ON TECHNOLOGICAL INTENSITY AND PERFORMANCE GAPS BETWEEN EU FOREIGN AND LOCALLY-OWNED COMPANIES

ALEXANDRA HOROBET – BUCHAREST UNIVERSITY OF ECONOMIC STUDIES

OANA POPOVICI – BUCHAREST UNIVERSITY OF ECONOMIC STUDIES & ROMANIAN ACADEMY

AGENDA

- Research objectives and background
- Research methodology
- Results and discussion
- Conclusions

RESEARCH BACKGROUND

- Are countries with larger inflows of FDI better off in terms of economic development, competitiveness, innovation or technological development seems?
  - Lack of convergence in the empirical studies.
  - The debate concerning the performance of FC versus LC particularly in unusual economic conditions is still open.

RESEARCH BACKGROUND

- Theory of multinational enterprises: the hypothesis of the specific-advantage (Dunning, 1973) which overcomes the liability of foreignness (Zaheer, 1995).
- Both foreign ownership and multinationality (= the benefits of being part of a network of affiliates) weight more heavily in building performance for FC.
  - Superior performance of FC in R&D productivity, wages, export intensities, less indebtedness, return rates (Notta&Vlachvei, 2008; Grasseni, 2010; Weche Gelubcke, 2011).

RESEARCH BACKGROUND

- The performance gap depends on **both** the ownership of the firm and the characteristics of the industry?
  - Less exploited topic in the literature.
  - ***Different results*** when empirical studies control for firm and industry-specific characteristics (Barbosa&Louri, 2005), when performance indicators are related to profitability (Weche Gelubcke, 2011), when investigating companies at sectoral level.
  - Still, FC have a growing role in in high-tech sectors (Liu, 2008). Results depend on the indicator of performance used (Bentivogli&Mirenda, 2016).

RESEARCH OBJECTIVES

- To investigate the prevalence of performance gaps between FC and LC in the EU.
- To establish whether the technological level of industries where FC and LC operate might be an explanatory factor for the performance gaps.
  - Differences between the labour productivity and profitability;
  - FC and LC from several industries with different levels of technological intensity.

DATA AND METHODOLOGY

- Data covers the period after the Global financial crisis, between 2008 and 2015.
- Data collected from the FATS - Foreign Affiliates Statistics (Eurostat)
  - “Controlled by the reporting country” - data referring to locally-owned businesses (LC)
  - “World total except for the reporting country” - data referring to foreign-owned companies (FC)
- FATS database considers as “foreign-owned” companies the ones where the share of foreign capital is at least 50% of the subsidiary's capital.
- 20 EU countries with highest data availability.

DATA AND METHODOLOGY

- Industries included in the investigation were selected depending on the level of technological intensity, as classified by Eurostat based on NACE Rev. 2 2-digit level.

Technological intensity	Industry
Medium high-technology industries	Manufacture of chemicals and chemical products (C20)
	Manufacture of electrical equipment (C27)
	Manufacture of machinery and equipment n.e.c. (C28)
Medium-low-technology industries	Manufacture of rubber and plastic products (C22)
	Manufacture of other non-metallic mineral products (C23)
Low-technology industries	Manufacture of food products (C10)
	Manufacture of textiles (C13)
	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (C16)
	Manufacture of furniture (C31)

- Indicators of performance:

Gross operating rate (GOR)	The ratio of gross operating surplus to turnover, close to a profitability ratio.
Apparent labour productivity (ALP)	The value added at factor costs divided by the number of persons employed.

DATA AND METHODOLOGY

- 4 stages of the statistical analysis:
  1. Calculation of averages for each industry/ country for FC and LC -> ***establishing differences between the two types of companies across industries.***
  2. Calculation of ratios of performance for FC against LC, for each industry and country, averaged for the 2008-2015 period -> ***establishing the variation depending on the industries' technological level***.
  3. Exploring the correlations across EU countries between performance indicators' values for FC and LC, based on averages between 2008 and 2015 -> ***observing whether LC tend to "mimic" the better performance of FC***.
  4. Investigating the correlations across EU countries between performance indicators' ratios of FC and LC, based on averages in the period 2008-2015 -> ***testing the performance gap connexion***.

RESULTS

- Significant gap in the case of productivity: higher ALP for FC in all industries.
- GOR is higher in favour of FC only for 5 industries.
- Overall performance of FC tends to be more homogeneous at EU level compared to the performance of LC.

Performance indicators for FC vs. LC, averages of EU countries 2008-2015

	Gross operating rate (GOR)						Apparent labour productivity (ALP)					
	Mean	Median	Minimum	Maximum	Std.Dev.	Mean SE	Mean	Median	Minimum	Maximum	Std.Dev.	Mean SE
Foreign-owned companies												
C20	10.741	10.294	5.625	15.925	3.151	0.705	89.682	93.506	25.250	187.575	45.205	10.108
C27	8.926	9.422	2.688	13.444	2.301	0.515	53.512	55.563	12.588	99.500	30.806	6.888
C28	10.611	9.694	6.838	19.730	3.564	0.797	57.347	65.425	14.163	92.838	29.419	6.578
C22	11.536	11.300	5.638	21.825	3.840	0.859	54.660	66.688	13.125	83.763	24.045	5.377
C23	12.630	10.934	7.563	23.148	4.771	1.067	58.787	61.231	25.463	87.438	21.586	4.827
C10	8.114	7.300	4.913	16.600	2.650	0.593	56.174	55.894	15.800	118.453	30.298	6.775
C13	9.255	9.213	5.066	19.125	3.403	0.761	42.572	36.714	9.913	120.088	29.858	6.676
C16	7.797	8.541	1.300	14.867	3.768	0.842	41.881	37.394	11.363	72.538	19.042	4.258
C31	6.991	7.478	-5.901	15.144	4.355	0.974	37.775	34.531	4.838	81.413	25.032	5.597
Locally-owned companies												
C20	9.489	9.025	2.050	20.450	3.988	0.892	61.929	54.138	11.450	126.352	36.608	8.186
C27	9.508	9.000	2.688	16.163	3.199	0.715	41.658	41.844	10.325	85.256	24.757	5.536
C28	10.451	10.569	5.700	14.988	3.007	0.672	44.238	42.494	9.363	93.500	26.779	5.988
C22	10.521	10.300	6.025	16.031	2.710	0.606	39.480	38.944	7.375	82.975	23.394	5.231
C23	10.840	10.338	7.613	16.060	2.367	0.529	37.404	36.206	9.400	67.813	21.321	4.768
C10	7.030	6.881	5.075	10.225	1.421	0.318	32.263	30.000	6.400	64.625	19.567	4.375
C13	9.373	8.988	3.588	16.163	2.768	0.619	29.253	29.731	5.813	63.488	18.076	4.042
C16	9.388	9.098	3.325	16.713	3.371	0.754	28.855	26.700	4.375	56.363	18.508	4.138
C31	8.216	7.819	4.488	14.263	2.676	0.598	26.740	22.453	5.188	54.000	16.730	3.741

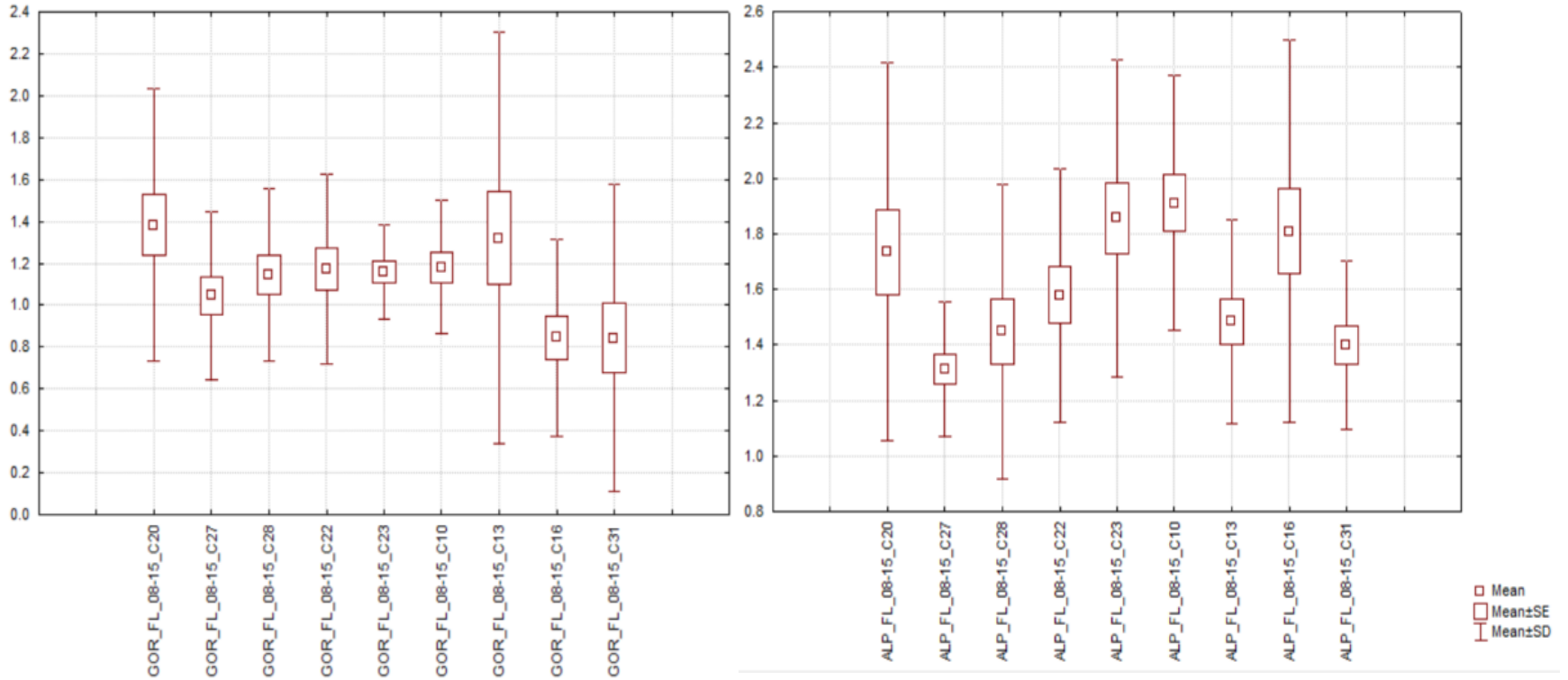
RESULTS

- If we relate to the mean values of the ratios: better profitability of FC for 7 out of 9 industries; the productivity gap is prevalent for all industries.
- The productivity gap is more accentuated than the profitability gap for this sample of countries.

Performance indicators' ratios of FC vs. LC, averages across countries 2008-2015

	Gross operating rate (GOR)						Apparent labour productivity (ALP)					
	Mean	Median	Min	Max	Std.Dev.	Mean SE	Mean	Median	Min	Max	Std.Dev.	Mean SE
C20	1.381	1.300	0.511	3.146	0.650	0.145	1.734	1.520	0.887	3.619	0.681	0.152
C27	1.046	0.998	0.297	1.990	0.400	0.089	1.311	1.265	0.942	1.860	0.243	0.054
C28	1.145	1.046	0.654	1.930	0.409	0.091	1.448	1.323	0.972	3.399	0.528	0.118
C22	1.171	0.975	0.774	2.430	0.453	0.101	1.579	1.555	1.029	2.437	0.457	0.102
C23	1.159	1.170	0.664	1.541	0.224	0.050	1.856	1.686	1.200	3.083	0.569	0.127
C10	1.182	1.198	0.774	2.031	0.320	0.072	1.911	1.916	1.174	2.706	0.460	0.103
C13	1.322	0.974	0.515	4.846	0.984	0.220	1.484	1.506	0.857	2.235	0.366	0.082
C16	0.845	0.763	0.148	2.153	0.468	0.105	1.810	1.574	1.020	3.254	0.688	0.154
C31	0.844	0.931	-1.696	2.126	0.736	0.165	1.399	1.461	0.691	1.897	0.302	0.068

RESULTS



Boxplots of performance indicators' ratios of FC vs. LC, averages across industries 2008-2015

RESULTS

Correlations between performance indicators' values for of FC and LC, based on averages across countries 2008-2015

	C20	C27	C28	C22	C23	C10	C13	C16	C31
GOR	*0.449*	0.350	0.440	*0.465*	*0.879*	*0.521*	0.301	0.330	*0.598*
ALP	*0.875*	*0.932*	*0.931*	*0.888*	*0.969*	*0.917*	*0.853*	*0.940*	*0.959*

Correlations between performance indicators' ratios of FC and LC, based on averages across countries 2008-2015

	C20	C27	C28	C22	C23	C10	C13	C16	C31
GOR - ALP	*0.678*	0.106	0.344	*0.544*	*0.594*	0.427	*0.591*	0.242	*0.687*

CONCLUSIONS

- There is no direct link between industries' technological level and the performance gaps.
- The performance gaps are prevalent and permanent for almost all industries and EU countries.
- The productivity gap is more accentuated than the profitability gap.
- Higher profitability and productivity levels of FC are accompanied by higher performance levels of LC, which might point towards positive spillovers from FC to LC.

THANK YOU!

alexandra.horobet@rei.ase.ro

oana.popovici@rei.ase.ro