The Financial Channels of Labor Rigidities

Evidence from Portugal

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How relevant are these mechanisms?

Simple model

What we do

Questions

- Can **rigidities in labor adjustment** amplify the real effects of credit shocks?
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- Use firms-level variation in **share of labor costs** in value added creation to proxy exposure to **labor financing** and **operating leverage**.
- Analyze the interactions with **TFP** to assess the presence of heterogenous effects across productivity levels.

What we find

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   - Decrease in hiring and total assets.
   - Increase in firings and firms' exit probability.
   - The **entirety** of the effects is attributable to firms with **greater commitments to labor** $\rightarrow$ **leverage amplification**.

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   - **Youngest, least protected workers** suffer the brunt of the adjustment.

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3. Given labor costs' exposure, productivity **does not attenuate** the effects of the shock.
   - **Non-cleansing** productivity dynamics through labor rigidity.
   - The shock explains approx. **30% of the aggregate employment losses**, **4.2% of productivity losses** in the post-period through **labor misallocation**.

Key contributions

Real effects of financial frictions

Chodorow-Reich (2014), Cingano et al. (2016), Huber (2018)

⇒ We provide robust causal evidence of **heterogeneous real effects** of financial shocks across workers and firms.

Financial frictions, labor frictions and capital structure

Simintzi et al. (2015), Serfling (2016), Ellul and Pagano (2019), Favilukis et al. (2020), Baghai et al. (2021)

⇒ We show that **labor leverage** is a fundamental driver of financial risk.

Productivity dynamics and misallocation

Barlevy (2003), Foster et al. (2016), Bai et al. (2018), Caggese et al. (2019)

⇒ We show that the financial channels of labor rigidities **matter in the aggregate**.

Empirical strategy and test of the channel

Identifcation

We conduct a dynamic Diff-in-Diff (DiD) analysis of the impact on real activity of a shock to the supply of **short term** credit.

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- We instrument credit supply with a **shift-share**: banks' exposure to the foreign interbank funds market (Iyer et al. 2014, Cingano et al. 2016).

$$Z_i = \sum_{b \in B_{i,05}} \omega_{i,b,05} \cdot FD_{b,05}$$

- $\omega_{i,b,05}$ is the share of credit of firm i with bank b in 2005
- $FD_{b,05}$ is the share of liabilities of bank b in the foreign interbank market in 2005.
- ID assumption is no differential selection of firms into banks based on interbank funds exposure.

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The partition captures **production differentiation**, **managerial structure**, **hoarding**...

Balance checks | Balance checks (Borusyak et al. 2022) | Sample characteristics

Same intensity of credit supply shock across TFP levels

$$S_{i,b} = \sum_{k \in \{L,M,H\}} \beta_k FD_b \cdot \mathbb{1}\{TFP_{bin} = k\} + \mu_i + \varepsilon_{i,b}$$

	(1)	(2)	(3)	(4)
		$S_{i,b}$		
FD_b, *Low TFP*	-2.237***	-2.347***	-2.318***	-2.235***
	(0.276)	(0.308)	(0.256)	(0.264)
, *Med. TFP*	-1.941***	-2.314***	-2.278***	-2.457***
	(0.309)	(0.312)	(0.268)	(0.274)
, *High TFP*	-2.376***	-1.927***	-2.346***	-2.245***
	(0.294)	(0.274)	(0.275)	(0.263)
Firms	9206	9206	12703	12703
Firm FE	Yes	Yes	No	No
Other FE	No	No	Yes	Yes
TFP Measure	CD ACF	TSLOG ACF	CD ACF	TSLOG ACF

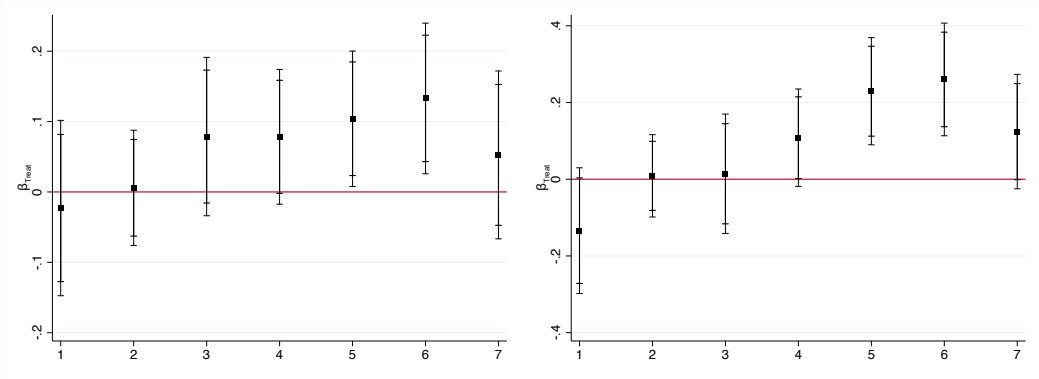
In columns 1 and 3 the production function is CD, whereas in columns 2 and 4 the production function is TSLOG.The estimation always follows Ackerberg et al. (2015). Standard errors in parentheses, clustered at the firm and bank-by-3 digits industry level. *** $p < 0.001$

Average loan level results

Main results

Greater empl./assets sensitivity for higher labor shares

$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}} \right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



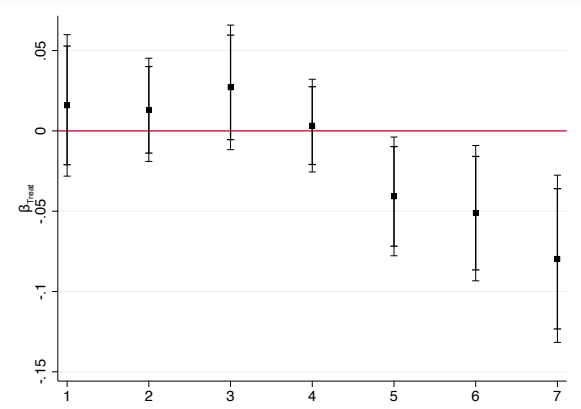
Employment Total Assets

90 and 95 % CI displayed. Labor share quantiles on x axis.

Average results | Effect on sales | Effect on curr./fixed assets | Alternative labor share | Residualized labor share | Labor share in sales | Labor share ('07-08 avg.)

Greater $P(exit)$ for higher labor shares

$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.
Labor share quantiles on x axis.

Alternative labor share | Residualized labor share | Labor share in sales | Labor share ('07-08 avg.)

Discussion of mechanisms: investment channel and leverage amplification

- Firms more exposed to labor costs have higher shares of **specialized** w., **managers**, **high ed.** w., **high tenure** w. Correlations with workforce measures

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- Estimated effects are **stronger** in firms that employ workers requiring **greater training costs** on-the-job. Regressions by ojt scores
- Employment effects **are not explained** by recent update of wages through bargaining agreements.

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- The results are **not** determined by the standard fin. leverage channel. Results by leverage bins

Labor rigidities and productivity

The “non-cleansing” hypothesis

Hypotheses

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- We partition firms in within-industry terciles.

Effects are not significantly different across differently productive firms

	(1) $log(\#emp)_{i,t}$	(2) $P(exit)_{i,t}$
S_i, *Low TFP*	0.080*	-0.034*
	(0.039)	(0.015)
, *Med. TFP*	0.077*	-0.015
	(0.037)	(0.012)
, *High TFP*	0.072	-0.022
	(0.045)	(0.017)
Firms	13287	13277
WID F	11.12	11.59
Sample	Complete	Complete
Firm FE	Yes	No
Other FE	Yes	Yes

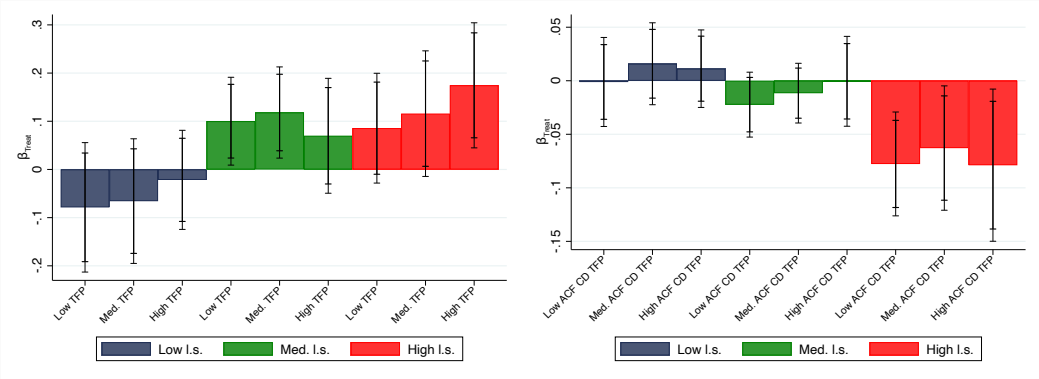
All specifications feature the full set of fixed effects and controls. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

ACF TSLOG TFP

TFP does not shield exposed firms from the shock

$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k,j \in \{L,M,H\}} \sum \beta_{k,j} S_i \cdot \mathbb{1}\{labsh_{bin} = k, TFP_{bin} = j\} + \gamma \mathbf{X_{i,pre}} \right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



Employment

Exit

90 and 95 % CI displayed.

Residualized labor share | Labor share in sales | ACF TSLOG TFP

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$$APG|_T \approx \sum_i \bar{D}_i \left(\overline{(\theta_i^L - s_i^L)}|_T \, \widehat{dlogL_i}|_T - \overline{(\theta_i^L - s_i^L)}|_{NT} \, \widehat{dlogL_i}|_{NT} \right)$$

where Domar weights and wedges are averages over the 2008 and 2012 values (counterfactuals for wedges).

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- Labor misallocation due to the shock explains **approx. 4.2% of overall APG**.

Conclusion

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  - Firm level → How to address the **maturity mismatch**? Do firms internalize the increased **liquidity** risks? How to finance **intangible** human capital?

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  - Firm level → How to address the **maturity mismatch**? Do firms internalize the increased **liquidity** risks? How to finance **intangible** human capital?
- Labor rigidities emerge as a very important **risk factor** for firms/financial markets.

Thank you!

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A simple model of labor frictions and finance

Introduction

- We develop a model in which productivity and exposure to labor are heterogenous.
- Employment at these firms is hit more by a credit shock
- Effects of credit shock affects both employment and exit $\rightarrow$ non-cleansing effects

Environment

- The economy lives for two identical periods, $t = 1, 2$
- It is populated by a large number of monopolistically competitive firms, each producing a single variety $\omega \in \Omega$
- Firms produce according to the production technology $q = L$,
- To produce, they have to pay fixed costs f_e and labor costs
- Labor costs are made of two parts:
  - A variable part that depends on a exogenous salary w per efficiency-units of labor
  - A fixed part F
- Both costs depend on a firm-specific productivity ϕ, that is drawn at the beginning of date 1 and stays the same throughout date 2
- Formally, this means that total labor costs are equal to $\frac{wL}{\phi} + F(\phi)$

Environment

- At $t = 1$, both firms and banks observe a labor productivity draw ϕ for each firm
- Banks make take-it-or-leave-it offers of credit M at interest rate R (fixed)
- Firms use credit to pay a fraction δ of total salaries in advance, according to a working capital constraint
- Firms can also run away and don't pay the remaining fraction $1 - \delta$, but in that case they only retain $1 - \theta$ of sale proceeds
- At $t = 2$ everything is the same, except that credit supply M is tightened suddenly and unexpectedly
- We study what happens to firm employment and exit

Discussion of the assumptions

- Fixing salaries is a way to introduce the downward wage rigidity typical of Portugal
- We did not assume anything about the sign of $F'(\phi)$: fixed labor costs can be increasing or decreasing in productivity
- Working capital constraint $\rightarrow$ financing on labor depends on banks as important source of credit
- Banks' take-it-or-leave-it offers at fixed interest rate $\rightarrow$ bargaining power in the banking relationships (in favor of banks)

Firms' problem

- A firm solves:

$$\max_{p} (p - c)q \tag{1}$$

subject to the CES demand function:

$$q = \frac{p^{-\sigma}}{P^{1-\sigma}} E \tag{2}$$

to the definition of marginal costs:

$$c = \frac{1}{q}\left[(1-\delta)\left(\frac{wL}{\phi} + F(\phi)\right) + (1+R)M\right] \tag{3}$$

Firms' problem

- to the working capital/credit constraint:

$$M \geq \delta \left(\frac{wL}{\phi} + F(\phi) \right) \tag{4}$$

and to the incentive compatibility constraint:

$$pq - (1-\delta) \left(\frac{wL}{\phi} + F(\phi) \right) \geq (1-\theta) pq \tag{5}$$

Firms' problem

- Attach multiplier χ to the working-capital constraint. Notice that it is a function of ϕ
- The first-order condition reads:

$$\left[q(p) + pq'(p)\right](1 + \theta\chi) - cq'(p) = 0 \tag{6}$$

which yields:

$$p = \frac{\sigma}{(\sigma - 1)(1 + \theta\chi)}c \tag{7}$$

The labor share

- The labor share is:

$$S = \frac{cq}{pq} = \frac{\sigma - 1}{\sigma}(1 + \theta\chi) \tag{8}$$

- The more binding the ICC, the higher the labor share
- The ICC is more binding the higher the marginal costs
- The relation between marginal costs and productivity is:

$$\frac{\partial c}{\partial \phi} = \frac{1}{q}(1 - \delta)\left[-\frac{wL}{\phi^2} + F'(\phi)\right] \tag{9}$$

- This is negative if $F'(\phi) < \frac{wL}{\phi^2}$
- It can also be positive if $F'(\phi) > \frac{wL}{\phi^2}$
- Assume for example $F(\phi) = \phi^2/2$. Then, marginal costs are increasing in productivity if $\phi^2 > wL/\phi$, i.e. if fixed labor costs are higher than variable labor costs

Effect of bank credit on firm employment

- In equilibrium the credit constraint holds with equality, hence:

$$q = L = \frac{\phi}{w}\left(\frac{M}{\delta} - F(\phi)\right) \tag{10}$$

hence:

$$\frac{\partial L}{\partial M} = \frac{\phi}{\delta w} > 0 \qquad \frac{\partial^2 L}{\partial M \partial \phi} = \frac{1}{\delta w} > 0 \tag{11}$$

- Firms react to a credit tightening by lowering employment, and more so if they are constrained but productive

Effect of bank credit on firm exit

- Since the credit constraint holds with equality:

$$c = \frac{1}{q}\left[\frac{1-\delta}{\delta} + (1+R)\right] M \tag{12}$$

- Lower M lowers marginal costs
- Lower marginal costs also lower prices
- Profits are:

$$\Pi = (p-c)q = \left[\frac{\sigma}{(\sigma-1)(1+\theta\chi)} - 1\right] cq = \left[\frac{\sigma}{(\sigma-1)(1+\theta\chi)} - 1\right]\left[\frac{1-\delta}{\delta} + (1+R)\right] M \tag{13}$$

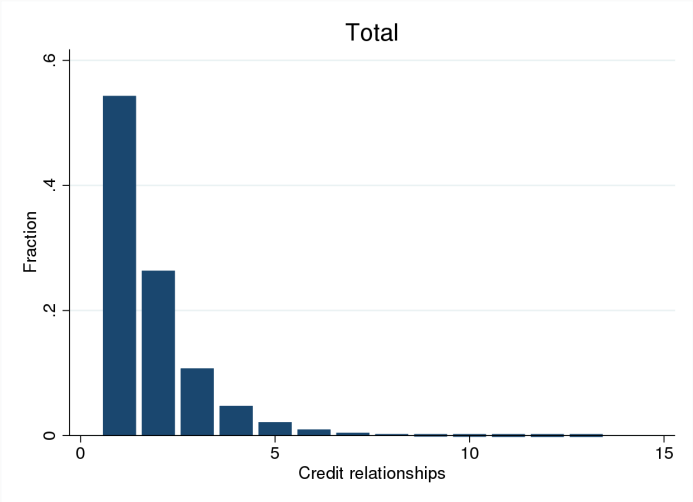
- A credit tightening can lead to exit if $\Pi \leq f^e$

Intuition

- We have evidence that the firms with high labor share are those that were hit the worst by the credit shock
- Which are the firms with high labor share according to this theory?
  - Low productivity firms
  - High productivity firms with high marginal fixed costs $F'(\phi)$
- From the second channel, we obtain non-cleansing effects
- Who are these firms?
  - Firms whose workers need training, e.g. firms with more educated workforce

Back : motivation

Bank relationships

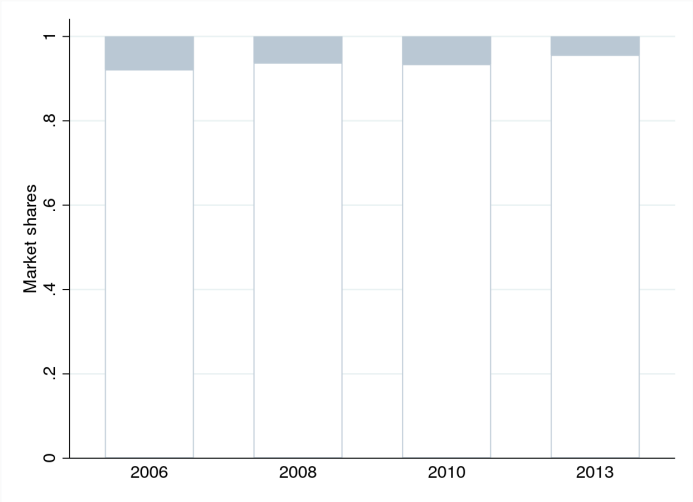


Distribution of banking relationships across firms, 2006

Data: Central de Responsabilidades de Crédito matched with Bank Balance sheets, own calculations.

Back

Credit concentration



Short term credit concentration by banks

Data: Central de Responsabilidades de Crédito matched with Bank Balance sheets, own calculations.

Back

Estimation sample

- We only consider mainland Portugal.
- We only consider credit relationships above 50 euros.
- We focus on firms that had at least one bank relationship in 2005 (and survive up until the crisis).
- We restrict the sample to firms that have at least 9 employees (approx. 75^{th} pctile of firms' size in pre-period, approx 60% of QP workforce).
- We require firms to be always present up to one year in the post-period (2006-2009)
- We end up with an **unbalanced panel** because of exit and attrition.

Representativeness Back

Firm Descriptive Statistics - Balance Sheet

Firm descriptive statistics pre and post 2008, Balance Sheet items in Euros

	Mean	SD	p25	p50	p75
Pre - 2009					
FTE employment	59.48	234.99	16.00	25.00	46.00
Wage bill	891,949.78	4,042,165.30	159,911.37	287,558.01	607,804.17
Avg. wage	14,427.21	6,480.97	9,960.92	12,792.20	16,877.77
Sales	9,917,213.22	59,168,827.51	1,014,851.32	2,295,683.43	5,771,160.42
Tot. assets	8,597,381.81	70,475,275.42	837,323.08	1,864,513.03	4,554,633.37
# loans	3.08	1.84	2.00	3.00	4.00
Regular debt/assets	0.24	0.20	0.08	0.20	0.35
ST debt/sales	0.12	0.20	0.01	0.06	0.16
ST debt/wage bill	1.19	2.72	0.08	0.45	1.31
Post - 2009					
FTE employment	70.25	337.52	16.00	26.00	50.00
Wage bill	1,088,347.62	5,258,404.35	176,668.35	322,748.09	710,588.65
Avg. wage	15,159.90	6,630.58	10,723.99	13,505.00	17,480.19
Sales	1,0860,932.69	68,885,027.20	942,522.93	2,213,365.53	5,896,964.44
Tot. assets	11,748,679.36	1.62e+08	947,493.93	2,129,300.94	5,508,795.18
# loans	3.24	2.02	2.00	3.00	4.00
Regular debt/assets	0.24	0.32	0.07	0.20	0.36
ST debt/sales	0.14	1.16	0.00	0.05	0.15
ST debt/wage bill	0.97	2.65	0.03	0.30	1.03

Descriptive statistics for the full (unbalanced) sample of analysis, with N=14,864 distinct firms. Monetary values expressed in euros, deflated by 2013 CPI. Data from Central de Responsabilidades de Crédito matched with Quadros de Pessoal and Central de Balanços , own calculations.

Back

Firm Descriptive Statistics - Workforce

	Mean	SD	p25	p50	p75
Pre - 2009					
Share of managers	0.13	0.15	0.02	0.09	0.17
Specialized workers	0.33	0.27	0.10	0.24	0.52
Generic workers	0.51	0.31	0.22	0.56	0.79
High education	0.11	0.17	0.00	0.05	0.12
Medium education	0.47	0.24	0.28	0.45	0.65
Low education	0.42	0.29	0.16	0.41	0.65
Under 30	0.25	0.17	0.12	0.22	0.35
Att. incumbents	0.68	0.19	0.58	0.72	0.82
Post - 2009					
Share of managers	0.15	0.18	0.04	0.10	0.19
Specialized workers	0.37	0.27	0.14	0.31	0.56
Generic workers	0.47	0.30	0.20	0.50	0.73
High education	0.13	0.19	0.00	0.07	0.16
Medium education	0.52	0.24	0.34	0.52	0.70
Low education	0.35	0.27	0.10	0.32	0.55
Under 30	0.18	0.16	0.07	0.15	0.27
Att. incumbents	0.55	0.23	0.40	0.58	0.73

Descriptive statistics for the full (unbalanced) sample of analysis, with N=14,864 distinct firms. All workforce decomposition variables from QP. Data from Central de Responsabilidades de Crédito matched with Quadros de Pessoal and Central de Balanços, own calculations.

Back

Sample representativeness

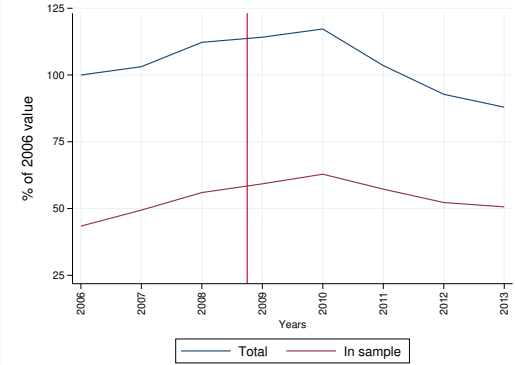
Shares of firms in 2005 with credit, QP

	FTE empl.	Wage bill	ST credit	Sales	# Firms
2006	0.55	0.62	0.58	0.60	0.14
2007	0.58	0.65	0.58	0.62	0.15
2008	0.62	0.67	0.58	0.64	0.16
2009	0.65	0.70	0.61	0.67	0.16
2010	0.66	0.71	0.61	0.68	0.17
2011	0.67	0.71	0.63	0.69	0.18
2012	0.67	0.72	0.64	0.69	0.18
2013	0.69	0.73	0.69	0.70	0.19

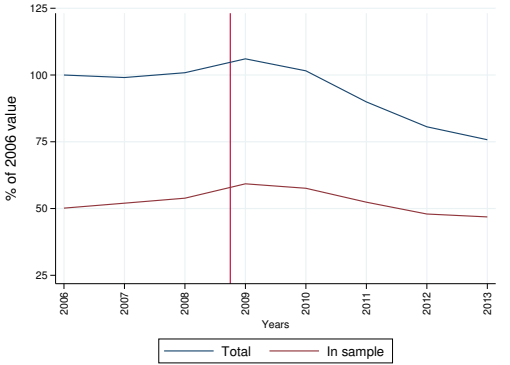
Shares of quantities per year, firms active in 2005 (QP) and with credit.

Back

2008 Financial crisis in Portugal



Long-term regular credit (>1 yrs)

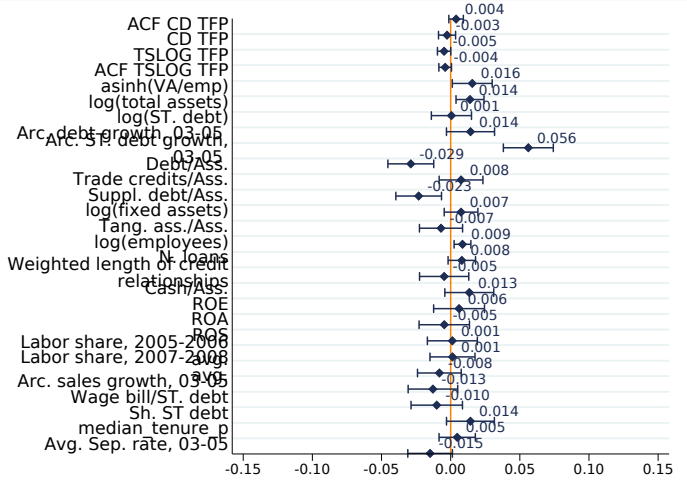


Total regular credit

Data: Central de Responsabilidades de Crédito matched with Quadros de Pessoal, subject to sample selection criteria, authors' calculation.

Back

Balance checks

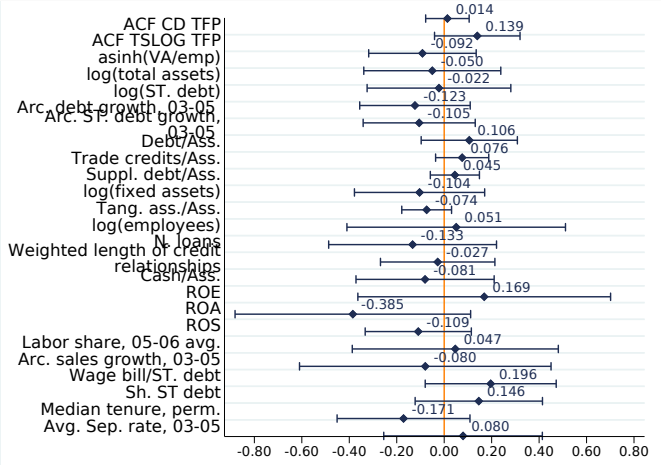


Pairwise regressions of standardized controls on the (standardized) instrument.

All regressions include the set of fixed effects included in the main DD regressions.

Back

Balance checks (Borusyak et al. 2022)



Pairwise regressions of standardized bank-level weighted exposures to firm level characteristics on the foreign interbank exposure. All bank-level weighted exposures are residuals after controlling for the set of fixed effects included in the main DD regressions.

Back

Testing the channel: loan level regressions

$$\Delta Credit_{st,i,b,post-pre} = \gamma_i + \beta FD_{b,05} + \mathbf{X}_b + \varepsilon_{i,b,t}$$

	(1)	(2)	(3)	(4)	(5)
			$S_{i,b}$		
$FD_{b;2005}$	-2.104***				
	(0.229)				
$Sovs./Ass._{b;2009}$					
$Sovs./Ass._{b;2009,q4}$					
Firms	9927	9927	9927	9927	13937
Firm FE	Yes	Yes	Yes	No	No
Sample	Multi-loans	Multi-loans	Multi-loans	Multi-loans	All firms

Sovereign debt is any debt instrument issued by the Portuguese government. Standard errors in parentheses, double clustered at the firm and bank-industry pair level.
In column 1 we include a bound for robustness to OVB calculated by following Oster (2019), pg. 7.
$^{+}$ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Credit growth in the sovereign debt crisis Back

Testing the channel: loan level regressions

$$\Delta Credit_{st,i,b,post-pre} = \gamma_i + \beta FD_{b,05} + \mathbf{X}_b + \varepsilon_{i,b,t}$$

	(1)	(2)	(3)	(4)	(5)
			$S_{i,b}$		
$FD_{b;2005}$	-2.104***	-2.151***	-2.186***	-2.145***	-2.192***
	(0.229)	(0.221)	(0.218)	(0.251)	(0.251)
	[-2.104 -1.971]				
$Sovs./Ass._{b;2009}$		-6.501***			
		(0.576)			
$Sovs./Ass._{b;2009,q4}$			-4.226***		
			(0.369)		
Firms	9927	9927	9927	9927	13937
Firm FE	Yes	Yes	Yes	No	No
Sample	Multi-loans	Multi-loans	Multi-loans	Multi-loans	All firms

Sovereign debt is any debt instrument issued by the Portuguese government. Standard errors in parentheses, double clustered at the firm and bank-industry pair level.
In column 1 we include a bound for robustness to OVB calculated by following Oster (2019), pg. 7.
$^{+}$ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Credit growth in the sovereign debt crisis Back

Instrument robustness: no effects on credit post 2010

The instrument has **no predictive power** for credit growth between 2010 and 2013 (after controlling for pre-2010 growth).

$$\Delta Debt_{st,i,2013-2010} = \beta Z_i + \gamma \Delta Debt_{st,i,2010-2006} + \delta X_{i,pre} + FE_i + \varepsilon_i$$

	(1)	(2)	(3)	(4)	(5)
			$\Delta D_{st,2013-2010}$		
$\Delta D_{i;st,2010-2006}$	-0.220***	-0.231***	-0.253***	-0.254***	-0.251***
	(0.011)	(0.011)	(0.012)	(0.012)	(0.012)
Z_i	0.240	-0.041	-0.148	-0.176	-0.154
	(0.277)	(0.257)	(0.260)	(0.262)	(0.261)
W. Sov.				-0.980+	
share in Q4-2009, 2005 banks				(0.588)	
W. Sov.					-1.242*
share in Q4-2009, 2009 banks					(0.629)
Firms	12883	12865	12061	12061	11882
Fixed effects	No	Yes	Yes	Yes	Yes
Controls	No	No	Yes	Yes	Yes

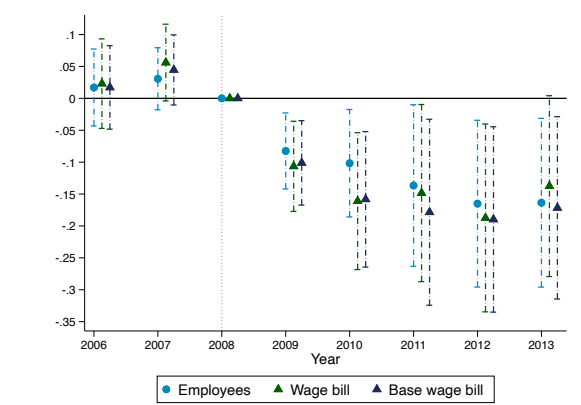
Fixed effects and controls are the same as in the main firm-level DD regressions (but for firm FE). The sample consists of firms with (short-term) credit relationships in 2010. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Dynamic results: Employment & Total Wage-bill

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_k \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$



The dep. variable is the ratio of outcome over pre-period average level. Results for a **negative** shock.
1 SD (predicted) treatment explains approx. 14-17% of SD of employment/assets. List of controls Back

Average firm level results

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\beta S_i + \gamma_{\mathbf{i}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)	(5)
	$log(\#emp)_{i,t}$		$log(Ass.)_{i,t}$		$P(exit)_{i,t}$
S_i	0.071*	0.086*	0.101*	0.098*	-0.019+
	(0.034)	(0.035)	(0.041)	(0.041)	(0.011)
Firms	13806	11802	13806	11802	13796
EFF. WID F	34.56	35.55	34.56	35.55	36.20
Sample	Complete	Survivors	Complete	Survivors	

The exit regression is a yearly linear probability model. All regressions feature a full set of 2005-06 controls and f.e., interacted with a *Post* dummy or year dummies. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Employment: coefficient stability | Wage bill | Hours | Different workers | Balance sheet/income st. variables | List of controls

1 SD (predicted) treatment explains approx. 14-17% of SD of employment/assets, 15% of avg. yearly exit rate.

List of controls

Fixed effects

Industry (3-digits), commuting zone, size quintiles, age quintiles, exporter status dummy, firm issuing bonds dummy, firm with overdue credit in 2008 dummy, firm with loans with banks failing in the post-period (up to 2014) dummy, firm with a single loan dummy.

Controls, 2005 values

Total ST debt, total assets, total fixed assets, total employment, total sales, financial leverage, arsinh of valued added (or sales) per employee, credit growth between 2004 and 2005, suppliers' debt over assets, trade credits over assets, number of loans, weighted length of lending relationships, firm age, share of tangible assets, share of ST debt, ROA, ROS, average workers' turnover, share of liquid assets, share of temporary workers.

Back

Average results: Employment regressions

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\beta S_i + \boldsymbol{\gamma_i \mathbf{X}_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)	(5)
			$log(\#emp)_{i,t}$		
S_i	0.066+	0.072*	0.070*	0.071*	0.086*
	(0.040)	(0.033)	(0.033)	(0.034)	(0.035)
Firms	14846	14830	13833	13806	11802
EFF. WID F	34.15	37.29	36.52	34.56	35.55
Sample	Complete	Complete	Complete	Complete	Survivors
Fixed effects	No	Yes	Yes	Yes	Yes
Controls	No	No	Fail b.c.	Yes	Yes

"Fail b.c" denotes all controls for which the balance check exercise fails. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Reduced form | First stage | Back

Average results: Wage bill regressions

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\beta S_i + \boldsymbol{\gamma_i} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)
	$log(wage\ bill)_{i,t}$		$log(base\ wage\ bill)_{i,t}$	
S_i	0.090*	0.114**	0.093*	0.111**
	(0.038)	(0.041)	(0.038)	(0.040)
Firms	13806	11802	13806	11802
EFF. WID F	34.56	35.55	34.56	35.55
Sample	Complete	Survivors	Complete	Survivors

All regressions feature the full set of fixed effects and controls.
Standard errors clustered at the main bank-industry pair level.
$^{+}$ $p < 0.10$, sym* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Average results: Hours regressions

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\beta S_i + \gamma_{\mathbf{i}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)
	$log(\#\ hours)_{i,t}$		$log(\#\ base\ hours)_{i,t}$	
S_i	0.067*	0.085*	0.067*	0.085*
	(0.034)	(0.035)	(0.034)	(0.035)
Firms	13806	11802	13806	11802
EFF. WID F	34.56	35.55	34.56	35.55
Sample	Complete	Survivors	Complete	Survivors

All regressions feature the full set of fixed effects and controls.
Standard errors clustered at the main bank-industry pair level.
$^{+}\ p < 0.10$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Back

First Stage regressions

$$S_i = \gamma_i + \tau_t + (\beta Z_i + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)	(5)
			S_i		
Z_i	-1.761***	-1.706***	-1.716***	-1.702***	-1.766***
	(0.301)	(0.276)	(0.280)	(0.285)	(0.293)
Firms	14846	14830	13833	13806	11802
Sample	Complete	Complete	Complete	Complete	Survivors
Fixed effects	No	Yes	Yes	Yes	Yes
Controls	No	No	Fail b.c.	Yes	Yes

Standard errors clustered at the main bank-industry pair level.

$^{+}\ p < 0.10$, $^{*}\ p < 0.05$, $^{**}\ p < 0.01$, $^{***}\ p < 0.001$

Back

Employment: reduced form regressions

$$\log(Y_i) = \gamma_i + \tau_t + (\beta Z_i + \gamma_{\mathbf{i}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)
	$log(\#emp)_{i,t}$			
Z_i	-0.123**	-0.120**	-0.120**	-0.152***
	(0.051)	(0.052)	(0.053)	(0.054)
Firms	14830	13833	13806	11802
Sample	Complete	Complete	Complete	Survivors
Fixed effects	Yes	Yes	Yes	Yes
Controls	No	Fail b.c.	Yes	Yes

Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Effect on firms' investment and operations

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\beta S_i + \boldsymbol{\gamma_i \mathbf{X}_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1) *Assets*	(2) *Sales*	(3) *Cash*	(4) *Trade cr.*	(5) *Debt to suppliers*	(6) *Fix. ass.*	(7) *Curr. ass.*
S_i	0.098*	0.041	-0.123	0.408+	0.021	0.063	0.108*
	(0.041)	(0.044)	(0.128)	(0.226)	(0.117)	(0.071)	(0.054)
Firms	11802	11554	11802	11802	11802	11799	11792
EFF. WID F	35.55	34.93	35.55	35.55	35.55	35.55	35.55
Sample	Survivors	Survivors	Survivors	Survivors	Survivors	Survivors	Survivors

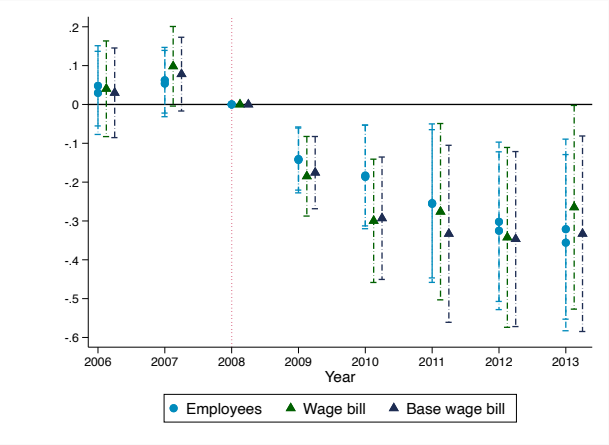
Logs are used for assets and sales, the arsinh for cash, trade credits and debt to suppliers. When the *arsinh* is used, the variable is expressed in net terms and can take negative values. All specifications feature the full set of fixed effects and controls. Standard errors double-clustered at the firm and bank-industry level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Long term credit shock | Sh. of secured credit, ST vs. LT | Back

Dynamic results: Employment & Total Wage-bill: reduced form

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k Z_i + \gamma_k \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$

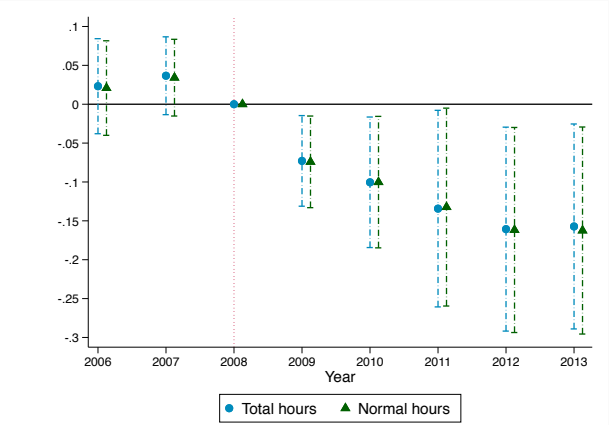


The dependent variable here is the ratio of the level of the outcome over the pre-period average level.

Back

Dynamic results: Hours

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k Z_i + \gamma_k \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$



The dependent variable here is the ratio of the level of the outcome over the pre-period average level.
Results for a **negative** shock. Back

Some heterogeneity results

Heterogeneity results on workers' types:

1. **Qualification**: effects concentrated on "specialized workers"
   Qualification - DD | Qualification - dynamic event study
2. **Cohorts**: young workers most affected.
   Cohorts - DD | Cohorts - dynamic event study
3. **Education**: effect concentrated on medium educated workers. High-educated not affected.
   Education - DD | Education - dynamic event study
4. **Contracts**: higher elasticity for temporary workers, but imprecisely estimated.
   Contract - DD | Contract - dynamic event study

Back : DD | Back : dynamic event study | Back: labor as investment

Employment regressions by qualification

$$Y_{i,t} = \gamma_i + \tau_t + (\beta S_i + \gamma_{\mathbf{i}} \mathbf{X}_{\mathbf{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)	(5)	(6)
	Managers$_{i,t}$		*Spec. workers*$_{i,t}$		*Generic workers*$_{i,t}$	
S_i	0.075	0.136	0.339**	0.402**	0.077	0.107
	(0.103)	(0.107)	(0.129)	(0.135)	(0.063)	(0.066)
Firms	11404	9757	13000	11154	13174	11270
WID F	32.05	36.02	37.40	38.16	36.79	38.74
Sample	Complete	Survivors	Complete	Survivors	Complete	Survivors

The dependent variable in these regressions is the ratio of the number of specific workers to the average level of the pre-period corresponding amount. The outcome variable is winsorized at the top 1% level. All regressions feature the full set of fixed effects and controls. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Employment regressions by age cohorts

$$Y_{i,t} = \gamma_i + \tau_t + (\beta S_i + \gamma_{\mathbf{i}} \mathbf{X}_{\mathbf{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)	(5)	(6)
	Young $w_{.i,t}(< 30y)$		*Prime age* $w_{.i,t}$		*Old* $w_{.i,t}(> 54y)$	
S_i	0.171+	0.223*	0.087**	0.101**	0.078	0.040
	(0.098)	(0.102)	(0.030)	(0.031)	(0.058)	(0.054)
Firms	13208	11313	13804	11800	10677	9122
WID F	32.01	32.55	35.73	36.35	29.42	35.61
Sample	Complete	Survivors	Complete	Survivors	Complete	Survivors

The dependent variable in these regressions is the ratio of the number of specific workers to the average level of the pre-period corresponding amount. The outcome variable is winsorized at the top 1% level. All regressions feature the full set of fixed effects and controls. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Employment regressions by education levels

$$Y_{i,t} = \gamma_i + \tau_t + (\beta S_i + \gamma_{\mathbf{i}} \mathbf{X}_{\mathbf{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)	(5)	(6)
	High educ.$_{i,t}$		*Medium educ.*$_{i,t}$		*Low educ.*$_{i,t}$	
S_i	0.031	-0.048	0.223**	0.272***	0.057	0.065+
	(0.138)	(0.133)	(0.071)	(0.080)	(0.035)	(0.036)
Firms	9538	8227	13697	11708	12677	10831
WID F	32.65	33.68	34.14	34.81	39.24	42.61
Sample	Complete	Survivors	Complete	Survivors	Complete	Survivors

The dependent variable in these regressions is the ratio of the number of specific workers to the average level of the pre-period corresponding amount. The outcome variable is winsorized at the top 1% level. All regressions feature the full set of fixed effects and controls. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Employment regressions by contract types

$$Y_{i,t} = \gamma_i + \tau_t + (\beta S_i + \gamma_{\mathbf{i}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)
	Permanent $w_{.,i,t}$		*Temporary* $w_{.,(i,t)}$	
S_i	0.099+	0.159*	0.173	0.146
	(0.057)	(0.062)	(0.147)	(0.150)
Firms	13655	11679	11827	10127
WID F	38.24	39.19	32.68	34.38
Sample	Complete	Survivors	Complete	Survivors

The dependent variable in these regressions is the ratio of the number of specific workers to the average level of the pre-period corresponding amount. The outcome variable is winsorized at the top 1% level. All regressions feature the full set of fixed effects and controls. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Dynamic results: Qualifications

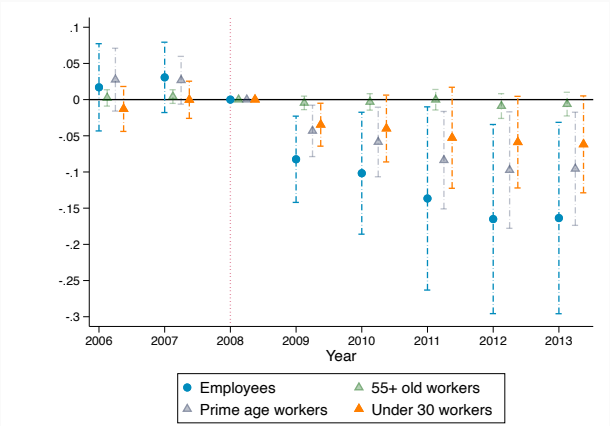
$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_k \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$

The dependent variable here is the ratio of the outcome over the pre-period average employment level. Pre-period sh. of managers: 13%. Sh. of specialized workers: 33%.
Results for a **negative** shock.

Back

Dynamic results: Age cohorts

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_{\mathbf{k}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$

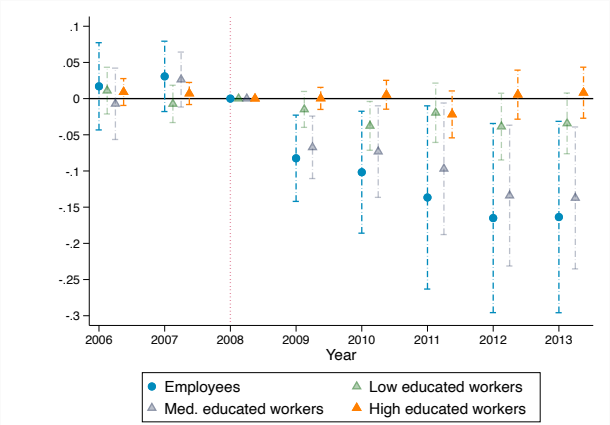


The dependent variable here is the ratio of the outcome over the pre-period average employment level. Pre-period sh. of under 31: 25%. Sh. of above 54: 8%
Results for a **negative** shock.

Back

Dynamic results: Education levels

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_k \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$



The dependent variable here is the ratio of the outcome over the pre-period average employment level. Pre-period sh. of med education: 47%
Results for a **negative** shock.

Back

Dynamic results: Contracts

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_k \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$

The dependent variable here is the ratio of the outcome over the pre-period average employment level. Pre-period sh. of temp contracts: 26%
Results for a **negative** shock.

Back

No avg. effect on capital investment: Almeida et al. (2011) shock

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\beta S_i + \delta S_i \cdot exp\_lt_i + \boldsymbol{\gamma_i \mathbf{X}_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)
	$log(fixed\ assets)_{i,t}$	
S_i	0.017	0.031
	(0.074)	(0.120)
$S_i \cdot exp\_lt_i$		-0.025
		(0.119)
exp_lt_i	-0.090***	-0.095***
	(0.015)	(0.026)
Firms	11799	11799
Sample	Survivors	Survivors

The treatment is interacted with a dummy variable equal to 1 if the firm has more than 20% of long-term debt maturing in the first two semester of 2009.
All specifications feature the full set of fixed effects and controls.
Standard errors clustered at the main bank-industry pair level.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

No avg. effect on capital investment: guarantees

2009 data show that ST debt is much less likely to be secured.

Share of secured credit, firm level

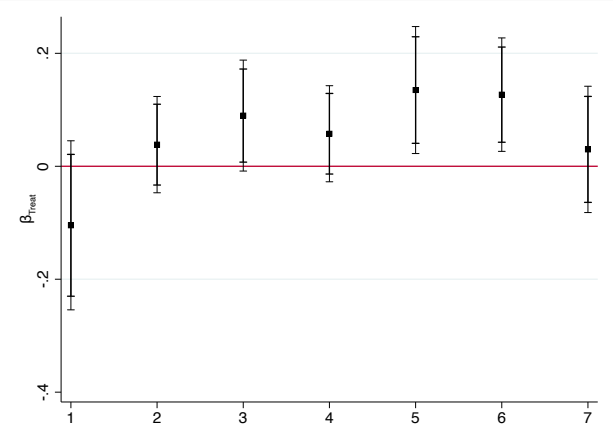
	(1) ST	(2) LT	(3) Diff.
Sh. secured loans	0.25	0.50	
Sh. secured credit	0.40	0.62	0.22***
	(0.43)	(0.40)	138.46
Sh. fully secured credit	0.21	0.38	0.17***
	(0.33)	(0.40)	122.03
Sh. financial collateral	0.04	0.07	0.03***
	(0.18)	(0.21)	33.11
Sh. real collateral mortgage	0.07	0.21	0.14***
	(0.23)	(0.35)	121.83
Sh. personal guarantee	0.37	0.50	0.14***
	(0.42)	(0.42)	83.50
N	140592	131845	

The share of secured loans refers to the actual share of loans at the firm level that have any sort of collateralization backing it.
Column (3) shows the results of t-test for the difference of the means, T-stats reported.

Back

Empl. regression by labor share bins (wage bill only)

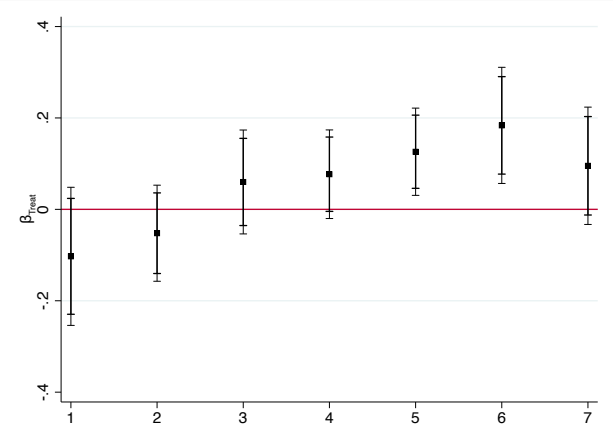
$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}\right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Back

Empl. regression by labor share bins (residualized by VA/Emp)

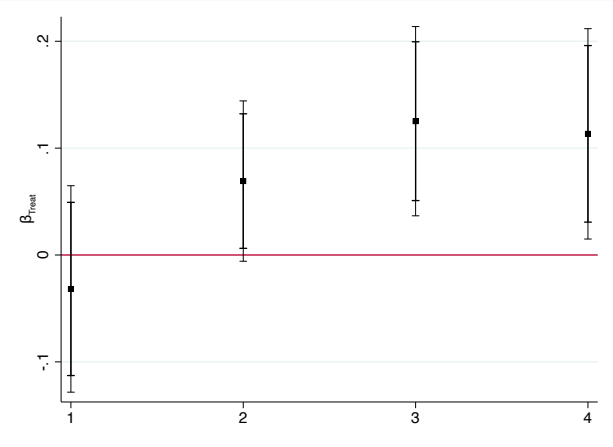
$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}\right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Back

Empl. regression by labor share in sales bins

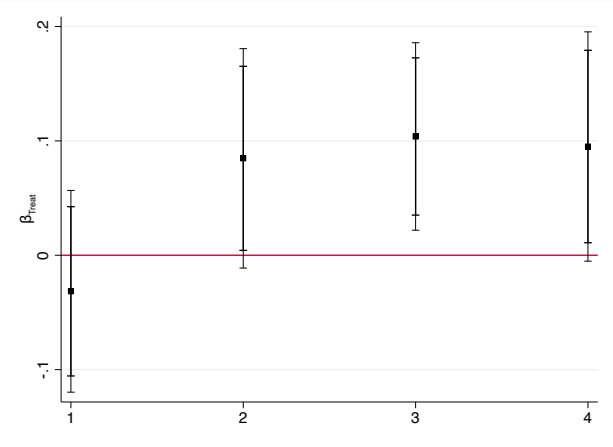
$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Back

Empl. regression by labor share quartiles

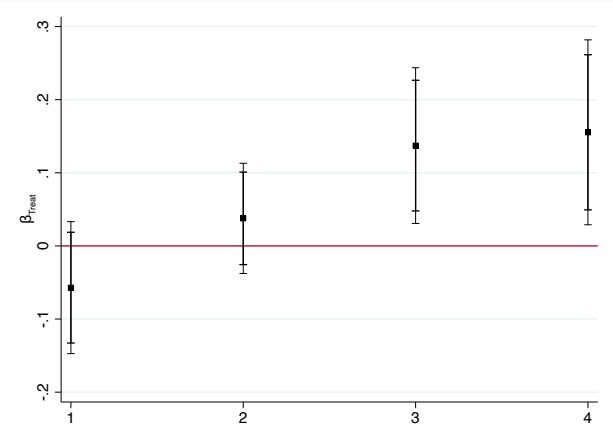
$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Back

Empl. regression by labor share quartiles (2007-08 avg.)

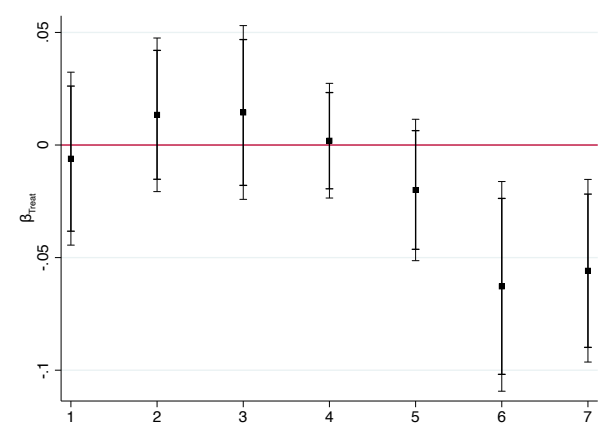
$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Back

Exit regressions by labor share (residualized by VA/Emp)

$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$

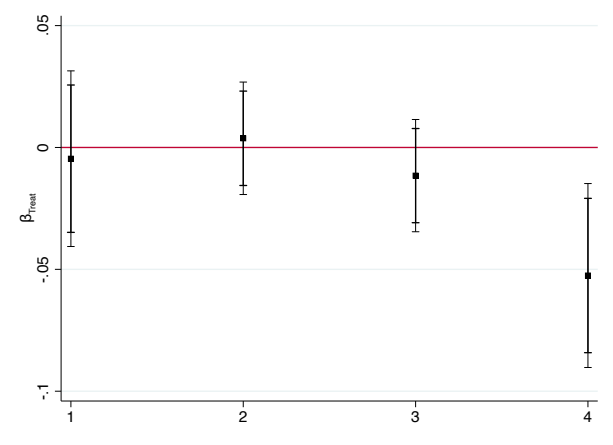


90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.

Back

Exit regressions by labor share in sales

$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$

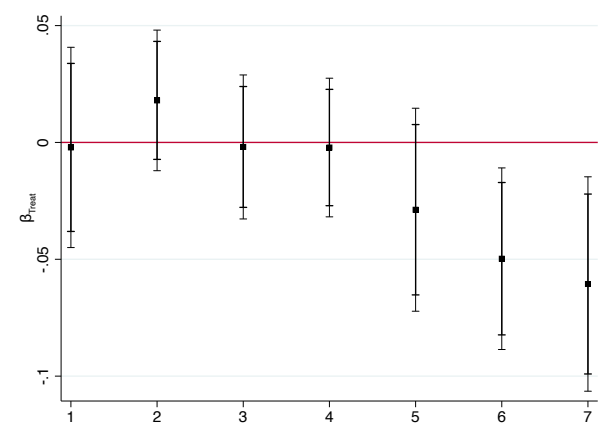


90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.

Back

Exit regressions by labor share (wage bill only)

$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$

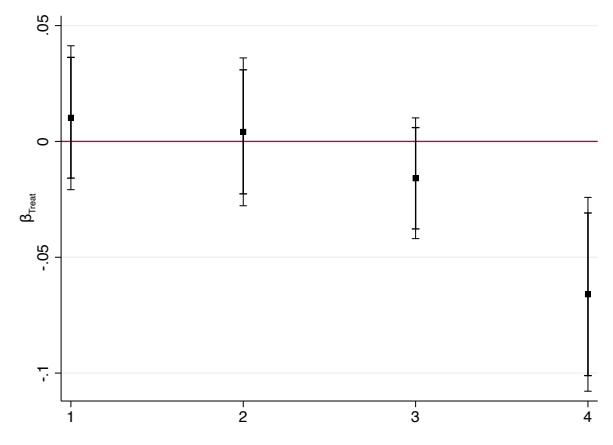


90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.

Back

Exit regressions by labor share quartiles

$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$

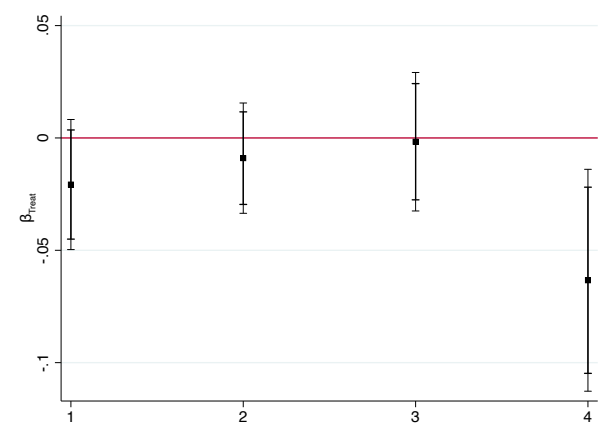


90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.

Back

Exit regressions by labor share quartiles (2007-08 avg.)

$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$

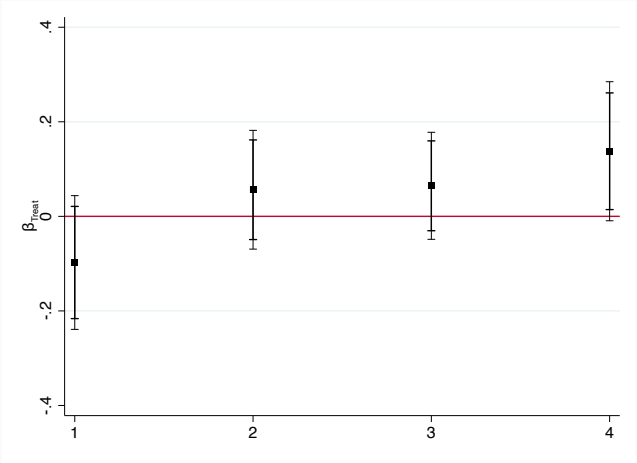


90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.

Back

Greater sales sensitivity for higher labor share

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

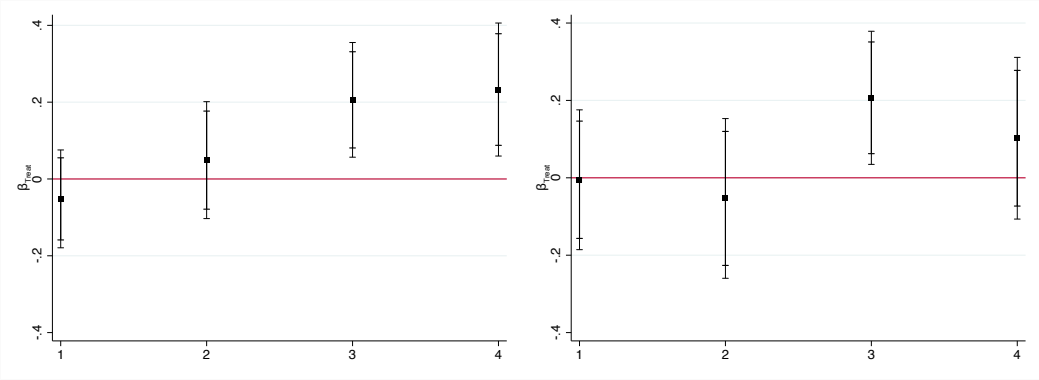


90 and 95 % CI displayed.

Back

Greater current/fixed assets sensitivity for higher labor share

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



Current Assets

Fixed Assets

90 and 95 % CI displayed.

Back

Employment/wage bill regressions: manufacturing industries

$$log(Y_{i,t}) = \gamma_i + \tau_t + (\beta S_i + \gamma_{\mathbf{i}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$

	(1)	(2)	(3)	(4)	(5)	(6)
	$log(\#emp)_{i,t}$		$log(Wage\ bill)_{i,t}$		$log(Base\ wage\ bill)_{i,t}$	
S_i	0.118**	0.136**	0.165**	0.186**	0.153**	0.169**
	(0.041)	(0.047)	(0.056)	(0.062)	(0.052)	(0.057)
Firms	6348	5404	6348	5404	6348	5404
EFF. WID F	23.65	21.76	23.65	21.76	23.65	21.76
Sample	Complete	Survivors	Complete	Survivors	Complete	Survivors

Regressions estimated only on the subsample of firms in manufacturing industries.
Standard errors clustered at the bank-industry pair level.
$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Back

Employment composition and the working capital channel

We regress 2005 and 2006-2008 observables on the controls in the regressions and labor share (controlling for VA/Emp and TFP).

	Labor share
Workforce variables	
Sh. managers	(+)***
Sh. specialized workers	(+)***
Sh. temporary workers	(-)**
Median tenure (perm.)	(+)***
Sh. workers 55+	(+)***
Sh. high education workers	(+)***
OJT score	(+)***
ONET zone score	(+)***

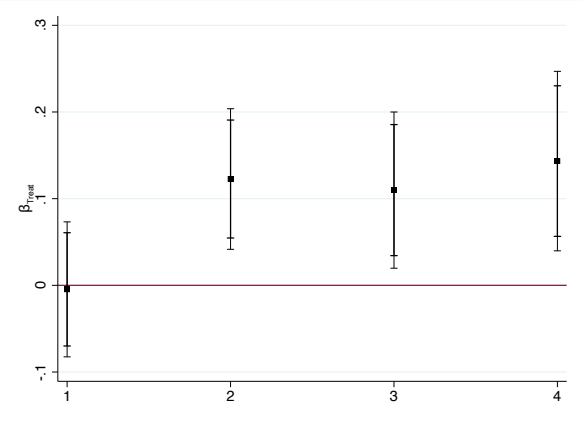
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Different workers DD and dynamic regressions | Back

Employment regression by OJT scores quartiles

We obtain **profession level** scores regarding training and education requirements from O*NET and aggregate them at the firm level.

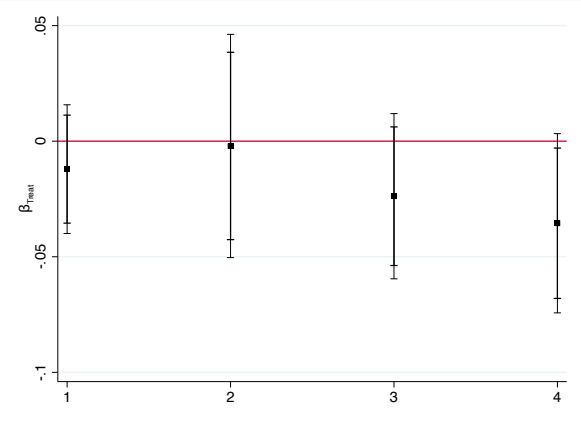
$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{OJT_{bin} = k\} + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Back

Exit regressions by OJT scores quartiles

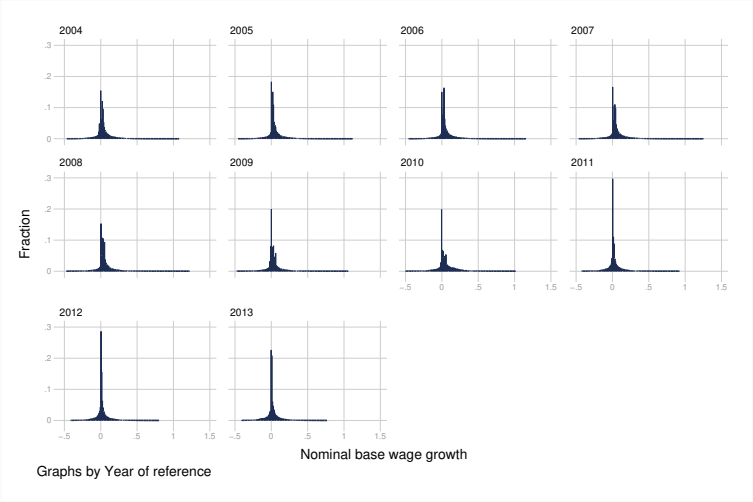
$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{OJT_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.

Back

Wage rigidity in Portugal



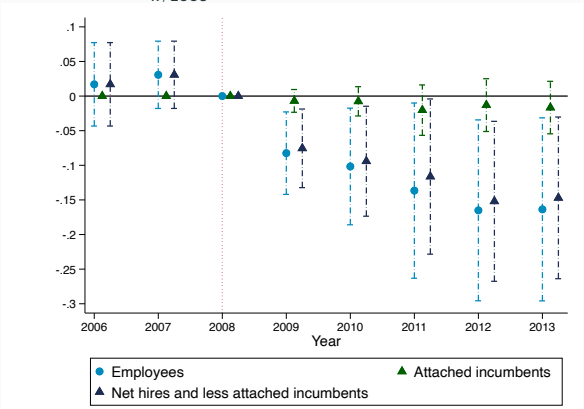
Wage adjustment dynamics in Portugal, authors' calculations.

Data: Quadros de Pessoal and Relatório Único.

Back

Dynamic results: Employment decomposition by attachment

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_k \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$

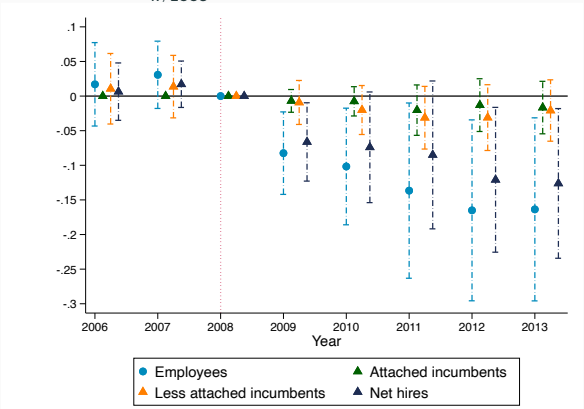


The dependent variable is the the ratio of the level of the outcome over the pre-period average level of employment. Attached incumbents are workers present in the firm for the entire pre-period. Sh. in pre-period: 67%.

Average wage results Back

Dynamic results: Employment decomposition by attachment

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_{\mathbf{k}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$

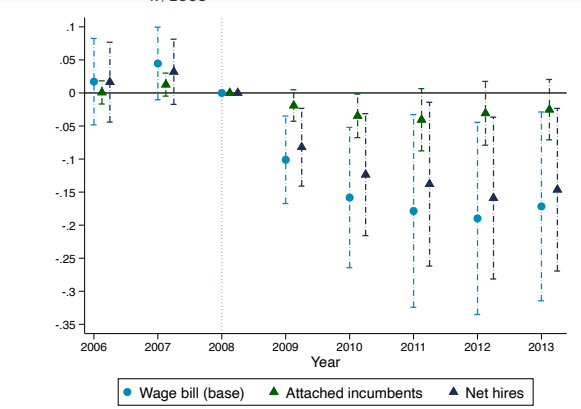


The dependent variable is the the ratio of the level of the outcome over the pre-period average level of employment. Attached incumbents are workers present in the firm for the entire pre-period. Sh. in pre-period: 67%.

Average wage results Back

Dynamic results: Wage decomposition by attachment

$$Y_{i,t} = \gamma_i + \tau_t + \sum_{k \neq 2008} (\beta_k S_i + \gamma_{\mathbf{k}} \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = k\} + FE_{i,t} + \varepsilon_{i,t}$$



The dependent variable is the the ratio of the level of the outcome over the pre-period average level of employment. Attached incumbents are workers present in the firm for the entire pre-period. Sh. of wage bill in pre-period: 71%.

Average wage results | Back

Balance sheet, liquidity and the operating leverage channel

We regress 2005 and 2006-2008 observables on the controls in the regressions and labor share (controlling for VA/Emp and TFP).

	Labor share
Workforce variables	
Avg. wage	(+)***
AKM firm FE	(+)***
Sh. temporary workers	(-)**
Financial variables	
Financial leverage (debt/ass.) (2005)	(-)***
ST debt/ass. (2005)	(-)***
Financial leverage (2008)	(-)***
ST debt/ass. (2008)	(-)+
Credit growth (06-08)	(-)***
Cash per worker	(-)***
Sh. ST credit	(+)***
Sh. ST debt fully secured	.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

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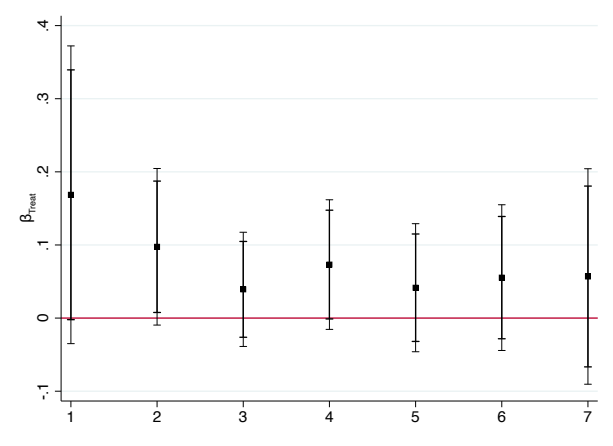
Employment regressions by leverage bins

$$\log(Y_{i,t}) = \gamma_i + \tau_t + (\sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{lev_{bin} = k\} + \gamma \mathbf{X_{i,pre}}) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed.

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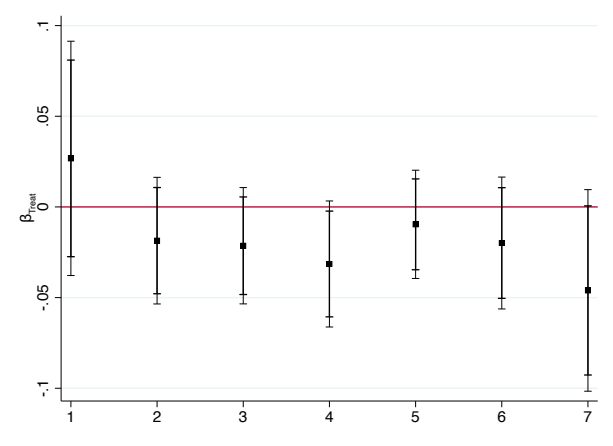
Exit regressions by leverage bins

$$P(exit)_{i,t} = \tau_t + \sum_{k=1}^{7} \beta_k S_i \cdot \mathbb{1}\{lev_{bin} = k\} + \gamma \mathbf{X_{i,pre}} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Negative coefficients indicate greater probability of failure following a negative shock.

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Average wage regressions

	(1) $log(Avg.\ wage)_{i,t}$	(2) $log(Avg.\ wage)_{inco8;i,t}$
S_i	0.018	0.023
	(0.015)	(0.017)
Firms	13806	13804
EFF. WID F	35.63	35.61
Sample	Complete	Complete

The dependent variable for column 1 is the logarithm of the average wage for all employees. The dependent variable for column 3 is the logarithm of the average wage for incumbent workers in 2008 who remain in the firm.

Standard errors clustered at the bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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Employment/exit regression by TSLOG ACF TFP bins

	(1) $log(\#emp)_{i,t}$	(2) $P(exit)_{i,t}$
S_i, *Low TFP*	0.080*	-0.034*
	(0.039)	(0.015)
, *Med. TFP*	0.077*	-0.015
	(0.037)	(0.012)
, *High TFP*	0.072	-0.022
	(0.045)	(0.017)
Firms	13287	13277
WID F	11.12	11.59
Sample	Complete	Complete
Firm FE	Yes	No
Other FE	Yes	Yes

All specifications feature the full set of fixed effects and controls. Standard errors clustered at the main bank-industry pair level.

$^{+}$ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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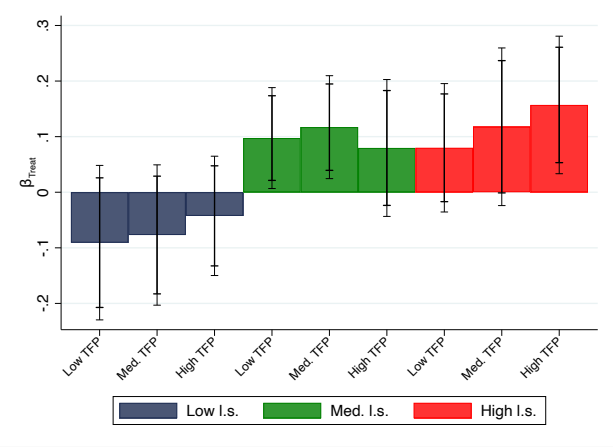
Empl. regressions by residualized labor share by TFP bins

$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k,j \in \{L,M,H\}} \sum \beta_{k,j} S_i \cdot \mathbb{1}\{labsh_{bin} = k, TFP_{bin} = j\} + \gamma \mathbf{X_{i,pre}} \right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



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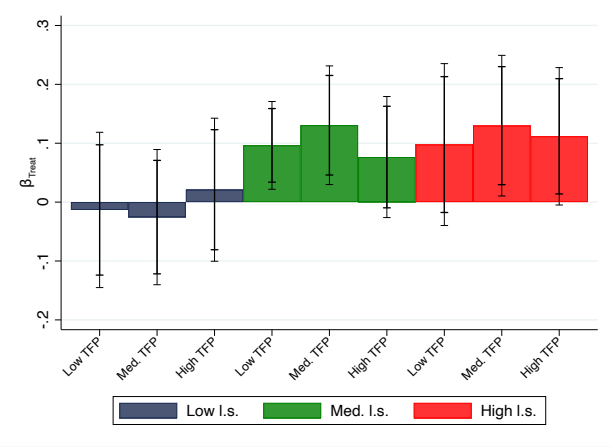
Empl. regressions by labor share in sales by TFP bins

$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k,j \in \{L,M,H\}} \sum \beta_{k,j} S_i \cdot \mathbb{1}\{labsh_{bin} = k, TFP_{bin} = j\} + \gamma \mathbf{X_{i,pre}} \right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



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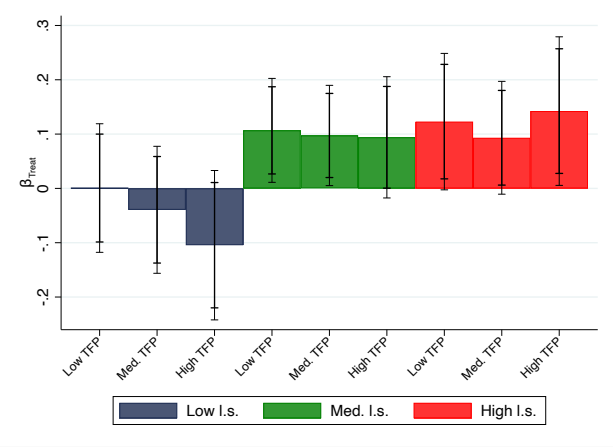
Empl. regressions by labor share by ACF TSLOG TFP bins

$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k,j \in \{L,M,H\}} \sum \beta_{k,j} S_i \cdot \mathbb{1}\{labsh_{bin} = k, TFP_{bin} = j\} + \gamma \mathbf{X_{i,pre}} \right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



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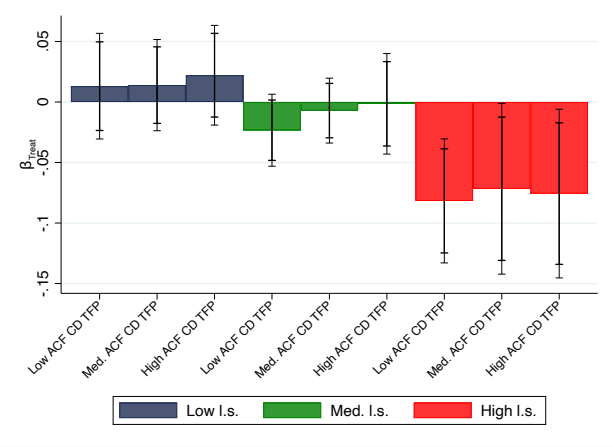
Exit regressions by residualized labor share by TFP bins

$$P(exit)_{i,t} = \gamma_i + \tau_t + \sum_{k,j \in \{L,M,H\}} \sum \beta_{k,j} S_i \cdot \mathbb{1}\{labsh_{bin} = k, TFP_{bin} = j\} + \gamma \mathbf{X_{i,pre}} \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



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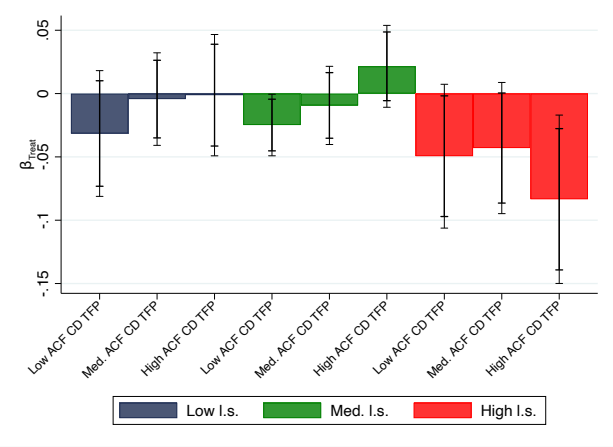
Exit regressions by labor share in sales by TFP bins

$$P(exit)_{i,t} = \gamma_i + \tau_t + \sum_{k,j \in \{L,M,H\}} \sum \beta_{k,j} S_i \cdot \mathbb{1}\{labsh_{bin} = k, TFP_{bin} = j\} + \gamma \mathbf{X_{i,pre}} \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



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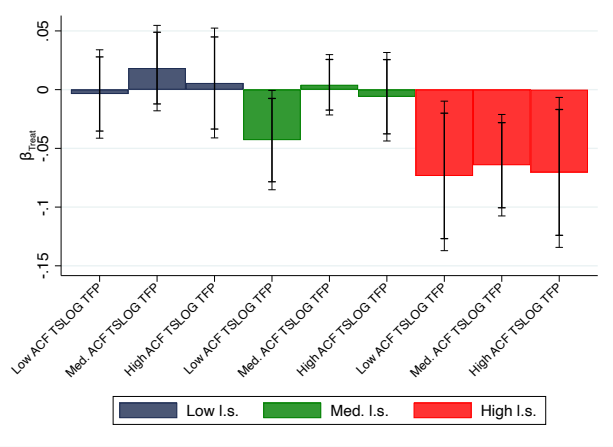
Exit regressions by labor share by ACF TSLOG TFP bins

$$P(exit)_{i,t} = \gamma_i + \tau_t + \sum_{k,j \in \{L,M,H\}} \sum \beta_{k,j} S_i \cdot \mathbb{1}\{labsh_{bin} = k, TFP_{bin} = j\} + \gamma \mathbf{X_{i,pre}} \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



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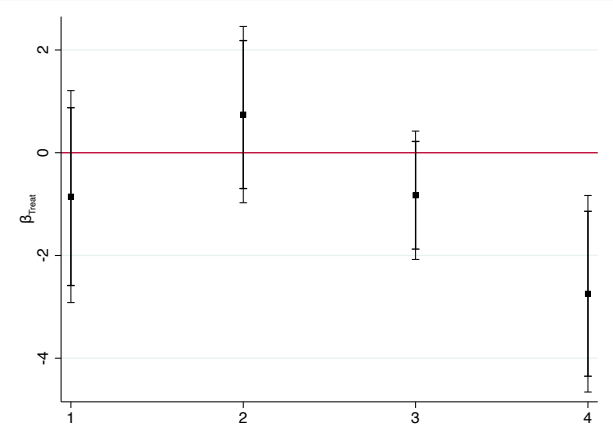
Labor MRP-cost gaps regression by labor share quartiles

$$\log(Y_{i,t}) = \gamma_i + \tau_t + \left(\sum_{k=1}^{4} \beta_k S_i \cdot \mathbb{1}\{labsh_{bin} = k\} + \gamma \mathbf{X_{i,pre}}\right) \cdot \mathbb{1}\{t = Post\} + FE_{i,t} + \varepsilon_{i,t}$$



90 and 95 % CI displayed. Back