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"Global commodity/value chain approach to assess the position of regions in the European and global economy"

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## Introduction

The globalization of economic activities and the delocalisation of production is a dynamic process with high complexity leading to a great diversity of organizational forms, network configuration and changes of functions ensuing from the distribution of power – control and rent distribution. The delocalization forms are structured temporally, spatially and by sector, and the diversity of organizational forms and production networks is a result of changing patterns of competition and governance in global contracting (Pickles *et al*, 2006). A complex of factors as world trade policy, branch-specific factors and country/region-specific factors are shaping the current world and EU economic map. The spatial fragmentation of production and services within European regions has been changed significantly and has deepened the integration between OMS and NMS in recent decades. The drive of EU producers to source production and services from CEE countries was mainly attributable to international trade regulations, particularly the outward processing trade regime<sup>1</sup> (OPT) (Smith *et al*, 2005). In addition, factors such as geographical proximity in physical, social and cultural terms, skilled working force and economic traditions influence considerably relocation of industries within Europe (Pickles *et al*, 2006, Roukova *et al*, 2008).

This paper focuses on the position of EU and CEE countries from the prospect of global value chains and production networks and its impact on the division of labour on the cases of two industries – traditional textile and clothing sector and highly fragmented sector of software. The paper attempts to provide an overview on the findings from the literature discussing effects of growing interconnection and interdependence between EU countries and the role of the CEE countries in sustainability and competitiveness of EU economy. It is organized in the following parts: theory and research background and two sections presenting key findings, facts and figures about selected industries.

### 1.1 Theory

The analyses of globalization impact on division of labour is labelled as a complicated task, because of the high intensity and diversity in organization of global economic activities and significant diversification of the phenomena by space, time and economic activities. The Global Commodity Chain (GCC)/Global Value Chain (GVC) approach are network-based and studying ‘the organizational dynamics of global industries’ in order to understand where, how and by who value is created and distributed’ (Appelbaum and Gereffi, 1994 by Bair, 2006). Hence, the separation of tasks by value is difficult to be defined with precision because of the high diversification of economic activities coexisting with creation of new ones (Gereffi, 2004). Therefore, more general groups by value of activities are focused by the GVC analysis, which differ by industries. The recent contributions to the GVC theory has been extended from the analysis of linear industrial relations to a broader context of local social and economic development and its impact on the position of the companies in the chains. Studying the global impact on the regions the global production network (GPN) analysis incorporates the main paradigms of GCC/GVC approach and focuses on three key topics: *value*, *power* and *embeddedness* (Dicken, 2003, Pickles *et al*, 2006). According to the new regionalism, network and territorial embeddedness, which are basic paradigms of the GPN theory, explore the connectivity of new economic actors or activities with the complex local socio-economic environment, which they have entered and where they operate. Dicken stresses that the impact of interaction and interconnectivity between the global/regional production networks and national/ local economies is crucial for the success or failure of particular industries and firms (2003).

The main dimensions of GVC analysis are related with an identification of organizational forms and trade patterns of particular production/service in accordance with upgrading and governance issues

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<sup>1</sup> Outward processing trade regime (1991-1998) is settled as EU trade policy tool in relation with the GATT’s MultiFiber Agreement (1974-2004). It allows EU producers a tariff-free temporary export to Central and East European countries of semi-finished goods for further processing

within the chain. Thus, the state and prospects of firm's competitiveness is possible to be outlined. In addition, an appraisal of globalization impact on host regions through exploring the interaction and interconnection with the regional social and economic environment contributes to a much complete assessment of the sustainability and resistance of particular chain and region.

The division of labour within the EU has been changed significantly in recent decades. In 2000 the economic interconnection between OMS and NMS was deepened. The Europeanization challenges have been accompanied by globalization challenges. Many CEE industries and regions experience a competitive pressure from intra-EU origin and extra-EU origin. (Smith et al, 2005, Pickles et al, 2006, Labrianidis et al, 2007). NMS became preferable sourcing locations for many West-European companies. Key drivers of this sourcing have been outlined - well-qualified and skilled labour force in NMS, lower labour cost and geographical proximity in physical, social and cultural terms. Both negative and positive features of impact of involvement in international chains are presented by the literature. The general negative implications of the relocation of production for the region/ firm are the jeopardy of their exclusion from international chains and networks. This might occur when relocation to more attractive locations become a continuous process.

In the context of main objectives of the project next sections present findings from the literature, which consider the answers of the following questions: *What and where is produced? How is produced?* and *What is the territorial impact?*

## **1.2 Case study on Computer services and Software**

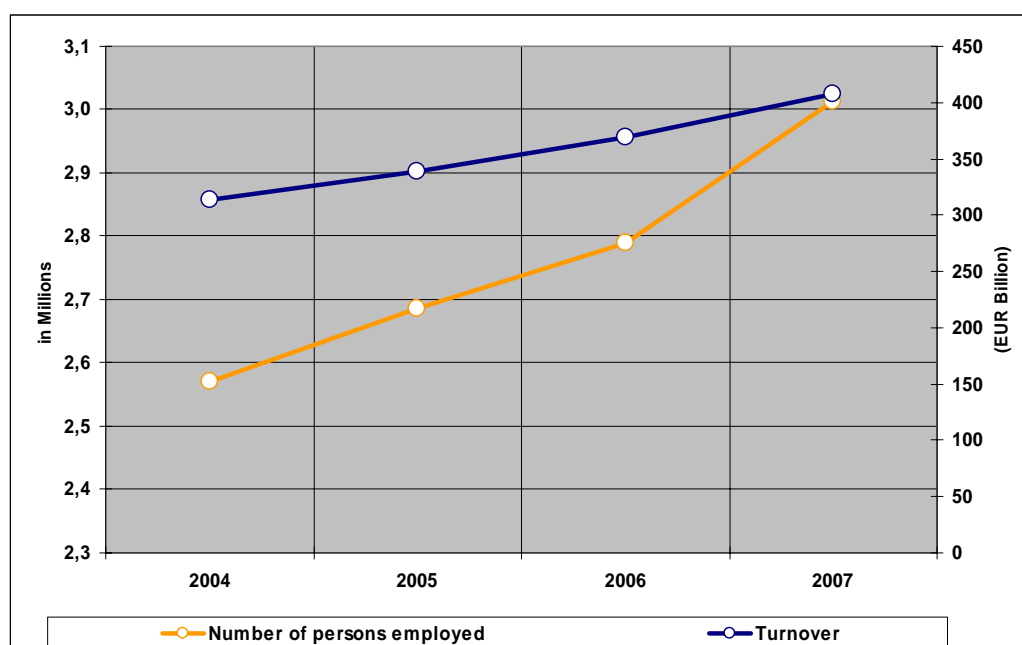
The globalization of the sector Information and Communication Technologies (ICT) has been unusually intensive in the last decade. ICT application have an economic impact on the increase of gross value added, gross domestic product, labour productivity, production efficiency, and labour cost formation. The globalization has led to creation of new subsectors of production and markets of the sector in the developing economies and to their consumption increase on a world scale. The main factors which influence this sector development in the last couple of years are the global economic crisis, the strong competition and its internal restructuring. The global economic crisis hit the ICT sector and in particular ICT services at a significantly less degree in comparison to many other economic activities. The small reducing of production volume and slower rates of development delay of ICT services are a result from the higher flexibility and innovativeness of the branch. The increased spatial mobility of the services is accompanied by a tendency of products specialization intensification. The ICT services in the EU face up more and more severe competition of the fast-developing economies, which seize whole sub-sectors. The internal restructuring of the sector was imposed by the increasing challenges of the market, for example, the producers of software products and services constantly improve and develop the products variety (open code software, commercial software, combined software products, custom software, package software and others).

The ICT sector consists of wide range of manufacturing and service activities, producing ICT products and ICT services separately or combined. From this fact emerge the difficulties and limitations of their statistical monitoring and registration. In the methodology, used in OECD studies of ICT services, the object of analysis are five subgroups of sectors, whereas three of them are connected with wholesales activities, the rest are telecommunications and renting of office machinery and equipment. The fifth subgroup is computer and related activities (OECD, 2010). According to the European Classification of Economic Activities, "computer and related activities" (NACE 72) are a branch of business services and it has six subbranches. The 'software and consultancy' are one of these subbranches and it is accounted under the subsection 72.2. The definition 'computer and related activities' is replaced often by researchers with 'ICT consultancy'. According to the World Trade Organization (WTO) methodology, computer services include services related to hardware and software and data processing. The main objective of this report is the computer services and software.

The statistic classifications are constantly updated, however, they do not succeed to keep in step with the development and diversification of ICT services sector. Especially difficult is to detach the computer services of firms which accomplish a wide range of ICT services, as well as in firms which combine ICT goods production and computer services. It is statistically difficult to value the real parameters of computer services sector in terms of economic performance and employment, because of their “intangible” nature. This problem is more sensitive for national statistics of the NMS.

### 1.2.1 EU computer services registered significant growth of economic performance and jobs

The European computer services (NACE 72) are presented by 580 000 enterprises with turnover of €407,7 billion and about 3,01 million people employed in 2007 (Fig.1). The software (code 72.2) creates approximately 70 % from the turnover of the sector computer services and related activities. In 2007 the turnover has increased by €95.7 billion and the number of employed – by 442000 in comparison with 2004. Bulgaria and Romania contribute with 79,7 thousand people only to the increase oh the employed during 2007.



**Figure 1. Turnover (right scale) and employed persons (left scale) in computer and related services in EU27.** Data source: Eurostat, 2010

Computer services companies account 70% of all firms of the ICT services, and the largest number of them is software companies. SME are 99% (micro and small are 95%) of total number of firms in the branch, and they have 69% of employment, 58% of turnover and one fifth of VA (FWC Sector Competitiveness Studies, 2009).

In EU27 computer services generate €199, 3 billion value added at factor cost and it increased by €45.5 billion in 2007 in comparison with 2004, and Bulgaria and Romania participate with €1.106 billion. Its regional distribution shows that Great Britain generates 30% from VA, Germany – 17%, France – 14%, Italy – 10% (FWC Sector Competitiveness Studies, 2009). NMS participate with 17% from the employed and 5% from VA in the computer services of EU27.

The importance of computer services in EU 27 economy measured as a share of employees to the workforce and its share of national GDP are 1,23% and 2,65% respectively. The countries with shares higher than the average ones of EU27 are Sweden, UK, Ireland, Netherlands and Finland, with shares

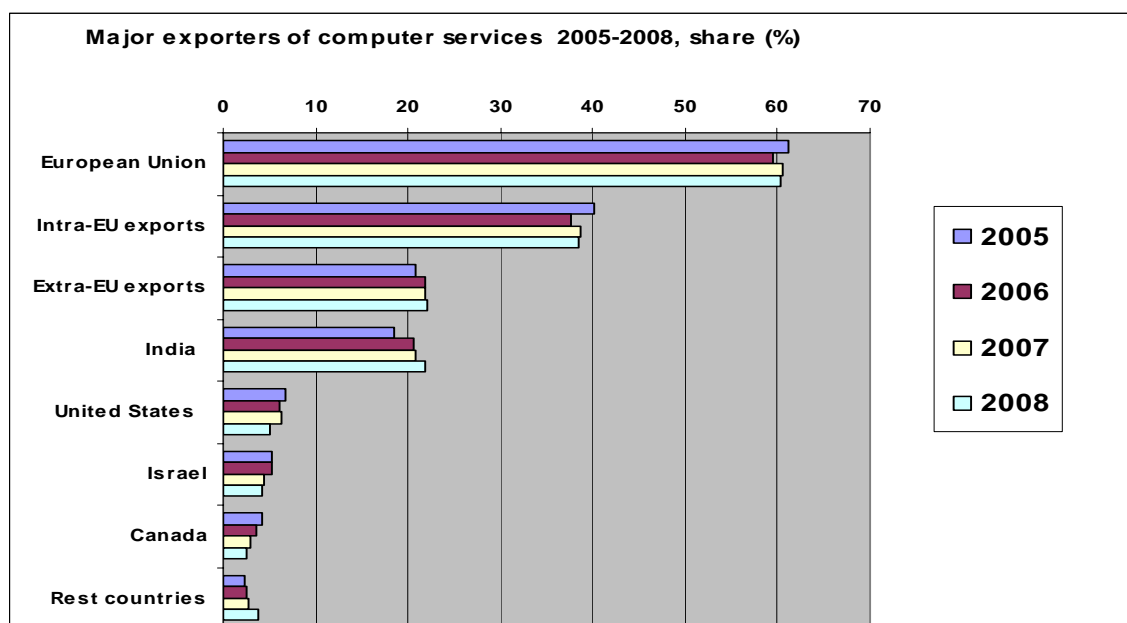
around the average ones are Germany, France, Italy, Austria and Czech Republic. Spain, Portugal, Greece and the rest of NMS have much lower shares (PAC Report D2, 2009).

Computer services and software are knowledge intensive high tech services with intensive R&D investments in human resources. In 2007 about 3,01 million people were employed in computer services (fig.1). The studies on the employment in ICT services show that approximately 50% from the employed in the sector work in computer services and software. The regional structure of the EU computer services employment outlines that in the leading countries Great Britain, Germany, France, Italy work more than the half (or 61%) of the employed in the sector and when are added Spain, Netherlands, Sweden and Poland, their share increases to 82%. Although with small percentage from the total employment in the sector, the employment in this field marks significant rise in particular EU countries – Ireland, Romania, etc.

Labour cost is the primary driven force in the geographical shift of production and services. As for the variable “wage adjusted labour productivity” almost all the NMS have values above the average for EU27 (130%), with the exception of Hungary and Estonia which have lower values. This fact contributes to NMS attractiveness as sourcing destinations. On the other hand, presence of highly skilled specialists in these countries cuts the expenses for R&D investments in human resources.

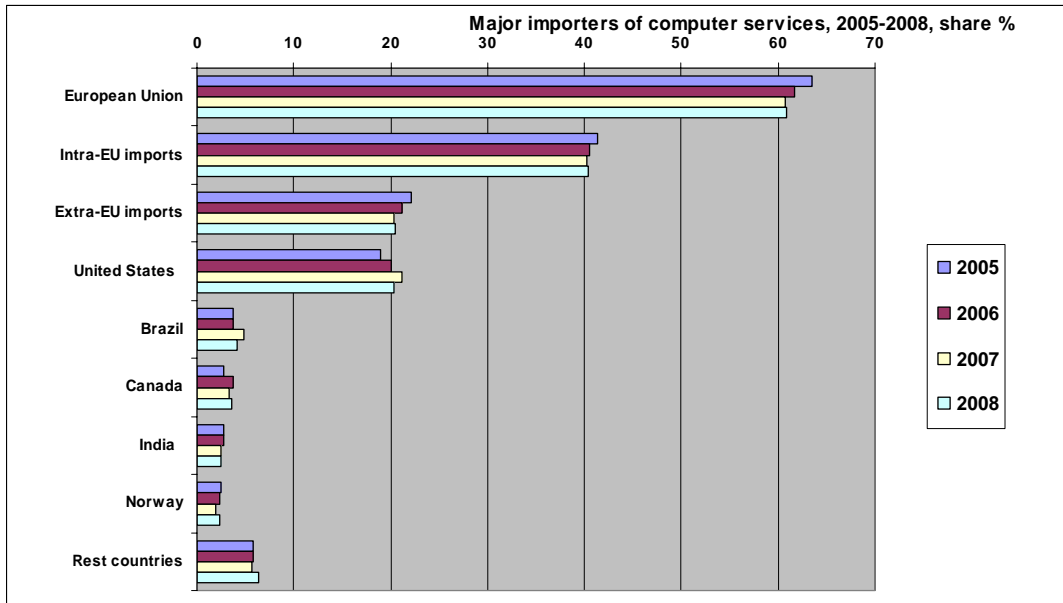
**1.2.2 EU was still a leader in the world trade of computer services in 2008**

The world trade of computer services marks a growth and in 2008 it reported a turnover of 232.5 billion dollars, as the export is rated at 157.5 billion dollars, and the import – at 75 billion dollars (WTO, 2010). The world structure of computer services trade shows that the main participants of the world market do not change their positions significantly during 2005-2008. EU takes the leading position with share of 60%, as about two thirds of them is due to the intra-EU trade. Till 2008 the absolute values show that computer services export increases in almost all countries, except for the USA where some decrease occurs (fig.2). India, which ranks second world exporter, diminishes the difference with extra-EU export from 2.1 billion dollars in 2004 to 0.2 billion dollars in 2008.



**Figure 2. World export structure of computer services** Source: WTO data, 2010

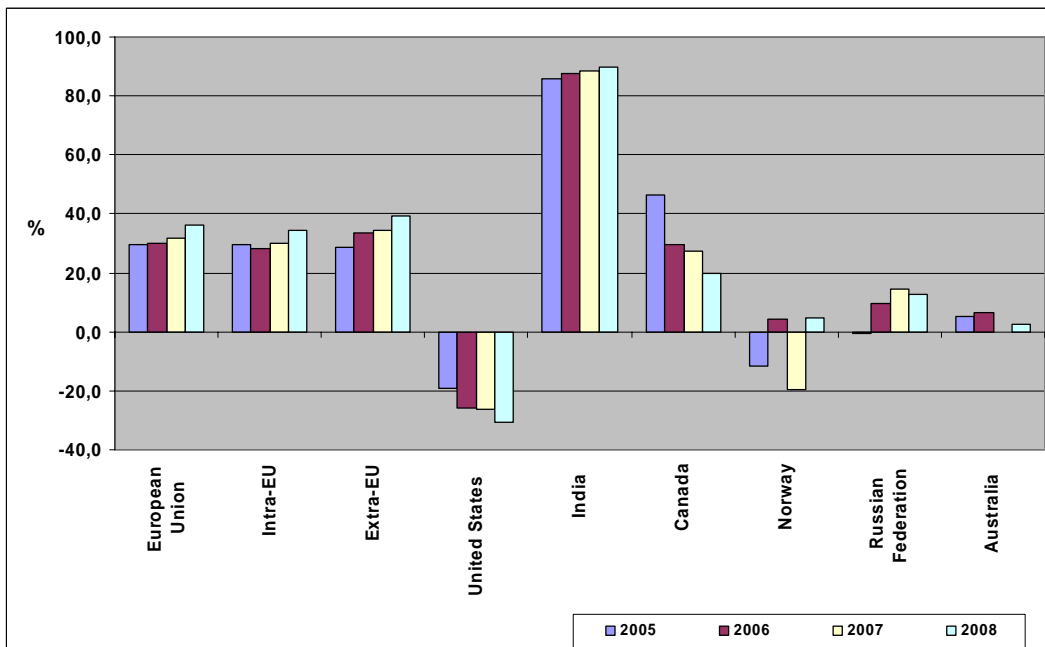
In the structure of world import insignificant changes are registered in 2004-2008 (fig.3). Hence, the absolute values evidence that import increase for EU is about 1.6 times, for USA, Brazil and Canada – about twice. The lowest is the increase for India – only 0.7.



**Figure 3. World import structure of computer services**

Source: WTO data, 2010

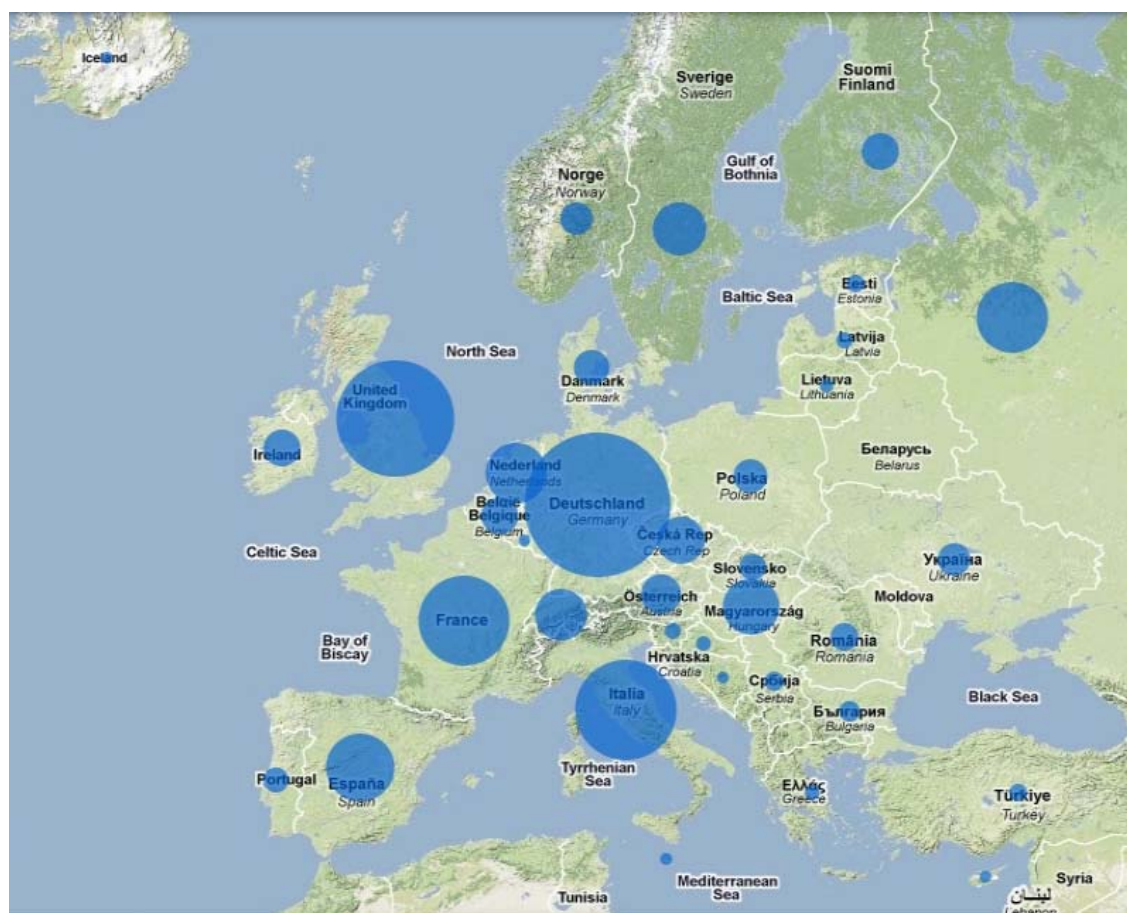
The importance of intra-EU trade in terms of value and of weight of computer services confirms the statement of strong integration of the regional European market in the sector. In 2008 the active trade balance of EU 27 increases with 127% (51.6 billion dollars), as intra-EU trade balance grew with 100%, and extra-EU trade balance with 152% compared to 2005. The asymmetry of trade of main world regions and countries is presented on figure 4.



**Figure 4. Asymmetry of trade of computer services** Source: WTO data, 2010

**1.2.3 Territorial organization: clusters and hubs**

Some scholars define the area of regional concentration of ICT services in West Europe as ‘blue-banana of Europe’. It includes South UK, BENELUX, and Denmark, the region of Ile-de-France, France and West parts of Germany, North Italy and Spain. ICT services industry has formed clusters around large cities, and powerful TNC are the core of these clusters. Well developed ICT clusters in OMS are KISTA, Stockholm (Sweden), Baden Württemberg (Germany), London, Oxford and Cambridge (UK), the regions of Madrid and Barcelona (Spain), Oulu (Finland). The largest software cluster is the area of Dublin in Ireland (Irish cluster). In recent decade new ICT clusters have been established in the NMS, for instance, in Poland – Masovetzk Vojevostvo, in the Czech Republic - Prague, Hungary - Kozep-Magyarorszag. In Romania and Bulgaria the most developed regions in terms of computer services are the regions of capital cities (FWC Sector Competitiveness Studies, 2009). The map shows the distribution of employees in IT services in Europe (fig.5).



**Figure 5. Distribution of employees in European IT services in 2009**

Source: European Cluster Observatory, 2010

The recent trends in space organization of some global industries are hubs, which ‘are open to the full force of global economy, both positive and negative, in ways that clusters are not. Hubs learn faster and more broadly, but experience the turmoil of globalization more actually than places that are less connected to the global chains.’ (Gereffi *et al*, 2004).

The sector is highly labour-price sensitive. It needs R&D protection and data security, political stability and national security (PAC Report D2, 2009). In this context the CEE countries are attractive as sourcing region. Although they have small shares in EU27 software industry, experts have foreseen better growth rate of almost 100% than in OMS in next couple of years ranking NMS attractiveness at the third place after India and China (PAC Report D2, 2009). Hungary was excluded of some of these prognoses because of its fiscal problems

### 1.2.4 European Software Chains

Two general kinds of software are defined: package software and custom software. The high value added activities are conceptualization and architecture of the product which are implemented mainly in home countries. The lower-value added activities as application development and maintenance, coding, testing, and sales and after sales services are objects of off-shoring. The research on software offshore outsourcing outlines that the trend of more R&D activities is intensified in recent decade. The largest R&D department of SAP Laboratories in CEE countries is in Bulgaria with 500 employees, while this one in Hungary employs only 50 persons. (Aggarwal *et al*, 2008). The software companies take different positions within the value chain, depending on the production/service tasks they accomplish. The differentiation between particular software production and services is difficult to be recognized in most of the cases because the firms perform a whole set of software activities.

Europe attracts much FDI in the computer services - the biggest investor is the USA, followed by India. China invests in Europe mainly in ICT goods, not in services. EU is a large software services market and that is the reason why USA firms invest in Europe. Large TNC establish hubs for software marketing, maintenance and support in host regions, or close to the markets in order to organize sales and after sales services within the region.. Hewlett Packard established such hubs in Germany and UK, later it lessened the number of employees there and replaced jobs to lower labor cost in countries as Ireland and Bulgaria. The inner EU relocation is due to the big wage gap between labour costs within EU countries.

The recent studies on the Ireland's software industry explain its significant growth with the large amount of FDI from USA origin in the sector. About 90% of software firms are USA ownership, and this means that higher share of the profit goes into the USA. In terms of GVC Ireland implements low value added activities related with the final stages of production and services while the high value added activities remained in the USA. This fact confirms the asymmetry of distribution of value within the chains in which the Irish firms are involved. The low position of Irish firms led to increase of their vulnerability to the global challenges in the sector.

The research on software outsourcing outline that firms are becoming increasingly willing to entrust core activities to their offshore subsidiaries. Since the end of 90s the trend of offshore outsourcing of more R&D activities in the sector is intensified. This mode of relocation implemented by large TCN as HP, IBM, and SAP Laboratories is followed by middle-sized firms in the sector. The largest R&D department of SAP Laboratories in CEE countries is in Bulgaria with 500 employees, while this one in Hungary employs only 50 persons. (Aggarwal *et al*, 2008).

Factors which have an impact on the localization of software are the availability of highly qualified labour force and the options for cost savings. – The sector is highly labour-price sensitive, R&D protection and data security, political stability and national security (PAC Report D2, 2009). In this context the CEE countries are more attractive as sourcing region. Some of the important features of CEE countries are also the growth of their national markets, where public procurements play key role. Although they have small shares in EU27 software industry, experts have foreseen better growth rate of almost 100% than in OMS in next couple of years ranking NMS attractiveness at the third place after India and China ( PAC Report D2, 2009). Hungary was excluded of some of these prognoses because of its fiscal problems after 2009.

The high volume of intra-EU trade is due to the FDI flows and outsourcing/insourcing of production within EU members. The survey<sup>2</sup> of 190 software firms in five European countries (UK, Greece, Poland, Bulgaria and Estonia) has demonstrated that outsourcing/insourcing relations prevailed FDI

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<sup>2</sup> The firm survey was implemented in 2005 under project 'Moving Frontiers: Changing Geography of Labour Intensive Industries', funded by 6<sup>th</sup> FP, EC (MOVE project)



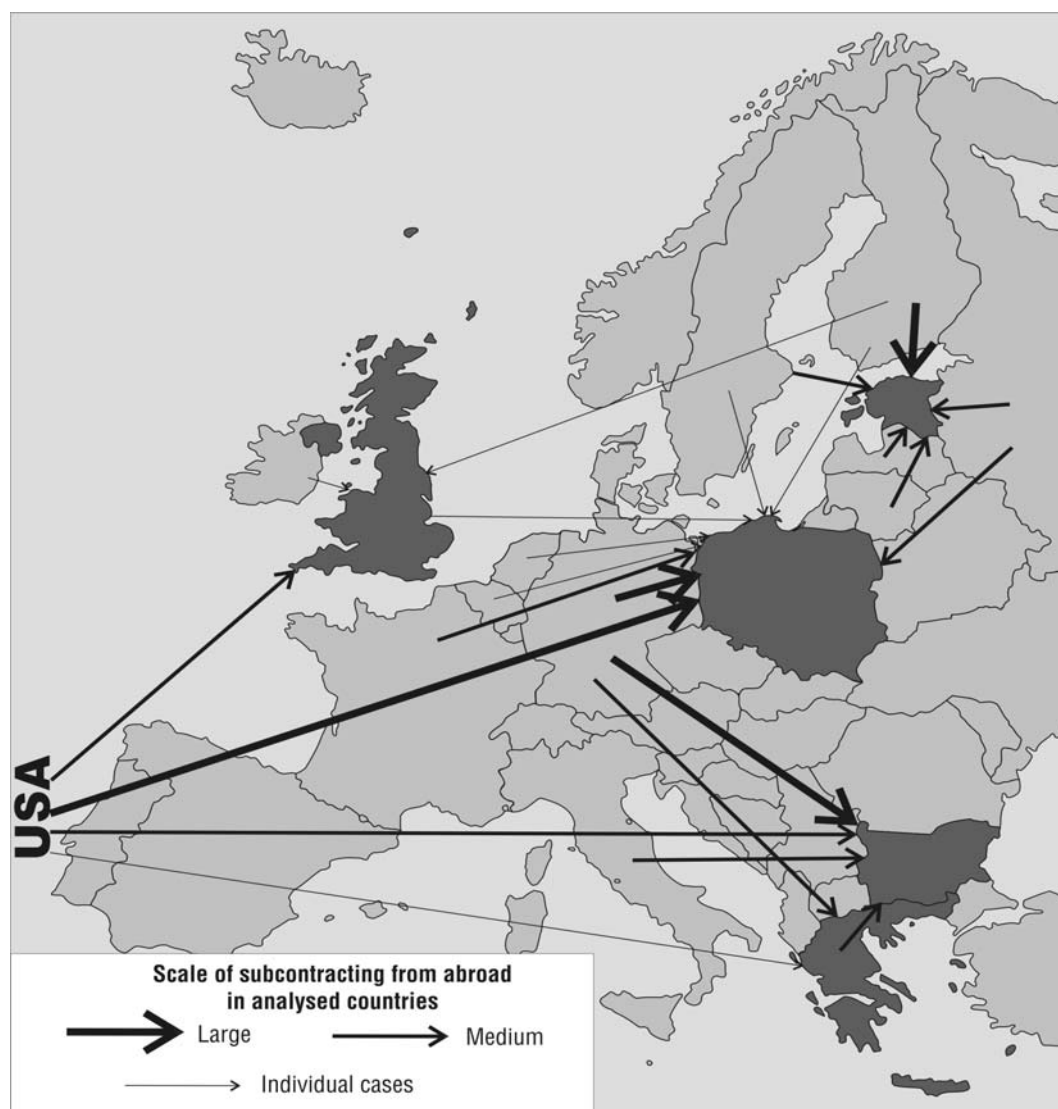
flows both in OMS and NMS. The UK and Poland showed high extent of involvement in software production networks and chains, followed by Estonia and Bulgaria. Greece had very limited performance on the European map of software industry.

FDI were presented by 32 % of all firms. Main FDI flows to the UK, Poland and Bulgaria originated from USA and Germany, and main FDI flows to Estonia were from Sweden and Finland (fig.6). The NMS attracted larger FDI and insourcing in software. UK and Greece were less attractive for FDI, but they outsourced production and had established subsidiaries abroad. Half of UK firms had subsidiaries abroad. The largest share of FDI had Poland, where foreign companies were 66% of interviewed companies. Second was Estonia with 29%. Half of the UK firms outsourced orders abroad (off-shoring outsourcing). This share for Poland, Greece and Estonia ranged from 20% to 25%, and it was only 4% for Bulgarian software firms. There were individual cases of CEE firms which invest abroad. For instance, big Polish firms invested in Russia, Ukraine and Czech Republic, and one Bulgarian firm invested in Vietnam (Guzik *et al.* 2008).

The survey outcomes substantiated that 72% of the firms undertook orders from abroad (insourcing), and this was more relevant to the firms in Bulgaria and Greece, and at a smaller degree - to the firms in UK, Poland and Estonia. Subcontracting from abroad was essential for 98% of Bulgarian firms and 75% of Greek firms. Firms implementing subcontracting orders maintained bigger number of relations with customers (4-5 per firm) (Guzik *et al.* 2008). Thus, they avoided the risk which might follow from suspended relations. Cross-border effect was observed in cases of Poland-Germany, Estonia with Sweden and Finland and Bulgaria-Greece (fig.7)



Figure 6. FDI flows of analyzed countries (Guzik *et al.*, 2008)



**Figure7. Subcontracting flows from abroad to analyzed countries (Guzik *et al.*, 2008)**

About 15% of firms had subsidiaries abroad and 20% outsourced tasks abroad. These two forms of organization of production were performed by the UK firms mainly.

Analyzing upgrading impact or shift to higher value added activities, Guzik *et al.* pointed out that there was no different upgrading impact between different modes of delocalisation. More than a half of the companies considered that they upgrade. The upgrading process was a shift from software development to consulting, from simple code writing to implementation of whole projects (Guzik *et al.* 2008).

The participation in the global production networks for two thirds of the firms has led to increasing of their turnover. The biggest share (above 60%) of interviewed firms estimated that the impact of delocalisation was positive in terms of turnover and profits. The growth was more significant in NMS. The firms from Poland and Bulgaria have increased their profits. There were no changes for almost the half of the Greek firms. A few companies reported for slight decrease of turnover and profit due to their involvement in global/regional software chains (Guzik *et al.*, 2008).

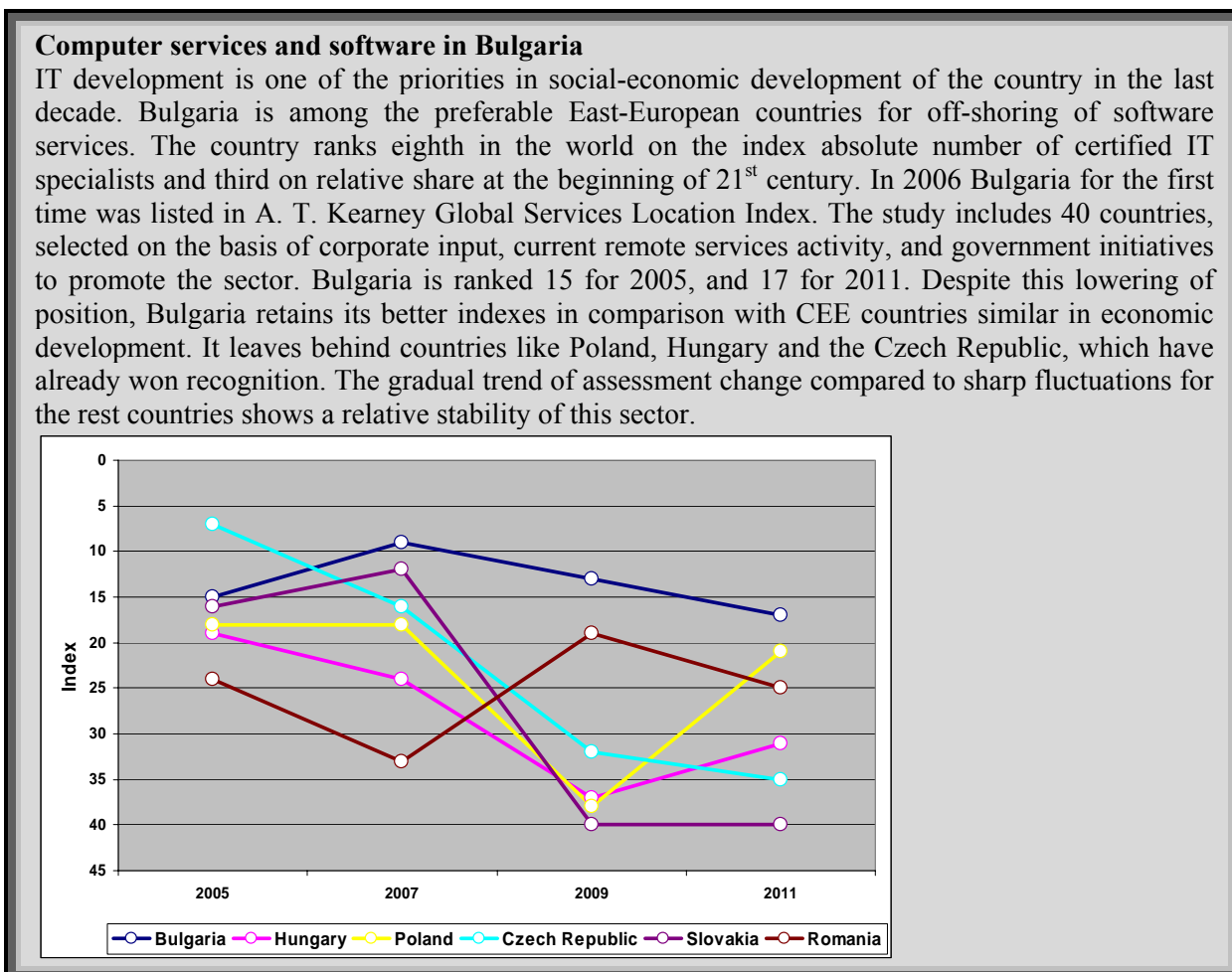
An important question is the share of export on subcontracting base, which presents the degree of dependence by foreign buyers. According to the survey data the export consisted of 40% from the software firms' production and 56% from it was on the basis of subcontracting. These proportions

differ by countries. Polish firms exported 56% of their production and 66% of it was on the subcontracting base. The UK and Bulgaria exported 34% of their production, but the subcontracting was 56% of the Bulgarian export and 0% of the UK export. Greece and Estonia exported around 25-27% of their production, and Greek export consisted of 81% subcontracting. The subcontracting proportion in the Estonian export is the lowest one – only 33%. The firms reported that about 20% from their production were intermediate products (Guzik *et al*, 2008).

Companies from all five countries estimated that they were preferable partners because of the high-qualified staff, reliability and appropriate technology. Low labour cost was ranked at the fourth place, but it has remained important for one-third of the firms.

Firms from home and host countries have underlined that the sector needs more new markets and growth than cost savings. The delocalisation has not caused a decrease of employment in home countries and Guzik *et al*. have concluded that the process has to be defined not as relocation of activities but as a business extension (2008). India is producing standardized software and it is not a competitor to NMS, which are specialized in custom solutions and software services. NMS are attractive sourcing and market locations of European software, where the most important factors than labour cost are high-qualified labour force, and creativity, reliability and trust. The political and fiscal stability of these countries are important for development of the sector, except Hungary recently.

Recent challenges of globalization/regionalization and its impact on CEE countries require updating of GCC/GVC analyses of software with sufficient details about evolution of forms of delocalisation and their embeddedness effect as well as about employment issues as quality of jobs, working conditions, development of local competences, etc.



**Figure 1. Annual Global Services Location Index of selected CEE countries for 2005-2011 r.**  
Source: Bulgarian Software Industry, 2008.

The comparison of key economic indexes shows a significant growth in the sector development for the period 2000-2007. The number of enterprises in the sector has increased with 54%, and of the employed with 222%. The turnover has increased almost 5 times, and value added at factor cost has risen 8 times (EUROSTAT data). As a consequence from the global financial crisis, in 2008-2009 the sector reported a decrease in turnover and revenues. According to an expert evaluation, in the sector export structure based on destinations the EU share is 74%, and US share is 26%. The software services are more than a half of the export, and the software products are over  $\frac{1}{4}$  from the export of the computer services. The largest investments in the sector were done by Germany (SAP, Software AG, Nemetschek AG) and the USA (HP, IBM, and Tumbleweed).

In 2007 the number of companies operating in software (NACE 72.22) was 275 and 38% of them are off-shore companies. There were 25 local R&D centers of foreign companies and only 15 firms sold their own products abroad. Revenue from software industry accounted for €57 million in 2007 and it increases twice in comparison with revenue in 2001. The prevailing part of Bulgarian firms for software and computer services are small and medium of size and more of them have been set up in 90s, whereas the foreign firms are big – HP (more than 1200 employees), SAP (over 500 employees). According to the national statistics, the number of employees in IT services are 14 800 and the employees in software are 5 600 persons (2009). In this sector there is a large number of temporary employees who are unregistered by the statistics, thus the experts have assessed the real figures with about of 25-30% higher.

**Findings from firm survey 2005.** A survey shows that USA, Germany, Great Britain and Netherlands off-shored the largest orders to Bulgaria. FDI were concentrated in big towns – Sofia, Plovdiv and Varna. The most important reasons of off-shoring to Bulgaria were the highly qualified specialists, their innovative and creative way of thinking, as well as the certified firms having capacity to accomplish big and full-scale projects.

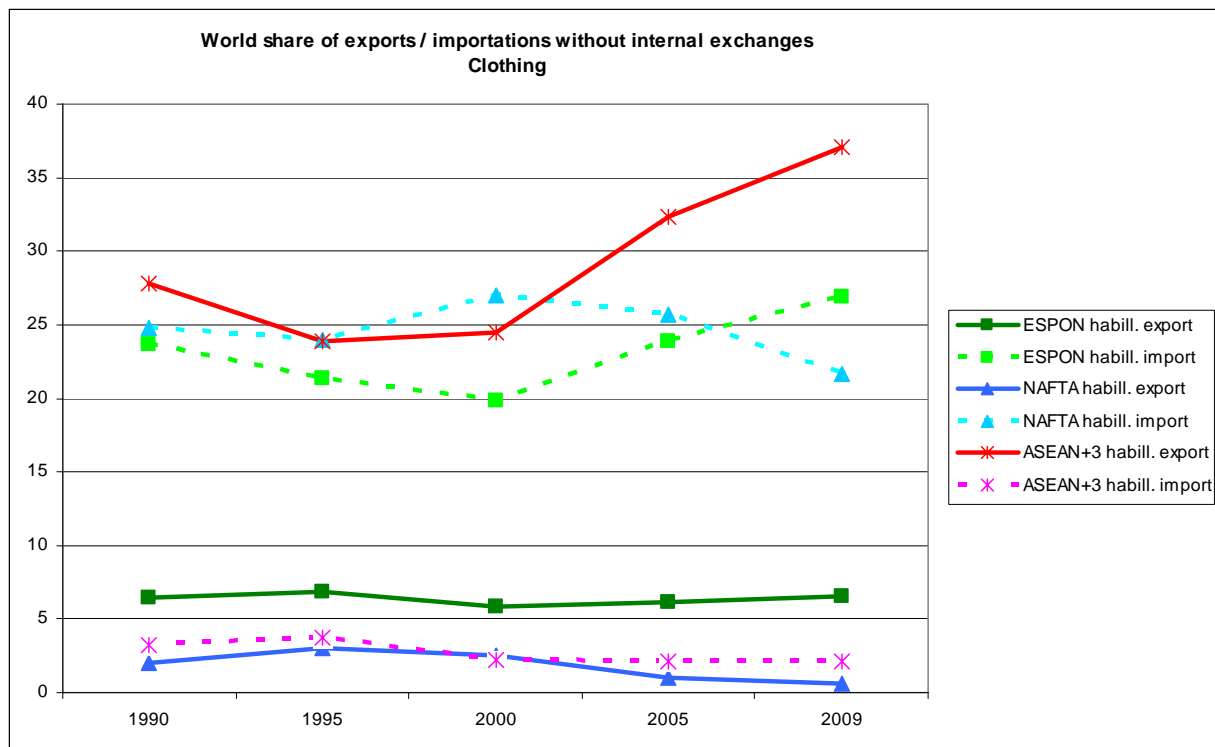
More than half of the firms exported software at 100% subcontracting base. Software firms were dominated by SME, working as second and third layer subcontractors to bigger software firms in the country. The survey showed that 63.8% of the firms were part of international subcontracting networks and 27.6% were part of national subcontracting networks. Firms estimated their own advantages in getting orders from foreign partners ranking the reasons as follows: 1 – Expertise, 2 – Reliability, 3 – Appropriate technology/equipment and 4 – Low labor costs. Continuous improvement of quality and decrease of expenditures were envisaged by firms as a response to the global competition. Due to the foreign orders 62% of firms increased their revenues and profits, and there were no change for 28% of the respondents.

Despite the significant increase of labor costs in the branch during the recent years, the Bulgarian software firms still gain from globalization. Bulgaria is a preferable partner for accomplishment of custom software and software applications, requiring highly qualified expertise and secure reliability. The domestic market of IT services is fast developing.

### 1.3 Case study on Textile and Clothing sector

Global challenges which EU textile and clothing (TC) industry faced up became stronger after liberalization of trade in 2005. Quota removal was followed by a range of non-tariff measures taken for protection of European producers against market penetration of big world producers (China, Turkey, India, Pakistan, etc.). The changes in geography of European textile manufacturing dated since 1970s and after 1990s they were intensified by quota restrictions (GATT, MFA, and ATC). Special importance for changes of division of labour in TC industry within EU had the outward processing trade (OPT) and preferential bilateral trade agreements.

The regional structural changes of world clothing trade shows negative trends for the NAFTA countries. Their export share declines 4 times between 2000 and 2009 (fig.8). The export share of ESPON countries remarks slight positive trend in the same period, while the ASEAN+3 countries score significant progress of 13 %. In the world import of clothing NAFTA share declines, ASEAN share remains without changes and only ESPON countries increase their share. ESPON countries recover their position in world trade of clothing after negative trends between 1990 and 2000 and in 2009 they take similar position as in 1990.



**Figure 8. Evolution of world share of NAFTA-ESPON-ASAEN+3**

Source: Chelem

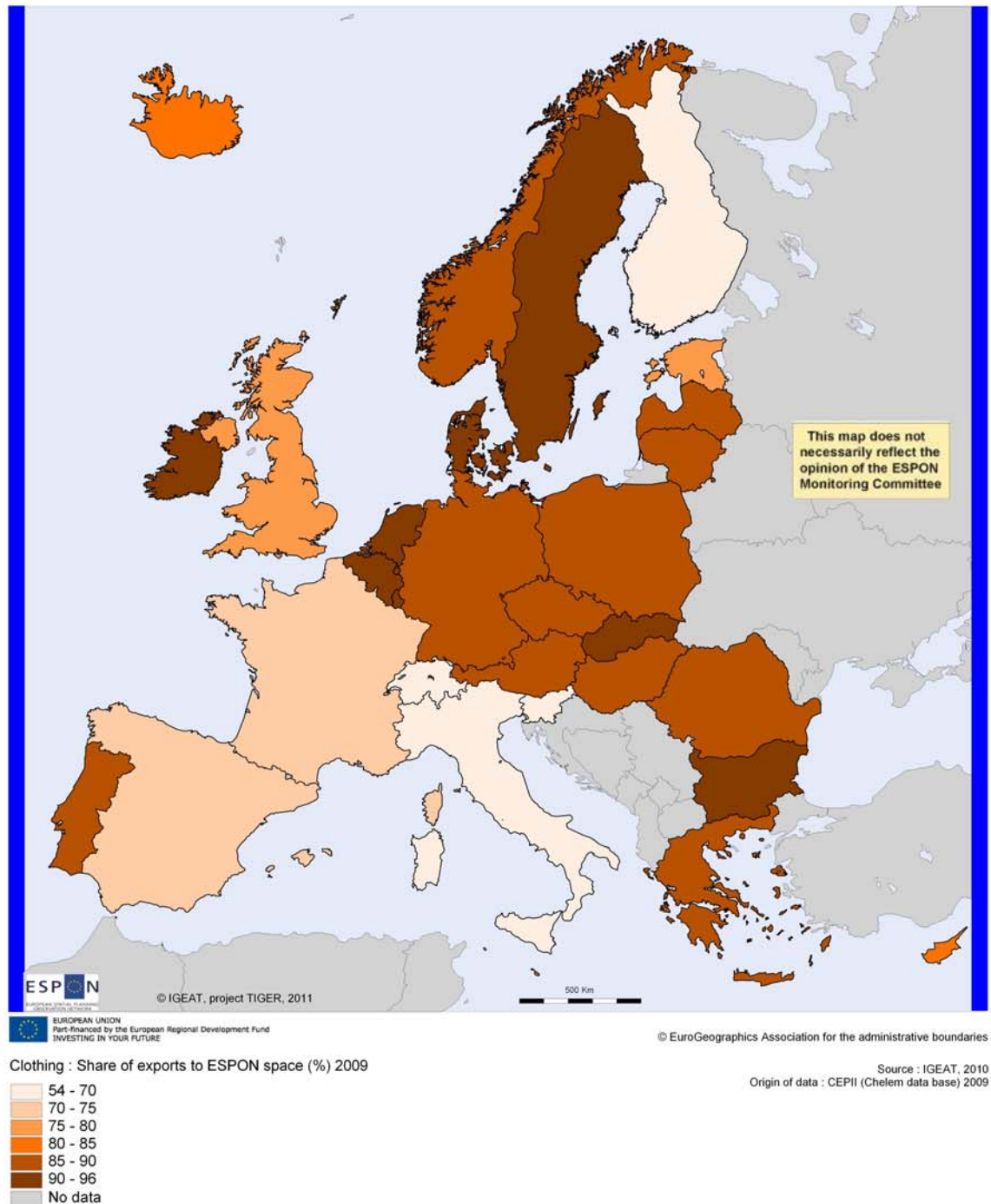
The TC sector was between manufacturing sectors affected severely by the global crisis. One of the reasons was the high interconnectivity of the industry globally and at EU level, but the more important one became the national features and parameters of the crisis. EU 27 TC industry has manifested continued decline in terms of economic performance and jobs since 2000. In 2007 about 218, 000 enterprises operated in TC sector, the turnover was accounted of € 197,600 million and there were 2, 370, 000 employed persons. Since 2004 the sector lost half a million jobs until 2007. For the period 2000-2008 the average annual rate of decline of the TC production and employment was between

4.2% and 5.5% respectively. The negative consequence of the global crisis was the registered double digits slump (turnover, number of enterprises and employment, production, orders) of TC in 2009 in comparison with 2008. Since the beginning of 2010 a slight recovery was registered.

In 2008 the EU 27 takes second place in world clothing export with 31% after China and it is a leader with 37% of the world import of clothing. In the EU 27 external trade of TC the shares of textile is 24% and of clothing is 76% of the import and 53% and 47% of the export respectively (2009). Since 2005 the passive trade balance in EU 27 external trade has extended with 24% in 2009 and it has reached € 44, 5 million, where textile participates only with €1, 5 million and clothing has the rest € 43 million.

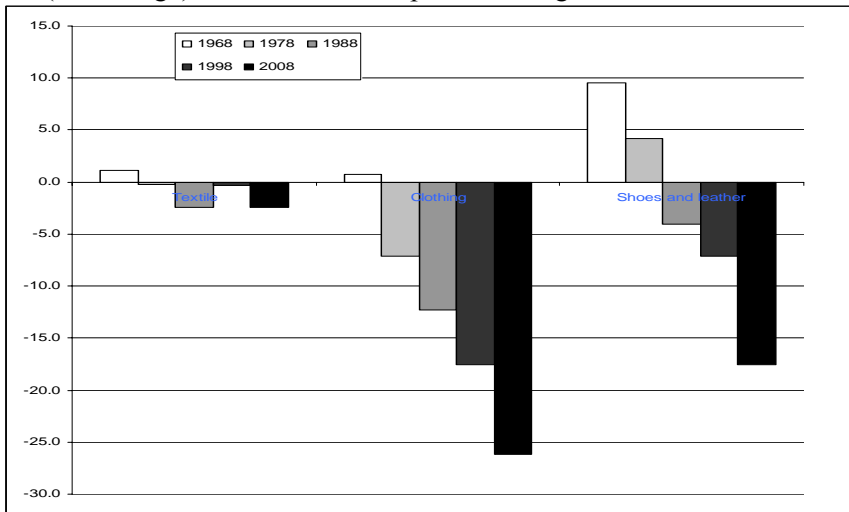
China is the main supplier of textile and clothing to EU27 with shares of 28% and 45%, respectively. For the period 2005-2009 China has increased its import of textile with 17% and much significant is the increase of 51% for the clothing import. Many other suppliers from Asia as Bangladesh, India, Vietnam and Sri Lanka have also increased their clothing import to EU 27. During the same period the import from the Euro-Mediterranean zone – Turkey, Morocco, Tunisia, has diminished. These trends are due to the removal of trade quota restrictions in 2005 mainly. The decline of textile export of EU27 is measured of 16% in 2009 to 2005. Slight growth of 2% is accounted for extra-EU clothing export (2009/2005). Traditional markets as USA and Japan dropped and they were replaced by growing new markets – U A Emirates, Russia, etc.

The ‘single market’ is well presented in EU clothing by high shares of intra-EU trade in the EU27 trade of clothing, where the intra-EU import is 48% and the intra-EU export is 75%. Belgium, Bulgaria, Denmark, Ireland, Netherlands, Slovakia and Sweden have highest shares of clothing export to ESPON space (90-96%) (fig. 9). Not only Bulgaria and Slovakia, but all others CEE countries supply 85-90% of their clothing exports to ESPON countries.



**Figure 9 Share of clothing exports to ESPON space (%) in 2009.**

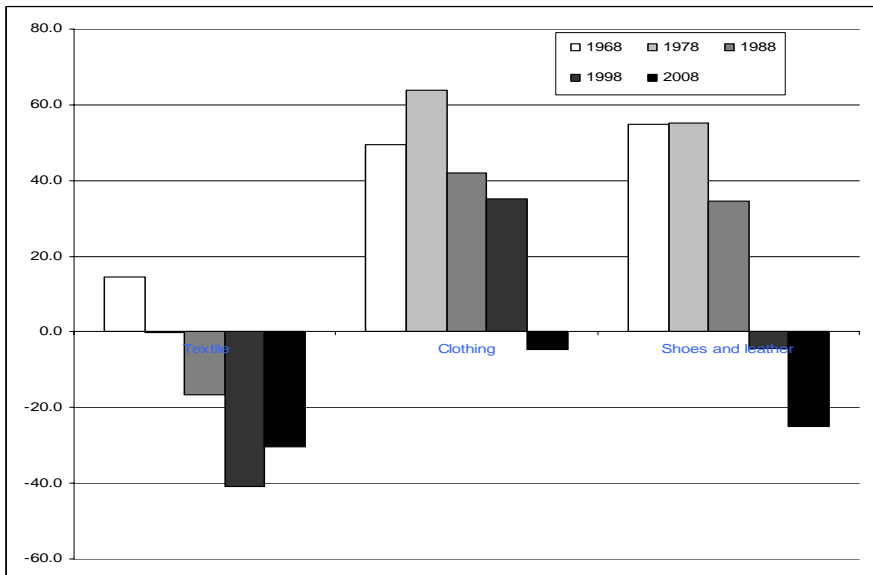
Measuring the asymmetry of trade, the position of Western and CEE countries in textile and clothing trade, it makes no doubt that Western Europe has a more and more negative balance on clothing and shoes, while for textile, the trade remains balanced (fig. 10, fig. 11). The picture is rather different for Eastern and Central Europe which is slightly positive for clothing in 2008, while more negative for textile. The intensive direct and indirect off-shoring of labour intensive clothing production toward CEE countries explain the more and more negative balances of Western Europe. While the diffusion from core West- European countries has shortly benefited the peripheral CEE countries in the nineties – at least in some countries, the cost of labour made this off-shoring production process rapidly less profitable (on average) for the West-European clothing firms.



**Figure 10. Asymmetry of trade for Western Europe, 1968-2008**

Note: Asymmetry is the ratio between the balance of trade (X-M) and the total trade (X+M) in the sector

Source: CHELEM-CEPII, 2010.



**Figure 11. Asymmetry of trade for Central and Eastern Europe, 1968-2008**

Source: CHELEM-CEPII, 2010.



The process of diffusion toward periphery shows the geographical shift of export specialization in clothing for European countries since 1968 (fig.12). While core countries were already weakly specialized in clothing industry in 1968, Mediterranean countries – except Spain – benefited from a growing specialization in clothing until 1988, after while more peripheral countries of the Euro-Mediterranean space benefited from relocation, notably in the Balkans and in Northern Africa. Morocco, Tunisia, Turkey and some Eastern Europe reach their specialization peak in clothing industry in 1998. But in 2008, all European countries marked a decline in their specialization in this industry in favour of South and East Asian countries.

In this general picture, the position of Italy is atypical. On the whole period, Italy remains specialized and with positive trade balance in the clothing industry, despite a moderate decline since 1998. The dynamic clothing and textile clusters of the so-called third Italy have been able to remain competitive despite high cost of labour. The Italian industry's strategy is the relocation of production activities, while conception, design and trade circuits are still controlled by Italian firms. Also, the Italian industry has favoured high value added and luxury clothing abandoning the mass production.

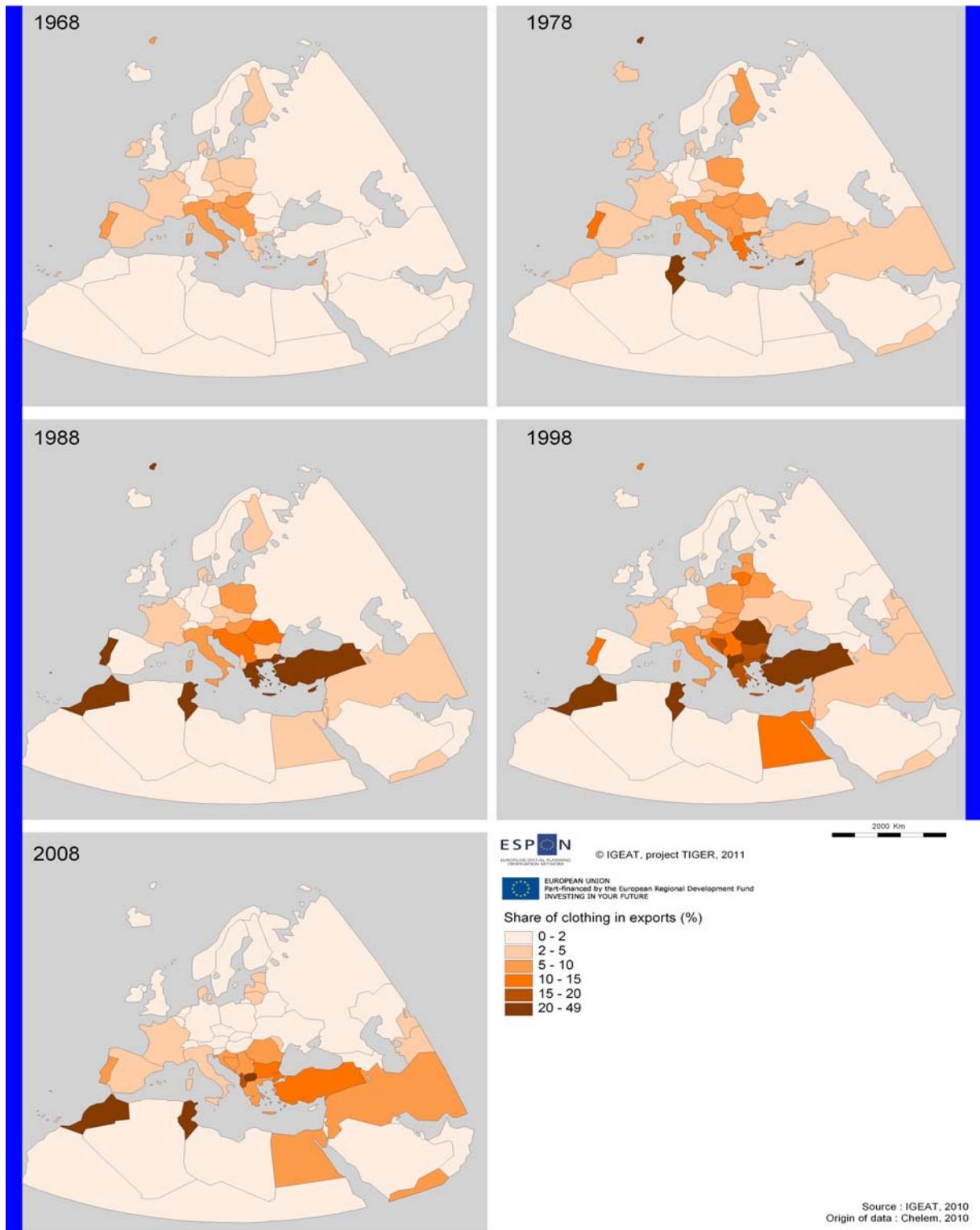
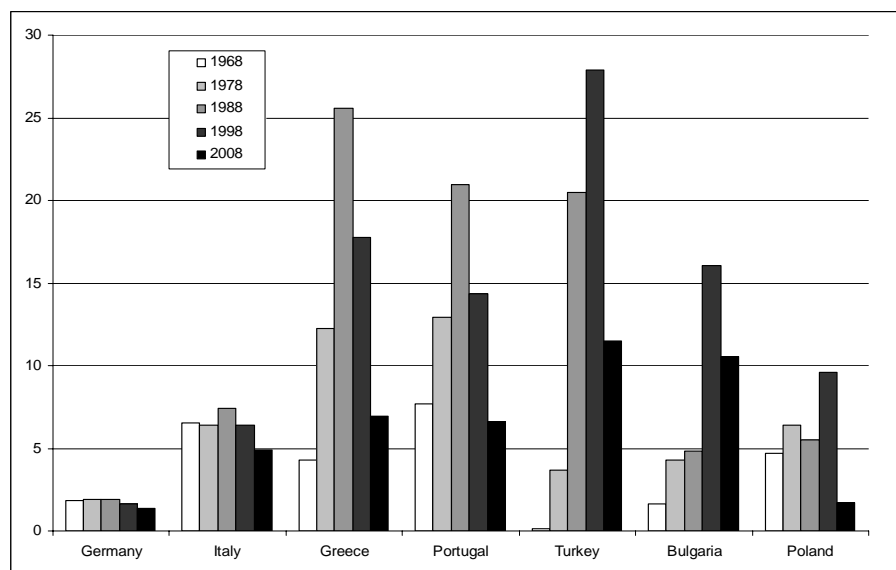


Figure 12. Specialization in clothing industry in the Euro-Mediterranean area, 1968-2008



**Figure 13. Specialization in clothing industry (share of total trade) for selected European countries, 1968-2008**

The clothing specialization does not play a significant role in the total trade of Germany and Italy as they are developed countries (fig. 13). Their indexes of clothing industry specialization decrease slightly in comparison with the sharp drop in the other countries. The slight trend might result from the spatial distribution of clothing production tasks by value. The low-value added clothing production is typical for the rest of the countries – Greece, Turkey, Portugal, Poland, which are more strongly affected by non-EU competitors.

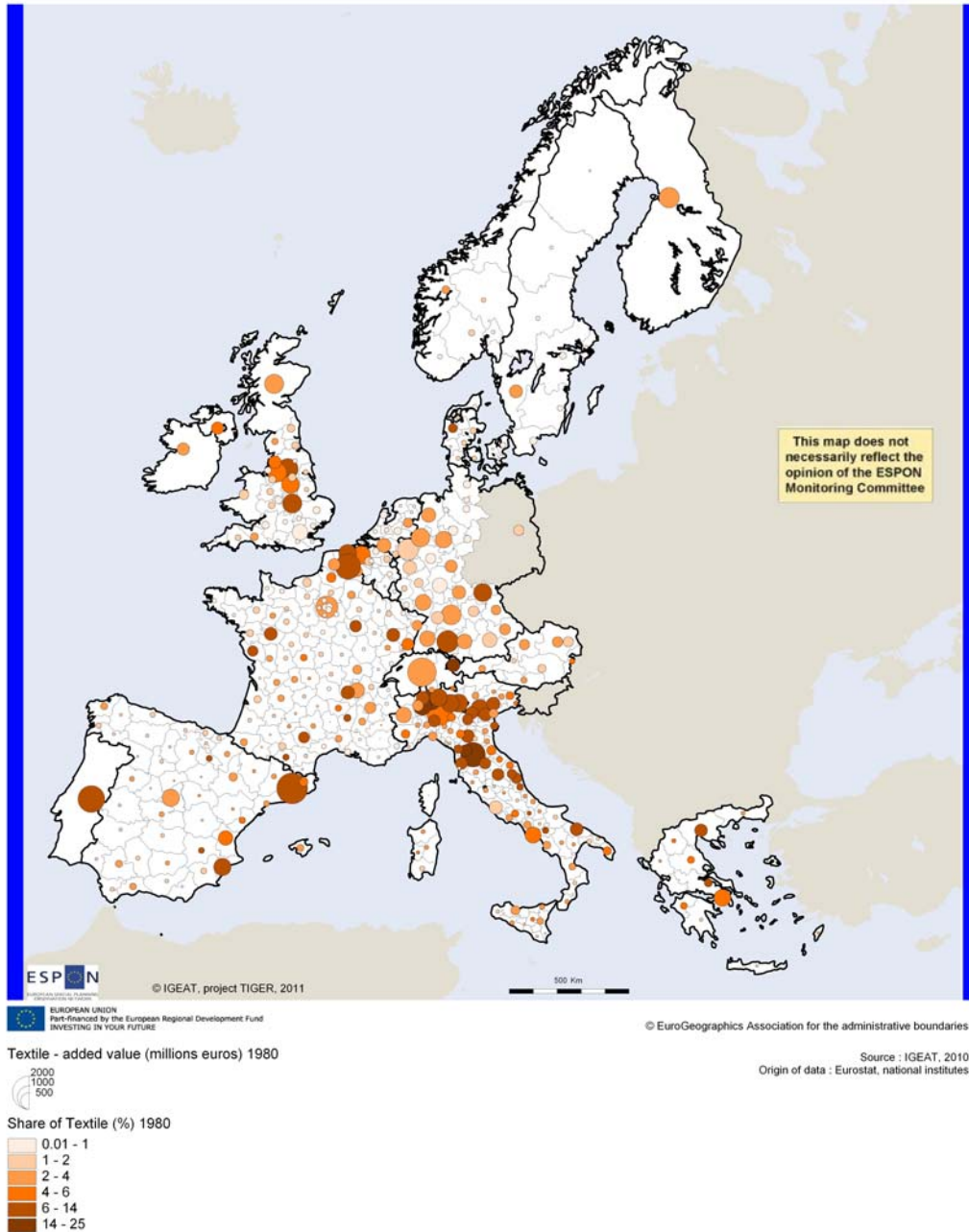
### The regional specialization in textile and clothing industry

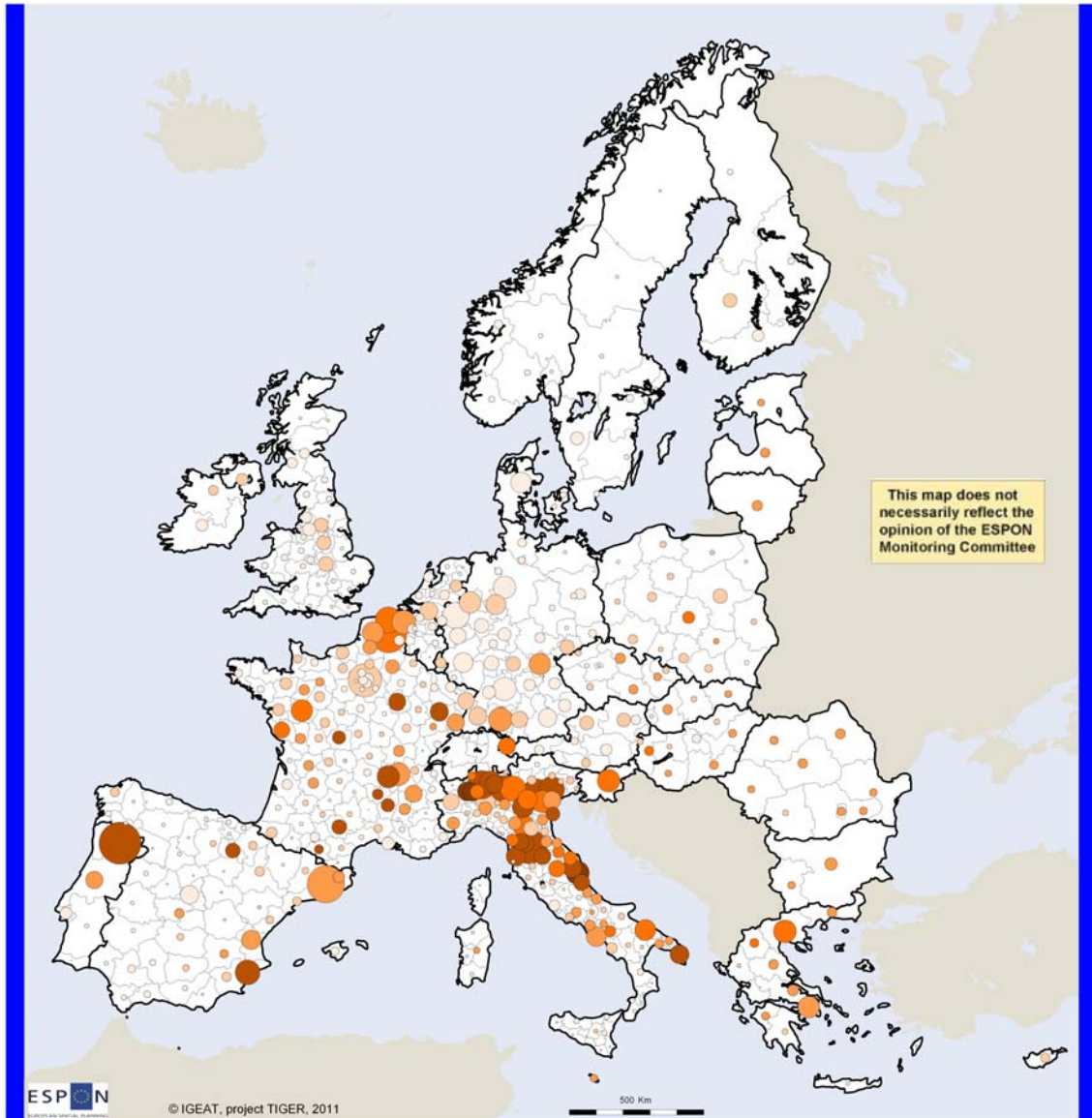
At regional level, textile and clothing production are highly concentrated in some regions (fig.14). The textile/clothing regions are often characterized by dense networks of interconnected small and medium firms in an innovative environment. They constitute typical Marshallian districts: Norte Portugal, Western Flanders, Third Italy districts such as Prato, the Choletais area in France etc. Interestingly enough, in the map of 1980, we still observe old textile industrial regions such as Northern England and Nord-Pas-de-Calais. But these areas have declined more than dynamic Marshallian districts.

Looking at the map of 2004, the picture is rather different than the one on trade because the industry is still highly concentrated in some Western regions, notably in third Italy. We can also notice that some areas, weakly specialized in textile/clothing industry are nevertheless of major importance: this is notably the case for Milano, Paris and London as well as Barcelona, which are big fashion centres.

However, it makes also no doubt that the decline of the activity has been very rapid between 1995 and 2004, hitting nearly all regions. The liberalization of trade severely hits the European textile and clothing industry. In such a sectoral crisis context, some Marshallian districts resist better than others but nearly all lost employment and added value in the sector (DG Regio report, 2008). Several regional strategies can be distinguished in this crisis context. Economic diversification is of course the most efficient strategy: the Kortrijk area in Belgium for example has for long diversified its economic structure through a horizontal diversification to other sectors (such as furniture or agro-business) and toward business service activities recently, and textile shift toward higher added value activities through technology upgrading. In the case of Norte Portugal, the diversification and upgrading strategies has limited impact and the region seems to suffer from an in-between position, unable to compete with other Western regions on technological segments but also unable to compete with Eastern or Asian regions because of higher labour cost.

Although the shrinkage of industry is registered all over the EU, between 1995 and 2004 the decrease of textile and clothing specialization in some regions did not necessarily led to reduction of the absolute value added figures. This is relevant for regions which have succeeded to keep their textile production and high value added activities in clothing relatively stable. Despite massive relocation of clothing production, the industry added value is still concentrated in Western regions, which continue to have control over the value chain.





This map does not necessarily reflect the opinion of the ESPON Monitoring Committee

ESPON

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500 Km

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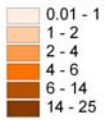
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Textile - added value (millions euros) 1995

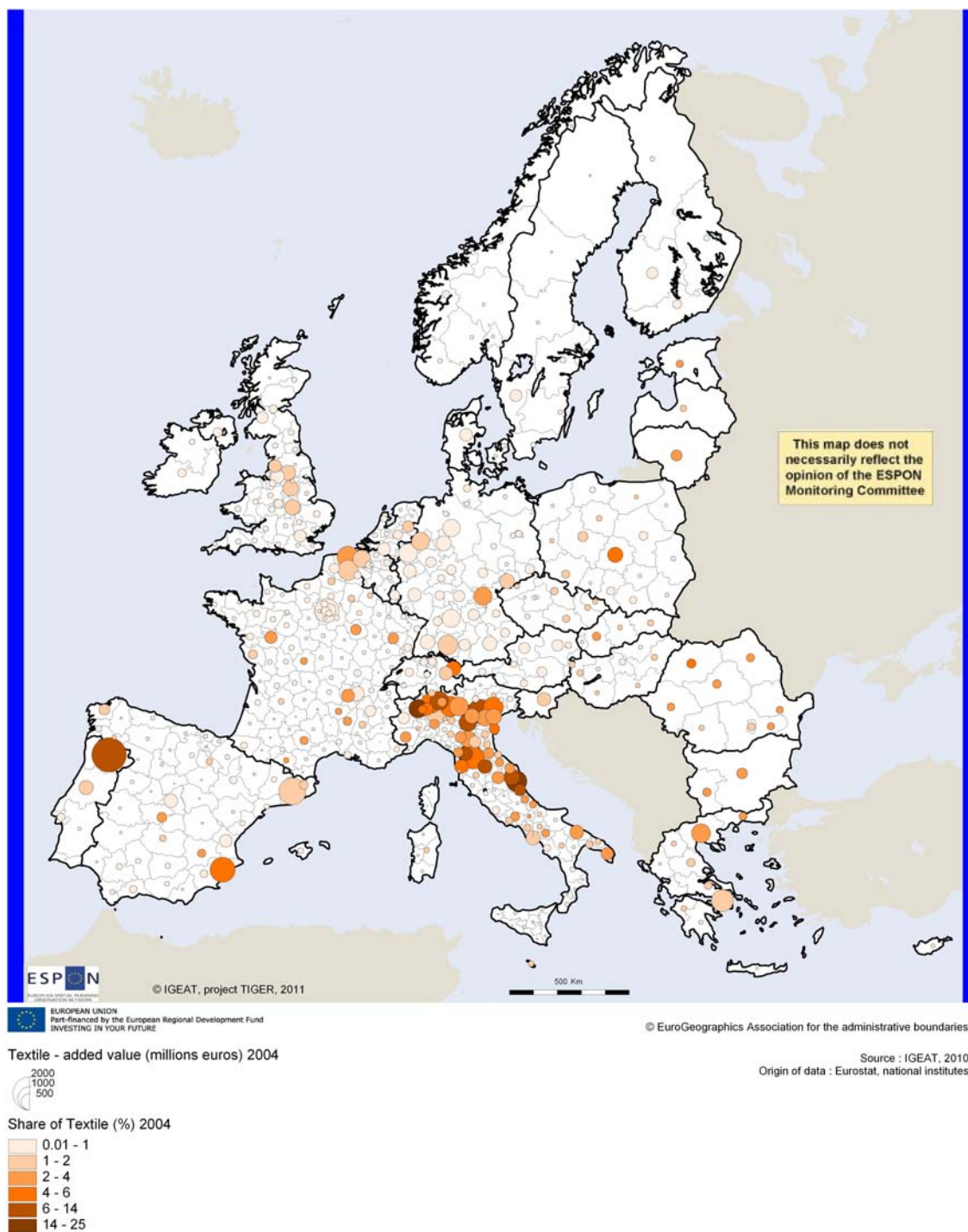


Source : IGEAT, 2010  
Origin of data : Eurostat, national institutes

Share of Textile (%) 1995





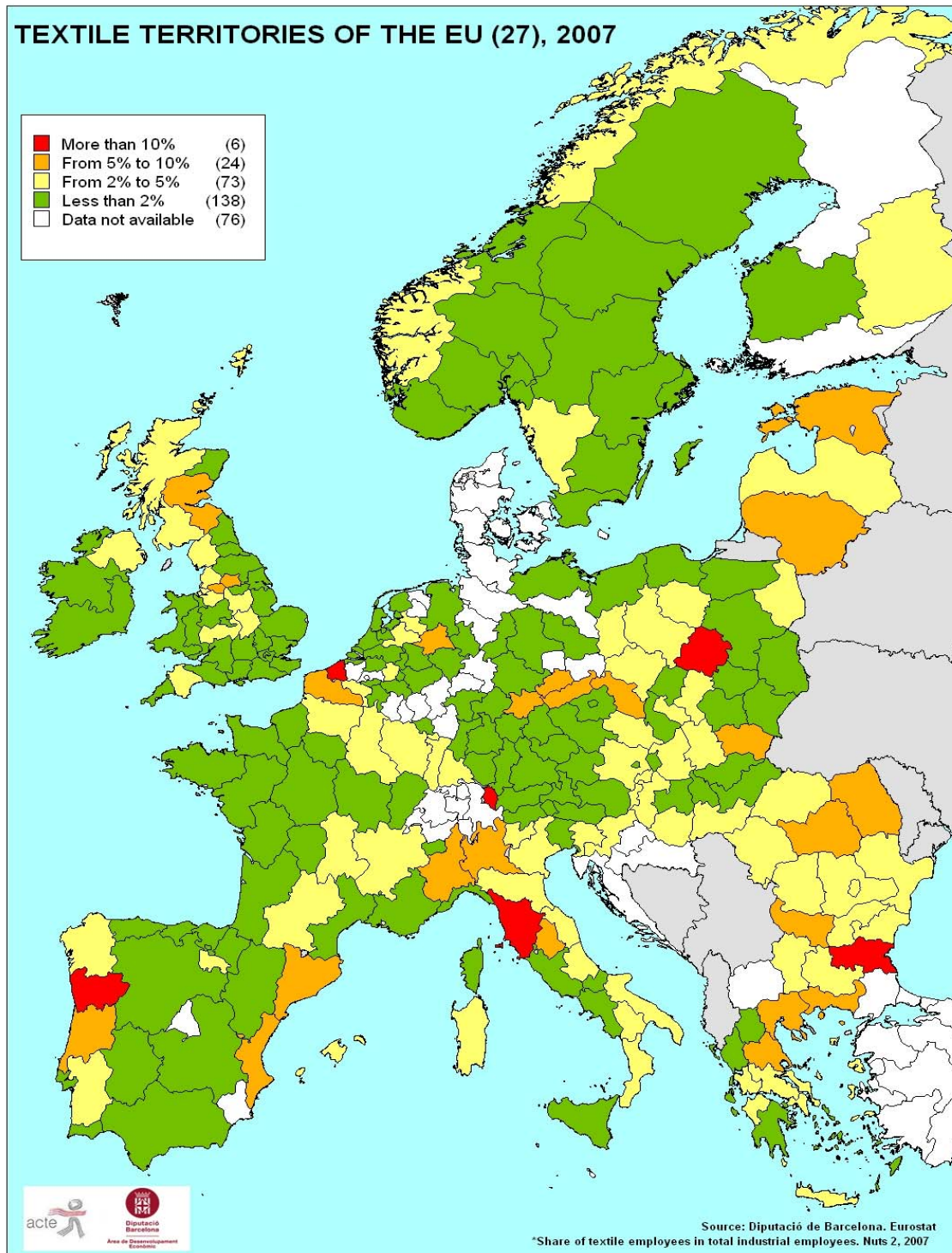


**Figure 14. Added value in textile and clothing industry by region in Europe, 1980-1995-2004**

Note: Added values in 1980 are in current Euros (ECU). You can only compare the relative size of the circle. Added value in 1995 and 2004 are in constant EURO 1995.

The regions specialized in clothing production and with high level of employment in it are more vulnerable to delocalisation of production, because they are less developed and have limited options to respond to global challenges. The delocalisation impact was not only a decrease of employment but it led to vanishing of the sector in many regions of OMS (Herning-Ikast area in Western Jutland (Denmark), Prato district, etc.). In the spatial distribution of the employed in the EU clothing, Italy and Romania have the highest weight with 19% and 18%, the next are Poland and Bulgaria with 12% and 10% (Eurostat data 2007). The clothing industry as labour-intensive one is more significant in terms of

regional employment than the textile industry (fig.15). In 2007 twenty EU regions (NUTS 2) had a share of clothing to manufacturing employment more than 10%. Only six of them were in OMS (North Portugal, North Greece and South-East Italy), and the rest 14 were regions of NMS (almost all regions of Romania and Bulgaria) (fig.13). These NMS regions show higher vulnerability in terms of further relocation of clothing jobs. In EU textile this is relevant for only six regions, and two of them are in NMS.



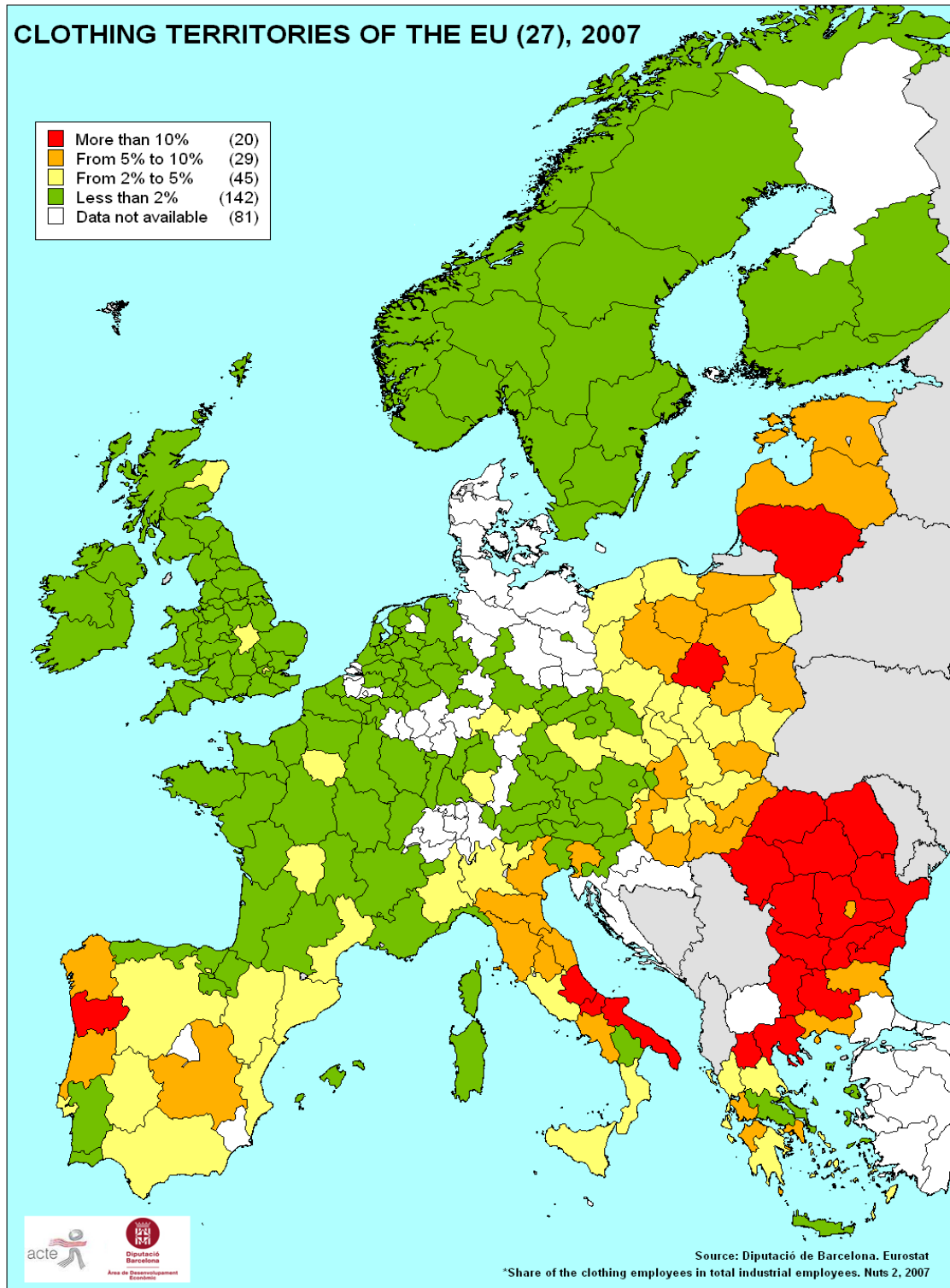


Figure 15. The importance of textile and clothing employment for EU 27 regions (2007)



The high concentration of power within clothing value chains as buyer-driven ones is on the top of the chain, where marketers, branders, manufacturers, and retailers compete with each other. The distribution of value is related with the following groups of activities: high value added activities are design and product development, distribution and marketing; the low value added activities are production activities (from assembly to full package production). The high value added activities require special competences and they have high entry barriers because of the huge concentration of the top of the chain (Gereffi *et al*, 2003). The upgrading options for the most part of companies involved as producers exist within the production activities and functions. European clothing chains show clear separation of tasks between OMS and NMS. The high value added activities remained in OMS and the lower value added jobs were moved to CEE countries. Some European global buyers export some high-value added activities to East Asian countries in recent years, and this is not a practice in relations with NMS.

The main push factor in relocation of clothing production from OMS to CEE countries was OPT, which dated from the beginning of 80s. OPT had significant impact on the EU division of labour continued during the first decade of the 21<sup>st</sup> c., although it experienced at the end of 90s formally (Smith *et al*, 2005). The OPT support Western buyers to improve their competitiveness through cost savings. The labour costs account above 50% of the production costs in clothing and their diminishing remains an important task. Recent studies outlined that the market imperatives set up factors as high quality of production, short delivery time and labour standards. The countries sourcing clothing production from NMS were Germany, UK, France and Italy mainly.

The widespread form of relocation of production tasks from OMS to NMS is subcontracting. In some labour intensive industries in NMS the share of firms which insourcing production tasks exceeded 80% of all branch companies. CEE firms operating as subcontractors are more often involved in regional rather than global chains and the producer-producer OPT relations prevail over retailer-producer relations in the European labour-intensive industries which restricts firm's ability to obtain knowledge and to upgrade (Pellegrin, 1999; Bair, 2006; Pickles *et al*, 2006).

CEE clothing producers work mainly as subcontractors participating in a lot of regional production networks where they implement distinct by kind and by value production tasks (Pickles, *et al*. 2006, Smith *et al*, 2005). FDI and joint ventures are presented by a few number of CEE firms (Smith, *et al*, 2005, Pickles, *et al*, 2006). Most of the recent operating JVs and FDI in labour intensive branches in CEE are based on previous subcontracting relations (Begg *et al*. 1999; Pickles *et al*. 2006). In this connection, Pellegrin differentiates the 'footloose' off-shoring in the LDCs, such as Mexico, from outsourcing to CEEC (1999). The strong interconnectivity between EU clothing producers might be considered as a competitive advantage of the sector. An advantage of clothing companies in NMS is the enforcement of international social codes and strengthening of state labour regulations.

The cases of downgrading are more often observed than these ones of upgrading, or there was replacement of functional upgrading by process and product upgrading or shift to lower value added activities. The latter could, in some cases, generate better performance in terms of company's sales and profits both in old and new member states (Amighini *et al*. 2003; Pickles *et al*. 2006, Roukova *et al*. 2008). Being 'locked' in subcontracting and thus having limited access to resources, knowledge and freedom of decision-making, CEE companies of many branches have upgraded their products and processes mostly. They have very limited ability to change their functions within particular chain and to take key positions in the triangular production (Smith *et al*, 2005). Hence, during the first decade of 21<sup>st</sup> c. some CEE countries succeeded to keep or even improve their performance in clothing commodity chains.

In 2005 a firm level survey<sup>3</sup> of clothing firms in five European countries included 212 firms in NMS and in OMS - 31 firms in Greece and 12 firms in UK. The findings confirmed that the most broadly spread form of international integration was the outsourcing/insourcing (79% of firms) which prevailing FDI (15%) and joint ventures (6%) (Kalantaridis et al. 2008). There were no examples of FDI and joint ventures in Greece and UK, and in Poland they are only 4%. The highest share had Bulgaria with 45% and Estonia with 33%. Insourcing was important for 86% of the Bulgarian firms and for 60% of Polish and of Estonian firms.

The mean of export of total production was higher in NMS than in OMS (for Bulgaria it was 92%, Estonia - 72%, Poland - 63%, Greece – 56% and only for 15% of UK firms). Within Bulgarian, Polish and Estonian firms the mean of export on subcontracting basis from the total export was between 92% and 82%, while for Greece its presence was limited and it was not registered within UK firms (Kalantaridis et al., 2008).

The Bulgarian and Greek interviewed clothing firms are dominated by price-sensitive products, which define their low value position. Greek firms benefit from neighbour countries with lower labour cost and undertook maintenance of production relations with them. It is envisaged as functional upgrading. In Poland the price-sensitive products are important for 61% of respondents and 33% focus on achievement of flexible response. About a half of the Estonian and UK firms focus on the design. Flexibility and delivery time are important for almost one fourth of all firms, except for Bulgaria and Greece.

Kalantaridis et al. underlined that there is no clear relation between higher value added activities and firm performance (2008). Bulgarian firms have declared the most positive assessments in terms of employment and turnover, and it is followed by Estonia and Poland. Companies in UK and Greece have diminished employment, although this has no impact on their turnover.

The interviewed firms in all countries stated that the ageing and the scarcity of labour force in the sector are envisaged as considerable problems. The low value added jobs in clothing are not attractive for the young people even in the undeveloped regions where the job opportunities are very limited.

### **Clothing Industry in Bulgaria**

The internationalization of clothing industry in Bulgaria was developed with higher intensity up to 2008. The Bulgarian producers succeeded in getting orders from European buyers as a result of the shift from Central European countries to the East European. The clothing specialization of neighbor countries Greece and Turkey played key role in relocation of orders to Bulgaria. The share of textile and clothing export reached 24% of national export in 2004, where clothing has almost 20%.

In 2005 the findings from enterprise survey of 60 clothing firms participating in international commodity chains presented the strong EU orientation of Bulgarian clothing export to EU (above 90%), as the export on subcontracting has the same shares of total firm export (Roukova et al. 2010). These variables stated the high dependence of Bulgarian clothing firms on foreign buyers, although mutual dependence and balanced relations with partners dominate within firms.

Trade patterns showed that Bulgaria is preferable sourcing location for Greece and Germany with more than 50%. To Italy were directed 22% of clothing export, Spain and France had 7% each, and UK, Belgium and Sweden had less than 4% each. Export to EU composed 98% of total clothing export of Bulgaria in 2004.

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<sup>3</sup> The firm level survey was implemented in 2005 under project 'Moving Frontiers: Changing Geography of Labour Intensive Industries', funded by 6<sup>th</sup> FP, EC (MOVE project)

Managers of 60% of the interviewed firms defined the international market competition as strong and very strong and considered that their participation in international production networks was due to the skilled working force (84% of firms) mainly, and put the expertise, low costs, reliability and geographical proximity next. Respondents ranked their competitive advantages as it follows: quality of production (78%), delivery time and reliability (65%), and cost efficiency (28%).

Most of the clothing firms defined their position in value chain as intermediate. In fact they are much close to the low end of the chain because of low value added production activities. Firms implement activities in relation with quality improvement, shortening the delivery time and higher value added production activities. Technology equipment was in focus, as 20% of interviewed firms informed that they use cutting age technology. Product and production process upgrading dominates over the functional upgrading. Small numbers of cases are firms which have developed design and products and have created their own brands.

Companies benefited by insourcing, 62% of them have increased employment, 77% - turnover, and 57% - profit. For more than a half of the firms the share of export of total production did not change, and it increased for 40% of firms. Positive impact of EU market development trends - need of small production volumes and short delivery time, was in favour of Bulgarian clothing producers (Roukova et al. 2010).

Bulgarian clothing industry was hit by the global economic crisis; however, it recovers faster than many other manufacturing branches. Staying part of European clothing production, the combination of low labour cost and qualified workers, as well as clothing market stabilization in EU, turn out to be important factors for this sector for overcoming the crisis.

In 2011 was implemented a firm survey of clothing firms in Bulgaria<sup>4</sup>. The survey covered all 60 firms interviewed in 2005 and new 9 firms was included in addition. The respondent rate was 37%, or 26 firms jointed the survey. It was planned the same approach and survey to be applied to Polish clothing firms, but no one of them completed the e-mailed questionnaire.

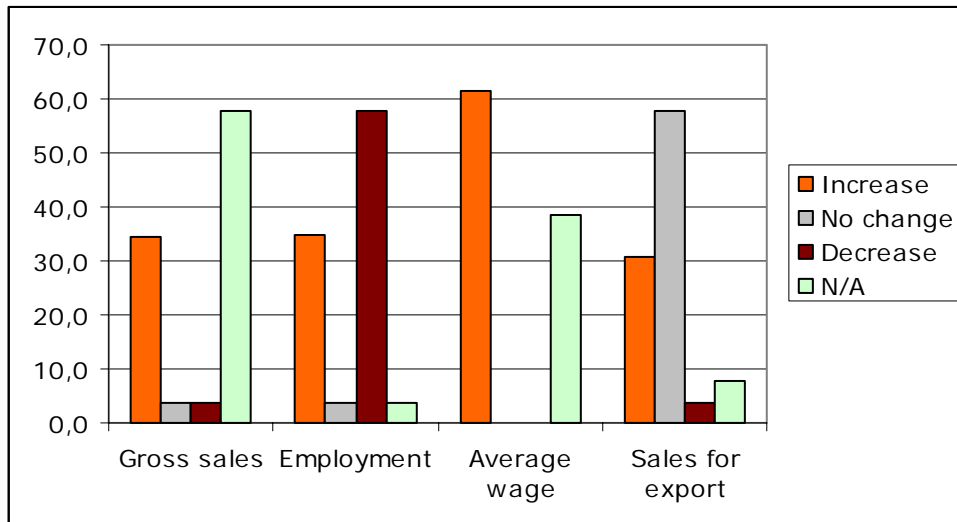
The questions are designed to the main objectives of the survey – assesment of the global impact on the industry, or they explore how many firms still operate, changes and development trends. The national trade register also is used for verification of legal status, ownership, liability and employment of companies.

A comparison of the recent survey data with the data obtained in 2005 shows that 2/3 of the firms continue to operate and 1/3 of them are closed or change their activities. The most part of the bankrupt enterprises are foreign ownership – 54% of Greek owned firms do not operate and 66% of Greek-Bulgarian joint ventures, as well as 33% of Italian owned firms. None of German, Belgian or other West European partners from the survey closed their enterprises in Bulgaria. Considering the difficulties of economic situation in Greece and Italy, the negative impact on clothing industry in Bulgaria is due more to the inner regional than to global challenges.

Positive changes in turnover and employment are reported by 35% of respondents (fig.16). An increase of wages have been remarked by 2/3 of companies.

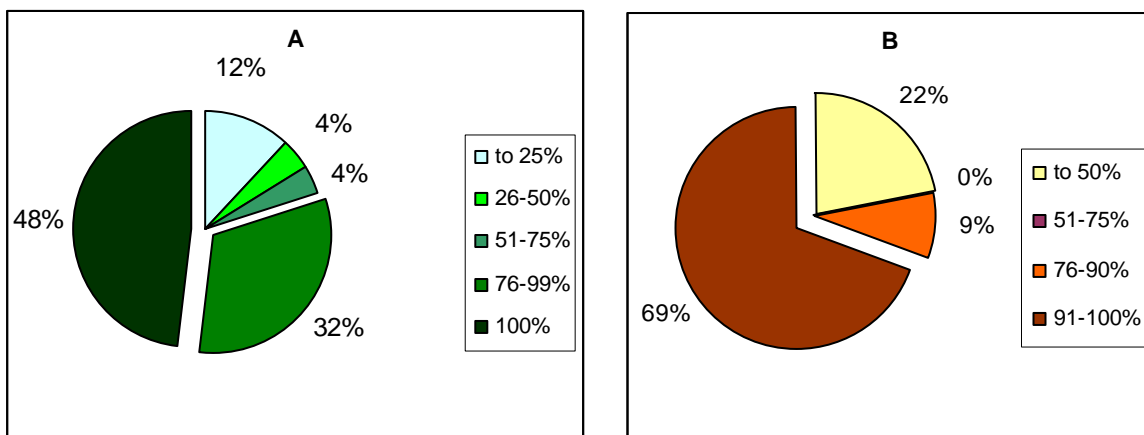
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<sup>4</sup> Authors are thankful to professor R.Begg, IUP and professor J.Pickles, UNC for their contribution to the design of survey questionnaire.



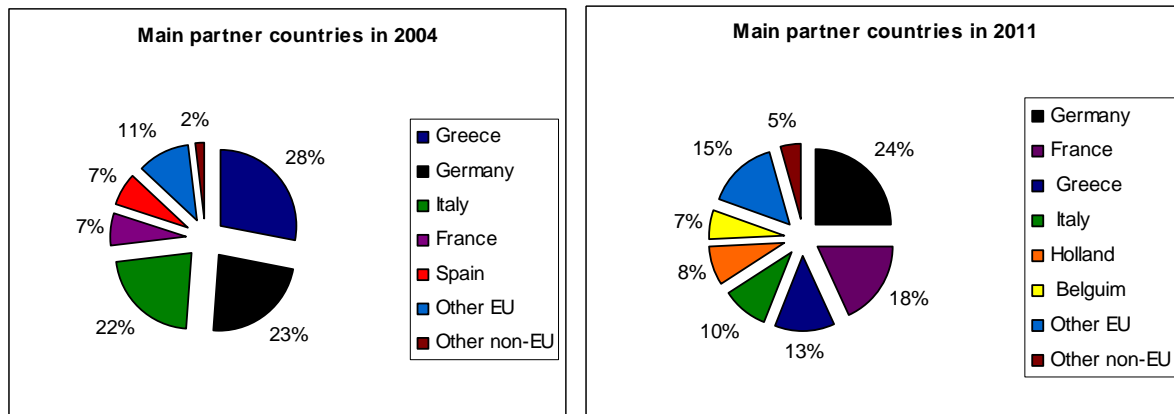
**Figure 16. Changes of economic performance of clothing firms in 2010 to 2005**  
 Source : Survey data 2011

Clothing industry remains strong export one – 80% of interviewed firms export between 75 and 100% of their production (fig. 17 A). Still subcontracting takes an important share of production (for 71% of the firms the subcontracted production is more than 90% of their total production) (fig.17 B)



**Figure 17. Answers of clothing firms by share of export in sales (A) and export on subcontracting (B)**  
 Source : Survey data 2011

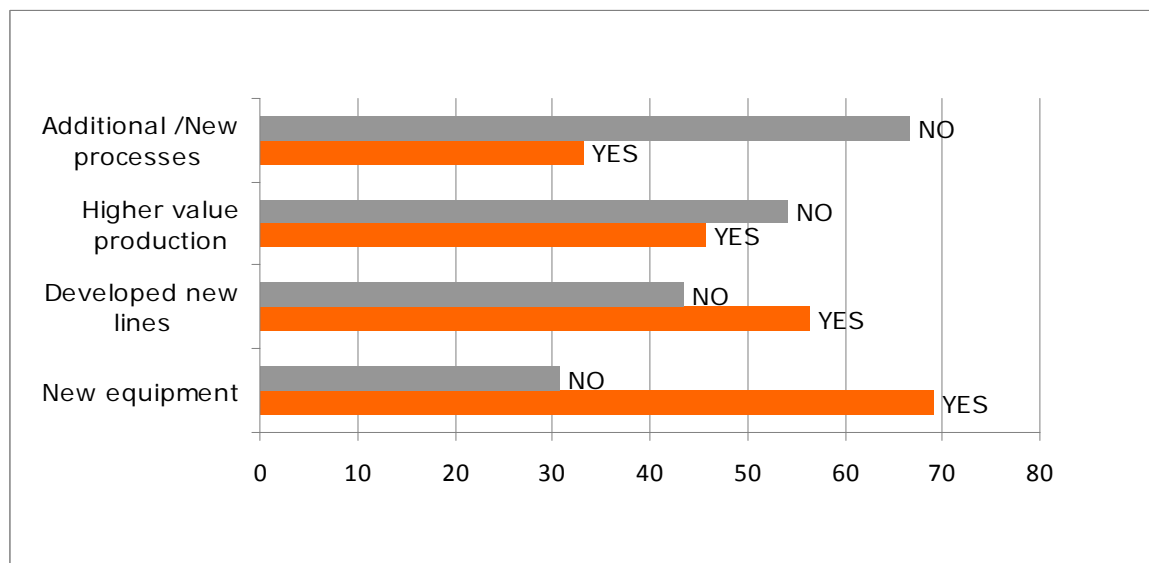
A significant percentage – 81% of respondents did not change their partners since 2004 and simultaneously some significant restructuring of partner countries was shown (fig.18). EU economic leaders as Germany and France increased their shares in 2011, the former becoming the second important destination for the Bulgarian clothing export in 2011. The shares of Greece and Italy decrease significantly.



**Figure 18. Main partner countries of Bulgarian clothing firms.**

Source: Survey data 2005 and 2011

During the crisis the investment activity was slowed down, though 70% of firms invest in new equipment, 50% in new production lines, and almost a half of the respondents – in production of higher value added products (fig.19) It means that the product and process upgrading led to an increase of the firm competences to implement higher value production and more complicated production operations, which might be considered as strong competitive advantages of the Bulgarian clothing firms.



**Figure 18. Investments of clothing firms in last five years**

Source : Survey data 2011

The negative impact on employment in clothing sector resulted in a drop of 20% from 2007 to 2009. In 2009 the clothing employment was 110 000 persons and they presented 20.5% of manufacturing employment in the country. South Central and South West regions account for 57% of the Bulgarian clothing employment. The regional importance of clothing employment measured as a share to manufacturing employment shows that there are many regions (NUTS 3) where clothing industry is of crucial importance. In 2009 with shares of 54% were Blagoevgrad and Kurdzhaly districts, and for many others this share accounted above 30% (Smolyan, Rousse, Haskovo, etc.). In principle, the effect of the closure of clothing firms is an increase of the female unemployment in a particular region. The female unemployment rate for Blagoevgrad district (South-West region), where most closed Greek

firms were located, is not an example of this statement because it has much lower value than the national and regional average ones in 2009 and 2010. The clothing industry in Bulgaria faces difficulties with shrinkage of labour force since 2005. Service sector and office work become more attractive than work in factory. According to the experts in the branch, it needs about 25 000 seamstresses more on national level in 2010. This imbalance between demand and supply of clothing labour force is observed in other CEE countries – Poland, Slovakia, and Romania. It might be considered that any further relocation of clothing production of Western European buyers will be due not only to the cost-cutting strategies but also to the fact that the capacity potential of East European clothing industry is almost accomplished to a considerable extent in terms of labour.

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