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DELOCALISATION PROCESS AND CHANGES OF COMPETITIVE ADVANTAGES – A SURVEY OF ENTERPRISES*

The aim of this paper is to examine the link between the industrial delocalisation and the changes of the competitive advantages based on results obtained from a Survey of 756 enterprises in five EU countries. The study is enriched by providing cross-country analysis based on some secondary data indicators. An attempt is made by comparing the results from the Enterprise survey and the secondary data analysis to summarize the findings and to outline the specific features and effects of the delocalisation processes on the competitiveness of the EU countries and their firms. Patterns of development of labour intensive industries, their trade performance and countries competitiveness are related to the delocalisation processes.

The study revealed that both sides participating in delocalisation processes, gain in terms of increasing their competitive advantages and profits. However, for countries like Romania and Bulgaria the delocalisation process can bring to problems in their future development due to their low profitability of working under subcontracting.

JEL: D21, F21, O52

Introduction

All theoretical formulations predict increase of the industrial specialisation and intra-industry trade as a result of EU enlargement and trade liberalisation that leads to significant changes in the EU countries competitive advantages, (CEC, 2003). The growth of intra industry trade between developed EU-15 countries and the less developed new member states (NMS)³, especially in the typical labour intensive industries (LII) like footwear, clothing and textiles can be attributed to the delocalisation processes and more specifically to outsourcing activities, (Falk and Wolfmayer, 2005).

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³ New member states (NMS) – all countries that joined the EU after 2004.

The aim of this paper is to examine the link between the industrial delocalisation and the changes of the competitive advantages based on results obtained from a Survey of enterprises in five EU countries done in the framework of the Move Project. The study is enriched by providing cross-country analysis based on some secondary data indicators.

Delocalisation and trade competitiveness

One clear indicator of delocalisation activity is the intensification of the vertical intra industry trade, (Hoekman and Djankov 1996). This is confirmed also by the fieldwork analysis prepared under the MOVE project, which verified the interrelation between subcontracting and the intensification of intra industry trade. The analysis proved that there is significant⁴ dependence between involvement in delocalisation and the purchasing of intermediate products, as well as for the position in the production chain and subcontracting of labour intensive products.

Looking at the trade performance of EU countries with labour intensive products (Table 3) there can be drawn some important observations. In general, a process of losing comparative advantages in the EU countries is observed. This is valid for the EU-15 countries as well as for the NMS. Secondly, it is clear that the intensity of losing position in labour intensive products is higher for the Central European NMS compared to that of the EU-15. The third observation is the existing of a clear relationship between the EU countries industrial structure and their trade specialisation.

In order to explore this relationship, the countries are distributed in groups according their industrial structures by using cluster analysis⁵ with the following parameters (having their values for y. 2004) Relative concentration measured by the Herfindal indexes; Share of the Labour intensive sector in the total manufacture employment; SSD (sum of square differences) indexes between given country and the EU-27 average; Ranks of the SSD indexes⁶. On the next stage the cluster analysis was implemented again yet this time with the characteristics of international trade for the y. 2003 (specified by the indicators for revealed comparative advantages and trade specialization, (Table 3, columns 1, 2, 3 and 7, 8, 9).

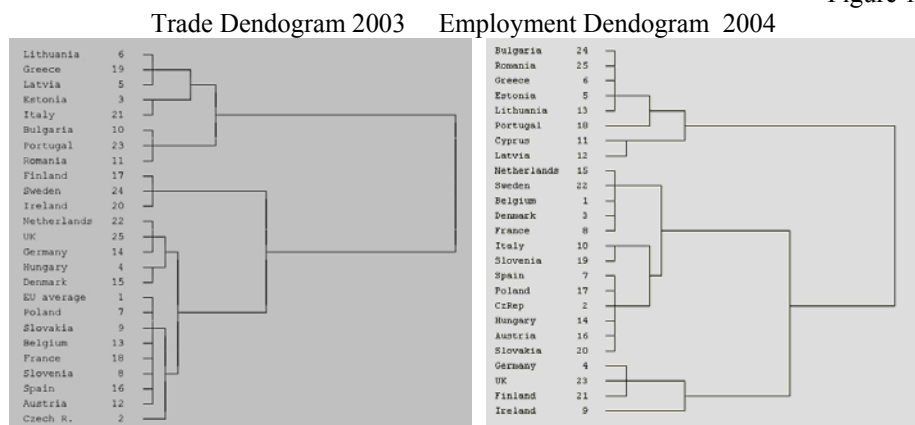
⁴ The Spearman's rank correlation coefficients are estimated for the clothing and footwear industries. They are statistically significant and approximately high (around 0.5) for the mentioned couples of variables.

⁵ The Discriminant analysis (Huberthy 1994) shows that higher predictor ability what concerns the industrial composition have the chosen parameters.

⁶ $SSD_t = \sum_i^n (a_{it} - b_{it})^2$ where [a, b] is a pair of countries, $i = 1, \dots, 21$ is the number of industries; t are time periods

The comparison of the obtained dendrograms, shows that there is an almost full overlap between the top-positioned corresponding clusters (Bulgaria, Romania, Lithuania, Latvia, Estonia, Portugal, and Greece).

Figure 1



Sources: UNCTAD/WTO data

Sources: Eurostat and own calculations

The cluster from the Trade Dendrogram can be characterized as the one containing the countries with the higher export of labour intensive products (it can be conditionally referred as the *High labour intensive cluster from the Trade Dendrogram*). The only discrepancy with the corresponding cluster from the Employment Dendrogram is the presence of Italy in this group.

On the other extreme of the Trade Dendrogram, there are located countries with less covered export of labour intensive products. These are Sweden, Finland and Ireland. The corresponding cluster from the other Dendrogram includes Finland, Ireland but also the UK and Germany. The last two countries did not fall into the corresponding Trade cluster and the explanation of this fact is that the mirroring of the production and trade structures is valid mainly for the small countries, which are supposed to have open economies and for which it is expected that the composition of production should reflect the composition of exports (Landesmann, 1996).

In between these two clusters, there is one that is not homogenous. It can be divided into two sub clusters. The first one is close to the High labour intensive countries, so this cluster can be referred as the *High to medium labour intensive cluster from the Trade Dendrogram*. It includes Poland, Slovakia, Belgium, France, Slovenia Spain, Austria and Czech Republic. The export of labour intensive products plays a certain role in these countries and most of them are involved in the delocalisation process in both sides – i.e. providing and undertaking subcontracting.

The other sub-cluster from this group includes the Netherlands, UK, Germany, Hungary and Denmark. This cluster can be specified as the Low to medium labour

intensive cluster from the Trade Dendogram. For these countries, the export of labour intensive products is declining and they are closer to the group from the Low labour intensive cluster.

Further analysis revealed that the divergences between the Trade and Employment Dendogram concerning the forming of clusters decreases in the course of time. If one compares the same Dendograms for the year 1995 it can be noticed that there is a quite different picture within them. It shows that the structural adjustment processes was very intensive in the beginning of the observed period, yet now they are calming down. One cannot expect such intensive delocalisation processes in the near future as the ones observed in the last decade. The formed clusters are not expected to undergo significant changes in the future. Verification for this statement is the tight similarity between the Trade cluster and Employment cluster in 2005 that came as a result of the process started near 1995, when such a similarity was not observed (Landesmann, 1996).

Intra industry trade is usually related to trade relations within developed countries. The intensity of the delocalisation process changes somehow this understanding because in the last decades the vertical intra industry trade has increased significantly between well-developed and less developed countries. Since the mid-90's, the vertical intra industry exchange between Western European countries and NMS (see Hoekman and Djankov, 1996) is playing significant part with the well established practice of transferring the inputs from the European Union (EU-15) suppliers to the NMS manufacturers, and export of the produced goods later back to the EU-15.

Specialization and competitiveness – the case of footwear industry

Countries specialization

The footwear production is one of the most typical branches of the labour intensive industries. The process of delocalisation of footwear industry is indicative for the relocation of the LII. A simple comparison by countries of the GVA, labour productivity and employment dynamics for this industry would show that the specialization here can be attributed to the delocalisation process mainly as a result of relocating of the low value added part of the production processes out from the EU-15 countries to the countries with cheap labour force, such as Romania and Bulgaria. In parallel, the shifting of the low value added part of the production from the EU-15 leads to increasing the share of the more high-quality products, which results in relative stronger decrease of the lower segments of the value chain. One finding from the Enterprise survey⁷ analysis is that there is a significant negative Spearman's rank correlation coefficient (minus 0.6) between the indexes showing

⁷ The survey (done under the MOVE Project) covers 750 respondents from European enterprises spread in five countries that participate in the delocalisation process. The examined enterprises are spread in four labour intensive industries: Clothing, Footwear, Electronics and Software.

the position in the production chain and the intensity of undertaking subcontracting of labour intensive products.

In the case of footwear industry one can see that the specialization measured by the share of the employed in the sector from the total employed in the manufacturing industries, is related to the level of the economic development. The comparison of this indicator with the GDP per capita in PPS (Purchasing power standard) yields a reverse relation, i.e. the linear correlation coefficient is minus 0.60, (Table 4, columns 4 and 5).

When one estimates this relation only for the EU-15 countries, the coefficient of correlation is rising significantly to reach minus 0.82. These figures are showing that, among the EU-15 countries, those featuring lower level of development are specialised as a rule in footwear industry. This relation is quite weak measured for the NMS only – the ratio drops to minus 0.20. Still, the specialization in footwear industry for NMS cannot be directly related with the level of economic development. However, the change of specialization in NMS shows that, in the near future, this indicator can be also indicative of the level of development of the NMS.

It is interesting to compare this correlation coefficient with the estimated one for the specialization in the industries with constant return to scale (CRS)⁸ and the GDP per capita in PPS (Table 4, columns 1 and 5). The correlation coefficient is minus 0.77, which is quite significant. This coefficient is approximately the same for the separate estimations of EU-15 and NMS. These results show that the specialization in the industries with CRS is closely related with the level of economic development, which also proves the validity of the relation between footwear specialization and the level of economic development from one side, and from the other – the validity of the prediction that the share of the employed in the footwear industry in the near future will be also indicative for the NMS level of development.

Countries Competitiveness

The indicator GVA/personal cost for the EU-15 shows that the figures for the UK are significantly above the average (UK 1.8 – EU average 1.3), Germany is slightly above the average 1.4; France, Italy and Spain are close to the average level, while Portugal and Greece have the lowest figures for EU-15, (Table 4, column 3).

Some interesting conclusions can be drawn by observing of the differences between labour productivity for all manufacture branches and footwear industry, (Table 4, columns 6 and 7). The variation for the footwear industry is significantly higher than for the total manufacture branches – the standard deviation for the footwear industry is 1.4, while for the manufacture sector as a whole is two times less (0.7). It shows that the productivity varies in wider than the average ranges for the footwear

⁸ Industries with constants return to scale (mainly low technological processing industries/labour intensive industries) from the NACE Division 15-37 are: Textile; Wearing apparel; Footwear ind.; Food ind.; Leather ind.; Wood ind.; Pulp and paper; Furniture; Metal prod; Other branches.

industry as a result of higher disposition to delocalize the low value added activities, (Falk and Wolfmayer, 2005). For example, the distinction of labour productivity in Romania and UK is 1:15 for the total manufacture productivity, while for the footwear industry is 1:36. The results of the Enterprise survey are in the same direction – 77 per cents of the UK companies point the differences in labour cost as the main reason to get involved in subcontracting/outsourcing activities. There is a very strong correlation between the question “Does your company give subcontracting” and the higher labour cost of production – the Spearman’s rank correlation coefficient is 0.8.

Countries trade specialisation

Despite the strong competition from low-wage countries (from Asia, above all) EU still preserves its strong position in the international footwear trade. The indexes of revealed comparative advantages (RCA) for the footwear industry in many countries remain higher than 1.0 (Romania 6.62; Portugal 3.95; Italy 3.67; Bulgaria 2.89; Slovakia 1.72 and Spain 1.51 – see Table 3, column 3).

The countries most specialized⁹ in the footwear export among the EU countries are: Romania - 7; Portugal - 14; Italy - 16; Bulgaria - 21; Slovakia - 36; Spain - 38, (Table 3, column 9, Figure 2). It is possible to add also countries like Estonia - 42, Slovakia - 45, Hungary - 47 and Poland - 55, but all of them are losing position in the course of time what concerns their rank specialization index.

The intra industry trade is significant what concerns trade between developed countries (mainly Italy) and less developed NMS (mainly Romania and Bulgaria). Most EU-15 export to Romania and Bulgaria is actually due to parts of footwear that are used for the fabrication of further parts or finished products destined for export to the EU-15.

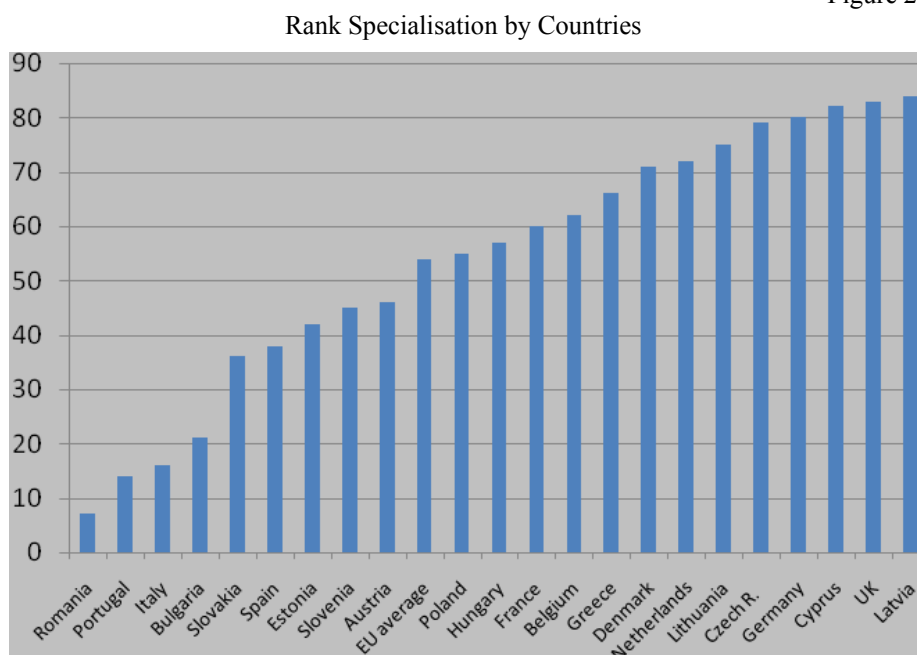
The increase of the intra industry trade can be attributed mainly to the delocalisation. Hoekman and Djankov (1996) outlined that there is a strong interdependence between the RCA indexes, intra industry trade and FDI from one side and the delocalisation process from the other. The gradation of the intensity of intra-industry trade is confirmed by the dynamics of the average share of the intermediate products purchases that come from abroad. These variables are higher for all countries that undertake subcontracting. At the same time, Spearman’s rank correlation coefficient shows significant interdependence between the destination point of product parts and undertaking of subcontracting.

The export and import between Italy, on one side, and Bulgaria and Romania, on the other side, is mainly in the low cost segment of the value chain. The share of the Romanian export to Italy in 2005 reaches up to 71 per cents from the total export and the share of the import from Italy is 63 per cents; these figures for Bulgaria

⁹ The countries are ranged by the rank specialization of the export. Rank 1 indicates that the country has the highest specialization index in the world for the sector under review – highest share of the specific product in its export.

respectfully are 73 per cents and 36 per cents.¹⁰ The analysis of trade specialization revealed that it is higher for the NMS and this specialization is due to the delocalisation processes. The more developed is one NMS, the less focused is its intra industry trade and the less intensive is the delocalisation processes in the footwear industry there.

Figure 2



Source: Table 3, column 9

Enterprise survey of the competitive advantages **Table 1** presents the changes of competitive advantages for the footwear industry as a result of the delocalisation process. The balance in comparative advantages (CA) is positive for Bulgaria and Poland. Actually, these are the countries that attained obvious increase of CA – Poland by 47 percentage points and Bulgaria by 16 percentage points. None of the other countries has negative balance. Comparing the results for footwear industry with those for all branches observed in the survey reveals that the delocalisation process in all branches results in higher increase of the number of CA than for the footwear industry.

The increase in percentage points for Bulgaria and Poland is approximately the same for footwear industry and all branches. Comparing the gain/loss ratio one can see that for all branches the gain of CA is always higher than for the footwear industry.

¹⁰ Sources: UNCTAD/WTO

Table 1
Changes of competitive advantages by countries after starting delocalisation process (the first figures are percentage of changes – the one in the brackets are the numbers)

Footwear	BG	EE	GR	PO	UK	Total
No→Yes	39% (17)	9% (1)	0% (0)	82% (28)	82% (18)	54% (64)
Yes→No	23% (10)	9% (1)	0% (0)	35% (12)	73% (16)	33% (39)
BALANCE /Percentage points/	16% (7)	0% (0)	0% (0)	47% (16)	9% (2)	21% (25)
Ratio Gained/Loosed	1.7	1.0	--	2.3	1.1	1.6
All Branches						
No→Yes	30% (60)	67% (134)	79% (63)	83% (166)	84% (63)	64% (486)
Yes→No	15% (30)	33% (65)	10% (8)	24% (49)	68% (51)	27% (203)
Balance/Percentage points/	15% (30)	35% (69)	69% (55)	58% (117)	16% (12)	37% (283)
Ratio Gained/Loosed	2.0	2.0	7.9	3.4	1.2	2.4

Source: Enterprise survey

UK and Poland are the countries where the economic environment has been changed a lot with the delocalisation processes. In these countries, significant shifts in CA are observed – UK gains 82 per cents of some of the CA but loses 73 per cents in other positions. The figures for Poland are accordingly 82 per cents and 35 per cents. Significant decline of the number of employed for the last years in those countries is also observed, (Table 4, column 2).

Another question related with the CA is whether the companies are principally threatened by ‘Low cost’ or ‘High quality’ products, (Table 2).

Table 2
Threatening in principally from Low cost or High quality products (in per cents)¹¹

	Footwear		ALL Branches	
	Low cost products	High quality products	Low cost products	High quality products
Bulgaria	95.3	4.7	86.7	13.3
Poland	77.4	22.6	65.4	34.6
UK	40.0	60.0	36.6	63.4

Source: Enterprise survey

The first conclusion that can be drawn is that the results for the footwear industry are similar to the figures for all branches.¹² In principle, the footwear industry is more threatened by ‘Low cost products’ than the other branches. If we accept that the competition of ‘Low cost products’ and ‘High quality products’ corresponds to the place occupied by the firms in the value chain, the result can be interpreted in sense that Bulgaria is at the lower end of the value chain, Poland is also at a lower end but a little bit upper than Bulgaria, while the UK is at a much higher level.

¹¹ Greece and Estonia are not included because the answer to this question is probably disturbed for different reasons.

¹² In the case of Greece, the number of the unanswered to this question is enough higher to bias the result; therefore, figures for Greece are not presented.

Another confirmation of this conclusion is that the companies from Central Europe (in our case in Poland) occupy a higher position in the production chain than those in Bulgaria, where 86 per cents of the respondents declare that they occupy low or intermediate levels of the value chain against 60 per cents for Poland.

Summary

Specialization and trade orientation in footwear industry (and generally in the Labour intensive sector) is accepted as risky since the branch (sector) is producing low added value products and the production can not be easily diversified – has limited possibility of redirecting to new products. However, the analysis definitely reveals that, in the framework of the EU, so far the delocalisation process is a win-win process in terms of economic development for both sides. The Enterprise survey revealed that both sides participating in delocalisation processes (providers and undertakers of subcontracting), gain in terms of increasing their competitive advantages and profits, yet the later ones (those undertaking of subcontracting) gain a little bit more by participating in this activity.

As main “negative” effect for providers of subcontracting can be accept the drop in employment, although featuring quite high negative rate it is not drastic in absolute figures. This is due to the fact that in the main producer countries, such as Italy, Spain and Portugal, the drop in employment is not high. The situation in the NMS is the same; there, the drop in employment does not entail dramatic social consequences.

A real problem may be faced by countries like Romania and Bulgaria where the number of employed in the footwear industry (Labour intensive sector) is high, on the one hand, and on the other hand, it is a result of working mainly under conditions of subcontracting. Due to the low profitability of working under subcontracting, the possibilities to develop other activities are quite limited. This is valid mainly for the lagging regions in these countries where the footwear industry location is significant. However, this process cannot be qualified as negative even for countries like Bulgaria, since at this stage this is possibly the only alternative for economic growth and solving social problems in these regions, (Totev and Sariiski, 2005). At the same time, the analysis shows that, quite often, subcontracting can be the first step to higher forms of business cooperation; it might help to upgrade domestic production.

Table 3
EU-27 Revealed Comparative Advantage and Rank specialisation indexes¹³

	RCA – (1999-2003)			RCA (1999-2003) minus (1996-2000)			Rank specialization index (1999-2003)			Rank specialization index (1996-2000) minus (1999-2003)		
	Textiles	Clothing	Footwear and Leather	Textiles	Clothing	Footwear and Leather	Textiles	Clothing	Footwear and Leather	Textiles	Clothing	Footwear and Leather
	1	2	3	4	5	6	7	8	9	10	11	12
EU average	0,98	1,35	1,41	-0,27	-0,31	-0,11	49	72	54	-1	-4	-3
Cyprus	0,89	0,82	0,34	-2,01	-1,41	n.a.	45	75	82	n.a.	-36	-49
Czech R.	1,32	0,43	0,36	-0,31	-0,25	-0,34	31	89	79	-1	-9	-9
Estonia	1,52	1,44	1,26	-0,22	-0,27	-0,24	27	60	42	2	-3	-2
Hungary	0,5	0,99	0,84	0,03	-0,41	-0,46	78	66	57	0	-5	-14
Latvia	2,09	2,44	0,31	-0,14	-0,54	-0,08	19	46	84	-2	-8	-1
Lithuania	1,64	3,31	0,46	-0,51	-0,64	-0,64	25	35	75	-5	-4	-22
Poland	0,84	1,14	0,86	-0,18	-0,8	-0,36	47	62	55	-4	-12	-7
Slovenia	1,19	0,78	1,11	-0,13	-0,66	-0,39	36	77	45	-1	-17	-6
Slovakia	0,85	0,95	1,72	-0,26	-0,78	-0,34	46	68	36	-7	-13	-1
Bulgaria	1,32	6,14	2,89	0,18	0,69	-0,3	30	27	21	7	-2	2
Romania	3,40	8,61	6,62	n.a.	n.a.	n.a.	9	1	7	n.a.	n.a.	n.a.
Austria	0,84	0,47	1,06	-0,12	-0,11	-0,22	48	86	46	-2	0	-1
Belgium	1,08	0,63	0,74	-0,28	-0,02	-0,13	37	82	62	-3	0	-1
Germany	0,7	0,41	0,35	-0,13	0	-0,05	58	93	80	-6	-1	2
Denmark	0,69	1,07	0,59	-0,09	-0,11	-0,06	60	64	71	-4	2	1
Spain	0,92	0,67	1,51	-0,1	0,12	-0,42	43	81	38	2	7	-2
Finland	0,3	0,13	n.a.	0,03	-0,01	n.a.	93	115	-	5	-3	n.a.
France	0,79	0,58	0,8	-0,09	0,02	0	51	83	60	-1	4	4
Greece	1,83	3,94	0,66	0,09	-1,68	-0,12	23	31	66	5	-7	0
Ireland	0,17	0,12	NA	-0,08	-0,01	n.a.	110	116	-	-9	-2	n.a.
Italy	1,84	1,66	3,67	-0,14	-0,1	-0,73	21	56	16	3	-2	0
Netherlands	0,61	0,44	0,5	0,06	0,03	0	68	88	72	7	5	4
Portugal	2,23	3,1	3,95	-0,47	-0,55	-1,5	14	37	14	-1	-3	-1
Sweden	0,38	0,25	n.a.	-0,01	0	n.a.	88	104	n.a.	-4	-1	n.a.
UK	0,56	0,43	0,34	-0,01	0	-0,1	72	90	83	1	1	-4

Source: COMTRADE data and own calculations
<http://www.intracen.org/countries>

¹³ The RCA index measures the country's revealed comparative advantage in exports according to the Balassa formula. The rank specialization index indicates the specialization that the country have in the trade of given product -- Rank 1 indicates that the country has the highest specialization index in the world for the sector under review, in other words the share of the given product of the countries trade is the highest compared with the shares for this product in the other countries.

Table 4

Main indicators of the EU

Indicators	Share of Branches with CRS	Employment changes 2003/1999	GVA)/personal cost	Specialisation (Labour)	GDP per Capita (in PPS) / EU=100/	Labour productivity / EU=100/	
Columns	1	2	3	4	5	6	7
	Total manufacture	Footwear	Footwear	Footwear	Total	Total manufacture	Footwear
Measures	%	%	-	%	-	-	-
EU	0.39	83	1.31	2.2	100.0	1.00	1.00
Austria	0.49	-	-	1.2	124.1	1.33	2.21
Belgium	0.42	71	1.31	0.3	119.4	1.70	-
Cyprus	0.67	-	-	1.7	84.3	0.60	-
Czech R.	0.42	58	1.04	1.5	78.3	0.26	0.45
Germany	0.36	86	1.35	0.4	109.9	1.28	2.84
Denmark	0.44	-	-	0.4	127.8	1.30	-
Estonia	0.61	-	1.27	2.0	66.2	0.22	-
Spain	0.51	86	1.27	2.7	99.9	0.93	1.19
Finland	0.46	81	1.31	0.7	117.5	1.74	3.46
France	0.43	83	1.32	1.2	109.2	1.29	1.71
Greece	0.66	78	-	2.4	85.1	0.84	2.11
Hungary	0.51	80	1.06	2.9	65.0	0.31	0.45
Ireland	0.43	57	1.59	0.3	141.8	3.42	-
Italy	0.50	92	1.28	4.7	102.3	0.93	1.75
Lithuania	0.70	40	1.29	1.2	57.6	0.13	-
Luxembourg	--	-	-	-	223.0	1.50	-
Latvia	0.70	71	-	0.4	53.9	0.26	-
Malta	--	-	-	-	72.0	0.56	-
Netherlands	0.41	78	1.30	0.3	126.6	1.35	4.35
Poland	0.58	70	1.24	2.0	53.2	0.59	0.75
Portugal	0.66	89	1.23	7.2	70.1	0.49	0.64
Sweden	0.29	87	-	0.2	118.2	1.20	-
Slovenia	0.44	-	1.42	3.6	84.3	0.37	-
Slovakia	0.57	-	-	4.6	60.6	0.25	0.34
UK	0.39	51	1.80	0.5	118.9	1.38	4.02
Bulgaria	0.72	103	1.14	3.7	35.1	0.08	-
Romania	0.66	123	1.53	7.2	37.8	0.09	0.12

Sources: Eurostat, UNCTAD/WTO; <http://www.intracen.org/countries/>; (CEC, 2005 p. 9)

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