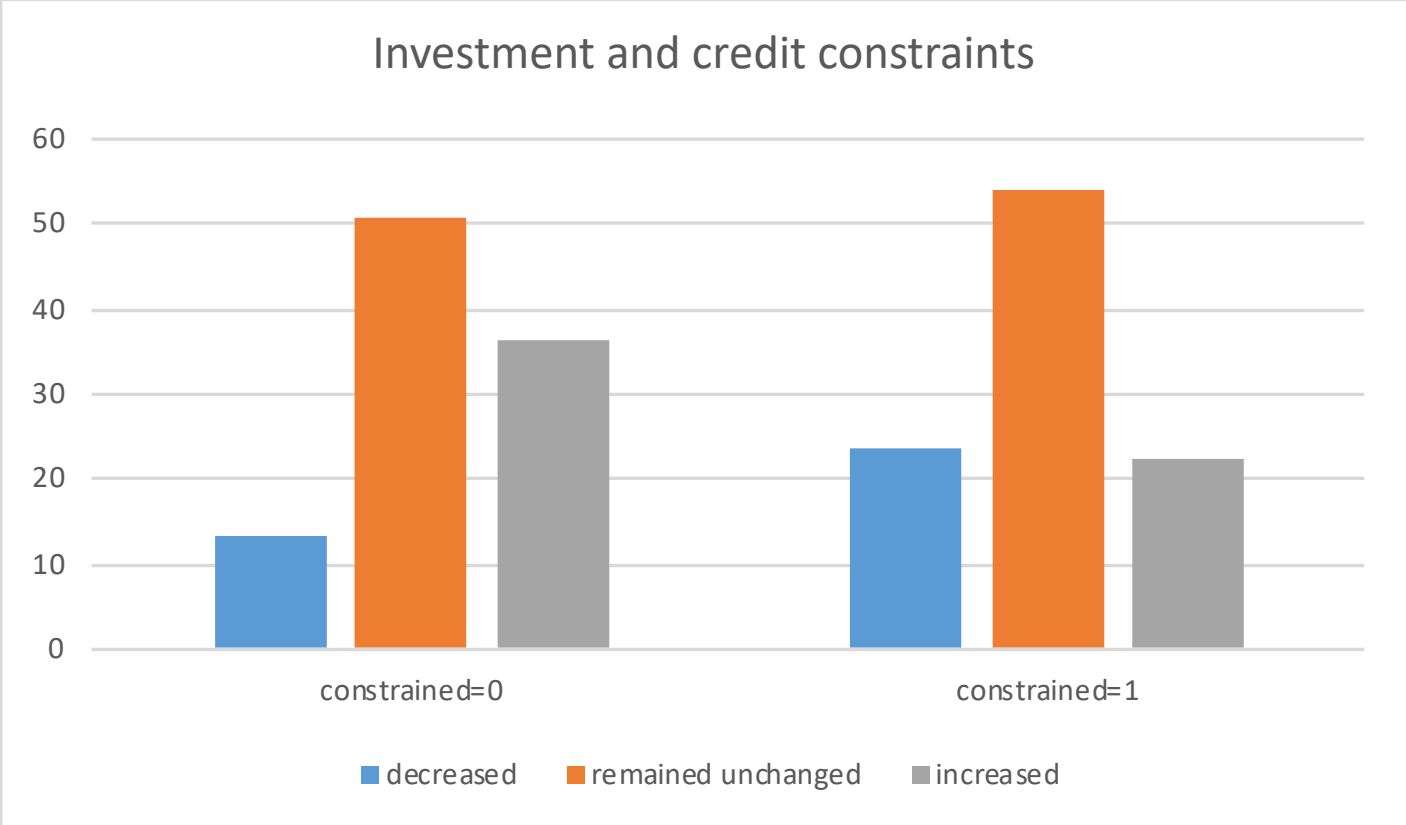
Credit constraints



Credit constraints

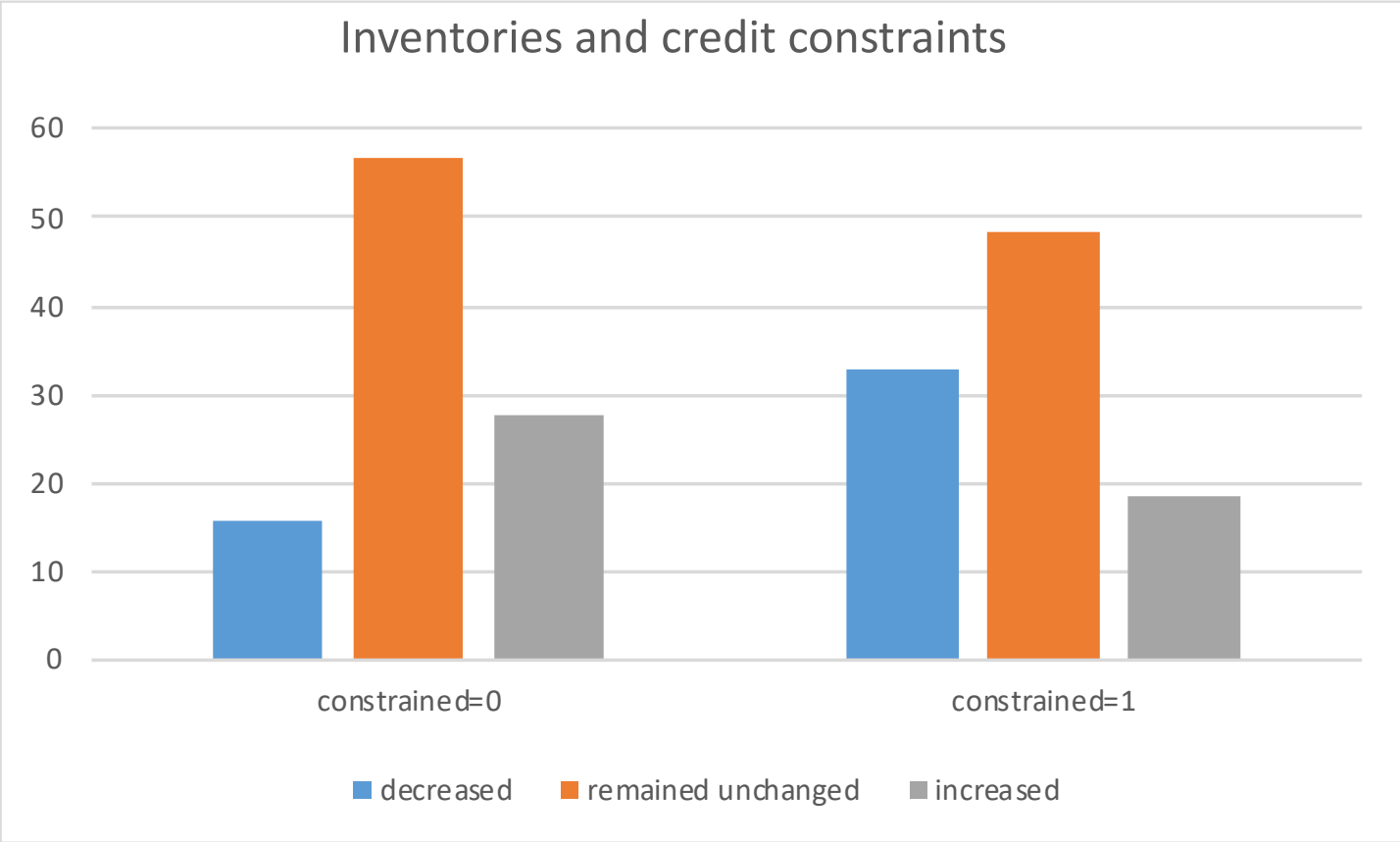


Credit constraints & investment



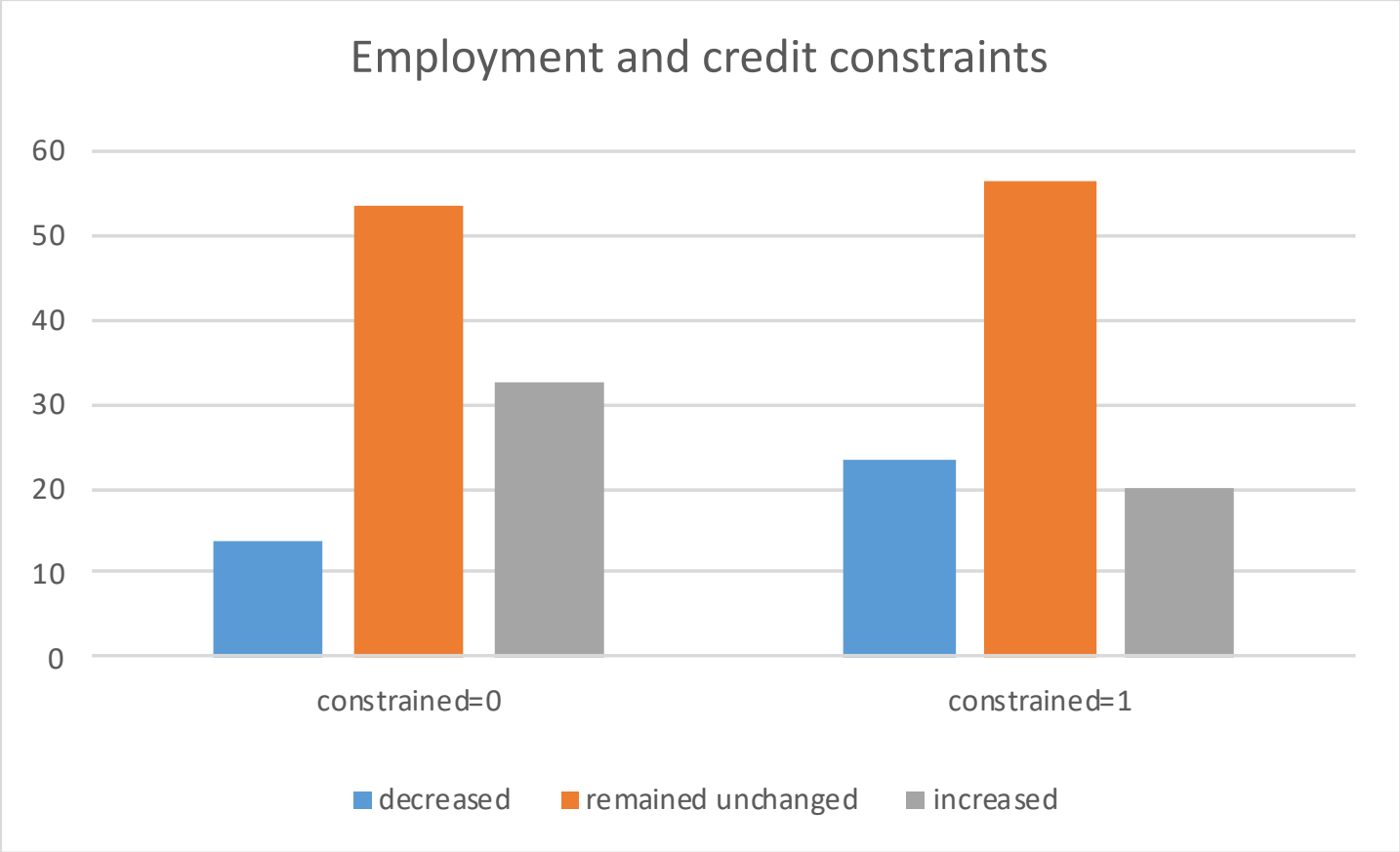
% firms that report a decrease in investment is substantially larger in the constrained firms (*constrained*=1), while % firms that report an increase in investment is substantially larger in the unconstrained firms (*constrained*=0).

Credit constraints & inventories



% firms that report a decrease in inventories is substantially larger in the constrained firms (*constrained*=1), while % firms that report an increase in inventories is substantially larger in the unconstrained firms (*constrained*=0).

Credit constraints & employment



% firms that report a decrease in employment is substantially larger in the constrained firms (*constrained*=1), while % firms that report an increase in employment is substantially larger in the unconstrained firms (*constrained*=0).

Identification strategy

- $$Y_{ict} = \rho \cdot constrained_{it} + X_i'\beta + X_c'\gamma + \alpha_c + \alpha_t + \varepsilon_{ict}$$

where Y_{ict} is a dummy variable that equals 1 if investment/inventories/employment has increased and 0 if it has decreased or remained unchanged

Identification strategy

Investment=f(X, credit constraints, investment opportunities)

Endogeneity between investment/growth and credit constraints:

poor investment/growth opportunities → high prob.(constraints)

(omitted variable bias)

Strategies:

- -proxies for investment/growth opportunities.
- -instrumental variables.

Strategy 1: proxies for investment/growth opportunities

Proxy for (firm) investment opportunities: changes in enterprise-specific outlook (with respect to its sales and profitability or business plan)

Proxy for (aggregate) investment opportunities: real GDP, unemployment rate, consumer confidence.

Determinants of investment opportunities: size, age, industry (Petersen and Rajan, 1994).

Strategy 2: instrumental variables

TLTRO: ECB's Targeted Longer-Term Refinancing Operations.

-**TLTRO-I**: announced on June 2014.

-Eight quarterly operations between September 2014 and June 2016.

-Borrowing limit for the first two operations: 7% of eligible loans outstanding on 30 April 2014.

-**TLTRO-II**: announced on March 2016.

-Four quarterly operations between June 2016 and March 2017.

-Borrowing limit: 30% of eligible loans outstanding on 31 January 2016.

Strategy 2: instrumental variables

Problem: while the TLTROs constituted a shock to the banking sector that should have relaxed credit constraints, it was not an exogenous shock, as banks could freely choose the uptakes.

Solution: exploit the borrowing limits, as they are based on exogenous parameters that are common across banks and on pre-determined banks' balance sheet characteristics.

Strategy 2: instrumental variables

- IV: **Country TLTRO**, predicted uptake of TLTROs by the banks of each country, scaled by the total assets of each country's banking sector.

$$countryTLTRO_{ct} = \frac{\sum \widehat{TLTRO}_{bt}}{\sum ta_{bt}}$$

- Actual TLTRO uptakes are regressed on the maximum borrowing limits of TLTRO-I and TLTRO-II, plus bank fixed effects and country-time dummies:

$$\log(TLTRO_{bt} + 1) = \alpha_i + d_{ct} + \beta \cdot \log(LIMIT_{bt} + 1) + \varepsilon_{bt}$$

- Sample: 326 euro area banks for the period 2014Q3-2017Q1.

Strategy 2: instrumental variables

VARIABLES	(1) log(tltro+1)	(2) log(tltro+1)
log(limit+1)	0.571***	0.580***
	(0.058)	(0.124)
size (t-1)		0.040
		(0.209)
capital ratio (t-1)		0.002
		(0.011)
liquidity ratio (t-1)		0.009**
		(0.004)
loan ratio (t-1)		-0.000
		(0.011)
deposit ratio (t-1)		-0.015
		(0.010)
market share (t-1)		-0.111*
		(0.063)
Bank fixed effects	YES	YES
Country-time fixed effects	YES	YES
Observations	3,912	3,248
Period	2014Q3-2017Q1	2014Q3-2017Q1
Number of banks	326	292
R-squared	0.851	0.894

Investment

	Structural equation	First-stage	Reduced form	Structural equation	Structural equation	Structural equation
	(1)	(2)	(3)	(4)	(5)	(6)
DEPENDENT VARIABLE	investment growth	constrained	investment growth	investment growth	investment growth	investment growth
constrained	-0.085***			-0.863**	-0.091***	-0.198**
	(0.011)			(0.350)	(0.011)	(0.084)
country TLTRO		-0.023***	0.020*			
		(0.007)	(0.010)			
ESTIMATOR	OLS	OLS	OLS	2SLS	PROBIT	BIVARIATE PROBIT
INSTRUMENTS				country TLTRO		country TLTRO
COUNTRY DUMMIES	YES	YES	YES	YES	YES	YES
TIME DUMMIES	YES	YES	YES	YES	YES	YES
MACRO CONTROLS	YES	YES	YES	YES	YES	YES
FIRM CONTROLS	YES	YES	YES	YES	YES	YES
OTHER FIRM CONTROLS	YES	YES	YES	YES	YES	YES
F-TEST (FIRST-STAGE)		11.81		11.81		
Observations	19,375	19,375	19,375	19,375	19,375	19,375

The dependent variable is a dummy that equals 1 if investment has increased and 0 if it has decreased or remained unchanged.

OLS /Probit significant at 1%

2SLS/Bivariate probit: credit constraints reduce prob. increasing investment by 86 pp / 20 pp

Inventories and working capital

	Structural equation	First-stage	Reduced form	Structural equation	Structural equation	Structural equation
	(1)	(2)	(3)	(4)	(5)	(6)
DEPENDENT VARIABLE	inventories growth	constrained	inventories growth	inventories growth	inventories growth	inventories growth
constrained	-0.029***			0.488***	-0.032***	-0.205***
	(0.007)			(0.174)	(0.008)	(0.040)
country TLTRO		-0.022***	-0.011**			
		(0.007)	(0.004)			
ESTIMATOR	OLS	OLS	OLS	2SLS	PROBIT	BIVARIATE PROBIT
INSTRUMENTS				country TLTRO		country TLTRO
COUNTRY DUMMIES	YES	YES	YES	YES	YES	YES
TIME DUMMIES	YES	YES	YES	YES	YES	YES
MACRO CONTROLS	YES	YES	YES	YES	YES	YES
FIRM CONTROLS	YES	YES	YES	YES	YES	YES
OTHER FIRM CONTROLS	YES	YES	YES	YES	YES	YES
F-TEST (FIRST-STAGE)		10.780		10.780		
Observations	19,499	19,499	19,499	19,499	19,499	19,499

The dependent variable is a dummy that equals 1 if inventories and other working capital have increased and 0 if they have decreased or remained unchanged.

OLS / Probit significant at 1%

2SLS significant but with the 'wrong' (positive) sign.

Bivariate probit: credit constraints reduce prob. increasing inventories by 20 pp

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Employment

	Structural equation	First-stage	Reduced form	Structural equation	Structural equation	Structural equation
	(1)	(2)	(3)	(4)	(5)	(6)
DEPENDENT VARIABLE	employment growth	constrained	employment growth	employment growth	employment growth	employment growth
constrained	-0.052***			-0.118	-0.059***	-0.039
	(0.010)			(0.224)	(0.011)	(0.096)
country TLTRO		-0.023***	0.003			
		(0.007)	(0.005)			
ESTIMATOR	OLS	OLS	OLS	2SLS	PROBIT	BIVARIATE PROBIT
INSTRUMENTS				country TLTRO		country TLTRO
COUNTRY DUMMIES	YES	YES	YES	YES	YES	YES
TIME DUMMIES	YES	YES	YES	YES	YES	YES
MACRO CONTROLS	YES	YES	YES	YES	YES	YES
FIRM CONTROLS	YES	YES	YES	YES	YES	YES
OTHER FIRM CONTROLS	YES	YES	YES	YES	YES	YES
F-TEST (FIRST-STAGE)		12.16		12.16		
Observations	19,778	19,778	19,778	19,778	19,778	19,778

The dependent variable is a dummy that equals 1 if employment has increased and 0 if it has decreased or remained unchanged.

OLS/Probit significant at 1%

2SLS / Bivariate probit insignificant.

Conclusions

Credit constraints have a **negative correlation** with :

-investment in fixed assets.

-inventories and working capital.

-employment growth

Causal impact of **constraints** on **investment**. No clear impact on employment growth and inventories.

Conservative measure of total impact of credit constraints on the real economy, as we ignore impact on the **extensive margin**.

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Related literature

Fazzari *et al.* (1988), Hoshi *et al.* (1991), Schiantarelli (1996).

The **sensitivity of investment to cash flows** is **greater** in the group of firms that are more likely to be constrained (e.g. low dividend pay-out ratio).

Unconstrained firms: they use external funds to smooth investment when internal finance fluctuates. Constrained firms: their investment should be driven by fluctuations in cash flows.

Key criticism: liquidity proxies investment opportunities.

-high liquidity signals that the firm has done well and is likely to continue doing well.

-more liquid firms have better investment opportunities: not surprising that they invest more!

Related literature (2)

Solution: **surveys** to construct **direct** measures of financial constraints.

Campello et al. (2010): panel of very large US companies in the 2007Q3-2008Q4 period.

-constrained firms planned, on average, **deeper cuts** in technology expenditures, capital expenditures, employment … than unconstrained firms.

-limitation: **endogeneity** of financial constraints.

-"Consider, for example, a company that performs poorly even before the crisis. It would not be surprising to find that this firm might both do worse during the crisis (e.g., invest less) and find less available credit" (page 471)

Related literature (3)

Ferrando and Mulier (2015): SAFE & financial statements for 9 euro area countries, 2010q2- 2014q1.

-effect of being a **discouraged borrower** on firm investment and growth.

-**endogeneity** between discouragement and investment/growth

-**instrumental variable**: **financial constraints** indicator, (=1 if firm's most pressing problem is access to finance)

-**valid IV?** both the endogenous regressor and the IV are financial constraints indicators!

-**reverse-causality:** lenders observe a firm's lack of investment opportunities → cut credit → access to credit is most pressing problem.

Related literature (4)

Beck *et al*. (2005); Coluzzi, Martínez-Carrascal and Ferrando (2015):
-World Bank's world business environment survey (WBES) in 1999-2000.
-perceived financial obstacles, rather than actual financing constraints: no info. on loan rejection.
-endogeneity of obstacles.

Buca and Vermeulen (2015): Bank Lending Survey and BACH for 6 European countries during the 2004-2009 period.

Real effects of credit supply shocks: Jiménez *et al.* (2017), Alfaro *et al.* (2016), Greenstone *et al.* (2014), Chodorow-Reich (2014), Acharya *et.al* (2016), Balduzzi *et al*. (2016).

Control variables

Macro controls: detrended real GDP, consumer confidence, 10 year government bond yield.

Firm controls: sector, size (# employees and turnover), age, legal form (autonomous enterprise vs. subsidiary/branch), ownership structure (e.g. family business, sole trader, publicly listed) and exporter.

Other firm controls: dummies for increase/decrease in turnover and dummies for improvement/deterioration of enterprise-specific outlook.

Countries

Country	Freq.	Percent	Cum.
AT	960	4.95	4.95
BE	983	5.07	10.03
DE	1785	9.21	19.24
ES	3,245	16.75	35.99
FI	819	4.23	40.22
FR	3,134	16.18	56.39
GR	1409	7.27	63.66
IE	1006	5.19	68.86
IT	3,410	17.6	86.46
NL	932	4.81	91.27
PT	1067	5.51	96.77
SK	625	3.23	100
Total	19,375	100	

Firm characteristics

	Freq.	Percent
sector		
Industry	5,369	27.7
Construction	2,004	10.3
Wholesale or retail trade	4,859	25.1
Other services	5,423	28.0
Missing (large firms)	1,720	8.9
Total	19,375	100
size employment		
Micro	6,065	31.3
Small	5,966	30.8
Medium	5,624	29.0
Large	1,720	8.9
Total	19,375	100
age		
>=10 years	16,367	84.5
>=5 and <10 years	2,163	11.2
>=2 and <5 years	670	3.5
<2 years	175	0.9
Total	19,375	100

	Freq.	Percent
legal form		
Subsidiary or branch	2,573	13.3
Autonomous enterprise	16,802	86.7
Total	19,375	100
ownership structure		
Public shareholders	371	1.9
Family or entrepreneurs	10,162	52.5
Other entreprises	2,475	12.8
Venture capital enterprises	142	0.7
Sole trader	5,600	28.9
Other	625	3.2
Total	19,375	100
exporter		
0	8,729	45.1
1	10,646	55.0
Total	19,375	100

Micro, small and medium firms each account for 30% of the sample. Most firms are more than 10 years old (85%), autonomous enterprises (87%), family business (53%) or sole traders (29%). Around half of them are exporters (55%).

Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent variables					
investment growth: decreased	19,375	0.16	0.37	0	1
investment growth: unchanged	19,375	0.49	0.50	0	1
investment growth: increased	19,375	0.34	0.48	0	1
inventories growth: decreased	19,146	0.19	0.39	0	1
inventories growth: unchanged	19,146	0.55	0.50	0	1
inventories growth: increased	19,146	0.26	0.44	0	1
employment growth: decreased	19,367	0.17	0.38	0	1
employment growth: unchanged	19,367	0.52	0.50	0	1
employment growth: increased	19,367	0.31	0.46	0	1
relevance grants	18,985	0.47	0.50	0	1
relevance trade credit	19,164	0.52	0.50	0	1
relevance informal loans	18,962	0.29	0.45	0	1
relevance market financing	18,886	0.20	0.40	0	1
use grants	8,933	0.40	0.49	0	1
use trade credit	9,213	0.67	0.47	0	1
use informal loans	5,472	0.55	0.50	0	1
use market financing	3,747	0.27	0.44	0	1
Credit constraints variables					
constrained	19,375	0.26	0.44	0	1
constrained bank	14,809	0.26	0.44	0	1
constrained other	11,005	0.24	0.43	0	1
Instrumental variable					
country TLTRO	19,375	1.14	1.18	0.01	5.25
Other controls					
turnover growth: decreased	19,375	0.24	0.43	0	1
turnover growth: unchanged	19,375	0.30	0.46	0	1
turnover growth: increased	19,375	0.46	0.50	0	1
enterprise outlook: improved	19,375	0.38	0.48	0	1
enterprise outlook: unchanged	19,375	0.42	0.49	0	1
enterprise outlook: deteriorated	19,375	0.21	0.41	0	1
GDP	19,375	0.18	1.02	-7.06	8.83
consumer confidence	19,375	-8.54	11.79	-69.80	21.48
government bond yield	19,375	1.50	1.51	-0.02	10.64

Checking the independence assumption

	(1)	(2)	(3)
DEPENDENT VARIABLE	country TLTRO	country TLTRO	country TLTRO
gdp	0.008		
	(0.060)		
consumer confidence	0.025	0.026	0.025
	(0.022)	(0.022)	(0.022)
government bond yield	0.308	0.309	0.307
	(0.306)	(0.302)	(0.300)
unemployment rate		0.224	
		(0.350)	
investment growth			0.239
			(0.388)
COUNTRY DUMMIES	YES	YES	YES
TIME DUMMIES	YES	YES	YES
Observations	72	72	72
R-squared	0.787	0.787	0.787
Estimator: OLS. Cluster-robust standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

Checking the exclusion restriction

- Exclusion restriction: only channel through which CountryTLTRO may affect firm investment/growth is via their influence on the likelihood of experiencing credit constraints.
- First-stage: $constrained_{it} = \alpha_0 + \varphi CountryTLTR0_{it} + \varepsilon_{it}$
- Reduced form: $Y_{it} = \alpha_1 + \rho CountryTLTR0_{it} + u_{it}$
- Structural equation: $Y_{it} = \alpha_2 + \lambda constrained_{it} + \eta_{it}$
- LATE: $\lambda = \frac{\rho}{\varphi}$
- Rearranging: $\rho = \lambda\varphi$
- Therefore: in samples where the first-stage, φ, is zero, the reduced form, ρ, must be zero as well

Checking the exclusion restriction (2)

FIRST-STAGE ESTIMATES FOR DIFFERENT SUBSAMPLES OF FIRMS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
SUBSAMPLE	micro	sme	large	10 years or more	5 to 9 years	less than 5 years	industry	construction	trade	other services	vulnerable	less vulnerable
country TLTRO	0.004	-0.014**	-0.052***	-0.030***	0.032*	-0.038	-0.021***	0.040***	-0.003	-0.024**	0.009	-0.013
	(0.011)	(0.007)	(0.012)	(0.006)	(0.017)	(0.039)	(0.008)	(0.012)	(0.013)	(0.010)	(0.008)	(0.030)
Observations	6,065	11,590	1,720	16,367	2,163	845	5,369	2,004	4,859	5,423	10,137	9,238

REDUCED-FORM ESTIMATES FOR DIFFERENT SUBSAMPLES OF FIRMS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
SUBSAMPLE	micro	sme	large	10 years or more	5 to 9 years	less than 5 years	industry	construction	trade	other services	vulnerable	less vulnerable
country TLTRO	0.004	0.025**	0.040*	0.028**	-0.012	-0.056*	0.032***	-0.001	-0.008	0.026**	-0.000	0.014
	(0.007)	(0.011)	(0.021)	(0.011)	(0.019)	(0.031)	(0.009)	(0.014)	(0.011)	(0.010)	(0.009)	(0.043)
Observations	6,065	11,590	1,720	16,367	2,163	845	5,369	2,004	4,859	5,423	10,137	9,238

Dependent variable: constrained in the upper table, investment growth in the lower table. Estimator: OLS.

Violation of the exclusion restriction: a statistically significant reduced-form estimate $|\hat{\rho}| > 0$ with no evidence of a corresponding first stage $\hat{\varphi} = 0$.

Heterogeneous effects

OLS ESTIMATES OF THE IMPACT OF CREDIT CONSTRAINTS ON INVESTMENT GROWTH

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SUBSAMPLE	micro	sme	large	10 years or more	5 to 9 years	less than 5 years	listed	family business	subsidiary	sole trader	other
constrained	-0.058***	-0.089***	-0.141***	-0.092***	-0.083***	-0.053	-0.037	-0.095***	-0.091**	-0.077***	-0.062
	(0.014)	(0.011)	(0.037)	(0.010)	(0.025)	(0.042)	(0.107)	(0.014)	(0.040)	(0.016)	(0.056)
Observations	6,065	11,590	1,720	16,367	2,163	845	371	10,162	2,617	5,600	625

2SLS ESTIMATES OF THE IMPACT OF CREDIT CONSTRAINTS ON INVESTMENT GROWTH

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
SUBSAMPLE	micro	sme	large	10 years or more	5 to 9 years	less than 5 years	listed	family business	subsidiary	sole trader	other
constrained	1.034	-1.747**	-0.761**	-0.907***	-0.363	1.473	-0.805	-0.922*	-0.817	-0.164	-4.112
	(4.200)	(0.709)	(0.373)	(0.297)	(0.522)	(1.920)	(0.545)	(0.513)	(0.638)	(0.598)	(5.705)
F-TEST	0.130	3.861	17.375	25.204	3.413	0.953	6.840	8.735	10.714	1.889	0.541
Observations	6,065	11,590	1,720	16,367	2,163	845	371	10,162	2,617	5,600	625

Dependent variable: investment growth. Estimator: OLS (upper table) and 2SLS (lower table).

Most of the causal impact of credit constraints on investment is driven by large companies and old firms.

Negative correlation for micro firms, SMEs and young businesses (weak first-stage).

Substitution between bank and non-bank finance?

	Relevance and use of non-bank financing: grant finance and trade credit					
	(1)	(2)	(3)	(4)	(5)	(6)
DEPENDENT VARIABLE	relevance grant finance	use grant finance	use grant finance	relevance trade credit	use trade credit	use trade credit
constrained bank	0.054***	-0.229***	0.285	0.097***	-0.051***	-0.030
	(0.011)	(0.018)	(0.383)	(0.012)	(0.016)	(0.334)
ESTIMATOR	OLS	OLS	2SLS	OLS	OLS	2SLS
COUNTRY DUMMIES	YES	YES	YES	YES	YES	YES
TIME DUMMIES	YES	YES	YES	YES	YES	YES
MACRO CONTROLS	YES	YES	YES	YES	YES	YES
FIRM CONTROLS	YES	YES	YES	YES	YES	YES
OTHER FIRM CONTROLS	YES	YES	YES	YES	YES	YES
F-TEST (FIRST-STAGE)			25.45			21.19
Observations	15,065	7,683	7,553	15,200	6,759	6,669

Bank-constrained firms are more likely to consider alternative finance (grants, trade credit) relevant.

But they are not more likely to use it….

They wish to diversify funding sources but fail to do so…maybe because they are less creditworthy?

Substitution between bank and non-bank finance?

			Relevance and use of non-bank financing: informal loans and market financing			
	(1)	(2)	(3)	(4)	(5)	(6)
DEPENDENT VARIABLE	relevance informal loans	use informal loans	use informal loans	relevance market financing	use market financing	use market financing
constrained bank	0.142***	0.047	-0.090	0.064***	0.018	-0.918*
	(0.011)	(0.031)	(0.305)	(0.012)	(0.031)	(0.491)
ESTIMATOR	OLS	OLS	2SLS	OLS	OLS	2SLS
COUNTRY DUMMIES	YES	YES	YES	YES	YES	YES
TIME DUMMIES	YES	YES	YES	YES	YES	YES
MACRO CONTROLS	YES	YES	YES	YES	YES	YES
FIRM CONTROLS	YES	YES	YES	YES	YES	YES
OTHER FIRM CONTROLS	YES	YES	YES	YES	YES	YES
F-TEST (FIRST-STAGE)			14.88			10.58
Observations	15,029	4,057	3,974	14,979	2,976	2,881

Bank-constrained firms are more likely to consider alternative finance (informal loans, debt securities, equity) relevant.

But they are not more likely to use it….

They wish to diversify funding sources but fail to do so…maybe because they are less creditworthy?

Substitution between bank and non-bank finance?

	Structural equation	First-stage	Reduced form	Structural equation
	(1)	(2)	(3)	(4)
DEPENDENT VARIABLE	constrained other	constrained bank	constrained other	constrained other
constrained bank	0.533***			0.670***
	(0.015)			(0.155)
country TLTRO		-0.048***	-0.032***	
		(0.013)	(0.011)	
ESTIMATOR	OLS	OLS	OLS	2SLS
COUNTRY DUMMIES	YES	YES	YES	YES
TIME DUMMIES	YES	YES	YES	YES
MACRO CONTROLS	YES	YES	YES	YES
FIRM CONTROLS	YES	YES	YES	YES
OTHER FIRM CONTROLS	YES	YES	YES	YES
F-TEST (FIRST-STAGE)		15.018		15.018
Observations	6,573	6,573	6,573	6,573

Being constrained in bank financing increases the probability of being constrained in other financing by 67 pp.

In fact, most bank-constrained firms (71%) are also constrained in non-bank financing.

This leaves little room for substitution between bank and non-bank finance.