

MULTINATIONAL CORPORATIONS AND EXPORT COMPETITIVENESS OF NEW EUROPE*

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1. Introduction

Successful reintegration of former centrally planned economies from Central Europe into global markets and their accession to the European Union (EU) offers a unique vantage point to study the multiple impacts of multinational corporations (hereafter MNCs) on changes in competitiveness of firms from New European countries' in global markets.¹ Their overall success, albeit individual countries' experience may vary, may be generalized to provide support to the observation that MNCs are critical to developing new niches of competitiveness in global markets.

The New Europe's experience also shows the importance of integration that is based on liberalization of access to domestic markets for goods, services and capital. Significant inflows of FDI, i.e., above the ten percent of domestic gross capital formation, followed dramatic liberalization of foreign trade policies and coincided with serious effort to implement structural, second-generation reforms. The EU accession has assured that commitment to liberalization and higher quality business climate was not only credible but also irreversible. Liberalization of foreign trade was the result of Europe Association Agreements, hereafter referred to as the "EU factor," rather than the result of a strong domestic push for liberalization. While the extent of multilateral liberalization varied among CEEC-10, with Estonia and Czech and Slovak customs union pursuing very liberal Most Favored Nation tariff policies, all countries liberalized their

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¹ "New European" countries (also referred to as CEEC-10) include new members of the EU—Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, Slovenia—as well as two EU candidate countries—Bulgaria and Romania—scheduled to accede to the EU in 2007.

tariffs vis a vis the EU which accounted on average for around three fourths of New Europe's trade in industrial products.

Regional liberalization of trade was not confined to bilateral interaction with the EU. In fact, one of the most significant factors enhancing the region's attractiveness to foreign direct investment (FDI) was the transition to a Pan-European market for industrial products organized around the EU. Preferential trade arrangements subsequently expanded into a single Pan-European market for industrial products based on the Pan-European Agreement on Cumulation of Rules of Origin and provided strong incentive to MNCs to establish production facilities in CEEC-10.² The prospect of duty-free access to the future EU-25 and several other European economies combined with the policy framework allowing unfettered distribution of production capacities on the territory of each signatory of the Pan-European Agreement, without worrying about meeting the rules of origin requirements, has created a very attractive environment for MNCs.

These developments have had profound implications for the quality of FDI and the scope of penetration of New European economies by MNCs. While bilateral trade liberalization under the European Association Agreements has opened domestic markets for industrial goods to competition from EU imports and, therefore, has largely taken care of tariff-jumping consideration, the removal of trade barriers to production sharing across the Pan-European area (thanks to the possibility of using inputs sourced from other Pan-European economies) have created environment attractive for investments based on a new paradigm of efficiency-seeking driven mostly by international fragmentation of production. In contrast to investments motivated by search for natural resources or access to domestic markets, FDI driven by international fragmentation of production usually involves high quality investments by large multinational corporations in automotive and electronic sectors. They create demand for skilled labor and often boost local research and development capacities. They are highly sensitive to the quality of business climate and trade facilitation infrastructure including customs procedures.

Any form of such involvement of foreign firms through outsourcing or FDI has to meet a stringent efficiency test. Operations have to be competitive in the context of a wider Pan-European free trade area for industrial products. While, by itself, this does not assure competitiveness in any market in the world, considering huge size and high contestability of Pan-

² The so-called pan-European cumulation program—adopted by the EU Council in July 1996—linked twenty nine countries including CEEC-10, Turkey and European Economic Area (EU and EFTA) countries through a system of diagonal cumulation allowing imports from these countries to be treated as local inputs. The Agreement, which went into effect on January 1, 1997, has set the stage for formation of a single European trading bloc on January 1, 2002.

European industrial markets, competitiveness there amounts to competitiveness in global markets. In other words, the ability to compete domestically often means the ability to compete globally provided, of course, unhindered access to production and commercial channels of MNCs.

With the prospect of accession and a pan-European free trade area for industrial goods looming large on the horizon and greater progress in economic transition across all Central European countries, the variation in FDI flows significantly declined and increasingly reflected differences in the size of countries in terms of the GDP. The shares of individual countries in regional FDI annual flows have moved closer to their respective shares in regional GDP, albeit with some exceptions. Slovenia, saddled with legacies of Yugoslav workers self-management model, has not reformed its corporate law to make investing in Slovenian equities attractive to foreigners and its share in FDI was on average at 28 percent of its share in regional GDP, albeit it grew to 38 percent in 2002-03. In these terms, Romania also significantly underperformed, whereas Estonia, the Czech Republic and Hungary were receiving significantly larger FDI inflows than their respective shares in regional GDP would imply. Relative to the GDP, the Czech Republic and Slovakia were most successful in attracting FDI in 1999-2003, with average FDI inflows in terms of GDP of 8 percent and 6 percent, respectively.

For the purpose of this discussion, we distinguish between two types of engagement: ‘buyer-driven’ value chains or buyer-networks and ‘producer-driven’ value chains or simply producer networks. The former involve foreign retailers, usually with global or regional reach, and the latter manufacturing firms. Both represent a different mode of integration and participation in global division of labor. Producer networks tend to be based on ‘off-shoring’ whereas buyer networks imply outsourcing and outward processing.

The remainder of this paper is organized as follows. Section 2 discusses dynamics and evolving composition of exports originating in New Europe. Section 3 reviews developments in network trade. Section 4 links FDI and MNCs with network trade and changing profiles of competitiveness in a broader regional perspective. Section 5 concludes.

2. Integration of New Europe into global markets: pace and mode

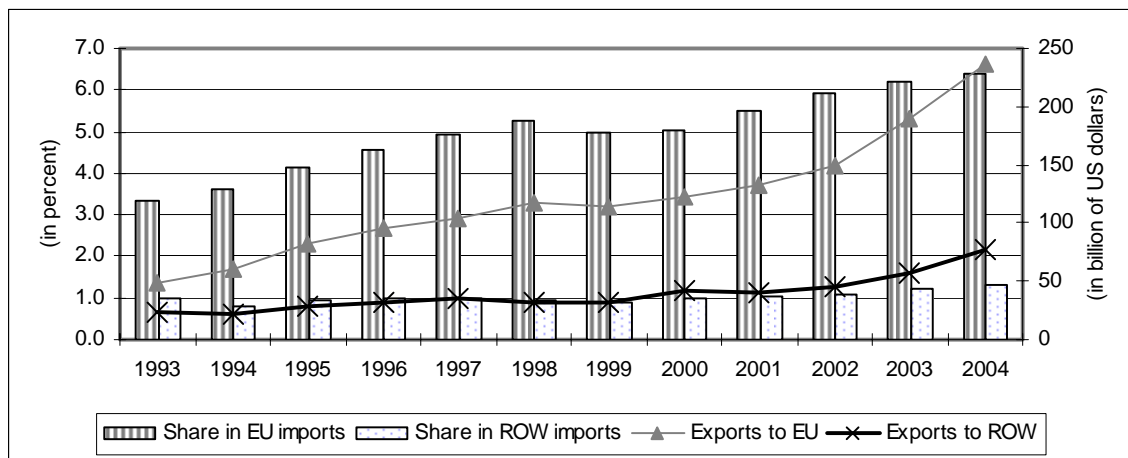
Following the collapse of central planning in 1989-91 in Central Europe, the prevailing commentary in both West and New Europe was that the region would be transformed into periphery of Western Europe; that it would be locked into a “North-South” type of inter-industry division of labor and that it stood little chance of sustained economic growth. Guerrieri (1995) [argued that the region would specialize in low processed natural resource and unskilled labor-intensive products. In consequence, the prospect of a rapidly emerging and prosperous Central

Europe would be doomed to failure (e.g., Berend, 1995).³ On the other hand, many commentators and politicians in Western Europe warned against a flood of cheap imports from Central Europe that would drive out low skilled labor intensive industries. Subsequent developments proved doomsayers wrong on all counts, as the export performance of CEEC-10 has been very impressive and driven by products other than suggested by doomsayers.

A. Exports dynamics

Countries that quickly introduced first-generation reforms liberalizing foreign trade and exchange rate regimes also experienced very rapid expansion of their exports during the initial phases of transition. Reform laggards—Bulgaria and Romania—have caught up later: both with impressive export performance at the turn of the century. Exports from all Central European economies have grown since 1993 significantly faster than world exports indicating, by this crude measure, the growth of export competitiveness of their firms. The least square growth rate of New Europe’s exports over the last decade exceeded that of world exports by 4.6 percent. Their aggregate share rose from 1.9 percent in 1994 to 3.3 percent in 2004.

Figure 1: *New Europe’s exports and their shares in imports of the EU and ROW in 1993-2004 (in billion of US dollars and percent)*



Source: Derived from the IMF Direction of Trade database.

The “EU-connection” drove the export growth of New European economies, although in 2002-04 exports to other markets significantly increased. They outperformed most other

³ Few saw their prospects in brighter colors, albeit there were exceptions. Hamilton’s and Winters (1992) pointed to New Europe’s likely specialization in intra-industry trade and higher technology goods stood out almost alone. Kaminski (1993) and Kaminski, Wang and Winters (1995) showed that redirection from former CMEA markets combined with ‘new’ manufactured goods rather than industrial raw materials drove their export expansion in EU markets.

competitors, with their share in total EU imports doubling between 1993 and 2004. The growth was particularly strong in 1993-98, followed by stagnation in 1999-2000, which, however, was partly offset by the growth of exports to the rest of the world (ROW) in 2000 (Figure 1).

The period 2002-04 witnessed strong growth of both EU- and ROW-destined exports pointing to a larger geographical diversification of New Europe's exports. While in 1993-2001 New Europe's ROW-destined exports had roughly kept pace with the ROW growth, keeping the share of New Europe flat at around 1 percent (Figure 1), they expanded much faster increasing their combined share by almost one third between 2001 and 2004.

While there was variation in national export performance, two general features stand out. First, export expansion, as measured by changes in respective shares in world exports, was particularly strong during the initial phases of transition in 1993-97. Five Central European economies—Baltic states, Poland and Slovakia—recorded double digit growth rates driven by the contraction in domestic demand, competitive pressures from expanding imports and low initial levels following the collapse of central planning. Yet, the coefficient of variation of average least square growth rates was relatively low. The only outliers were Bulgaria (-9 percent) and Slovenia (2 percent), albeit for different reasons. Bulgaria was a victim of disastrous economic policies that led to the crisis in 1996, whereas Slovenia had already well established commercial links with world markets. The variation in export dynamics significantly fell in 1997-2004. Except for Romania, whose share in world exports grew at a double-digit rate (10.3 percent), other economies recorded growth rates between 8 percent (Lithuania), 2 percent (Poland) and 0.5 percent (Slovenia). Bulgaria, having had finally gone through stabilization-cum-transformation reforms, experienced strong export growth of 7 percent, although from a very low base.

B. From unskilled labor to capital and skilled labor intensive levers of export expansion

Contrary to predictions, raw materials had not been responsible for dramatic reorientation of exports towards the EU and the export expansion that followed the implementation of first generation reforms in Central European countries. Manufactures have made the largest gains, although during the initial phases of transition these were mostly unskilled labor intensive products. There was some variation in drivers of exports and their timing, although patterns—not surprisingly, given shared endowments in production factors of New Europe—have been similar moving almost in a flying-geese pattern. Skilled labor and capital intensive goods have replaced unskilled labor intensive products as drivers of exports. Developments within Central Europe fall within a range delineated by two extreme cases of Bulgaria and Hungary. Their experience offers a much clearer picture than one derived from mere averages for New Europe.

Both stand at extremes of New Europe's transitional experience. Hungary has consistently moved forward proceeding with the most radical program of structural reforms among transition economies, whereas Bulgaria experienced two transitions: one quickly aborted and another one that began five years later in 1997. Hungary's pattern is similar, though its pace much faster to other New Europe's economies.

The picture that emerges from an examination of Hungary's exports to the EU in terms of factor content can be summarized as follows.⁴ First, there was a dramatic movement away from natural resource intensive products, which accounted for almost half of Hungarian EU-oriented exports testifying to the existence of severe distortions inherited from the 'socialist' past (Table 1).⁵

Table 1: *The Composition of Hungarian Exports to the EU According to Factor Intensities, 1989-97 (in percent and millions of US dollars)*

Factor Intensity	1989	1990	1991	1992	1993	1994	1995	1996	1997	A*/	B**/
Natural resource	46.2	41.5	39.3	34.1	30.8	28.9	25.1	21.9	16.5	-33	-46
Unskilled labor	18.8	21.1	22.6	24.8	26.5	23.0	19.2	19.3	17.1	41	-35
Skilled labor	12.9	14.2	13.3	15.7	15.1	17.0	19.1	20.1	22.2	17	47
Capital	19.3	21.1	22.5	23.0	25.3	28.9	34.6	36.9	44.1	31	74
Memorandum:											
Skilled labor and capital intensive	32.2	35.3	35.8	38.7	40.4	45.9	53.7	57.0	66.3	25	64
EU-oriented exports (million of US dollars)	3,705	4,834	5,799	6,537	5,773	7,260	9,974	11,231	13,398	56	132

* / Percent change during the first phase 1989-93

** / Percent change during the second phase 1993-97.

Note: the product shares do not sum to 100 because some SITC. four digit categories (SITC. 9 Special transactions) cannot be classified in terms of factor intensities.

Source: Derived from the UN COMTRADE database as reported by the EU.

Second, two phases are easily distinguishable: the initial phase over 1989-93 and thereafter. During the initial phase, the fastest growing were clearly exports of unskilled labor intensive products. The aggregate share of skilled labor and capital intensive products was then less than one third, but grew faster than total EU-oriented exports through 1989-93. Beginning in 1994, the shift in drivers of EU-destined exports was rather astounding. The share of unskilled labor intensive products was consistently falling from 1994 on, while that of capital intensive

⁴ Natural resource and unskilled labor intensive groups represent lines of production largely characterized by low value added, high natural resource intensity and simple technologies. For countries at the lower end of the industrial scale such products account for a dominant share of exports. While the line dividing the skilled labor and capital intensive groups is fuzzy, they both contain products requiring more sophisticated inputs than found in the first two groups. We use EU import statistics, because of low quality of foreign trade data before and aftermath of the collapse of central planning.

⁵ Despite low wages, labor intensive products accounted for barely 32 percent in 1989. Low value added natural resource intensive products and unskilled labor intensive products accounted for two-thirds of EU-directed exports in 1989. For an illuminating discussion of distortions inherent in production structures of centrally planned economies and implications from their trade, see Winiecki (2003).

products followed by skilled labor intensive products were dramatically expanding. Note that the value of exports more than doubled between 1993 and 1997, while that of capital and skilled labor intensive products almost quadrupled (3.8 times) during that period. Their aggregate share in EU-destined exports increased from 40 percent in 1993 to 66 percent in 1997.

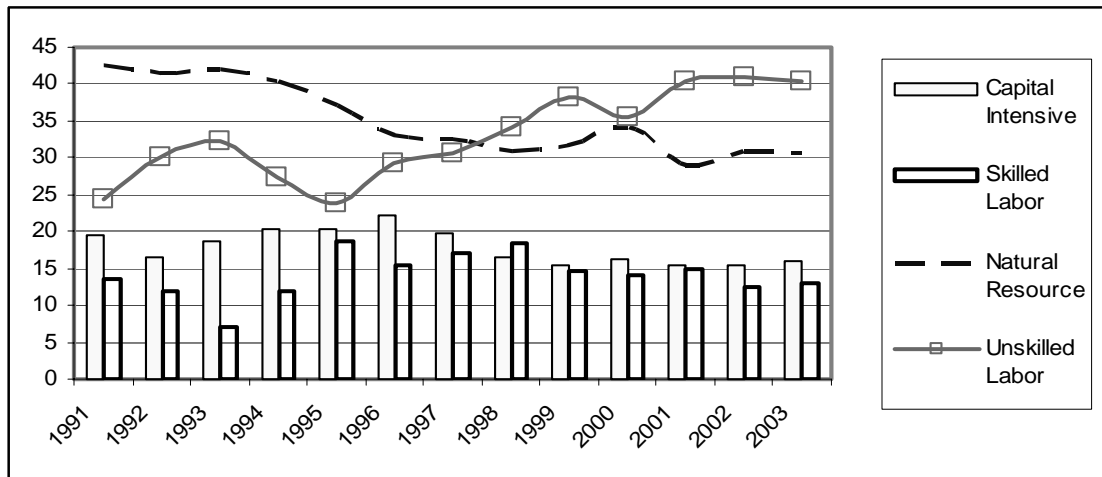
Bulgaria's 'profile' is different: until 1993 it was similar to Hungary's first phase, in 1994-95 it resembled Hungary's second phase and then reverted back to the pattern observed during Hungary's first phase. This is mainly due to the fact that Bulgaria experienced two first-stage economic reforms: one quickly aborted and another one that began five years later in 1997. Although Bulgaria moved swiftly in implementing first-generation reforms already in 1991 (Bruno, 1994), the initial bold program of dismantling central planning and overcoming transformational recession had been quickly aborted with the re-introduction of central controls. Subsequently, state's capture by private interests groups led to another transformational recession, with two consecutive years, 1996 and 1997, of falling aggregate output.⁶

Bulgaria's pattern in terms of export intensities has been similar to those observed in Central European transition economies but only in 1990-96. Unskilled labor intensive industrial products were also the driving force behind Bulgaria's EU-oriented export growth (Figure 2). The value of these exports increased by 58 percent between 1991 and 1993 (as compared to a 19-percent increase in total EU-destined exports), and their share rose from 24 percent to 32 percent. But it fell to 28 percent in 1994.⁷ Since the share of unskilled labor intensive products in EU-oriented exports Hungary as well as of Czech Republic and Poland had also been contracting since 1992-93, there was nothing unusual about it. The 1994-96 witnessed a major realignment in the export growth pattern, with skilled labor and capital intensive products emerging as major levers of Bulgaria's export expansion (Figure 2).

However, in contrast to Hungary, Bulgaria's pattern of specialization in terms of factor content, driven by state subsidies pocketed by groups in power, turned out to be non-sustainable. Indeed, unskilled labor intensive products became major drivers of exports in 1995-2001, with their share growing spectacularly from 25 percent to 40 percent of total EU-destined exports in 2001-03. This was a repetition of the patterns observed during the initial stage, albeit on a much larger scale.

⁶ Bulgaria, together with Romania and Moldova, are the only transition economies that experienced the second transformational recession, i.e., at least two consecutive years of contracting aggregate output.

⁷ The value of total EU-oriented exports increased 85 percent in 1993-96. The value of skilled labor intensive products quadrupled and that of capital intensive exports increased 2.4 times. Simultaneously, the share of unskilled labor intensive declined from 32 percent to 29 percent.

Figure 2: Factor intensities of Bulgaria EU-oriented exports in 1991-2003(in percent)

Source: Based on EU data from UN COMTRADE Statistics.

How does Bulgaria's performance compare with that of other CEEC-10 in 1996-2003? Data in Table 2 provides answer to this question. Lithuania and Romania were singled out, simply because the export basket of the former was the closest to that of Bulgaria in 1996-2000, while Romania also went through the second transformation recession triggered by reversed reforms. In Lithuania's exports, however, the share of natural resource and unskilled labor intensive was slightly larger in 1996. The situation changed already in 2000 indicating growing differences in the dynamics of exports in terms of their factor intensities, with skilled labor intensive products emerging as the major levers of Lithuanian exports.

Leaving Bulgaria aside, other New Europe's economies have been acquiring comparative advantage in capital and skilled labor intensive products thanks to progress in transition to competitive markets and, as we shall see, inflows of FDI.

Table 2: Change in shares and dynamics of total exports in comparative perspective in 1996-2003 (in percent)

	Index, 2000; 1996=100				Index 2003; 2000=100				Memorandum: Index of total exports (current US\$) in 2000 and 2003	
	NR	UL	CI	SL	NR	UL	CI	SL	1996=100	2000=100
Bulgaria	93	158	76	96	97	119	88	92	99	156
Romania	98	106	108	81	102	98	89	119	128	170
Other New Europe	73	83	132	119	95	95	104	104	142	164
Of which: Lithuania	101	128	92	70	92	110	91	127	113	188

Notes: NR—natural resource intensive; UL—unskilled labor intensive; CI—capital intensive; SL—skilled labor intensive

Source: Derived from countries' data in UN COMTRADE database.

C. Concluding comment: why such a stark difference between Bulgaria and Hungary?

Bulgaria and Hungary stood apart in terms of transition progress and FDI inflows in 1992-97. While Bulgaria witnessed the reversal of first-generation reforms in 1992-96, Hungary stayed on the reform course and actively sought foreign strategic investors privatizing almost 50 percent of large state-owned companies by 1995 (Sass, 2004). While net FDI inflows in Bulgaria amounted on average to 0.6 percent of the GDP, they amounted to 5.6 percent of Hungary's GDP. While companies from Cyprus were among the largest investors in Bulgaria, prominent MNCs from the US, Japan and the EU were among top investors in Hungary. The fundamental reason why they came to Hungary was their ability to take better advantage of resources available locally thanks to their superior technology and know-how. While they actively sought areas with potential comparative advantage in Hungary, firms investing in Bulgaria exploited rents created by government policies.

Hence, the answer to the question in the title boils down to the presence of high-quality MNCs in Hungary, and their absence in Bulgaria. The list of top 100 Hungarian companies in 1997 was awash with easily recognizable subsidiaries of MNCs.⁸ Among 20 largest firms in terms of sales there were at least six companies which were part of large MNCs. These included IBM Storage Products (#2); Volkswagen's Audi Hungaria Motor (#6); General Motor's Opel Hungary (7); Philips (#12); General Electric Lightning (#15); and Japan's Magyar Suzuki (#16). Many companies were majority owned by MNCs (e.g., a white-goods producer Lehel Hutogepgyar (#39), which is owned by Sweden's Electrolux). Foreign owned companies were responsible for the shift towards capital and skilled labor intensive products and the striking acceleration over 1994-97 of exports of engineering products, machinery and capital equipment.

With a delay of around five years, similar patterns of foreign trade could be observed in other New European economies. The time profile of evolving factor content of their exports was comparable with that of Hungary. Unskilled labor intensive products, mainly textiles and clothing, drove their exports directed almost exclusively to the EU during the initial stages of transition. Clothing and, to a lesser extent, footwear have been the quintessential engines of growth for most CEEC-10 in the early 1990s accounting for significant shares of value added and manufacturing employment. Except for Czech Republic, Slovakia and Slovenia, textiles and clothing accounted for more than one fifth of total manufacturing exports in their respective peak years. Subsequently, skilled labor and capital intensive products took over as the engines of export growth.

⁸ See the top 100 list in *The Wall Street Journal Europe's Central European Economic Review* (July & August 1998, Vol. VI, Number 6). Compiled by Dun & Bradstreet Hungaria Inc.

3. Buyer- and producer-driven network trade: evolving competitiveness

The term international production and distribution network, also known as a global commodity chain, refers to the whole range of activities involved in the design, production and marketing of a product. For the purpose of this analysis, we distinguish between ‘buyer-driven’ and ‘producer-driven’ commodity chains.⁹ The former denotes the case of global buyers creating a supply-base upon which production and distribution systems are built without direct ownership. The latter refers to vertically integrated arrangements i.e., common ownership of successive stages of production under one corporate entity. While the differences in terms of foreign ownership are less clear cut in reality, the two network types exhibit different geographic and temporal patterns in the region.

‘Buyer-driven’ commodity chains tend to exist in industries in which large retailers, branded marketers, and branded manufacturers play the key role in setting up decentralized production networks, usually in developing or transition economies. Such networks are prevalent in labor-intensive, consumer goods sectors, such as apparel and furniture. Production is generally carried out by tiered networks of contractors in developing countries, which export finished goods made to the specifications of a foreign buyer.

‘Producer-driven’ networks have spurred a new global division of labor by dividing up the value chain into smaller components and moving them to countries where the production costs are lower. Production fragmentation in vertically integrated sectors is behind ‘producer-driven’ network trade. It differs in several important respects from traditional, ‘buyer-driven’ global value chains. It includes two-way flows of parts and components for further processing and development across firms located in various countries. A historical example of production fragmentation at a regional level is the Canada-United States Automotive Products Agreement of 1965, which, followed by the significant reduction in trade barriers, led to an expansion of trade in auto parts (Jones, Kierzkowski and Lurong, 2005).

According to Gereffi (1999, p.43), while the multinationals in ‘producer-driven’ chains often belong to global oligopolies, where there is only a handful of competitors, ‘buyer-driven’ commodity chains are characterized by highly competitive, locally owned and globally dispersed production systems. Their profits derive not from scale, volume and technological advantage, as in ‘producer-driven’ chains, but rather from a combination of high-value research, design, sales, marketing and financial services. This combination allows the retailers, branded marketers and branded manufacturers to act as strategic brokers in linking factories abroad with evolving product niches in the main consumer markets. Developing and transition country initially start

⁹ Gereffi (1999) proposed this typology.

participating in buyer-driven networks as subcontractors, involved solely in simple assembly operations for which they receive all the necessary inputs from the buyer. However, with time some of them manage to move up in the value chain by taking on the responsibility for sourcing materials and some design activities.

Network trade has been the driving force of several New European economies' integration into global markets, as documented below. The most developed of them have moved through two stages. In the first stage, 'buyer-driven' network exports served as a major vehicle linking them to external markets. The second stage has been participation in 'producer-driven' networks. All New Europe's economies appear to be moving along the same path, albeit at different speed.

A. Clothing and furniture: sunset value chains

Clothing and to a lesser extent furniture have been the quintessential engines of export growth for many New Europe's economies during the initial stages of the transition. They accounted for a considerable share of value added and manufacturing employment. With increasing wages in the more successful reformers, many of outward processing operations in the clothing sector have been shifting to economies less advanced in the transformation process to take advantage of lower labor costs.

Table 3: *Shift away from clothing: the share of clothing in exports of manufactured goods in peak years and 2004 (in percent and million of US dollars)*

Country	Peak Year	Clothing Share (%) in Peak Year	Clothing Share (%) in 2004	Exports (\$ million) 2004	Index Peak=100 2004	Least Square Growth (%) 1995-04
Bulgaria	2001	37.7	31.2	1,616	83	5.1
Romania	1999	37.1	29.5	5,276	80	0.7
Lithuania	1999	34.8	19.3	678	56	-4.0
Estonia	1993	27.5	7.0	279	25	-10.5
Latvia	1994	22.7	14.6	271	64	-1.5
Poland	1993	21.4	4.3	1,834	20	-15.4
Hungary	1992	20.8	3.1	1,134	15	-15.8
Slovenia	1992	15.6	3.7	368	24	-12.2
Slovak Republic	1994	8.9	3.3	668	37	-8.7
Czech Republic	1993	7.4	2.0	858	26	-11.1

Note: Manufactured goods excluding chemicals.

Source: Computations based on world import data from UN COMTRADE Statistics.

The subsequent fall in significance of clothing in exports occurred earlier in countries that moved fast in implementing reforms and attracted FDI. For reform laggards—Bulgaria and Romania—clothing continued driving exports till 2001 and 1999 respectively. While Lithuania's record in transition progress was better, it failed to attract sizable FDI inflows till 1997 and clothing exports peaked in 1999. In Poland, the first country to implement a radical stabilization-

cum-transformation program in 1990, the share of clothing in manufactured exports peaked in 1993, or four years into the transition. In Slovakia, clothing exports did not reach their peak until 1997, but Slovakia was lagging on structural economic reforms and privatization until 1999 (Kaminski and Smarzynska 2003). With labor cost going up across New Europe, many of outward processing operations in the clothing sector moved to other countries in South and Eastern Europe through the 1990s.

In contrast to the apparel value chain, which often involves only simple cut-make-trim operations applied to fabrics supplied by buyers and thus boils down to the use of only local unskilled labor force, the furniture network is more diversified and complex requiring a larger local input of skills and investment in capital assets. Similar to apparel, furniture producers operating in a global value chain, supply products according to specification provided by large multinational retailers. They also tend to be locally owned. But the relationship between supplier and multinational retailer frequently reflects a complexity of tasks involved. In consequence, the relationship between buyers and suppliers is based on a more long-term mutual commitment, with multinationals often providing assistance in technology development, production management and personnel training. Skills acquired this way can be used in developing a specialization in activities going beyond mere assembly operations, for instance, production of specialized parts or higher value added furniture. As a result, the furniture network is less sensitive to the rise in labor costs and creates more opportunities for knowledge transfer and productivity spillovers (Javorcik 2004).

The furniture production chain has been an important driver of manufacturing exports in New Europe, but, again, not all countries have tapped fully into this network (see Table 4). It has two distinguishing features. First, its overall economic weight has been on the decline, although its trade has almost kept pace with the growth in trade in manufactures, with its share only slightly declining in 1995-2002.

Second, the earlier reliance on furniture parts imported from the EU and other suppliers, which has been relatively low in comparison with other networks, has continued to fall. The shift towards specialization in furniture parts has been significant for most countries, indicating overall progress in industrial restructuring. While in 1995, only Slovenia, one of the most industrialized economy in the region and an important supplier to EU furniture producers, and to a lesser extent Hungary specialized in furniture parts, the situation changed by 1999. In fact, parts have become the driver of furniture network exports in Poland, Estonia and Romania.

Buyer-driven network products still account for sizable portions of exports of manufactures of Romania (35 percent), Bulgaria (34 percent), Lithuania (29 percent) and Latvia

(24 percent). In other countries, their share has dramatically fallen, as mainly textiles and clothing have kept moving out to countries with lower unit labor costs.

Table 4: *Evolving significance of furniture network trade: share in manufactured (excluding chemicals) exports and share of parts in network's exports in 1995, 1996 and 2003 (in percent)*

	Exports (US\$ mln)			Least Square Growth	Share of furniture in manufactured exports			Share of parts in total furniture network exports		
	1995	1999	2003		1995-03	1995	1999	2003	1995	1999
Poland	1,338	1,964	3,902	11.4	9.2	10.1	9.7	11	17	31
Lithuania	46	96	366	24.8	3.9	5.8	9.2	10	36	27
Slovenia	454	617	881	7.6	6.9	9.1	9.0	46	64	67
Latvia	47	80	135	13.4	7.0	9.3	8.9	38	45	37
Estonia	69	136	308	17.8	6.7	7.4	8.1	23	37	45
Romania	514	428	789	4.5	9.7	6.9	5.8	3	10	16
Slovakia	192	186	859	17.3	3.3	2.4	4.8	13	36	24
Czech R.	402	771	1,297	13.3	2.6	3.5	3.1	37	62	68
Bulgaria	36	46	131	18.0	1.7	2.4	3.0	14	20	22
Hungary	233	558	829	15.2	3.3	2.8	2.4	41	73	76

Source: Own calculations based on national trade statistics reported to the UN COMTRADE database.

B. Automotive and information technology networks: the gradual shift towards IT

In 'producer-driven' supply chains, the production process tends to be coordinated by large multinational corporations. Such networks are mainly present in capital and skilled labor intensive industries such as automobiles, computers, semiconductors and heavy machinery. A classic example of a producer-driven supply chain or network is the automobile industry, which encompasses multi-layered production systems involving thousands of firms, including parent companies, subsidiaries and subcontractors. Its trademark is dividing up the value chain into smaller components and moving them to countries where the production costs could be lower. So is information technology (IT) network.¹⁰ Both are vertically integrated sectors generating two-way flows of parts and components for further processing and development across firms located in various countries.

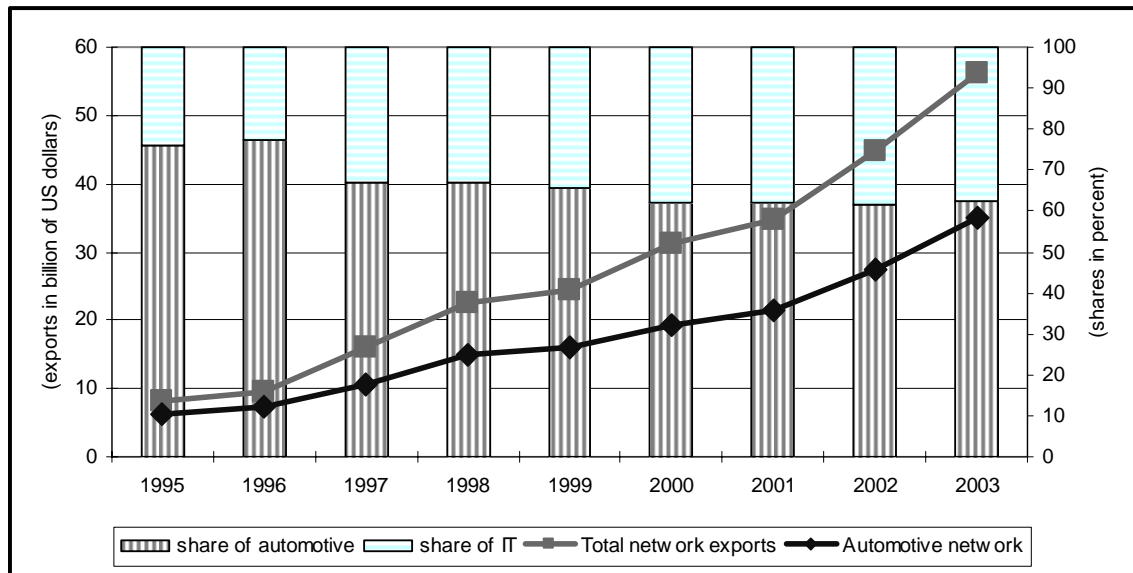
In both information technology (IT) and automotive sectors, the pressures of technological change have led to a practical disappearance of "one stop shop" industrial structures. Miniaturization, exponential growth in information processing and storage capacities combined with integration of Internet and imaging technologies have been the major driving forces behind transformation of both auto industry and IT sectors worldwide over the last two decades. Large multinationals, which have traditionally coordinated production and marketing activities across the globe and dominated both sectors, have undergone dramatic changes over the past two decades. Their common denominator has been increasing geographic dispersion of the

¹⁰ Our definition of the IT network encompasses office equipment, telecommunication equipment and electronics. It covers only trade in goods (see Kaminski and Ng, 2005).

production process. Thanks to new technologies making possible to trace parts and components moving through chains of production spread over several countries and continents, vertically integrated firms have been replaced by structures connected through complex and borderless supply chains. These chains include not only product manufacturing but also the front-end customer contact and support services and consist of several layers including parent companies, subsidiaries and subcontractors.

For a variety reasons discussed in the next section, New Europe's entry into global production networks did not take place immediately after the collapse of central planning but well into the transition in the mid-1990s. In 1997, the value of total production networks' exports rose 68 percent to US\$ 16 billion from US\$ 9 billion in 1996 (Figure 3). The average least square growth rate over 1996-2003 was 23 percent per year, with their value doubling on average every three years. Their share in total exports from New Europe increased from 7 percent in 1996 to 12 percent in 1997, 19 percent in 2000 and 23 percent in 2003.

Figure 3: Total producer-driven exports and shares of networks in 1995-2003



Source: Derived from UN COMTRADE database.

While automotive sector remains dominant accounting for almost 70 percent of producer-driven networks' exports of parts and final products, IT networks' exports have been displaying stronger dynamics with an average rate of growth of 29 percent per year over 1996-2003, although from a much lower base. This is in line with trends in trade observed worldwide.

Totals, however, hide huge variation in the presence of global production networks across New Europe, although over the last five years their shares in manufactured exports have been

growing in all New Europe's economies. Using the share of network's exports and parts in exports of manufactures (excluding chemicals), one may distinguish between *heavily* (the share above 20 percent), *lightly* (above 5 percent and below 20 percent) and *yet to be involved* (below 5 percent) groups of countries. The Czech Republic, Estonia, Hungary Poland, Slovakia and Slovenia belong to the heavily involved group; Lithuania and Romania to the lightly involved group; and Latvia and Bulgaria are yet to become part of producer-driven networks. However, all of them have experienced exports growth exceeding the growth of manufactured exports since 1999, which suggests that 'lightly' and 'yet to be involved' groups have been catching up.

The apparent shift of New Europe towards IT production network trade has been driven by sectors emerging in two countries—the Czech Republic and Hungary (Table 5). Their combined share in New Europe's exports increased from 51 percent in 1995 to 80 percent in 2003, with Hungary contributing most to this increase. Its exports increased sixteen-fold over this period, and its share in New European IT exports to 56 percent. Hungary is a dominant player in both networks with its exports having had expanded the fastest in both IT and automotive products over 1995-2003. Its rise to prominence and dominance in IT network has been particularly spectacular. Only Romania's IT network exports rose faster, but from a much lower level and its share in manufacturing exports was only 4 percent. Although Estonia's exports rose at a slower pace, they accounted for one-fifth of exports of manufactured goods indicating strong involvement of its firms in the IT network.

In contrast to IT network, there is a more widespread involvement across national economies in automotive network activities. Exports of automotive network products account for around one fifth of Slovak, Hungarian, Czech, Polish and Slovenian manufactured exports. These countries contributed jointly around three-fourths of total New Europe's network exports in 2003. Furthermore, there are clear indications of an expansion in Romanian exports. However, this sector appears to have been disappearing in Bulgaria and Latvia.

The positive correlation between the share of network exports in manufactured exports and imports of network products and parts indicates strong two-way trade in networks and reliance on imports in export activities. The value of correlation coefficient was high and growing: it increased from 75 percent in 1999 to 84 percent in 2003.

Another interesting feature is an apparent shift away from simple assembly operations based on imported parts to those based more on locally obtained inputs. A crude measure of it is import intensity, i.e., the ratio of network parts imports to network exports of parts and final products. For countries entering networks, the import intensity has been on the decline, i.e., fewer parts have been imported in relation to total network exports (see Table 5 above).

Table 5: Features of trade in automotive and IT networks in 1995, 1999 and 2003

Automotive Network	Exports (US\$ mln)			Least Square Growth 1995-03	Share in manufactured exports			Share of parts in network exports			Import intensity		
	1995	1999	2003		1995	1999	2003	1995	1999	2003	1995	1999	2003
Slovak R.	546	2,031	6,365	26	9	26	36	74	30	37	32	51	44
Hungary	737	4,979	7,928	31	10	25	23	56	71	79	47	53	47
Czech R.	1,966	4,631	9,049	19	12	21	22	44	47	57	35	35	36
Slovenia	1,161	1,329	1,899	5	18	20	19	35	37	47	51	50	42
Poland	1,325	2,660	8,213	23	9	14	20	30	41	66	95	120	42
Lithuania	102	96	447	13	9	6	11	24	28	14	74	97	38
Estonia	119	100	319	9	12	5	8	40	52	45	46	70	53
Bulgaria	0	68	62	-10	6	3	1	42	66	60	66	151	284
Romania	203	206	753	14	4	3	6	35	83	89	39	93	66
Latvia	50	12	29	-6	7	1	2	27	62	56	94	506	370
IT-network													
Hungary	540	3,790	8,528	39	8	27	31	65	23	21	82	59	50
Estonia	138	171	379	23	13	22	22	89	25	54	117	66	54
Czech R.	485	303	3,803	33	3	3	13	70	30	26	150	123	56
Lithuania	115	35	83	9	10	8	8	72	52	73	45	59	49
Poland	405	680	1,327	20	3	6	6	71	35	42	168	110	90
Slovak R.	108	180	474	25	2	4	5	27	42	44	191	104	85
Romania	14	32	461	62	0	2	4	85	23	19	2124	225	121
Latvia	23	7	34	3	4	2	3	18	58	25	136	378	191
Slovenia	139	84	187	6	2	2	3	58	27	25	108	118	91
Bulgaria	41	14	66	13	2	1	3	50	40	41	121	315	194

Note: Import intensity is defined as the ratio of network parts imports to network exports of parts and final products.

Source: Own calculations from the UN COMTRADE database.

C. Concluding observations

An examination of developments in network trade of New Europe gives support to two observations: First, New Europe is a highly heterogeneous group in terms of the scope and depth of participation in global network trade. Hungary, followed by the Czech Republic, has reached very high levels of participation in both producer-driven networks. In contrast, Bulgaria and Latvia have both a long way to go to take advantage of opportunities offered by network trade and associated gains in competitiveness of higher value-added activities.

Second, participation of various countries in various networks strikes one as a moving target, although they all appear to be following almost the same trails resembling—as Damijan and Rojec (2004) argue—a flying geese pattern. It appears to reflect changes in comparative advantage as their economies restructure and develop. Stylized facts include the rise and fall of textiles and clothing, the shift in furniture exports towards specialization in parts, entry into automotive networks usually followed by IT networks. In the initial phase of the transition process, these countries had relied on unskilled labor intensive exports associated with ‘buyer-driven’ production chains in clothing and furniture. However, rising wages have prompted these

countries to shift toward skilled labor and capital intensive exports conducted through ‘MNC-driven’ networks encompassing automotive and information technology industries.

4. Multinational corporations and network trade

Foreign-based multinationals organize supply activities of both buyer- and producer-driven networks, albeit their involvement is different. Participation in furniture or clothing global chains usually does not necessarily require foreign direct investment. It may be, however, associated with FDI, as the case of Romania’s textiles and clothing illustrates. It seems to be an exception rather than the rule.¹¹

In contrast, the link between FDI and producer-driven network trade seems to be ubiquitous for producer-driven networks. The entry into producer-driven networks is rather inconceivable without FDI for several reasons although the experience of some East Asian countries offers the evidence to the contrary. First, fragmentation of production combined with the creation of distribution networks spanning across continents increases complementarity between FDI and trade. While firms from developing and transition economies may not possess intangible assets or services infrastructure developed at the level sufficient to have a comparative advantage in manufacturing of final goods, thanks to production fragmentation they are able to join the production chain by specializing in the labor intensive fragment of the manufacturing process. Production fragmentation not only enables firms from less developed and transition countries to access foreign markets without large outlays on advertising and market research but it also may lead to an additional benefit in the form of knowledge spillovers which is discussed in the companion paper (Javorcik and Kaminski, 2006).

Second, the growing share of global trade takes place within large MNCs. It is estimated that about one-third of world trade consists of intra-firm trade, that is trade among various parts of a single corporation, and the importance of intra-firm trade has been growing over time. Furthermore, estimates also suggest that about two-thirds of world trade in the latter half of the 1990s involved multinational corporations, including both intra-firm trade and arms-length transactions (UNCTAD 2002, p. 153).

The World Investment Report nicely summarize the links between FDI and trade; “the issue is no longer whether trade leads to FDI or FDI to trade; whether FDI substitutes for trade or trade substitutes for FDI; or whether they complement each other. Rather it is: how do firms access resources — wherever they are located — in the interest of organizing production as

¹¹ A large number of small Italian firms appear to dominate both clothing and leather industries in Romania (Kaminski and Ng, 2004a). As Hunya (2002, p. 391) points out, however, this is the case of a much higher foreign penetration than customary in other transition economies.

profitably as possible for the national, regional or global markets they wish to serve? In other words, the issue becomes: where do firms locate their value added activities? . . . increasingly, what matters are the factors that make particular locations advantageous for particular activities, for both, domestic and foreign investors” (UNCTAD 1996, p. xxiv).

Table 6: *Links between FDI stock in manufacturing and network exports in 2003 (in US dollars and percent)*

	FDI in manufacturing	Network exports	Share in manufactured			Value of total network	
	per capita	per capita	export (excluding chemicals)			exports	
	(in US dollars)	(in US dollars)	(in percent)			Index 1999	Index 2003
	2003	2003	1995	1999	2003	1995=100	1999=100
Hungary	1,694	1,847	18.1	52.2	52.5	814	180
Czech R.	1,338	1,391	15.5	24.3	39.7	217	267
Slovakia	624	1,339	11.2	30.5	32.2	362	305
Slovenia	824	1,094	19.7	21.5	22.5	112	147
Estonia	548	844	25.1	27.8	27.8	197	224
Poland	547	275	11.9	19.5	25.7	219	278
Lithuania	314	220	18.5	13.8	20.9	104	337
Romania	262	59	4.1	5.7	9.5	164	372
Latvia	230	32	10.9	3.3	4.2	39	261
Bulgaria	428	22	7.6	4.9	3.7	61	183

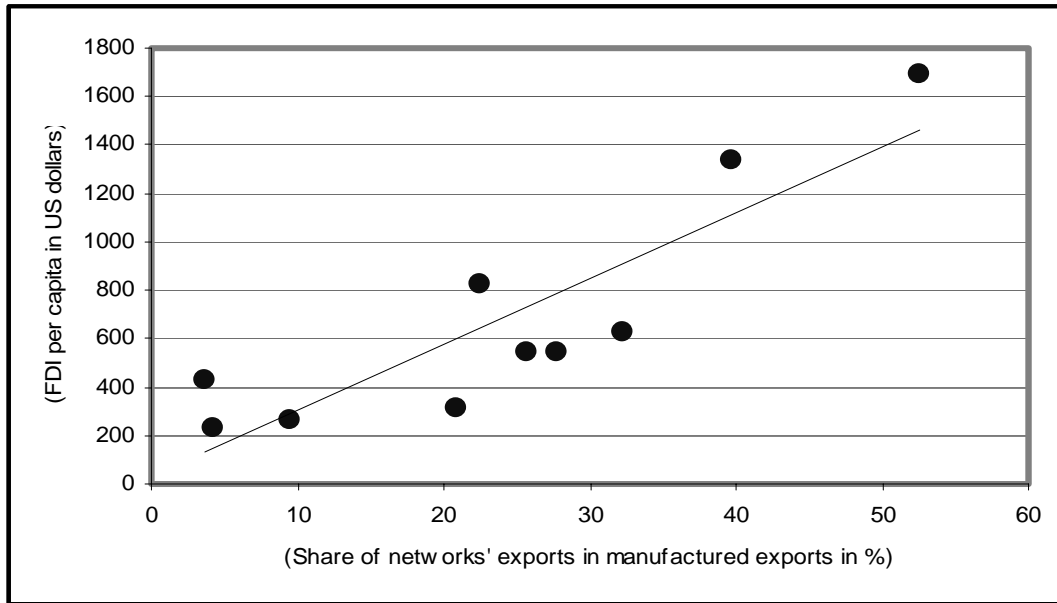
Source: UN COMTRADE Statistics and FDI stocks as of 12/31/2003 calculated as a total net FDI inflows as reported in the IMF statistics. Share in manufacturing compiled from national sources.

Since the determinants FDI inflows are discussed in our companion paper (Javorcik and Kaminski, 2006), here suffices to mention that FDI in producer-driven networks are efficiency-seeking and thereby particularly vulnerable to the quality of broadly defined business environment. They are unlikely to take place unless rather demanding conditions are met: These conditions, first and foremost, relate to smoothly functioning backbone services including customs, ports management, and transportation network. Unpredictable delays at customs, ports or high transportation and communication cost may erode the capacity to of MNCs to run ‘just-in-time’ production and inventory management worldwide; a salient feature of modern global production networks. Second, other ingredients such as good governance and favorable and stable investment climate have also to be in place. Fragmentation of production also means that multinational corporations can relatively easily shift their production from one geographic location to another in response to changes in the cost of production, market access, regulatory conditions or perceived risks, although the ability to shift production tends to diminish with the technological intensity of exports. It follows that MNCs’ perception of government’s credibility of commitment to good policies matters a lot. One of the key benefits of the EU accession process was providing credibility of commitment to reform.

Developments in New Europe’s producer-driven network trade fully corroborate these general observations. First, there is a strong correlation between performance in producer-driven network exports and the size of FDI inflows. Indeed, the data tabulated in Table 6 and graphically

presented in Figure 4 indicate the existence of a very powerful link between FDI stock in manufacturing and exports of IT and automotive network products. The value of the correlation coefficient between the share of total network exports in exports of manufactures (excluding chemicals) in 2003 and the FDI stock in manufacturing (end-2003) is very high at 87.6 percent. Correlation between FDI stock in manufacturing per capita and producer networks' exports per capita is roughly the same at 88.4 percent.

Figure 4: *Producer network exports and FDI stock in manufacturing in 2003*



Source: As in Table 6.

Second, MNCs appear to have made a major contribution to closing the gap between endowments of New Europe in relatively well skilled labor force and the low share of skilled labor intensive products in their exports observed during the early stages of transition (Kaminski, Wang, Winters 1996). As noted earlier, the gap disappeared quickly in Hungarian export basket; Hungary was also the largest recipient of FDI in New Europe in 1990-95. It was the only recipient of FDI among New European economies in 1990 and it accounted for 80 percent of FDI flows in 1991. Hungary's share in cumulative net FDI annual flows over 1990-97 in New Europe's total in 1997 was 36 percent ahead of Poland (34 percent) with the GDP more than twice as high, and the Czech Republic (14 percent).

The relationship goes beyond an individual case. It appears that countries, which significantly expanded their presence in producer-driven networks, were also those where skilled labor and capital intensive goods accounted for the largest share of their exports. Note that the average share of capital and skilled labor intensive products in exports of countries *heavily*

involved in network exports (the share of network exports in manufactured exports above 20 percent) of 64 percent was well above the averages of 34 percent for *lightly* involved (above 5 percent and below 20 percent) and of 29 percent in exports of countries *yet to be involved* (below 5 percent) of 27 percent. The heavily involved group (Czech Republic, Estonia, Hungary Poland, Slovakia and Slovenia) also witnessed a very significant increase in this share from 49 percent in 1996 to 62 percent in 2000 (Table 7). The performance of the remaining groups (lightly-Lithuania and Romania and yet to be—Bulgaria and Latvia) began improving in 2000-03. Furthermore, economies with higher network trade per capita have also registered a stronger growth in skilled labor and capital labor intensive exports. The correlation between the change in the value of these exports between 1995 and 2003 and network exports per capita is positive at 76 percent.

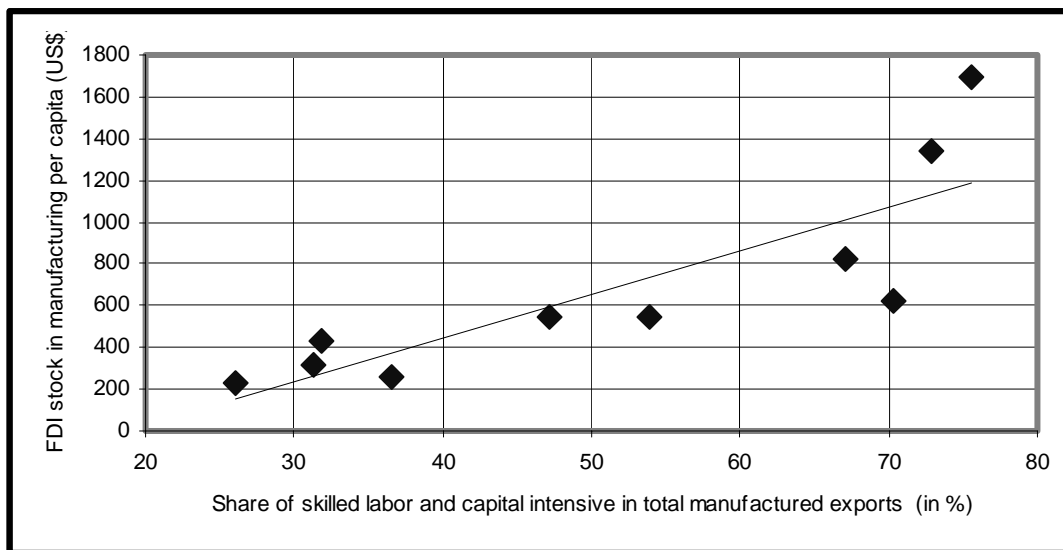
Table 7: *Changes in factor intensities of exports and FDI in 1996, 2000 and 2003 (in percent and US dollars)*

	Share of capital and labor intensive products in manufactured exports			Index 2000	Index 2003	FDI stock in manufacturing
	1996	2000	2003	1996=100	2000=100	2003
Bulgaria	41	31	32	99	74	428
Czech Republic	61	68	73	133	149	1,338
Estonia	38	50	47	184	243	548
Hungary	46	73	76	214	337	1,694
Latvia	30	24	26	130	104	230
Lithuania	37	30	31	113	94	314
Poland	41	52	54	130	163	547
Slovak Republic	49	66	70	135	182	624
Slovenia	61	65	67	105	111	824
Romania	35	34	37	128	122	262

Source: Own calculations based on data from UN COMTRADE database.

Finally, as illustrated in Figure 5, countries with larger FDI manufacturing stocks per capita were also those with a higher share of skilled labor and capital intensive products in total exports. The correlation coefficient of 84 percent indicates that higher presence of foreign owned firms was accompanied by larger shares of capital and skilled labor intensive products. MNCs appear to have been attracted by the availability of high skilled labor force in New Europe. Ultimately, the driving force behind the decision of “in-sourcing,” embedded in foreign direct investment was to take better advantage of resources available locally thanks to MNCs’ superior technology and know-how. This resource has been skilled labor and its outcome was the gain of competitive advantage in products using this resource in combination with capital and technology brought by MNCs.

Figure 5: *FDI stock in manufacturing per capita and share of skilled labor and capital intensive products in manufacturing exports in 2003*



Source: As in Table 7.

Last but not least, micro evidence emerging from case studies of sectors points to the conclusion that large MNCs have been behind transforming and creating new comparative advantage of New Europe. Although, for instance, South Korea was successful in establishing indigenous automotive sector, the experience of New Europe quite strongly suggests that entry into producer-driven networks is rather inconceivable without FDI. Experiences of IT sectors in Estonia and Lithuania, on the one hand, and Latvia, on the other hand, offer two contrasting developments showing the importance of FDI. Both countries inherited from the Soviet era a relatively well developed IT industry that used to work for both civilian and military sector. But while the Latvian electronic sector has had limited success, electronic products have been among the best Estonian and Lithuanian export performers, as their firms have successfully integrated into global IT networks (FIAS 2003). Cast in a broader perspective, firms such as Nokia, Thomson, Siemens, Philips, IBM, General Electric and their suppliers have been present in all countries that have attracted sizable FDI inflows. Szanyi (2004) provides a compelling evidence of the importance of FDI in the electrical equipment sector, whose products and parts are partly covered by the IT network. The shares of the electrical sector in total manufacturing output were roughly similar in Bulgaria and Hungary at around 8 percent in 1989. In 2001 the share in Hungarian manufacturing output rose to 24 percent, while that in Bulgarian output fell to 4.3 percent. The explanation lies in FDI and presence of MNCs.

Developments in the automotive sector also show that without MNCs' involvement, local firms were doomed to failure. Before the collapse of communism many of them produced motor vehicles mostly on the basis of licenses (e.g., Fiat-Lada in Russia, Polish Fiat, and Renault-Dacia in Romania). Czechoslovakia, with a strong tradition in automotive manufacturing going back to the beginning of the last century, produced a whole array of motor vehicles. So did the former Soviet Union and Yugoslavia. Czech Skoda, Yugoslav Yugo, Polish Fiat, Romanian Dacia or Soviet Lada (a modified Fiat model) were marketed in Western Europe but with not much success despite their low prices. Except for Lada or Volga in Russia, they are no longer manufactured. Richet (2004) argues that their presence has contributed to early investments of MNCs in automotive sectors of these countries, however

MNCs have been subsequently responsible for restructuring of the automotive sector and its impressive export performance (Meyer 2000; Richet 2004)). Skoda flourishes as a brand name but it has become an integral part of the Volkswagen Group. In Slovakia, Volkswagen, Siemens (cable harnesses, lights), INA Werke Schaffeler (ball bearings), Sachs Trnava (coupling assemblies for passenger cars), just to name a few, have become household names (Javorcik and Kaminski 2004). Engines for Audi automobiles assembled in Hungary have set the stage for Hungary's spectacular entry into supply chains of automotive sector. Skoda Auto of the VW Group and other car producers in the Czech Republic, have attracted large international firms specializing in automotive parts and components. As of 2002, there were 270 firms operating in the Czech Republic representing 45 percent of the Top 100 World suppliers of automotive parts and components (USDS 2002).

5. Conclusion

The observations emerging from this paper can be summarized as follows. First and foremost, foreign direct investment has been crucial to industrial restructuring and making New Europe's economies competitive in global markets. Multinational corporations have been contributing resources scarce in New Europe: capital, links to global markets and marketing skills, new technologies and know-how. Thanks to these resources, CEEC-10 have been able to become part of global supply chains spanning across international borders.

Second, FDI inflows have contributed to closing the dissonance between export baskets tilted heavily toward unskilled labor intensive products during the early stages of transition and their relative high endowments of skilled labor. FDI has entered production activities characterized by relatively high skilled labor intensities and has shifted the pattern of the revealed comparative advantage to skilled and capital intensive activities.

Third, although New Europe remains a highly heterogeneous group in terms of the scope and depth of participation in the global division of labor, all CEEC-10 appear to have been following almost the same trajectory with respect to export performance. Thanks to MNCs' abilities to divide the industry's value chain into smaller functions that are performed by foreign subsidiaries or are contracted out to independent suppliers, producers from New Europe have been able to overcome barriers associated with not having intangible assets or services infrastructure developed at the level sufficient to have a comparative advantage in manufacturing of more processed goods. All economies of New Europe have been gradually moving to higher value added export activities with FDI being increasingly the major driver of change.

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