

Financial Institutions' Stability and Competitiveness in the European Union

"Who will provide the next Financial Model? Asia's Financial Muscle and Europe's Financial Maturity" - EUSI Conference

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Keio U., Tokyo - 10 December 2011

Motivation

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- While the stability of banks is crucial to ensure a smooth working of the economy over the cycle (demand side), how central are banking institutions in boosting growth and competitiveness (supply side) in the EU context?

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- 2 Explore the (organizational, financial, strategical) characteristics of firms more likely associated to a higher productivity (and hence higher competitiveness) via a novel comparable firm-level dataset at the European level (EFIGE)
- 3 Evaluate whether and to what extent those identified characteristics linked to competitiveness depend on the 'health' of financial institutions (banks)

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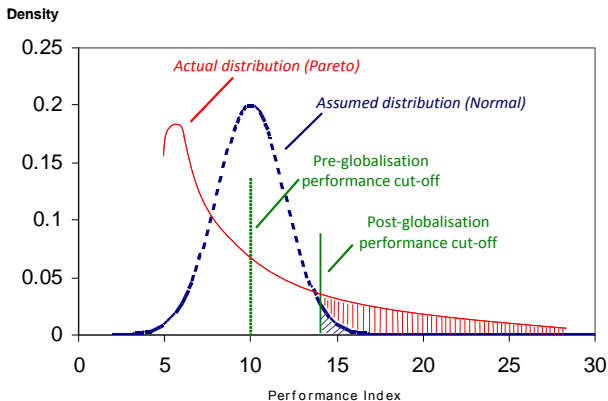
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- In this sense, Krugman's idea of competitiveness being 'a poetic way of saying productivity' is probably right

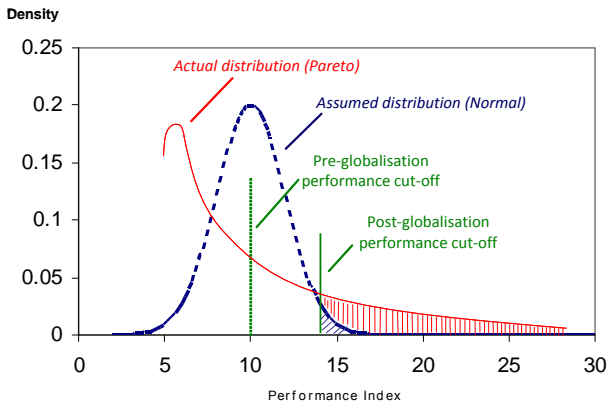
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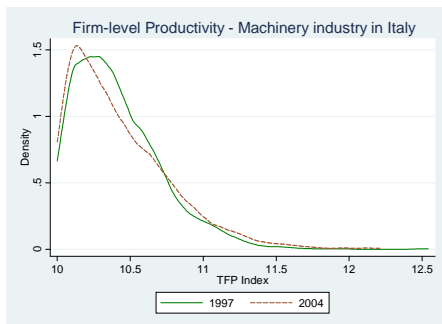
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- What it matters for competitiveness is thus the ability to *reallocate* resources so that firms move from below to above the relevant cutoff

An example

- We plot the distribution of firms' productivity before (1997) and after (2004) the introduction of the euro for an Italian industry: the right-hand tail of very productive firms becomes thicker, while initially less productive firms are losing out, i.e. the competitiveness of the industry is increasing
- Policies aimed at competitiveness should concentrate on 'thickening' the right hand tail of firms fostering reallocation of resources from bad to good firms; policies aimed at social cohesion should deal with the exiting firms => two objectives = two distinct policies: there is no 'average' policy for the industry



Internationalization as a proxy for competitiveness

- The latter effects are well known to the economic literature: trade liberalization has a positive impact on aggregate productivity through the **selection** of the most productive firms
- After the trade shock, initially active domestic firms end up being partitioned into three groups:
 - the least productive firms start making losses in their home markets without gaining access to foreign markets and have to exit;
 - the most productive firms compensate lost profits on domestic sales with new profits on foreign sales, thus being able to survive and expand their market shares abroad;
 - firms with intermediate productivity also survive but are not productive enough to gain access to foreign markets, and their market shares shrink
- Moreover, the partition is such that aggregate productivity rises also thanks to the **reallocation** of productive resources from less to more efficient firms

The role of internationalization - data

- Evidence from a new dataset built within the 7th RFP of the European Commission: Bruegel/Unicredit EFIGE dataset.
- Representative samples of manufacturing firms >10 employees across countries: the first comparable dataset in Europe assessing (among others) all the dimensions of internationalization of firms (export, imports, outsourcing, FDI) together with other structural characteristics not observable from balance sheet data. Stratification by industry and firm size

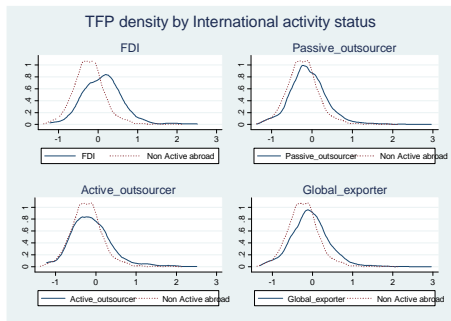
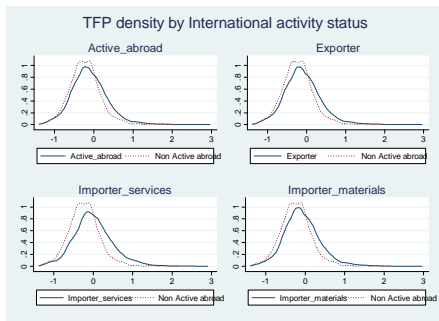
Table 1: The EFIGE dataset by country

Country	Number of firms
Austria	443
France	2,973
Germany	2,935
Hungary	488
Italy	3,021
Spain	2,832
UK	2,067
Total	14,759

Source: EFIGE Survey dataset.

International firms are better

- International activities of firms are strongly correlated to productivity measures. Here we compare the performance (log TFP) across seven EU countries of firms active internationally vs. those with only a domestic exposure.



Internationalization status and productivity premia

- The 'productivity premium' indeed increases with the complexity of internationalization activities, controlling for a number of characteristics

Table 5: International status and TFP premium

Dep. variable: TFP	(1)	(2)	(3)	N
	OLS	OLS	O.Probit	
Active abroad	0.0906*** (0.0132)	0.0353*** (0.0128)	0.261*** (0.0290)	7,259
Exporter	0.0999*** (0.0136)	0.0399*** (0.0131)	0.272*** (0.0298)	6,563
Importer of services	0.171*** (0.0171)	0.0626*** (0.0171)	0.620*** (0.0531)	3,334
Importer of materials	0.118*** (0.0142)	0.0449*** (0.0138)	0.394*** (0.0332)	5,320
FDI	0.257*** (0.0329)	0.0980*** (0.0357)	0.750*** (0.0750)	1,862
Passive outsourcer	0.122*** (0.0151)	0.0558*** (0.0150)	0.329*** (0.0342)	4,372
Active outsourcer	0.134*** (0.0309)	0.0477 (0.0306)	0.364*** (0.0755)	1,777
Global exporter	0.156*** (0.0168)	0.0699*** (0.0167)	0.425*** (0.0368)	3,652
Country fixed effects	Included	Included	Included	–
Industry fixed effects	Included	Included	Included	–
Firm size	Excluded	Included	Excluded	–

Notes: Standard errors in parentheses. *** denotes statistical significance at the 1-percent level. One cross-sectional regression for each internationalization characteristic, with sector and country dummies. Column 2 controls also for the size class of firms (10-19; 20-49; 50-249; >=250 employees). The number of observations is given by the number of inactive firms plus the number of firms active in the selected international activity. All regressions control for country and industry fixed effects.

Which firms' characteristics drive reallocation ?

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- ② identify those firms that between 2001-7 and 2008-09 switch from below to above such a decile of productivity: firms experiencing reallocation around the cutoff
- ③ test for the firms' characteristics associated with the probability of being a 'switching' firm vs. other firms in the sample

Switching firms: identifying the relevant cutoff

- We test the joint probability that deciles of TFP above a random one are significantly associated to a given international status, controlling for industry, country (1) as well as firm-size (2) fixed effects

Critical threshold of TFP

Ho: Pct_7=0, Pct_8=0, Pct_9=0, Pct_10=0				
	Active abroad		Exporter	
	(1)	(2)	(1)	(2)
chi2(4)	75.39	22.97	57.37	11.38
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- We find this critical threshold to be the 7th decile of TFP (consistently with prev. figures): below this threshold, the probability of being internationally active is not significant

Switchers' Characteristics - 1 (Structural Features)

- We then identify 942 firms that between 2001-07 and 2008-09 switch above the 7th decile of TFP: these firms tend to be relatively small but are more capitalized and with lower ULC with respect to the average firm in the sample. Young Innovative Companies ?

Characteristics of firms with respect to their TFP dynamics

Change in TFP w.r. to the cutoff (7 th TFP decile)	N. of firms	Avg. turnover per firm (in 1,000 EUR)	Avg. n. of employees	Avg. Capital stock per employee (in 1,000 EUR)	Total Factor Productivity	Unit labour cost (in EUR per unit of value added)	Labour productivity (value added per employee)
Remain below	3823	4146.1	27	157.9	0.653	0.845	39.346
Move below	1010	12271.1	66.5	188.5	0.821	0.886	48.652
Move above	942	7805.9	34	202.4	1.129	0.65	68.755
Remain above	2856	53921.1	341.9	248.8	1.546	0.649	79.394
Total	8631	19462.2	126.3	193.1	0.989	0.772	55.441

Switchers' Characteristics - 2 (Financial Features)

- Looking at financial characteristics, switching firms do not seem to differ systematically with respect to other firms in the sample, but for the fact that they appear to self-finance their activities (FII: capital + cash / tot. assets) to a larger extent

Dynamics	Avg. FII	Avg. CashR	Avg. IFP	Avg. CurrR	Avg. LR	Avg. LevR
Remain below	0.419	3.855	0.211	10.808	0.208	1.361
Move below	0.594	0.315	0.118	2.435	0.333	0.364
Move above	4.347	0.396	0.144	1.791	0.23	0.793
Remain above	0.607	0.611	0.099	2.773	0.315	1.031
Total	0.953	1.821	0.15	5.748	0.265	1.072

- Probit regressions to show the extent to which some firm characteristics influence the probability of switching. We include the following variables, derived from the EFIGE dataset:
 - **Structure:** size class, age, foreign ownership, facing competition, use of flexible contracts, quality certificates
 - **Management:** family managed (if $>$ national average), family CEO, decentralized management, performance-related bonus
 - **Innovation:** human capital (if graduate workers $>$ national average), R&D workers, product/process/market innovation
 - **Finance:** Financial Interdependency Index, Liquidity Ratio, bank credit requested & bank credit obtained

Note: other financial variables (Cash Ratio, Leverage Ratio, Index of Financial Pressure, Current Ratio) have been ruled out by a 2-step Heckman selection model where the (lagged) financial variable acts as a predictor of the internationalization status, controlling for (lagged) productivity in the first stage (to control for endogeneity)

Results on switching firms - 1

- **Financial variables:** Firms with higher financial capital have a higher probability of switching in both specifications (change in control group, as sensitivity check). Human capital and salaries linked to productivity (bonus) are also positive.

VARIABLES	Swing=1=Move Up	Swing=1=Move Up
	Swing=0=Remain/get below	Swing=0=Remain
r_d	0.102 (0.0802)	0.0996 (0.0854)
age	-0.0296 (0.0865)	-0.0332 (0.0929)
hk	0.167** (0.0827)	0.185** (0.0886)
labour_flex	-0.128 (0.105)	-0.163 (0.114)
FI	0.643*** (0.212)	1.087*** (0.234)
LR	-0.493** (0.221)	-0.389 (0.238)
fam_managed	-0.0812 (0.0891)	-0.147 (0.0941)
fam_ceo	-0.0121 (0.0876)	-0.0353 (0.0936)
for_group	-0.00848 (0.252)	0.377 (0.314)
decentr_manag	-0.110 (0.0928)	-0.0981 (0.0987)
bonus	0.145* (0.0868)	0.203** (0.0939)
qual_cert	0.00311 (0.0792)	-0.0163 (0.0842)
comp	0.0317 (0.0807)	0.102 (0.0860)

Results on switching firms - 2

- **Credit variables:** Firms that require more credit from banks have a lower probability of switching, as well as firms that are family-managed. R&D, human capital, being part of a foreign group and having productivity-based salaries are associated to a higher probability of switching.

VARIABLES	Swing=1=Move Up	Swing=1=Move Up
	Swing=0=Remain/ get below	Swing=0=Remain
r_d	0.128*** (0.0459)	0.139*** (0.0485)
age	-0.0260 (0.0472)	0.0269 (0.0504)
hk	0.0598 (0.0473)	0.0845* (0.0505)
labour_flex	-0.00658 (0.0601)	-0.0183 (0.0639)
fam_managed	-0.115** (0.0530)	-0.129** (0.0555)
fam_ceo	-0.0570 (0.0481)	-0.0823 (0.0511)
for_group	0.154 (0.0989)	0.244** (0.112)
decent_manag	-0.00883 (0.0508)	0.00512 (0.0544)
bonus	0.0738 (0.0495)	0.115** (0.0532)
qual_cert	0.0769* (0.0457)	0.103** (0.0480)
comp	-0.0420 (0.0455)	-0.0242 (0.0483)
credit_req	-0.231** (0.0989)	-0.278*** (0.104)
credit_obt	0.140 (0.113)	0.156 (0.119)

Results on switching firms - 3

- Innovation variables.** As in the previous case, family managed firms and those that have requested more credit have a lower probability of switching. Innovating (process) increases the same probability. The same is true for firms which are part of foreign group and partially link the salary to the performances of employees (only in the second specification).

VARIABLES	Swing=1=Move Up	Swing=1=Move Up
	Swing=0=Remain/get below	Swing=0=Remain
age	-0.0270 (0.0472)	0.0254 (0.0504)
hk	0.0714 (0.0473)	0.0992** (0.0505)
labour_flex	-0.00468 (0.0601)	-0.0153 (0.0638)
fam_managed	-0.114** (0.0529)	-0.130** (0.0554)
fam_ceo	-0.0576 (0.0482)	-0.0823 (0.0511)
for_group	0.148 (0.0989)	0.238** (0.112)
decentr_manag	-0.00331 (0.0507)	0.0121 (0.0542)
bonus	0.0744 (0.0497)	0.116** (0.0535)
qual_cert	0.0815* (0.0458)	0.109** (0.0481)
comp	-0.0319 (0.0453)	-0.0131 (0.0482)
credit_req	-0.225** (0.0988)	-0.274*** (0.104)
credit_obt	0.131 (0.113)	0.146 (0.119)
product_innov	0.0641 (0.0579)	0.0810 (0.0616)
process_innov	0.0801* (0.0445)	0.0824* (0.0475)
mkt_innov	-0.0815 (0.0632)	-0.109 (0.0675)

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- Clearly this is a correlation, not causality. The possible channels are twofold, organizational and financial:
 - family-managed firms rely more on bank credit than equity financing, while at the same time being more risk averse and thus investing less in innovation
 - secured bank loans are either not allocated properly (competitiveness vs. connectedness) or they are not the ideal tool to finance innovation (with venture capital or equity financing being more efficient alternatives)

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