

Firm dynamism, productivity and the German anomaly

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Introduction

- Firm creation, growth, decline and death, and the reallocation of factors of production associated with this process, is a key to productivity growth (Schumpeter, 1942)
- New firms introduce new or better business models and products
 - Large existing firms: agency problems may prevent radical innovation
- Exit is key: Scarce resources become available to new or more productive firms

Introduction

- ▮ The literature finds ample evidence for the role of firm dynamism in productivity growth
 - Foster, Haltiwanger, and Krizan (2001): entry and exit of plants account for 25 percent of U.S. manufacturing productivity growth.
 - Brandt et al. (2012): entry and exit account for 72 percent of Chinese manufacturing productivity growth.
 - Asturias et al. (2017) also find that a large fraction of aggregate productivity growth is due to firm entry and exit in China and Korea.
 - Haltiwanger, Jarmin and Miranda (2013), Haltiwanger et al. (2016) and Decker et al. (2014): large role of start-ups in creating new jobs and increasing aggregate productivity.
 - Bartelsman, Haltiwanger and Scarpetta (2004) suggest that business dynamism also forces incumbent firms to improve their performance

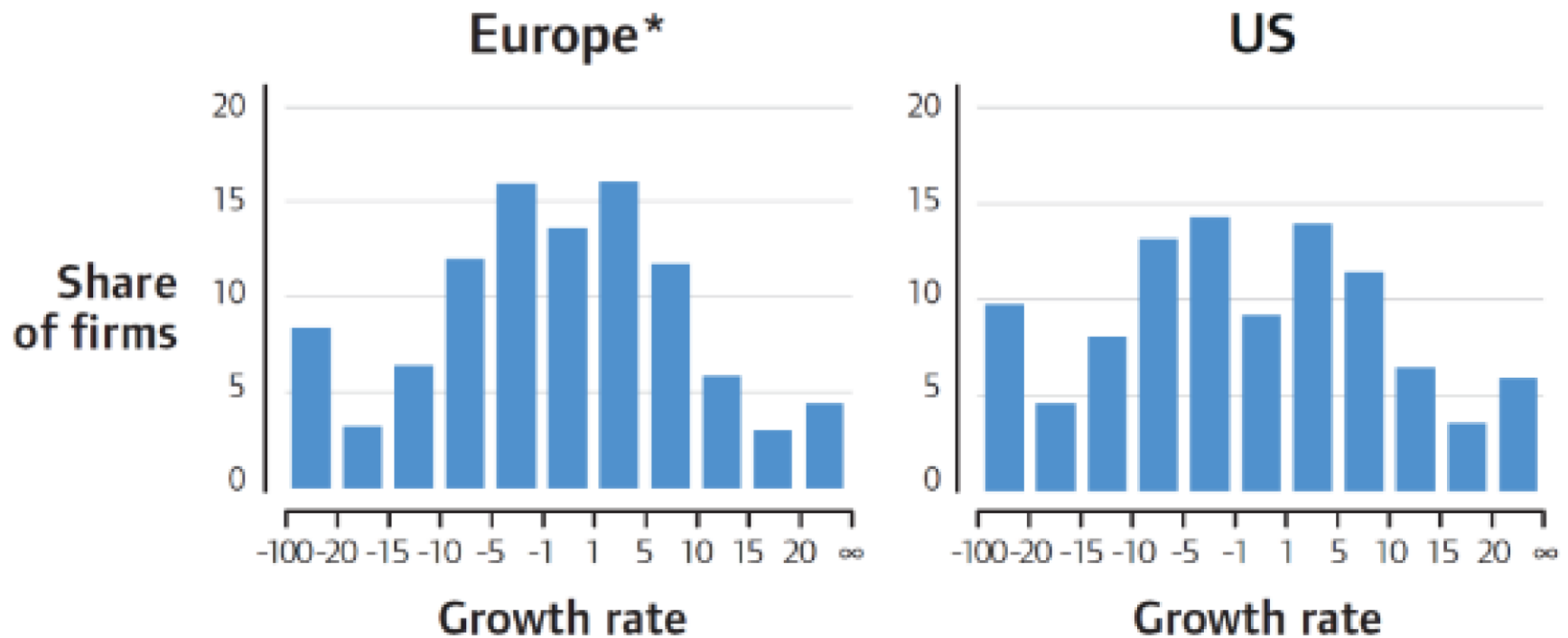
Introduction

- The literature links lack of firm dynamism to different frictions in labor and financial markets: Restuccia (2018), Bartelsman, Haltiwanger and Scarpetta (2013), McGowan, Andrews and Millot (2017)
- Labor market frictions appear to be particularly important as in Haltiwanger, Scarpetta and Schweiger (2014), Bartelsman, Gautier and De Wind (2016)
 - differences in labor market institutions across countries affect the pace of job reallocation.
 - Labor market frictions generate a factor misallocation, reduce the incentives to invest in new and risky technologies

This paper: Starting point

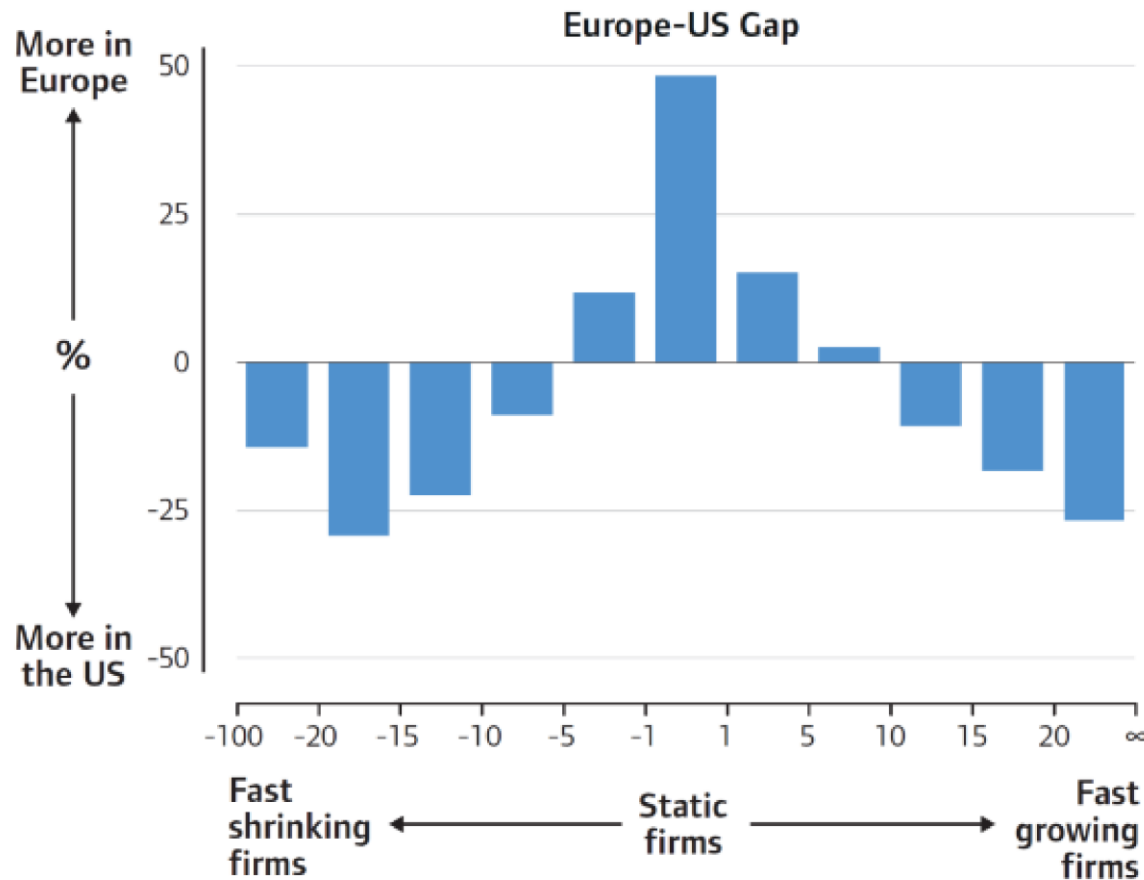
- Little evidence on Europe and individual European countries
- Bravo-Biosca (2011, 2016) shows that Europe has more static firms (firms that neither grow nor shrink) compared to the U.S.
- Links this to the lower productivity growth in Europe

Starting point: Growth distribution of firms



Source: Bravo-Biosca, 2016

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This paper

- Replicate and update Bravo-Biosca (2011, 2016) for eight European countries
 - Document firm growth patterns for individual countries
 - Examine the correlation between firm dynamism and productivity
-
- Link firm dynamism to structural factors in the European economies to obtain policy recommendations

Data

- Amadeus firm level data (2017 and 2019 vintage)
- All firms >10 employees
- BE, DE, ES, FR, IT, NL, PT, SE
- Sample period: 2013 to 2016
- Coverage for number of employees and sales better than for other variables
 - Focus largely on number of employees as Bravo-Biosca (2016)
- Median firm ~20 employees

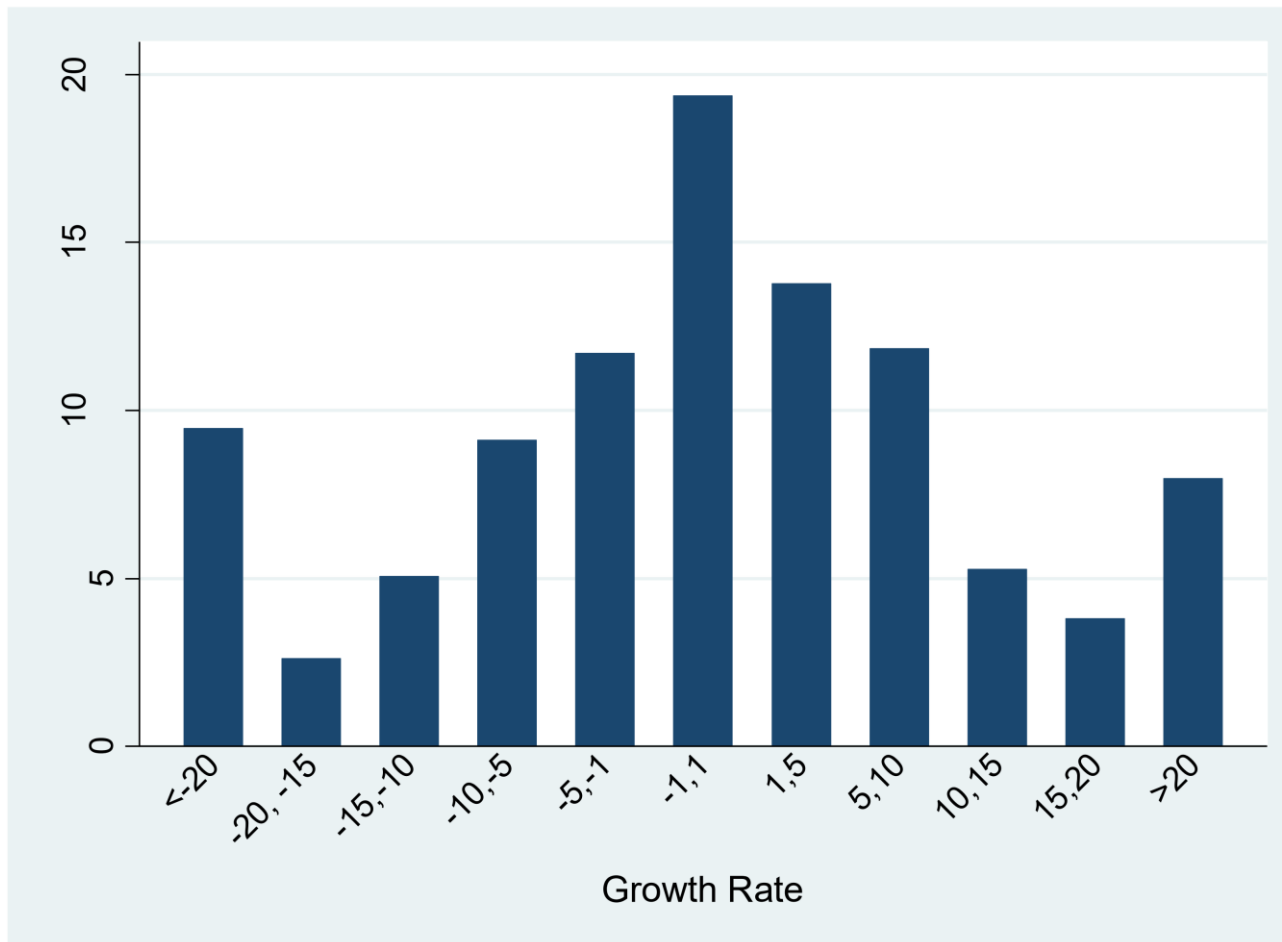
Coverage

Table 1: Percentage of Active Firms in Amadeus as a Share of Eurostat

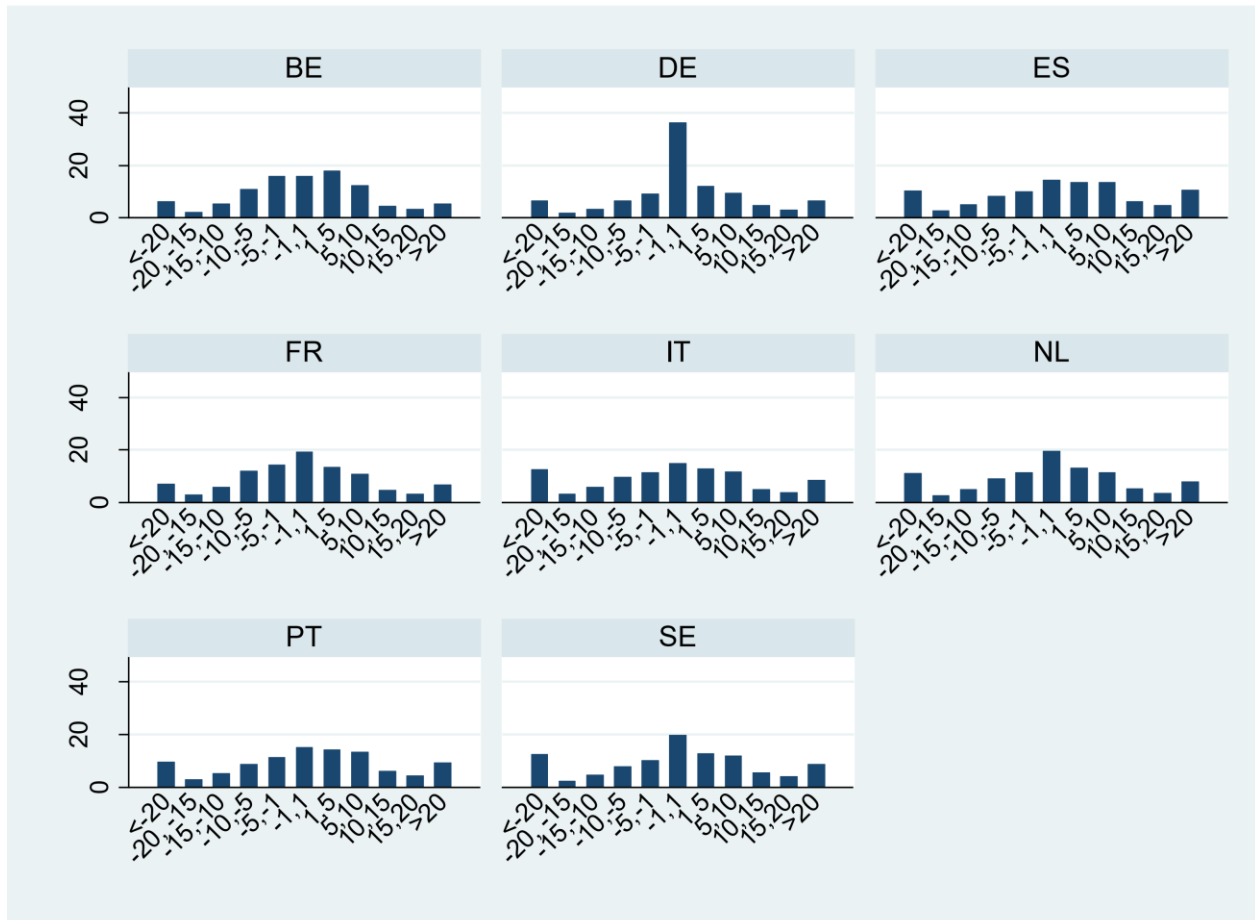
For the Sectors Manufacturing, Information and Communication, and Construction

Country	2012	2013	2014	2015	2016
BE	89%	90%	91%	91%	91%
DE	38%	84%	79%	77%	80%
ES	81%	81%	82%	84%	82%
IT	83%	87%	91%	96%	95%
FR	31%	41%	47%	45%	44%
NL	94%	90%	91%	88%	76%
PT	91%	93%	94%	94%	94%
SE	83%	84%	86%	88%	89%

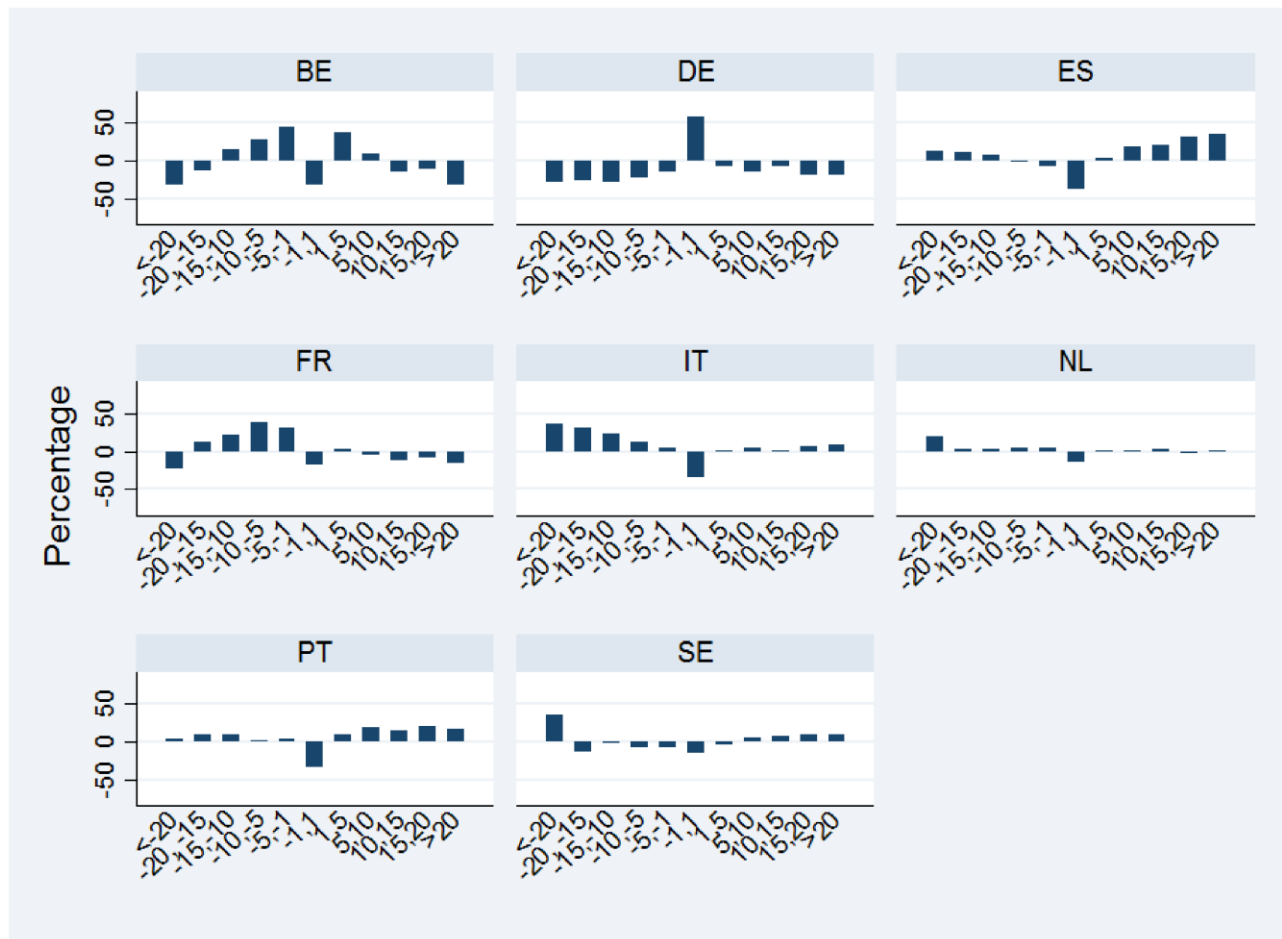
Results: Firm growth rates, combined sample



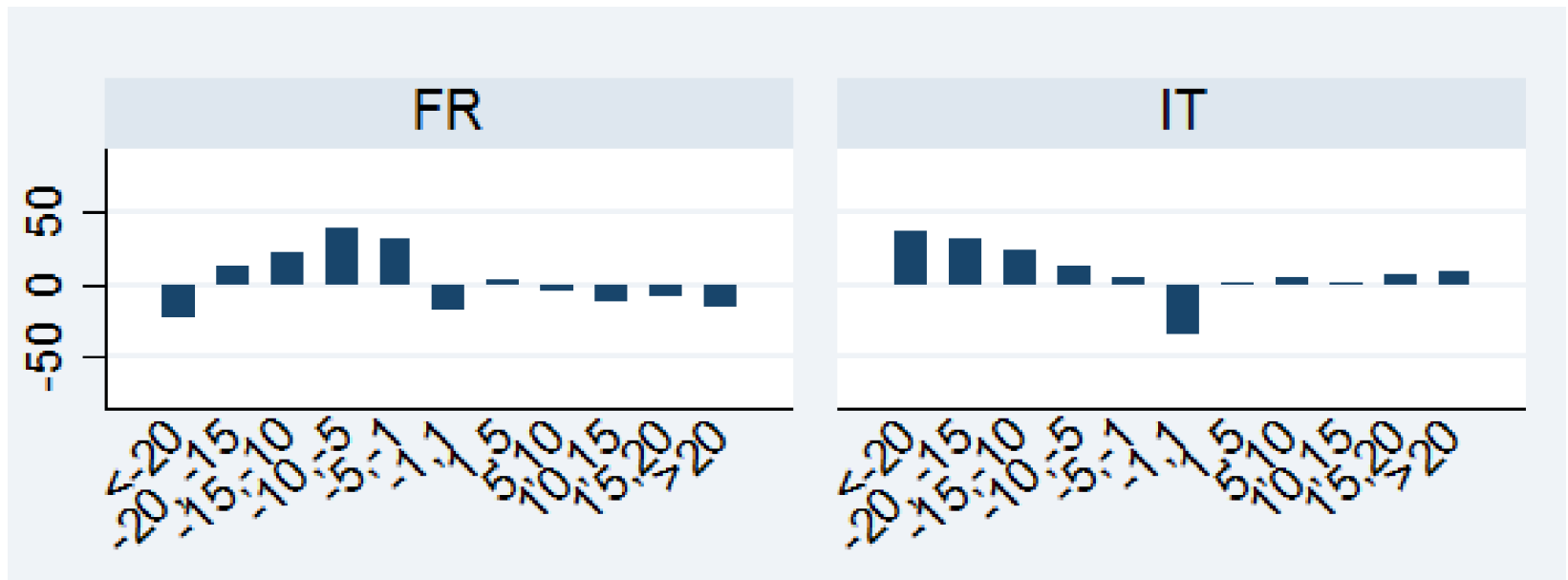
Results: country by country



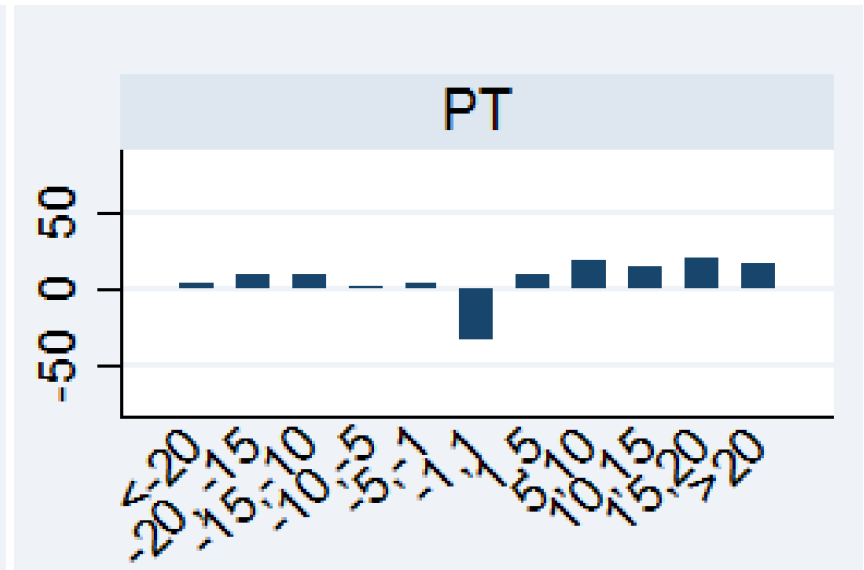
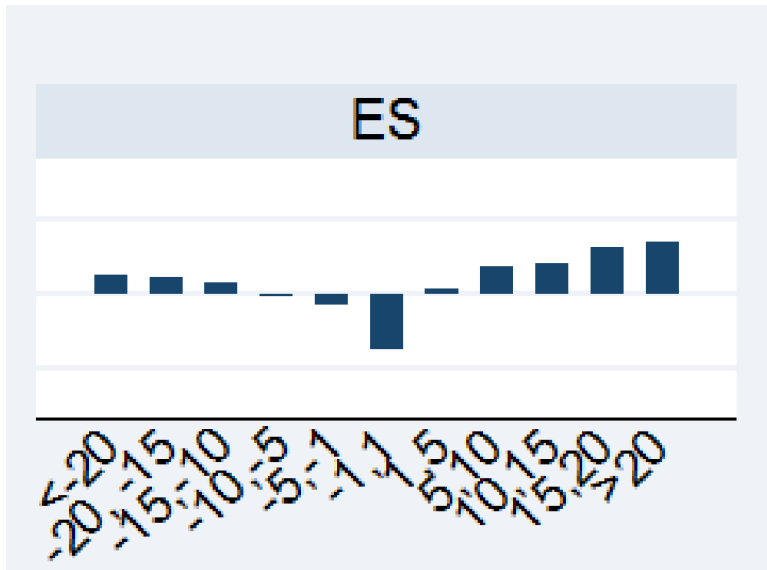
Growth distribution relative to sample average



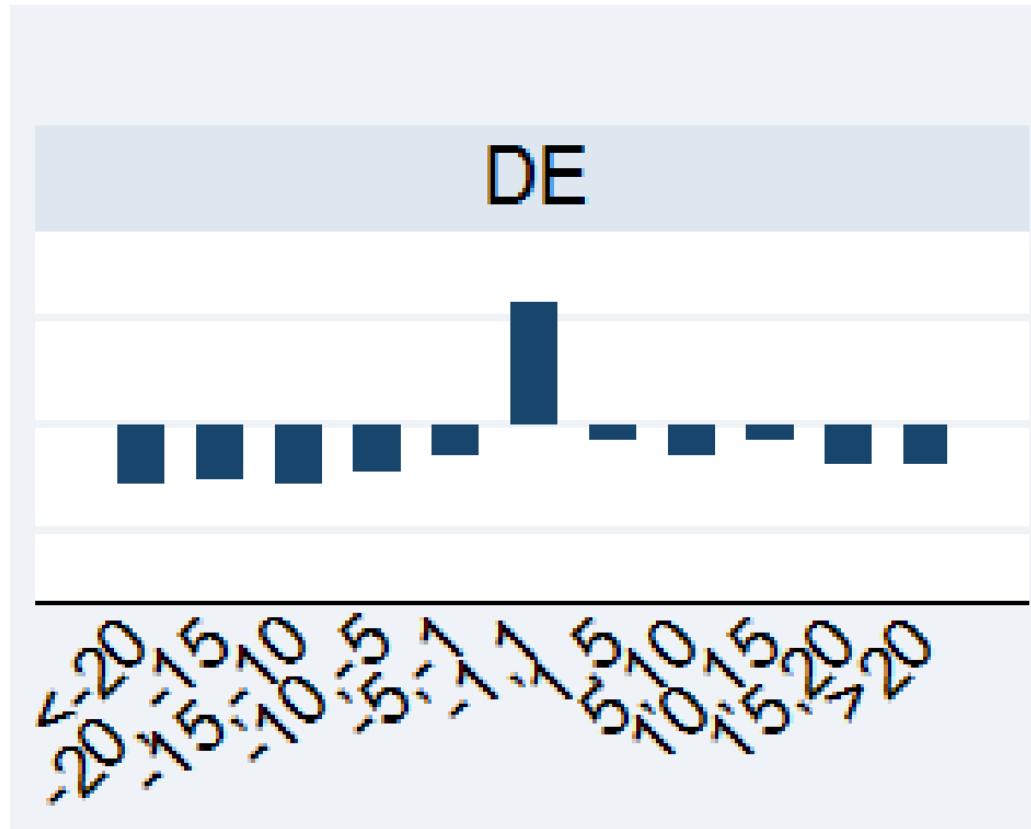
France and Italy: shrinking firms



Spain and Portugal: growing firms



The German anomaly



Sector-Country productivity growth

Table 4: Annualized Country-Sector Labor Productivity Growth p.p. (2013-2016)

	Mean	SD	Min	p25	p50	p75	Max	n
BE	2.27	1.7	0.3	0.8	2.0	3.2	6.0	15
DE	3.20	2.2	-1.3	1.7	3.0	5.4	6.0	14
ES	0.73	2.1	-4.8	-0.5	1.5	1.8	3.9	15
FR	1.34	1.0	-0.3	0.6	1.2	1.9	3.8	15
IT	0.36	5.1	-16.4	0.2	1.3	1.8	7.4	15
NL	3.18	3.4	-1.7	0.8	2.1	4.7	10.0	14
PT	1.36	3.9	-1.8	-1.3	0.9	2.1	10.5	15
SE	0.67	3.5	-5.9	-0.6	1.1	2.3	6.0	12

Firm dynamism and productivity

DE included

	(1)	(2)	(3)	(4)	(5)	(6)
	LP Growth	LP Growth	LP Growth	LP Growth	LP Growth	LP Growth
Percent Static	-0.036 (0.063)	-0.074 (0.069)		-0.128** (0.047)	-0.134* (0.057)	
Employment Growth		-0.184 (0.217)	-0.093 (0.224)		-0.185 (0.224)	-0.013 (0.253)
Distance to Frontier		0.025 (0.041)	0.032 (0.036)		0.024 (0.048)	0.032 (0.040)
Percent Growing			0.001 (0.097)			0.054 (0.106)
Percent Shrinking			0.135 (0.077)			0.239*** (0.038)
Observations	115	115	115	101	101	101
Adjusted R^2	0.300	0.331	0.345	0.268	0.291	0.323

Standard errors in parentheses clustered at the

* $p < .10$, ** $p < .05$, *** $p < .01$

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Digging deeper on the German anomaly

- Does Germany have more firms in sectors that are static (manufacturing, say), but patterns in other sectors look like in other countries?
- Does Germany simply have more firms in a certain size class (“Mittelstand”) that are static?
- Does Germany have more firms in the extreme tails of the distribution, explaining the high productivity growth?
- Does Germany have more entry and exit compared to other countries?

Digging deeper on the German anomaly

- ▮ Do specific labor market characteristics in Germany affect employment growth?
 - Do German firms adjust employment at the intrinsic (hours worked) and not the extrinsic margin (hire and fire)?
 - We find similar patterns for sales growth: Germany's share of static firms is much higher than in other European countries
- ▮ Is the German anomaly simply a data issue?
 - We find a disproportionate number of firms with “round” employment and sales numbers in the data
 - Also many firms with *identically zero* growth in employment
 - However, even eliminating all firms with zero growth and focusing on firms with 50+ employees still shows a disproportionate share of static firms relative to other countries

Conclusion

- Results show less firm dynamism in all European countries compared to the U.S.
- However, the link between firm dynamism and productivity growth breaks down when including Germany
- Germany has high productivity growth (although lower than the U.S.) and extremely low firm dynamism
- Suggests that perhaps there is an alternative mechanism to Schumpeter's creative destruction that can facilitate innovation
 - What is this mechanism?
 - What is the institutional and regulatory environment that facilitates this mechanism?