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EU ENLARGEMENT AND FINNISH FOREST INDUSTRY: A Special Emphasis on the Packaging Industry

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ABSTRACT: The aim of the project was to provide an overview of the competitiveness of the forest-based and related industries in the 10 CEECs, from the Finnish point of view, and to study in particular the development potential for the Finnish packaging industry in the region. An important question is *what effect will Eastern expansion have at the industry sector level, and how will this translate to various EU regions, and in particular, Finland*. In Part I of this report, the relative cost advantage of countries in central and eastern Europe is demonstrated. In Part II, the potential for the Finnish forest industry in these countries is explored in more detail.

Developments in central and eastern Europe will alter the landscape in terms of the location of production facilities in some key areas for the Finnish forest industry. It was shown that most of the potential for the Finnish forest industry in central and eastern Europe appeared to exist for the pulp and paper industry. One of the most profound changes, which will indirectly affect the future of the Finnish fibre-based packaging sector, is that of the shift in the manufacturing base of various sectors of industry to lower cost producing countries of the CEEC region.

KEYWORDS: Finnish forest industry, competitiveness, CEEC countries, EU enlargement

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TIIVISTELMÄ: Projektin tarkoituksena oli tarkastella metsäperustaisen teollisuuden ja sen liitännäistoimialojen kilpailukykyä Suomen näkökulmasta kymmenessä Keski- ja Itä-Euroopan maassa (KIE-maat). Tutkimuksessa tarkastellaan erityisesti suomalaisen pakkaustuoteteollisuuden kehitysmahdollisuuksia alueella. Keskeinen kysymys on, *mitkä ovat EU:n itälaajentumisen toimialatason vaikutukset, ja mitä ne merkitsevät EU:n eri alueiden ja erityisesti Suomen kannalta.* Raportin ensimmäisessä osassa tarkastellaan Keski- ja Itä-Euroopan maiden suhteellista kustannusetua. Raportin toisessa osassa tarkastellaan yksityiskohtaisemmin näiden maiden suomalaiselle metsäteollisuudelle tarjoamia mahdollisuuksia.

Keski- ja Itä-Euroopassa tapahtuva kehitys tulee muuttamaan yritystoiminnan kenttää vaikuttaen tuotantolaitosten sijoittumiseen joillain suomalaisen metsäteollisuuden avainalueilla. Tarkastelun perusteella eniten mahdollisuuksia suomalaiselle metsäteollisuudelle Keski- ja Itä-Euroopassa näyttää olevan sellu- ja paperiteollisuudessa. Yksi perustavanlaatuisista muutoksista, joka tulee epäsuorasti vaikuttamaan suomalaisen kuitupohjaisen pakkaustuotealan tulevaisuuteen, on eri teollisuusalojen tuotantopohjan siirtyminen matalamman tuotantokustannustason maihin Keski- ja Itä-Euroopassa.

AVAINSANAT: Suomen metsäteollisuus, kilpailukyky, KIE-maat, itälaajentuminen

EU ENLARGEMENT AND FINNISH FOREST INDUSTRY: A Special Emphasis on the Packaging Industry

PART I – The Impact of EU-Enlargement on Finnish Forest Industries

PART II - The Packaging Industry in Central and Eastern Europe

Part I - The Impact of EU-Enlargement on Finnish Forest Industries

I-1 Introduction

Today, at the beginning of the twenty-first century, the European Union has embarked upon an ambitious plan to increase economic and political co-operation (via economic and monetary union) and to enlarge its' borders further eastwards. Whilst the ultimate aim is to create a much larger single market, which facilitates the free movement of goods and people, and to create an even playing field for all members to compete fairly, there are nevertheless many questions which remain unanswered. Even within the EU, there are serious doubts as to whether convergence is really taking place, which puts into question the very notion of expecting the new potential member states to converge with the rest of the current EU members.

Despite the potential economic and social implications of EU enlargement (requirements on structural and cohesion funds), an important question is what effect will Eastern expansion have at the industry sector level, and how will this translate to various EU regions, and in particular, Finland.

During research for the recently published book: 'Forest-based and related industries of the European Union – Industrial Districts, Clusters and Agglomerations' it was observed by the author (C. J. Hazley), that a considerable amount of activity was developing in the central and eastern European region in connection with the forest cluster. Based on the data available from the above research, EU-Enlargement appeared to provide both opportunities and threats to the Finnish forest cluster.

Opportunities exist in the shape of new markets, which are expected to grow as living standards improve in Eastern Europe. For example, between 1989 and 1995, forest cluster exports to Eastern Europe have grown from 0.6 billion Euro to 3.5 billion Euro, which was faster than forest cluster exports to Asia.

Eastern European countries also provide potential threats. During the period 1989-1995, the share of forest cluster imports from the Eastern European countries and Russia has grown from 5 to 7% and now stands at 6.5 billion Euro – the second largest importer after North America. In fact, if one examines closely the type of imports stemming from central and eastern Europe, it is clear that these products are not merely low value-added products but those encompassing a broad spectrum of products aimed at the higher and lower end of the markets. See table I-1 overleaf.

However, as developments in the Central and Eastern European Country (CEEC) region were not the focus of the above research, there was clear need to look into the potential impacts of EU-enlargement in respect of the forest-based and related industries to examine the impact on Finland. This report is the result of this investigation.

The aim of the project was to provide an overview of the competitiveness of the forest-based and related industries in the 10 CEECs[1], from the Finnish point of view, and to study in particular the development potential for the Finnish packaging industry in the region.

[1] In this report, the ten CEECs include the following countries: Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia and Slovenia.

Part I - The Impact of EU-Enlargement on Finnish Forest Industries

Table I-1 Key Competitors Supplying EU Markets

Product Category suffering loss (only products were Finland experienced a decline in market share are listed below)	Finish Exports to OECD area		Finnish Exports to EU in 1995 Mill $US	Market Share of World Imports to EU15 area by major trading region			
	% decline in market share (89-95)	Market share 1995		CEEC	North America	ASIA	Ctrl & S America
Waste of other paper, of bleached chemical pulp	-1.3	0.9	3669	0.4	12.9	0.2	0.1
Chemical wood pulp, dissolving grades	-9.8	0.0	0	0.6	**30.0**	0.0	0.5
Chemical wood pulp, coniferous, soda, unbleached	-3.4	5.2	14790	1.4	9.4	0.1	**11.4**
Chemical wood pulp, non-coniferous, soda, unbleached	-29.1	11.1	3453	**7.4**	8.5	8.0	3.8
Chemical wood pulp, non-coniferous, soda, bleached	-4.5	10.6	**459829**	1.4	**22.5**	2.2	**15.4**
Chemical wood pulp, sulphite, bleached	-2.7	0.0	0	**13.7**	18.3	0.3	1.7
Semi-chemical wood pulp	-6.4	4.6	27875	0.0	63.1	0.0	0.2
Pulp of other fibrous cellulosic material	-3.1	1.4	2476	3.1	34.4	15.0	0.1
Artificial guts of hardened protein, cellul. mater.	-4.9	1.3	6	**3.4**	3.8	2.6	0.5
Plywood, sheets of wood, ply of tropi. Or non-conif.	-9.6	45.4	**335592**	**5.1**	0.3	**35.8**	7.2
Other plywood, > one ply of non-coniferous wood	-4.8	1.3	942	**14.3**	1.7	14.4	6.3
Fibreboard of ligneous materials, density>0.8g/cm3	-4.8	4.8	20683	**14.8**	9.6	4.5	5.3
Wood wool; wood flour	-1.6	0.4	74	1.8	0.9	0.0	0.0
Tools, broom, handles, of wood; boot, shoe lasts, trees	-1.6	0.6	70	11.2	2.5	15.9	23.9
Paper & paperboard, photo-electro-heat-sensitive	-3.1	0.0	0	**0.7**	1.8	0.5	0.7
Carbonizing base paper	-5.3	0.1	34	0.1	0.3	0.3	13.5
Wallpaper base	-21.7	31.4	**57157**	0.2	0.0	0.0	0.5
Other paper (weight<40g/m2), excluding fib. by mec. proc.	-2.7	2.6	1785	1.1	**10.9**	0.2	2.2
Other paper (40g/m2<weight<150g/m2), exclude mec. fib.	-10.4	13.6	**566544**	**4.5**	0.6	0.3	2.9
Other paper (weight>150g/m2), excluding fib. by mec. pro.	-1.9	0.2	459	2.2	0.8	0.5	0.7
Other paper & paperb., >10% fibres by mechan. proc.	-4.8	28.2	**947631**	**1.1**	0.5	0.1	0.0
Copying paper & simil., printed or not, width > 36cm	-2.7	0.1	3	**1.3**	0.2	2.9	0.0
Kraft paper, uncoated, in rolls or sheets	-3.8	3.9	**121198**	**2.9**	**20.7**	0.1	3.8
Kraft paper, uncoated, rolls, sheets, n.e.s., m2<150g	-5.8	13.5	**112433**	**4.3**	1.8	0.2	0.3
Kraft paper, uncoated, rolls, sheets, n.d.a., m2>225g	-5.9	35.9	**157797**	**1.5**	**5.0**	0.1	0.0
Sulphite wrapping paper, uncoated, rolls or sheets	-7.4	0.3	2	**19.8**	2.8	0.6	0.3
Other paper & paperboard, uncoated, weight<150g/m2	-1.4	2.7	34909	1.3	2.3	0.2	0.1
Other paper & paperboard, uncoated, weight>225g/m2	-3.5	5.7	20000	**1.7**	**8.5**	0.2	0.0
Sack kraft paper, creped, crinkled, rolls or sheets	-7.2	0.0	0	0.0	0.0	0.0	0.0
Other kraft paper, rolls or sheets, creped, crinkled	-3.1	1.2	928	1.0	1.2	0.1	0.0
Paper for household purposes, width > 36cm	-4.2	7.2	**69414**	**3.7**	4.0	0.7	5.1
Other paper, coated with platics (excluding adhesives)	-1.9	6.0	**81821**	0.9	2.8	1.4	0.0
Paper & paperb., tarred, asphalted, rolls or sheets	-1.7	2.5	695	**6.1**	0.8	0.3	0.0
Kraft paper, coated with inorg. subs., blea., m2<150g	-14.5	3.8	10725	**3.4**	0.3	0.0	0.0
Kraft paper, coated with inorg. subs., blea., m2>150g	-25.5	8.8	42686	0.0	**18.2**	0.2	0.0
Other kraft paper, coated with inorg. Subst., rolls	-20.0	0.3	1268	0.1	**53.6**	0.0	0.0
Gummed or adhesive paper & paperboard	-1.6	12.1	**104776**	0.8	2.2	0.5	0.0
Filter blocks, slabs & plates, of paper pulp	-1.7	0.1	5	0.0	3.2	1.5	0.0
Sacks & bags, base of a width > 40cm	-28.2	3.1	953	**3.0**	1.9	2.6	0.0
Other sacks & bags	-4.0	2.3	8994	**3.4**	2.1	7.6	0.2
Registers, account books, order books, diaries & sim.	-1.2	2.6	7301	2.7	3.9	30.1	0.1
Binders, folders and file covers	-2.2	0.2	164	**6.3**	2.3	6.2	0.0
Manifold business forms & interleaved carbon sets	-1.6	4.6	4274	**2.6**	4.0	1.1	0.0
Carbon paper, other copying papers, cut to size	-5.1	0.5	829	**1.6**	1.4	**5.6**	0.0
Trays, dishes, cups & the like, paper or paperboard	-4.5	9.3	22542	1.0	**6.9**	1.1	0.1
Other articl. of paper pulp, cellulose fibres, n.e.s	-1.3	6.7	**59593**	1.1	**18.2**	6.0	0.5
Aluminium powders and flakes	-1.5	0.0	0	2.0	12.2	5.8	0.0
Tanks, vats & similar of aluminium > 300 litres	-1.3	0.1	0	**5.6**	2.0	0.5	0.2
Machinery for making or finishing paper, paperboard	-14.5	18.6	49125	0.0	**2.8**	0.4	0.4
Parts & accessories for machine-tools of 7281	-1.7	1.4	14480	**3.0**	2.3	3.9	0.1

Source: OECD International Trade by Commodity Statistics; ETLA estimates.

Part I - The Impact of EU-Enlargement on Finnish Forest Industries

I-1.1 EU-Enlargement

After ten years of reform, most people feel worse off than before and they now question is it really worth it. Accompanying the transition to a free market has been the high cost of dismantling the previous system and the massive growth in inequality. 'Democracy may have brought freedom, but the free market was supposed to raise living standards that lagged well behind those in the West'. 'According to the World Bank, in 1989, less than 4% of the population across the transition region was living below the poverty line – now it is 40%'. 'In Central Europe, only 25-30% of the population has enjoyed any real increase in incomes, and around 20% have seen a significant drop'. In 1989, most people expected a temporary setback in production, but nobody forecast the actual collapse. 'Central Europe's output dropped by over 30% and the Baltic States' by more than 50%'. Little wonder then, that 'over half of Central European consistently tell pollsters that they are dissatisfied with the present economic system and are nostalgic about the socialist system they abandoned'. [2]

In October 1999, the European Commission President presented the latest progress reports on the EU candidates. 'These reports were bad, and showed that all the candidates still face a heavy workload in preparing for accession, and that things were moving too slowly'[3]. In fact the progress reports showed that in terms of adopting EU legislation, the areas which have still to be addressed include the environment, state aid, regional development/policy and agriculture. However, since the announcement by the Commission of the launch of accession negotiations with all Central and Eastern candidates in December 1999, it is likely that some key issues will become bargaining tools in the process itself. These key issues include the free movement of people, the environment and the timing of membership.

I-1.2 Migration

In 1997, a study by the German Economic Research Institute argued that there was a direct link between income gaps and migration, and that because Central European countries were so much poorer than Western ones, around 500,000 migrants a year would pour across EU borders from neighbouring countries. Nowadays, however, economists argue that migration levels will be manageable since consideration of other factors, such as growth potential, low mobility levels and migration behaviour, results in much less dramatic conclusions: 'between 750,000 and two million people are likely to move into the EU over a 10-15 year time span'.[4]

Of the ten CEECs involved in accession negotiations, five of them border Germany and Austria. Around three-quarters of all Central European working in the EU are already in these two countries, where they make up about 1% of the total employment. But it is not just geographical proximity that lures workers across borders, equally important is whether there are jobs. In Austria, about 90% of Central Europeans work in Eastern Austria – the most wealthiest part which includes Vienna – whilst in Germany, most work in the booming areas of Berlin or Upper Bavaria, not in Eastern Germany.

Although it is also thought that the impact on EU labour markets will be negligible, there are suggestions that lengthy transition periods on the EU's free movement of labour laws should be imposed to prevent Central Europeans from working in the West. In particular, Germans and Austrians are concerned that they will be inundated by an influx of cheap labour across

[2] 'Was it worth it?' – Business Central Europe, November 1999.
[3] 'Gloves off '– Business Central Europe, November 1999.
[4] 'Faceless fears – EU countries fear they'll be flooded by immigrants' (Business Central Europe, April 2000).

their borders. In fact, 'Austria's trade unions want to delay free movement of workers until wage levels are up to 80% of Austria's. In the case of Poland, and optimistic scenario suggests that that would be in 2045. However, simply delaying enlargement for another 50 years is not an option'.

Hence the real question now is not whether to introduce transition periods, but how to make them compatible with integration. Publicly, Central and Eastern European negotiators refuse to accept limitations on free movement of labour, but they are already using the EU's dilemma as a bargaining tool to gain breathing space on other demands, like the environment, after joining the European Union.

I-1.3 The Environment

Following the cyanide spill in Romania, the environment has once again been pushed to the top of the enlargement agenda. 'The commission is now pushing for the toughest negotiating position: full adoption of the environmental acquis, as a condition for accession'. As the EU recognises, all this will be expensive (in 1997 the estimate for just a few problems, such as water supply and air pollution, was 100 billion Euro). About 'half of all it's pre-accession aid is for the environmental improvements, whilst the rest of it is conditional on meeting environmental criteria'. 'Whilst EU members seek to severely restrict transition periods, candidate countries still want lengthy transition periods before being forced to meet EU Environmental standards'.[5] Even though candidate countries must show alignment is underway, the question of funding the necessary investments must, in itself, suggest that transition periods will need to be longer.

I-2 Timetable for Eastern Enlargement – Speed versus Quality

Within the European Commission, the official dates given for expansion into Central and Eastern Europe are that by 2002, the EU will be ready to accept new members, hence, candidate countries may join after that when they too are ready. Indeed, up until recently, this was the belief. However, according to the Economist[6], the talk now amongst EU governments is that the process will start two or three years later. And although, some candidate countries believe that accepting 2005-06 as the starting date would remove some of the pressure, the real issue will be the actual state of preparedness of the more strategically positioned candidate countries, such as Poland.

For example, despite being less advanced as its proponents would wish, 'getting Poland quickly and securely into the EU has been a top political priority of the whole enlargement venture, due to its large population, market size and strategic importance'. 'Even though Poland could still finish its preparations by the end of 2002, readying for membership in 2003 – as early as other potential members – the question is what if Poland is not ready, would it and other countries be held back? The political risk could be that Poland might turn against the EU, and the urge to reform might ebb. Therefore, in this case, governments might choose to include Poland in any first group of joiners, ready or not'

Alternatively, governments may choose to 'delay the entry of the better-prepared countries until Poland had caught up'. 'If this were to happen, in 2005 or 2006, many countries might be ready to join at once, which may be convenient in other ways'. Hence, if this scenario was

[5] A clean fight – The EU is getting tough over the environment (Business Central Europe, April 2000).
[6] Who will join Europe's club – and when? The Economist, April 8th 2000.

to come about, 'an enlargement left to 2005-06 could include the countries most advanced in their negotiations (Cyprus, Czech Republic, Estonia, Hungary, Poland and Slovenia), and at least four of the six countries whom have just begun detailed negotiations (Latvia, Lithuania, Malta and Slovakia)'. This would leave Bulgaria and Romania, which may be ready around 2010-12.

However, after working hard to meet all the criteria it would be difficult to conceive how governments of these candidate countries would be able to accept any delay and yet to maintain any pro-EU membership momentum, never mind stay in power. Speed is needed because over-long negotiations would weary people in the candidate countries'[7].

One of the reasons for the recent change of mood is, according to the Economist, 'that talks are at last moving on to the tricky issues where big interests are at stake. Most candidates want the full range of EU farm subsidies, whereas EU countries want to give them none. All want free movement of labour, whereas some EU governments want long transitional periods in which free movement is denied'.

So what is the upshot of all this? Indeed, it is likely that political expediency will be the order of the day, since the political and security risks of extensive delays will be seen as too great. After all, the European Union conceptualises itself not merely as a political and economic force but also as a supra-national entity with a major commitment to peace, democracy and the defence of human rights. Following the 1997 Treaty of Amsterdam, the internal objectives of the Union are that it must become more firmly focused on the attainment of a cohesive and inclusive society based on solidarity, as well as a high quality of life, sound environment, freedom, security and justice. Although the treaty does not specify exactly how these objectives would be operationalised, it is clear they each have intrinsically different values in the eyes of politicians.

Moreover, according to the European Commissioner for Enlargement, Günter Verheugen, "the central aim of European Integration is unifying our continent to overcome conflict, ensuring peace, democracy, stability and prosperity". "The Kosovo crisis taught Europe that peace and stability across the continent are not yet a fact".[8] Therefore, since it is difficult to envisage a situation where EU governments will postpone memberships beyond acceptable timeframes at the risk of instability in Europe, it is highly likely that longer transitional periods will be granted at the time of accession, where necessary.

[7] Viewpoint: Unifying our continent – Business Central Europe, The Annual 2000.
[8] Viewpoint: Unifying our continent – Business Central Europe, The Annual 2000.

I-3 Status of economic development in the CEEC region - Progress in Transition

A decade after the fall of the Berlin Wall, Central and eastern European countries (CEECs) and countries of the Commonwealth of Independent States (CIS) have met with varying degrees of success in their transition from the command to market economy. Indeed, it has been demonstrated that transition is not a steady march forward, and that it is complex and still has a long way to go, even in the more advanced countries.

According to the EBRD[9], two broad patterns have emerged across the region. First, 'the progress in market oriented reform has been more rapid and sustained in the countries adjacent to the EU, including central Europe and the Baltic states, than in countries further south and east'. The second pattern is an inherent imbalance in reforms. Whilst 'some aspects of a market economy have been created quickly – through market liberalisation and privatisation – developing the institutions and behaviour required for well-functioning markets and private enterprise takes much longer'. In fact, 'the promotion of effective institutions, such as government structures, laws and regulations and the sound behaviour of governments, enterprises and financial institutions lies at the heart of the challenge of transition as it enters the next decade'.

Furthermore, the EBRD also state that 'the initial hope that liberalisation and privatisation would create the foundation for improved governance and would transform the relationship between the state and firms has not been fully realised'. 'The competitive process of market entry, innovation and growth at the enterprise level ultimately holds the key to a successful transition and rising living standards'.

'Even among countries with unfavourable starting points, there is clear evidence that rapid liberalisation and stabilisation, as well as progress in small-scale privatisation, have yielded significant benefits in terms of stronger growth in output'. 'Over the medium term, the transition economies are, in principle, well-placed for rapid growth because of their high level of skills and their potential for rapid improvements in productivity following the introduction of new technologies. This potential has begun to be realised in part of the region, primarily in Central and Eastern Europe'.

'The strong influence of competition and hard budget constraints on deep restructuring and product innovation contributes significantly to the growth of firms. Growth tends to be more rapid in new private firms than other types of firms. However, firms that operate in countries with unfavourable investment climates tend to grow more slowly. The emergence and growth of the 'new private firms' occurs most strongly if the market 'playing field' is level. Restructuring of existing large industrial enterprises remains one of the greatest challenges of the transition.'

I-4 Empirical evidence on restructuring in the CEEC region

Flexibility of the labour market is important because it permits the rapid reallocation of resources to the most efficient uses and thus it is vital for economic growth. Hence, it is suggested that a good indicator of restructuring is measured by the excess job reallocation rate. Firms and sectors that engage in restructuring destroy low productivity jobs and create high productivity ones. This leads to high job turnover and an increase in labour productivity and is

[9] EBRD Transition Report 1999.

particularly relevant for the emerging CEEC economies in order to move from a central planning system to a competitive market-based economy.

Based on an exceptionally rich data set on firm level data over the years 1993-1997, Faggio and Konings (July 1999)[10] analysed the dynamics of job flows in five transition economies, Poland, Estonia, Slovenia, Bulgaria and Romania. They found that 'in the early stages of transition job destruction dominates job creation'. However, 'as transition progresses, job destruction equals job creation in the more advanced countries, such as Poland, Estonia and Slovenia, while job destruction remains high in the less advanced countries, such as Bulgaria and Romania'.

They also found that gross job reallocation varies across countries and that job flow rates in the more advanced countries are comparable to those found in Western economies. In addition, differences across countries may be linked to differences in labour and product market flexibility due to employment protection legislation and openness of the economy. Moreover, it seems that a rapid approach to reforms, such as in Estonia, has resulted in higher job flow rates than in those shown by other countries, like in Slovenia, where a more gradual approach to reforms has been adopted.

The authors also found that firms even in transition economies, when hit by severe shocks, behave in a very heterogeneous manner regarding their employment decisions. Even within narrowly defined sectors, regions and firm size classes, there exists simultaneous creation and destruction of jobs. Moreover, in suggesting that a good indicator of restructuring is measured by the excess job reallocation rate they also demonstrate that there is a positive correlation between the excess job reallocation rate and net employment growth at the regional and sector level[11]. Furthermore, they also show that job reallocation occurs predominantly within sectors and regions *rather than* between sectors and regions, which suggests that we should think of transition *not* in terms of job flows from declining sectors or regions to growing ones, *but rather* in terms of from declining firms to growing firms within the same sector and region.

At the firm level, they found that 'job creation is explained by initial downsizing (firm size), ownership and trade orientation effects'. The latter was also seen as a proxy for firm viability. Indeed, trade orientation effects were important for countries in early transition but not for countries in a more mature stage of the transition process. After the collapse of central planning, viable firms, which were able to sustain production and face increasingly international competition (particularly those in the tradable sector exporting to EU prior to collapse), while other firms producing low quality goods were thus subject to downsizing, restructuring or eventual exit. Additionally, they found that 'large state firms perform the same as large privatised firms, however, if the latter have downsized, they do better'. More importantly however, they found that 'foreign firms perform better compared to private firms and state ones'. Whilst the effect of initial downsizing is largest in the more advanced countries.

[10] Gross job flows and firm growth in transition countries: Evidence using firm level data on five countries. Giulia Faggio and Jozef Konings. Discussion Paper No. 2261 Centre for Economic Policy Research, October 1999.

[11] The sum of gross job creation and gross job destruction gives a measure for gross job reallocation and the difference yields the net employment growth rate. However, the gross jobs reallocation does not necessarily measure the extent of real turnover of jobs. A better alternative is the excess job reallocation rate which is defined as the gross job reallocation rate minus the absolute value of the net employment growth rate.

Finally, the results suggest that a great deal of turbulence occurs in transition economies, which can not be seen if one just looks at the macro economic data. At the same time this suggests that the restructuring process is very heterogeneous and specific to certain sectors and regions.

In transition, the regional clustering of industries, pursued under central planning, is mostly dismantled since as a result of the implementation of reforms, market forces will change the economic structure that has been artificially imposed on regions. Thus it is expected that not only some regions but sectors will be hit more than others. All the countries studied, except Bulgaria, exhibited high excess job reallocation rates in the capital districts, which are densely populated and have the necessary infrastructure for attracting investment and supporting economic activity. As with differences in job flows across sectors, each country also show differences in job flows across regions. Whilst some regions have a positive net employment growth, others have negative. Thus some regions are expanding, while others are contracting.

While Poland and Slovenia have a larger number of expanding regions – regions with a positive net employment growth rate – Estonia has more dynamic regions (regions with simultaneously high job creation and destruction rates and thus by high job reallocation rates). Bulgaria and Romania are characterised by higher job destruction rates than job creation rates, although some Romanian regions appear comparable to those of the more advanced countries. Part II of this report provides further details of regional development within the countries of the CEEC region.

I-5 CEEC trade with the EU – some general patterns

Table I-2 summarises merchandise exports from the CEECs between 1986 and 1998. Over the four year period preceding the total collapse of the Soviet block, total trade fluctuated on average at around $54 billion, before collapsing to $48 billion in 1991. These figures exclude the Baltic countries, at this time. Since 1991, total exports from the all ten CEECs has continually increased to almost $117 billion, in 1998. One exception to this appears to be Bulgaria, whose export levels have still not revived to pre-collapse levels of the late 1980s. It is also worth mentioning that along with the Baltic countries, who did not gain their independence until 1991/92, Czechoslovakia also split into two separate countries, the Czech Republic and Slovakia. Therefore, for practical reasons, most analysis in this report attempts to utilise data from 1992 or thereafter.

Table I-2 Exports of the ECE Transition Economies, 1986-1998 (billion $US)

Country	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Eastern Europe:													
Czechoslovakia	12.2	12.4	12.4	12.0	10.7	11.3							
Czech Republic							8.8	14.5	15.9	21.3	22.2	22.8	26.4
Slovakia							3.5	5.5	6.7	8.6	8.8	9.6	10.7
Hungary	9.2	9.6	10.0	9.7	9.7	10.2	10.7	8.9	10.7	12.9	15.7	19.1	23.0
Poland	13.1	14.1	14.6	14.7	18.3	14.9	13.2	14.2	17.2	22.9	24.4	25.8	26.3
Romania	8.2	8.6	9.0	8.1	4.6	4.3	4.4	4.9	6.2	7.9	8.1	8.4	8.3
Bulgaria	7.6	7.8	7.6	6.7	5.2	3.4	4.0	3.8	3.9	5.3	4.9	4.9	4.3
Slovenia	2.6	2.8	3.3	3.4	4.1	3.9	6.7	6.1	6.8	8.3	8.3	8.4	9.0
Total Eastern Europe	*52.8*	*55.2*	*56.8*	*54.5*	*52.7*	*48.0*	*51.2*	*57.8*	*67.5*	*87.2*	*92.4*	*99.0*	*108.0*
Baltic Republics:													
Estonia							0.4	0.8	1.3	1.8	2.1	2.9	3.2
Latvia							0.8	1.4	1.0	1.3	1.4	1.7	1.8
Lithuania							0.9	2.0	2.0	2.7	3.4	3.9	3.7
Total Baltics							*2.1*	*4.2*	*4.3*	*5.8*	*6.9*	*8.5*	*8.7*
Total CEECs	**52.8**	**55.2**	**56.8**	**54.5**	**52.7**	**48.0**	**53.3**	**62.0**	**71.8**	**93.0**	**99.3**	**107.4**	**116.7**

Source: ECE Economic Survey of Europe, 1999 No 1. United Nations.

I-5.1 Trade Reorientation to the EU

Since the collapse of communism in eastern Europe, trade patterns have substantially changed for most of the former Soviet block countries. In terms of total trade, the ten CEECs have become more reliant on the EU than on the former Soviet block. In 1992, CEEC trade with the EU (worth some $1040 billion), represented under 46 per cent of total trade, whereas in 1997, CEEC trade with the EU (worth $1170 billion) accounted for 66 per cent.

Table I-3 details CEEC trade with the EU between 1992 to 1997. As with total trade, CEEC trade with the EU dipped in 1993, and then grew until 1996. However, trade with the EU has been fairly stable between 1995 and 1997 at around 66 per cent. Trade levels vary from country to country, but it is clear to see that trade re-orientation towards the EU has taken place since the start of economic transition.

For the Czech Republic, trade with the EU has steadily grown and now represents more than 58% of total trade. Hungary's trade with the EU, peaked in 1995 at 77%, and has since been dropping, but it still remains the most trade oriented towards the EU at 70%. In Poland's case, trade with the EU represented almost 75% in 1992, but this has continually dropped to 63% in

1997. Although there is a clear shift away from the EU, Polish trade still remains orientated to the EU.

Slovakia's trade with the EU has quickly grown to around 48%, but appears to have stabilised at this level in 1997. Romanian trade with the EU has continually grown from 45% in 1992, to some 61% in 1997. In a similar way, Bulgaria's trade with the EU has continually grown to around 48%, hence, it is more reliant on area regions for trade. Slovenian trade with the EU appears to have peaked in 1995 at almost 67%, and although the level is dropping slightly, it still remains predominantly orientated to the EU. Baltic country trade with the EU appears to have peaked in 1995 at 69% and whilst it has since been dropping, trade with the EU is still dominant at around 60%.

Table I-3 CEEC Trade with the EU

Country	1989	1992	1993	1994	1995	1996	1997
Trade (Bill $)							
Total CEEC trade with World		1656	1455	1598	1926	1961	1960
CEEC trade with EU15		1040	869	964	1186	1196	1170
Trade with EU as a % of total trade with world:							
Czech Republic			45.5	54.4	54.7	55.2	58.3
Hungary		60.7	65.5	67.1	77.0	72.0	70.4
Poland		74.6	67.4	67.4	69.8	63.7	63.0
Slovakia		0.0	31.1	39.3	46.5	48.6	47.0
Romania		45.1	43.9	51.0	56.3	56.9	60.8
Bulgaria		31.9	32.4	42.7	44.9	44.1	48.3
Slovenia		35.5	62.2	65.7	67.1	66.1	64.8
Baltic States		68.4	54.0	64.6	69.2	66.5	59.0
CEEC10	**44.3**	**45.7**	**57.3**	**62.5**	**66.5**	**65.2**	**66.0**

Source: Foreign Trade by Commodities 1992-1997, volume 5, OECD; C. Hazley estimates.

I-5.2 Trade in Forest-based and related industry products between the EU and the CEECs

As previously mentioned, CEEC forest-based and related industry (FBI) exports to the EU have been growing steadily over the last decade or so. In 1989, the total value of CEEC FBI exports was worth $2.5 billion. In 1997, this figure had grown to $7.5 billion. Of the ten CEECs, Poland and the Czech Republic appear to be the largest exports with $2.4 and $1.3 billion in FBI exports, respectively. Slovenia also exports a significant amount at $0.9 billion as does Hungary with $0.6 billion. However, FBI exports from the three Baltic countries has been rapid and now represents $1.2 billion. The top section of Table I-4 provides details of growth in FBI exports to the EU, for each CEEC country.

In terms of EU FBI exports to the CEEC region, exports have continually grown from $1.1 billion in 1992, to $4.4 billion in 1997. The main destinations for EU exports are Poland, the Czech Republic, Hungary and Slovenia, countries perhaps considered to be amongst those more economically developed in the CEEC region. The bottom section of Table I-4 provides details of growth in FBI exports from the EU, for each CEEC country.

Table I-4 Total Trade of Forest-based and related industries between the CEECs and the EU

Region/Country	**CEEC FBI Exports to the EU** (*Billions* of $US)						
	1989	1992	1993	1994	1995	1996	1997
World	84.0	88.4	72.9	84.8	107.3	97.1	94.5
Czech Republic		0.4	0.9	1.2	1.4	1.3	**1.3**
Hungary		0.4	0.3	0.4	0.5	0.6	0.6
Poland		1.2	1.2	1.6	2.3	2.3	**2.4**
Slovakia		0.1	0.2	0.3	0.5	0.5	0.4
Romania		0.4	0.4	0.4	0.5	0.5	0.5
Bulgaria		0.1	0.1	0.1	0.1	0.1	0.1
Slovenia		0.3	0.5	0.7	0.9	0.8	**0.9**
Baltic States		0.1	0.2	0.5	0.9	1.0	**1.2**
Total CEEC FBI Exps to EU	**2.5**	**3.0**	**3.8**	**5.1**	**7.1**	**7.0**	**7.5**
Region/Country	**EU15 FBI Exports to the CEECs** (*Billions* of $US)						
		1992	1993	1994	1995	1996	1997
World		81.2	73.5	84.7	109.9	103.4	100.8
Czech Republic		0.0	0.3	0.4	0.7	0.8	**0.8**
Hungary		0.4	0.4	0.6	0.7	0.7	**0.7**
Poland		0.4	0.5	0.6	1.0	1.2	**1.4**
Slovakia		0.0	0.1	0.1	0.2	0.2	0.2
Romania		0.0	0.0	0.1	0.2	0.2	0.2
Bulgaria		0.1	0.1	0.1	0.2	0.1	0.1
Slovenia		0.1	0.2	0.3	0.5	0.5	**0.5**
Baltic States		0.0	0.1	0.1	0.2	0.3	0.4
Total EU FBI Exps to CEECs		**1.1**	**1.8**	**2.3**	**3.6**	**4.0**	**4.4**

Source: Foreign Trade by Commodities 1992-1997, volume 5, OECD; C. Hazley estimates.

I-5.3 Importance of CEEC forest-based and related industry trade with the EU

Forest-based and related industry trade is not insignificant for most of the CEECs. In terms of total exports from the CEECs, FBI exports represent as much as 12 per cent of total CEEC exports to the EU. Whilst this figure has remained fairly 'stable' between 1992 and 1997, the importance of FBI exports for some countries has declined, whereas for others it has increased. In many cases, the composition of these exports are mainly raw material based. In some countries, this is not the case, but this aspect will be covered in more detail in later sections.

Of those countries where FBI exports to the EU have become more important, FBI exports from Slovenia and Poland represent the highest individual shares with more than 15% each. Whilst, individual shares for each of the Baltic countries is not available, as a group, FBI exports to the EU represent as much as 25% of their total exports to the EU. However, in the case of the Baltic countries evidence shows that a large amount of this figure is derived from exports of raw materials.

Of the countries where FBI exports to the EU have declined in importance, the largest drop (from 19% in 1992, to under 10% in 1997) occurred in Romania. FBI exports from both the Czech Republic and Slovakia to the EU also declined somewhat less from about 13% in 1993, to about 10% in 1997. The top section of Table I-5 provides details of CEEC FBI exports to the EU as a percentage of total CEEC exports to the EU, between 1992 and 1997.

In terms of , forest-based and related industry exports from the EU to the CEECs, FBI exports have much less significance representing less than 5 per cent of total EU exports to the CEECs. FBI exports from the EU have generally grown to Slovenia, Poland, the Czech Republic, Slovakia and the Baltics. In other countries FBI exports from the EU appear to have been dropping (Hungary) or fluctuating. The lower section of Table I-5 provides details of EU FBI exports to the CEECs as a percentage of total EU exports to the CEECs, between 1992 and 1997.

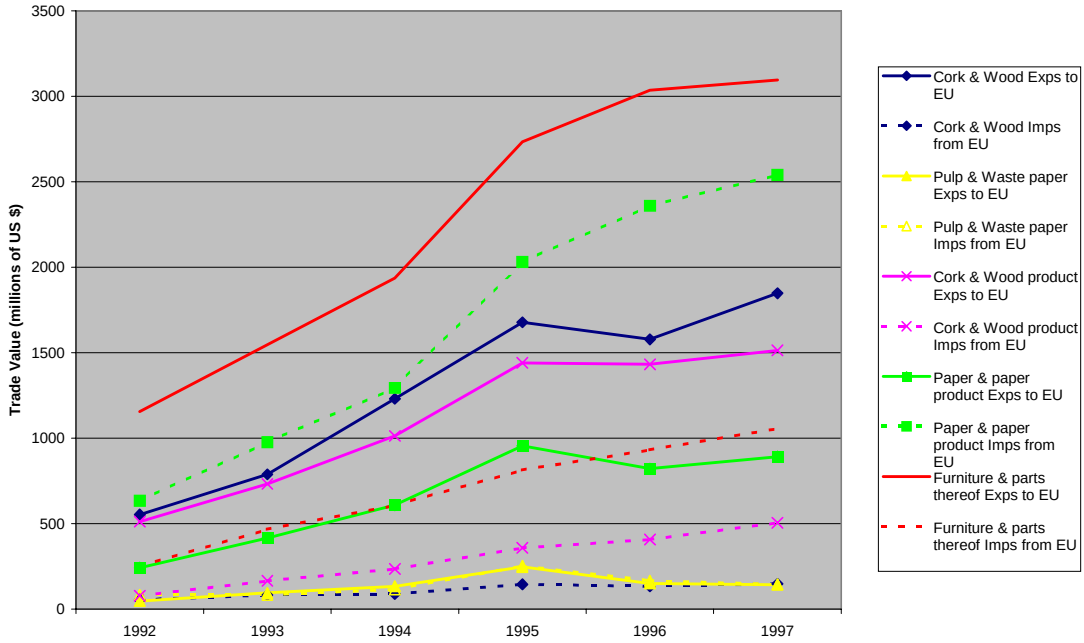
Table I-5 CEEC Forest-based and related industry trade with the EU

Region/Country	**CEEC FBI Exports to the EU** (*as a % of total exports to the EU*)						
		1992	1993	1994	1995	1996	1997
Czech Republic		NA	13.1	13.5	11.7	10.5	9.9
Hungary		6.3	5.5	5.3	5.4	5.3	4.4
Poland		12.1	12.8	13.8	14.7	14.8	15.0
Slovakia		NA	12.7	11.9	12.3	10.6	9.4
Romania		19.0	16.4	12.7	11.4	10.8	9.8
Bulgaria		5.6	4.6	4.4	4.5	4.7	5.2
Slovenia		14.1	14.3	14.8	15.9	14.9	15.7
Baltic States		8.9	9.8	18.0	21.4	21.3	25.0
CEEC FBI Exps to EU (as a % of total trade)		**12.7**	**11.5**	**12.1**	**12.2**	**11.7**	**11.5**
Region/Country	**EU15 FBI Exports to the CEECs** (*as a % of total exports to the CEECs*)						
		1992	1993	1994	1995	1996	1997
Czech Republic		NA	4.2	4.2	4.5	4.5	4.8
Hungary		5.7	5.7	5.9	6.1	5.6	4.8
Poland		4.0	4.0	4.4	5.4	5.0	5.2
Slovakia		NA	3.8	4.4	4.4	4.6	4.5
Romania		1.9	1.7	2.5	3.2	3.0	2.9
Bulgaria		3.4	3.8	4.7	5.7	5.7	5.2
Slovenia		6.1	5.5	6.0	6.9	6.9	7.3
Baltic States		2.3	3.5	4.8	5.7	5.6	5.3
Total EU FBI Exps to CEECs (as a % of total trade)		**4.3**	**4.3**	**4.7**	**5.3**	**5.1**	**5.0**

Source: Foreign Trade by Commodities 1992-1997, volume 5, OECD; C. Hazley estimates.

A closer inspection of imports and exports, between the EU and the CEECs (see Figure I-1), also reveals some interesting aspects worth mentioning. In terms of CEEC FBI exports to the EU, the largest group of exports are that of furniture products. The next largest groups of exports to the EU are cork and wood products, both as raw materials and as manufactured products. In terms of FBI exports from the EU to the CEECs, it is interesting to note that most exports are paper and paper products. However, whilst paper and paper product exports to the EU from the CEECs are much less than from those imported from the EU, there is nevertheless an upward trend between 1992 and 1997 (ignoring the bumper year in the paper industry in 1995).

Figure I-1 Forest-based and related industry trade between the EU and CEEC region 1992-1998



Source: Foreign Trade by Commodities 1992-1997, volume 5, OECD.

Note: the above statistics are based on the Standard International Trade Classification revision 3 definitions, as follows:

Section

2 Crude materials, inedible, except fuels
Division
24 Cork and wood
25 Pulp and Waste paper

6 Manufactured goods classified chiefly by material
Division
63 Cork and wood manufactures (excluding furniture)
64 Paper, paperboard, and articles of paper pulp, of paper or of paperboard

8 Miscellaneous manufactured articles
Division
82 Furniture and parts thereof, bedding, mattresses, matress supports, cushions and similar stuffed furnishings

I-6 Trade Analysis: CEEC

I-6.1 Trade Analysis - Imports from the CEEC region

In this section, an attempt has been made to assess the strengths and weaknesses of CEEC forest-based and related industry products. As no comparable trade statistics are available for the CEEC region, trade is analysed indirectly using details of imports and exports of the EU to/from the CEEC region, using the OECD trade database[12]. In addition, as most export trade from the CEEC region was originally oriented towards eastern markets of the former Soviet Union, it is argued here that growth in share of EU imports represents a measure of competitiveness (due to cost, or other comparative advantage). In latter sections of Part I, cost competitiveness of CEEC-based producers is also explored in several forest industry product categories.

Table I-6 overleaf provides details of the growth in share of EU imports of forest-based and related industry products from the CEEC region in comparison with the EU. Columns to the right-hand side of the table show growth in share of EU imports of that particular product between 1992 and 1999. Columns to the left-hand side of the table represent the EU15's share of EU imports in the that particular product category. The list of products are also arranged to represent CEEC products with the highest share of the EU import market, as of 1999.

Without a doubt, the vast majority of CEEC products having a large share of the EU import market are those products which are generally classified as raw materials or generally as low value added products. For example, there are numerous products such as fuel wood, poles and piles, lumber, logs, wood in chips etc. At the same time there are also numerous product groups which may be classified as very low added value products. These latter products include, pallets, cases, boxes, clothes hangers, concrete shuttering etc.

A further observation, is that where CEEC products have rapidly gained in market share, the EU's share of the import market in this product category has rapidly declined. Therefore, comparative advantage of the CEECs in these product areas is clear to see. Given the focus on most of these products as either raw material or low in value added, then this may be expected, perhaps.

In addition, there are also numerous products which may be considered as more labour-intensive in their manufacture. These products include, different types of wood furniture, builders carpentry and joinery, windows and their frames, numerous types of fibreboard, not to mention some of the previous products mentioned. Again, comparative advantage, in the form of low-cost labour, is implied by the labour intensive manufacturing nature of these products. This will also be explored in more detail in latter sections.

Despite the fact that the above observations, tend to reinforce the commonly held views that most forest industry products from the CEEC region are very low value added products, there are still some products within this list which need further scrutiny. For example there are a number of pulp and paper products which perhaps suggest more capital intensive manufacturing processes are also providing some comparative advantage.

[12] International Trade by Commodities Statistics, OECD Harmonised System, at the 6 digit level.

Table I-6 Growth in Share of EU Imports - CEEC's share vs EU's share (1992-1999)

PRODUCT	World Imps to EU Value 1999 ($ mill)	EU15's share of EU Imports:						CEEC10's share of EU Imports:					
		1992	1994	1996	1998	1999	Growth in % points 92-99	1992	1994	1996	1998	1999	Growth in % points 92-99
Fuel wood	39.3	33	31	30	32	30	-3	55	61	66	60	60	5
Poles, piles etc, coniferous, pointed not sawn	41.3	67	56	59	50	47	**-20**	44	34	34	44	48	4
Shuttering for concrete constructional work, of wood	87.0	81	71	60	66	60	**-21**	9	26	38	32	40	30
Paper, copying/transfer, nes	71.4	73	73	76	61	52	**-21**	6	2	1	25	38	32
Poles, piles etc, non-coniferous, pointed but not sawn	20.2	62	47	61	50	41	**-20**	7	20	15	24	37	30
Pallets, box pallets and other load boards, wooden	**732.1**	54	58	61	63	64	10	38	40	35	33	33	-5
Fiberboard >0.35 g/cm2 <0.5 g/cm2 not worked or surface covered	5.5	78	81	73	76	60	**-18**	6	16	18	18	33	27
Panels, 1 outer ply non-coniferous wood nes	103.9	41	53	54	56	52	11	8	14	25	27	32	24
Wood articles nes	**1119.3**	53	46	40	37	33	**-20**	13	21	26	30	31	19
Lumber, Beech	428.3	57	49	44	38	36	**-21**	14	29	31	30	31	16
Logs, poles, coniferous nes	**1335.5**	59	53	49	46	40	**-19**	15	28	26	28	30	15
Clothes hangers of wood	50.1	35	32	33	33	28	-7	20	29	32	30	29	8
Fiberboard >0.35 g/cm2 <0.5 g/cm2 nes	6.1	62	44	82	50	48	**-14**	20	46	12	29	29	9
Seats with wooden frames, upholstered nes	**2382.7**	80	72	70	64	62	**-18**	12	20	22	26	27	15
Fiberboard >0.8 g/cm2 not worked or surface covered	213.9	57	54	59	55	60	3	17	23	27	30	27	10
Reservoirs, tanks, vats & sim ctnr, cap >300L, i o s (ex liq/compr gas)	349.7	77	66	66	65	62	**-15**	13	21	21	22	26	13
Aluminium sulphate	22.2	58	60	58	72	68	10	37	36	37	25	25	-12
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176.4	34	33	37	33	29	-5	9	12	19	24	25	17
Wood charcoal (incl shell or nut charcoal)	107.0	23	17	16	16	17	-6	17	27	22	25	25	8
Windows, French-windows and their frames, of wood	409.9	71	64	61	62	62	-10	13	22	28	26	25	12
Builder's joinery and carpentery of wood nes	**731.0**	71	52	51	49	47	**-24**	6	10	15	20	24	19
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133.3	80	70	69	68	67	**-13**	13	18	21	22	24	11
Fiberboard not worked or surface covered nes (0.35 g/cm2 & less)	32.2	73	61	65	68	74	1	10	15	14	16	24	14
Shingles and shakes, of wood	10.4	35	30	32	16	26	-9	14	20	26	22	23	8
Logs, non-coniferous nes	**1009.9**	27	25	26	20	20	-7	10	12	16	22	22	13
Bedroom furniture, wooden, nes	**1509.0**	83	76	72	69	65	**-17**	8	13	16	19	20	12
Matches	57.7	59	60	63	67	62	2	8	11	14	15	18	11
Panels, 1 outer ply coniferous wood nes	152.6	61	64	61	66	71	10	6	11	19	17	18	13
Seats with wooden frames, nes	**742.4**	57	52	41	35	31	**-26**	17	22	21	19	18	1

Part I - The Impact of EU-Enlargement on Finnish Forest Industries

PRODUCT	World Imps to EU Value 1999 ($ mill)	EU15's share of EU Imports:						CEEC10's share of EU Imports:					
		1992	1994	1996	1998	1999	Growth in % points 92-99	1992	1994	1996	1998	1999	Growth in % points 92-99
Chemical wood pulp, sulphite, conif semi-bleached or bleached, nes	335.2	52	48	46	46	46	-6	8	13	13	16	18	11
Furniture, wooden, nes	**4588.7**	79	70	66	62	57	**-23**	10	16	17	17	18	8
Paper, sack craft, in rolls, unbleached, uncoated	300.0	87	89	88	83	77	-9	8	7	6	12	17	10
Doors and their frames and thresholds, of wood	**671.6**	56	53	50	57	53	-3	8	13	19	15	17	9
Lumber, non-coniferous nes	**985.8**	18	13	15	12	13	-4	6	6	11	14	17	11
Logs, Beech	252.4	70	76	75	73	68	-3	11	11	9	13	16	6
Lumber, coniferous (softwood) 6 mm and thicker	**5679.7**	66	70	68	68	65	-1	5	9	13	15	16	11
Fiberboard nes (0.35 g/cm2 & less)	81.3	50	53	56	53	40	-10	7	8	17	14	16	9
Sheets nes, panels/tile etc of asbestos-cement, cellulose fib-cement	68.7	91	91	87	77	75	**-16**	3	6	7	15	16	12
Sawdust and wood waste and scrap	131.5	87	84	77	72	70	**-17**	4	6	10	13	15	11
Wood in chips, coniferous	164.8	88	75	71	64	64	**-25**	5	6	8	12	15	9
Paper, wrapping, sulphite, rolls/sheets, uncoated	75.7	73	63	64	54	60	**-13**	9	18	19	17	15	6
Tools, bodies & handles, brooms or brush bodies & handles of wood	79.3	49	40	41	42	39	-10	7	9	12	13	14	8
Melamine	187.2	69	64	59	47	59	-10	14	21	18	15	14	0
Logs, Oak	116.3	51	60	63	68	66	15	11	10	9	12	13	3
Mechanical pulps of other fibrous material (o/t cotton linters)	17.0	70	53	34	29	23	**-47**	5	41	30	24	13	8
Paper, fluting (corrugating medium), in rolls, semi-chemical, uncoated	301.1	80	76	79	81	78	-2	8	10	11	11	13	6
Binders, folders and file covers, of paper	165.1	87	84	81	74	72	**-14**	3	5	8	11	13	10
Anhydrous ammonia	356.4	36	28	24	33	32	-3	7	12	16	15	13	6
Tableware and kitchenware, of wood	164.2	36	34	35	28	24	-12	7	11	12	14	13	6
Lumber, Oak	607.2	29	26	24	20	21	-8	7	9	9	9	12	5
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619.1	54	48	54	52	49	-5	6	7	11	12	12	6
Paper, felt, in rolls or sheets, uncoated	20.9	93	89	91	86	87	-6	1	10	8	13	12	11
Textile fabrics coatd with gum, of a kind usd for outer covers of books	17.4	93	88	84	87	84	-9	3	5	7	10	12	9
Parts and accessories nes for use on machines of heading No 84.65	370.5	83	78	75	68	67	**-17**	3	6	9	10	12	8
Wooden frames for paintings, photographs mirrors or similar objects	203.5	68	54	50	46	39	**-29**	2	6	6	10	11	9
Wood in chips, non-coniferous	37.9	29	62	70	81	83	53	4	10	15	12	11	7
Chemical pulps of other fibrous material (o/t cotton linters)	36.8	47	32	32	33	43	-4	5	1	1	9	9	4
Paper, multi-ply, each layer bleached, in rolls/sheets, uncoated, nes	2.4	98	98	99	98	**90**	-8	0	2	0	2	9	9
Poles, treated/painted etc	48.3	87	87	91	92	84	-3	7	6	6	6	9	2

Source: OECD; C. Hazley estimates

To investigate to what extent CEEC based producers have competitive shares of the EU import market, in some of the higher value added products, the analysis has been conducted in a slightly different manner. This time EU imports from the CEECs are presented in terms of absolute value, so that the top 50 imports are listed. Table I-7 shows the top 50 EU imports from the CEEC forest-based and related industries.

The first three columns showing figures in the table, show the value of each product category of that region. Columns to the right of the table list the EU's share of EU imports and also the CEEC's share of EU imports. Generally speaking, the EU's share of EU imports from the world is fairly high in most areas. As before, the CEEC's share of the EU import markets is also substantial in many product areas, but this may be explained as previously discussed, due to the low value added nature of many of these products. However, there are also many products in this list which can be considered as high in value added. These products, although high on the list in terms of value, do not appear to have high market shares, include fine papers, trade advertising material, books, brochures, kraftliner, chemical wood pulps and also some speciality chemical inputs.

Taking the analysis further, the exercise has been carried out for each of the ten CEECs in an attempt to identify key areas of specialisation and competitiveness. Appendix I-A1 through to Appendix I-A.10 lists details of top EU imports from each CEEC country in value terms for 1999 (countries are listed in alphabetical order). This time additional columns list the shares of the average EU producer for each respective product category, along with the share of the CEEC country whose imports are listed on the table. The inference from this method is that CEEC products are deemed to be competitive if they have a share of EU imports higher than or similar to that of the average EU producer.

Furthermore, the lists have also been analysed 'qualitatively' to identify the change in product composition over time. This analysis is summarised on table I- 8, on the following pages and discussed in more detail below. In this way, it is hoped to reveal if each country has moved up or down in terms of value added production. For example are countries exporting larger proportions of raw materials or higher proportions of semi-finished or finished and/or more technically sophisticated products.

Top imports from **Bulgaria** mostly comprise raw materials and wood products. Very few products have significant market shares of the EU market. However, there are a number of products which do have shares similar to that of the average EU producer. These include fuel wood, and several types of fibreboard or panels. From the composition analysis, it appears that Bulgaria has slipped down the value added ladder since it is exporting are larger proportion of lower value added products. For example, the proportion of raw materials have increased, whilst the proportion of pulp and paper products and speciality chemical inputs has decreased.

Top imports from the **Czech Republic** are wide and varied covering a range of high and low value added products. Pulp and paper products are well represented, and especially packaging papers. Indeed there appears to be several speciality input chemicals used in paper making, along with several paper making machinery type products. On top of this, there are also a number of other machinery products used in printing and also packaging. Furthermore, there are also a considerable number of wood products along with numerous wood furniture products. The Czech Republic appears to have higher shares than the average EU producer. Hence, due to the range and high shares in many product areas, the Czech Republic could be deemed competitive and may even have the makings of a cluster.

Table I-7 Top 50 EU Imports from the CEECs (1999)

EU Imports from: / PRODUCT	World Imports $ mills	EU15 Imports $ mills	**CEEC10 Imports $ mills**	**EU15** Share of EU	**CEEC10 Share of EU**
Lumber, coniferous (softwood) 6 mm and thicker	5680	3705	918	65	16
Furniture, wooden, nes	4589	2605	830	57	18
Seats with wooden frames, upholstered nes	2383	1487	648	62	27
Logs, poles, coniferous nes	1335	531	399	40	30
Wood articles nes	1119	372	352	33	31
Bedroom furniture, wooden, nes	1509	987	304	65	20
Pallets, box pallets and other load boards, wooden	732	468	239	64	33
Logs, non-coniferous nes	1010	205	223	20	22
Builder's joinery and carpentery of wood nes	731	340	176	47	24
Paper, fine, woodfree, in rol/shts, >/=40g/m2, </=150g/m2, uncted	2896	2428	167	84	6
Lumber, non-coniferous nes	986	130	163	13	17
Taps, cocks, valves and similar appliances, nes	4950	3727	144	75	3
Seats with wooden frames, nes	742	227	135	31	18
Lumber, Beech	428	154	132	36	31
Trade advertising material, commercial catalogue and the like	1915	1537	121	80	6
Particle board of wood	1491	1254	120	84	8
Doors and their frames and thresholds, of wood	672	356	112	53	17
Windows, French-windows and their frames, of wood	410	253	101	62	25
Paper, fine, cut to size or shape, nes	1291	967	91	75	7
Reservoirs, tanks, vats & sim ctnr, cap >300L, i o s (ex liq/compr gas)	350	216	90	62	26
Veneer, non-coniferous nes, less than 6 mm thick	934	370	85	40	9
Books, brochures, leaflets and similar printed matter, nes	3402	2009	78	59	2
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	303	74	49	12
Lumber, Oak	607	125	73	21	12
Parquet panels, including tiles of wood	794	544	66	69	8
Paper, Kraftliner, in rolls, unbleached, uncoated	1208	631	62	52	5
Chemical wood pulp, sulphite, conif semi-bleached or bleached,	335	154	61	46	18
Office furniture, wooden, nes	694	561	61	81	9
Pigments and preparations based on titanium dioxide	1628	1198	59	74	4
Sanitary articles of paper, incl sanit towels & napkin (diapers) f babies	1985	1802	57	91	3
Fiberboard >0.8 g/cm2 not worked or surface covered	214	128	57	60	27
Paper, sack craft, in rolls, unbleached, uncoated	300	232	52	77	17
Anhydrous ammonia	356	116	46	32	13
Wood (lumber) continuous shaped non-conif (hardwood)	606	236	44	39	7
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176	51	44	29	25
Parts and accessories nes for use on machines of heading No 84.65	370	247	43	67	12
Chemical wood pulp, soda/sulphate, non-conif, semi-bl/bleachd,	2417	1189	42	49	2
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	257	41	40	6
Logs, Beech	252	171	41	68	16
Paper, fluting (corrug medium), in rolls, semi-chemicl, uncoated	301	234	40	78	13
Shuttering for concrete constructional work, of wood	87	53	34	60	40
Paper, fine, woodfree, in rolls/sheets, </=150 g/m2, clay coated	3198	2881	34	90	1
Panels, 1 outer ply non-coniferous wood nes	104	54	34	52	32
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	90	32	67	24
Toilet paper	631	574	30	91	5
Parts of mach for make/finish paper or paperboard mach	675	506	29	75	4
Panels, 1 outer ply coniferous wood nes	153	108	28	71	18
Kitchen furniture, wooden, nes	829	757	27	91	3
Wood (lumber) continuous shaped conif (softwood)	321	267	27	83	8
Paper, copying/transfer, nes	71	37	27	52	38

Source: OECD; C. Hazley estimates.

Table I-8 Trade Composition Analysis (product group as a % of top 60 product CEEC exports to EU)

Product Group	Latvia		Estonia		Lithuania		Romania		Bulgaria	
	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999
Pulp & Paper products	0.4	0.2	**3.8**	1.0	**2.5**	0.1	0.4	0.3	**20.2**	15.0
Pulp & Paper Machinery & Equipment	0.1	0.0	0.3	0.8	0.3	0.4	2.3	3.1	0	0
Packaging products	0.0	0.0	0.1	1.2	0.0	0.9	1.9	1.7	1.0	0.6
Packaging Machinery & Equipment	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.3	0.3	0.3
Printed products	0.0	0.1	0.2	0.6	0.1	0.1	0.1	0.0	0.4	0.0
Printing Machinery & Equipment	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Wood Raw Materials	77.2	**77.0**	56.2	**62.4**	**62.5**	54.0	5.0	**20.2**	21.4	**25.5**
Wood Products	14.6	**16.5**	**19.2**	17.0	19.2	**23.5**	8.3	**17.2**	18.1	**27.6**
Woodworking Machinery & Equipment	0.1	0.1	0.2	0.2	0.2	0.0	0.5	**1.9**	3.1	3.7
Wood Furniture	4.5	**5.3**	14.3	**15.6**	14.3	**20.9**	**79.5**	52.7	17.8	**21.8**
Speciality Inputs (chemicals etc)	3.2	0.6	**5.4**	1.2	0.7	0.0	1.9	2.6	**17.7**	5.1
Product Group	**Poland**		**Slovakia**		**Hungary**		**Czech Rep**		**Slovenia**	
	1994	1999	1994	1999	1994	1999	1994	1999	1994	1999
Pulp & Paper products	5.0	**8.1**	**31.2**	22.9	9.6	**20.8**	**11.3**	**11.1**	**26.7**	**19.8**
Pulp & Paper Machinery & Equipment	1.9	**2.6**	3.4	4.9	**3.5**	**4.1**	3.8	**7.6**	3.8	4.0
Packaging products	4.2	4.3	4.4	**6.6**	4.5	4.1	5.0	4.7	0.7	2.1
Packaging Machinery & Equipment	0.0	0.0	0.0	0.6	0.6	0.0	0.0	0.7	0.0	0.5
Printed products	0.3	1.3	6.7	4.4	0.0	1.6	3.6	**10.3**	4.4	**5.2**
Printing Machinery & Equipment	0.0	0.0	0.0	0.4	4.7	0.0	0.5	**2.1**	0.0	0.0
Wood Raw Materials	**19.9**	9.3	23.3	**30.7**	**29.0**	26.9	38.7	**28.1**	10.5	11.9
Wood Products	25.9	**28.6**	13.7	12.4	19.6	**23.4**	**17.6**	**18.8**	**29.8**	**27.3**
Woodworking Machinery & Equipment	0.2	0.3	0.4	1.2	0.3	0.0	1.3	1.3	1.8	2.0
Wood Furniture	38.7	**42.6**	14.4	**15.4**	**20.5**	18.0	13.1	11.9	20.2	**21.5**
Speciality Inputs (chemicals etc)	3.9	2.9	2.6	0.4	**7.3**	1.2	5.1	3.2	2.0	**5.6**

Source: OECD International Trade by Commodities Statistics, C. Hazley estimates.

In regards to the Czech Republic's change in trade composition, it appears that the Czech Republic has been moving further up the value added ladder. First of all, wood raw material exports to the EU now represent a lower proportion of top exports. Pulp and paper products still occupy the same proportion as before, but pulp and paper making type-machinery has increased as has the share of printed products and printing machinery and equipment. Hence, it appears that the Czech Republic's forest based and related industries are becoming more competitive and technically sophisticated.

Top imports from **Estonia**, having a higher than average share of EU imports, tend to be raw material based products. Top products in terms of value, are generally wood furniture or wood products such as wood based panels or builder's carpentry and joinery. As with Bulgaria, there are very few products with higher than average market shares. Indeed, in examining the composition of Estonia's trade, it appears that Estonia has dropped down the value added ladder. The proportion of wood raw material type products has increased, whilst the shares of wood products, pulp and paper products and speciality inputs has decreased. Despite the fact that the share of furniture products has increased, it is likely that Estonia's main advantage must lie in its raw material supplies and cheap cost of labour.

Top EU imports from **Hungary** are mostly wood products, wood furniture, and wood raw materials. Although there are a number of products with quite high market shares, these tend to be raw material based products. However, in absolute terms there are several pulp and paper products (graphic papers and packaging papers) amongst the top exports to the EU. In reviewing the trade composition analysis, it is apparent that pulp and paper products have grown substantially, as has the proportion of wood products. It is also noticeable that the proportion of raw material products has decreased somewhat. It would appear that Hungary has moved up the value added ladder to some degree.

Top EU imports from **Latvia** are essentially raw material based. Even in areas where Latvia has higher than average import market shares, these products tend to be raw material based. However, there are a number of wood based panel products along with wood furniture among the top EU imports from Latvia. In fact, the trade composition analysis indicates that Latvia's forest based and related industry trade is the most reliant of all the CEECs on raw material exports to the EU. As such, it is probable that Latvia are slipping down the value added ladder and are perhaps being looked into their current trajectory of development.

The Top EU imports from **Lithuania**, are wood furniture, wood raw materials and to a lesser extent wood products. However, there are very little products with shares higher than the average EU producer. Despite the low market shares, the trade composition analysis indicates that Lithuania is probably moving up the value added ladder. For example, the proportion of wood raw materials has decreased whilst, the proportion of wood products and wood furniture has increased.

Top EU imports from **Poland**, are quite diverse. Wood products tend to dominate and also have much higher than average market shares of EU imports. Although the largest groups of imports are in wood furniture, pulp and paper products are also well represented in the areas of packaging papers and graphic papers. It is also interesting to note that Poland also exports substantial amount of speciality inputs of chemicals not to mention pulp and papermaking machinery and equipment. In examining the change in composition of trade, it is apparent that Poland has moved a long way up the value added ladder. Exports of wood raw materials to the EU have decreased substantially, whereas exports of pulp and paper products, packaging products, pulp and paper machinery, wood products, have all increased. Exports of

wood furniture have also increased and represent the largest share. Given the range of increases and large import market shares, Poland appears to be gaining in competitiveness in both labour- and capital-intensive industries. Indeed, in a brief description of Foreign Direct Investment into Poland, it is quite evident that Poland is benefiting from substantial amounts of foreign investment, technology and know-how.

Top EU imports from **Romania** are mainly centred on wood furniture products, along with wood products. Romania also has a number of product exports in these areas with higher than average market shares. In reviewing the trade composition analysis, it is apparent that Romania has is slipping down the value added ladder. Exports of wood furniture represented the largest proportion previously, but this share has since dropped sharply. In addition, the proportion of exports of wood raw materials have grown rapidly. However, the share of exports of wood products have also increased. Despite having an emphasis on more labour intensive manufacturing or craftsperson industries, the shift in proportions to more lower value added products, suggests that Romania has perhaps suffered in terms of competitiveness.

The top EU imports from **Slovakia** are noticeably different than other CEECs. Slovakian exports to the EU, comprise a large number of pulp and paper products and in particular packaging papers and boards and tissue papers. In addition, Slovakia also exports a number of papermaking machinery and related products. In several areas Slovakia also has higher than average import market shares. However, the country also exports a considerable number of wood raw material products. Indeed, in examining the change in trade composition it is noticeable that the proportion of raw material exports has increased, whilst that of wood products has decreased. Despite that fact that the share of pulp and paper products has decreased somewhat, Slovakia appears to have a the highest specialisation in pulp, paper and packaging products amongst the CEECs. It is perhaps conceivable that Slovakia has the basis for a pulp and paper or even packaging cluster.

Top EU imports from **Slovenia** tend to be wood furniture products, wood products, and pulp and paper products. Given the proximity of Slovenia to Italy it may not be a surprise to observe high proportions of wood furniture products and related wood products being exported. Within the pulp and paper products exported to the EU, there are numerous types of printing and writing papers along with some packaging papers, not to mention a number of speciality chemical inputs. Inspecting the composition of trade over time there are no major changes excepting that the proportion of pulp and paper products has decreased whilst that of speciality chemicals inputs has increased.

I-6.2 Trade Analysis - Exports to the CEEC region

EU exports of forest-based and related industry products to the CEEC region have also been analysed. Table I-9 shows the top 60 exports (by value) to the CEECs in 1992. This table also provides the share of total EU exports of each product exported from the EU. What is noticeable is that most top exports do not represent a high share of EU exports. Therefore, in 1992, it is clear that the CEEC region did not offer many opportunities for EU exports. However, it is evident that pulp and paper exports accounted for a large amount of EU exports to the CEEC region. In particular, packaging products such as cartons, boxes, containers, multiply papers, labels, packaging machinery and flexographic printing machinery - used in packaging - do have significantly higher shares. As will be discussed later in Part II, this confirms what happened during the early stages of transition were high standard western consumer packaging had to be imported to the CEEC region.

Table I-9 Top 60 EU Exports to the CEECs (as of 1992)

PRODUCT:	EU Exports to World value ($ mill)	Share of which:		
		EU15 Exports %	CEEC Exports %	CEEC Exports value ($ mill)
Taps, cocks, valves and similar appliances, nes	6540	60	3	219
Mach f fil/clos/seal/etc.btle/can/box/ bag/ctnr nes, mach f aeratg bev	1704	42	**10**	171
Cartons, boxes & cases, folding, non-corrugated paper orpaperboard	1656	75	**7**	111
Packing or wrapping machinery nes	2664	49	**4**	108
Books, brochures, leaflets and similar printed matter, nes	4082	55	2	84
Paper, fine, woodcontaining, in rolls or sheets, uncoated, nes	2412	77	3	81
Paper, fine, woodfree, in rolls or sheets, </=150 g/m2, clay coated	3042	63	2	76
Furniture, wooden, nes	5293	71	1	62
Cartons, boxes and cases, of corrugated paper or paperboard	1161	80	**5**	56
Office furniture, wooden, nes	761	64	7	55
Paper, in rolls o sheets, coated/impregnatd o coverd with plastics, nes	1330	63	4	54
Paper, fine, woodfree, in rolls or sheets, >150 g/m2, clay coated	1756	71	3	53
Newspapers, journals and periodicals, nes	1880	72	3	52
Mach-tls for workg wod/crk/bne/hrd rubber/hrd plas/sim hrd mat etc nes	772	51	7	50
Sanitary articles of paper, incl sanit towels & napkin (diapers) f babies	2017	87	2	48
Trade advertising material, commercial catalogue and the like	2599	84	2	47
Chemical wood pulp, soda or sulphate, conifer, semi-bl or bleached, nes	1430	87	3	43
Lumber, coniferous (softwood) 6 mm and thicker	4486	82	1	41
Paper labels of all kinds, printed	560	74	**7**	39
Offset printing machinery nes	1757	41	2	39
Printing ink, nes	716	70	5	38
Paper, fine, woodfree, in rol/sheets, >/=40g/m2, </=150g/m2, uncoated,	2528	67	1	37
Parts of printing machinery & machines for uses ancillary to printing	1229	50	3	36
Newsprint, in rolls or sheets	2257	82	1	31
Paper, multi-ply, in rolls or sheets, clay coated, nes	1665	76	**2**	30
Paper, in rolls o sheets, ctd, impreg, cov, surf-col, surf-dec o printd, nes	683	72	4	27
Veneer, non-coniferous nes, less than 6 mm thick	395	74	7	26
Printing machinery nes	833	46	3	26
Chemical wood pulp, sulphite, coniferous semi-bleached or bleached, nes	312	81	7	23
Mach which can c/o diff typ of mach op w/o tl chang bwn such op f wood	312	60	7	22
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	613	56	4	22
Seats with wooden frames, upholstered nes	2608	77	1	22
Planing/millg or mouldg (by cutting) mach for workg wood/plastic etc	309	56	7	22
Paper, fine, cut to size or shape, nes	1067	83	2	21
Brochures, leaflets and similar printed matter, in single sheets	502	56	4	21
Pumps nes	932	48	2	20
Sawing machines for working wood/cork/ bone/hard rubber/plastics etc	391	57	5	20
Filtering or purifying machinery and apparatus for liquids nes	634	58	3	20
Particle board of wood	1485	87	1	20
Reel fed offset printing machinery	962	51	2	19
Parts of mach for making or finishing paper or paperboard mach	934	58	2	19
Paper, fine, woodcontaining, in rolls or sheets, clay coated, nes	1188	76	2	18
Wallpaper and similar wall coverings, nes	316	77	6	18
Paper, in rolls or sheets, weighing 150 g/m2 or less, uncoated, nes	836	81	2	18
Cutting machines for paper pulp, paper or paperboard of all kinds	612	52	3	17
Printed matter, nes	623	62	3	17
Paper, self-adhesive, in rolls or sheets, nes	759	82	2	17

Parts and accessories nes for use on machines of heading No 84.65	315	58	5	16
Paper, self-copy, in rolls of a w >36cm, sheets at least one side >36 cm	486	72	3	16
Paper, fine, light weight coated, in rolls or sheets	2294	73	1	16
Containers, packing, nes (including record sleeves) of paper	328	79	**5**	15
Sacks and bags, of paper, nes; including cones	352	78	**4**	14
Phenolic resins	358	68	4	14
Pts of mach for makg up paper pulp, paper or paperboard, incl cuttg mach	407	59	3	14
Plaster boards etc not ornamental facd o reinforcd w paper/paperboard	182	60	8	14
Kitchen furniture, wooden, nes	1213	75	1	13
Glues or adhesives, prepared nes	303	73	4	13
Book-binding machinery, including book-sewing machines	439	41	3	13
Machinery for making up paper pulp, paper or paperboard nes	339	58	4	13
Logs, poles, coniferous nes	604	87	2	13
Finishg agents, dye carriers & oth prep, nes, for use in the paper industry	195	83	6	13
Flexographic printing machinery	231	38	**5**	12
Pigments and preparations based on titanium dioxide	1415	59	1	12
Dryers for wood, paper pulp, paper or paperboard	111	44	10	11

Source: OECD; C. Hazley estimates.

EU exports to the CEEC region have also been analysed to determine the top exports in 1999. Table I-10, overleaf, lists the top 60 EU exports to the CEEC in 1999. Again, the share of EU exports to the CEEC region of each product exported from the EU is also listed in the table. Immediately, it can be seen from the high shares, that, the CEEC region has now become a more important export market for EU exporters. In particular, the extensive array of pulp and paper products should be very evident. Whilst many of these products are high value added printing and writing papers, one should also notice the considerable amount of packaging products and packaging machinery which occupy the top section of the list. Indeed, packaging products tend to represent the highest shares and the highest growth in shares of EU exports. From this it is apparent that the packaging industry in the CEEC region offers immediate potential for EU producers of packaging products.

At the same time, what is also evident is that a significant amount of machinery and equipment is also being exported to the CEEC region. In fact, pulp and paper making machinery products are amongst the products deemed more important to EU exporters and which also have the highest growth in shares of EU exports to the CEEC region. Again, it can be concluded that a great deal of the activity must be occurring within the pulp and paper industries of the CEEC region. As such, Part II of this report is devoted to investigating the pulp and paper industry of the CEEC region with a special focus on the fibre-based packaging industry.

Table I-10 Top 60 EU Exports to the CEECs (as of 1999)

PRODUCT:	EU Exports to World Value ($ mill)	Share of which to:			
		EU15 Exps (%)	CEEC Exps Value ($ mill)	CEEC Exps (%)	Growth CEE-CExps 1992-1999
Taps, cocks, valves and similar appliances, nes	7543	53	530	7	4
Paper, fine, woodfree, in rolls/sheets, </=150 g/m2, clay coated	4429	69	217	5	2
Cartons, boxes & cases, folding, of non-corrug paper or board	1929	70	204	**11**	4
Paper, fine, woodcontaining, in rolls or sheets, uncoated, nes	2649	73	196	7	4
Packing or wrapping machinery nes	3086	42	195	**6**	2
Mach f fil/clos/seal/ btle/can/box/bag/ctnr nes, mach f aeratg bev	2176	35	193	**9**	-1
Furniture, wooden, nes	5651	59	186	3	2
Trade advertising material, commercial catalogue and the like	2891	75	185	6	5
Printing ink, nes	1456	63	139	10	4
Cartons, boxes and cases, of corrugated paper or paperboard	1333	75	136	**10**	5
Sanitary articles of paper, incl sanit towels/napkin (diapers) f babies	2374	78	129	5	3
Paper, fine, light weight coated, in rolls or sheets	3535	75	120	3	3
Books, brochures, leaflets and similar printed matter, nes	4730	50	120	3	0
Paper, in rolls o sheets, coated/impregnatd o coverd with plastics	1869	60	119	6	2
Paper, multi-ply, in rolls or sheets, clay coated, nes	2016	69	116	**6**	4
Offset printing machinery nes	2649	46	100	4	2
Particle board of wood	1958	75	99	5	4
Paper, in rolls o sheets, ctd, impreg, cov, surf-col, surf-dec o printd,	1242	61	91	7	3
Veneer, non-coniferous nes, less than 6 mm thick	668	64	87	13	6
Fiberboard >0.8 g/cm2 nes	614	41	86	14	13
Paper, fine, woodfree, in rolls or sheets, >150 g/m2, clay coated	2228	68	86	4	1
Paper labels of all kinds, printed	669	59	85	**13**	6
Chemical wood pulp, soda or sulphate, conifer, semi-bl or bleached,	1824	82	76	4	1
Mach-tls for workg wod/crk/bne/hrd rubber/hrd plas/sim hrd mat	677	45	74	11	4
Newsprint, in rolls or sheets	2935	83	73	2	1
Paper, fine, woodfree, in rol/sheets, >/=40g/m2, </=150g/m2, unctd	3156	74	72	2	1
Lumber, coniferous (softwood) 6 mm and thicker	5528	74	69	1	0
Reel fed offset printing machinery	1200	48	69	6	4
Paper, fine, cut to size or shape, nes	1503	80	66	4	2
Paper and paper articles, nes	635	56	62	10	8
Paper, fine, woodcontaining, in rolls or sheets, clay coated, nes	1483	75	61	4	3
Parts of mach for making or finishing paper or paperboard mach	995	49	59	6	4
Newspapers, journals and periodicals, nes	2456	65	59	2	0
Press f the mfr of part/fib board/f treat wood etc nes hvg indiv func	657	47	56	9	5
Paper, self-adhesive, in rolls or sheets, nes	935	71	56	6	4
Office furniture, wooden, nes	1089	58	55	5	-2
Filtering or purifying machinery and apparatus for liquids nes	981	55	54	5	2
Parts of printing machinery & machines for uses ancill to printing	1373	43	53	4	1
Mach which can c/o diff typ of mach op w/o tl chang bwn op wood	499	49	53	11	3
Paper, in rolls or sheets, weighing 150 g/m2 or less, uncoated, nes	998	76	49	5	3
Plaster boards not ornamental facd o reinforcd w paper/paperboard	269	44	49	18	10
Paper, self-copy, in rolls of w >36cm, sheets at least 1 side >36 cm	505	58	48	10	6
Pigments and preparations based on titanium dioxide	1843	61	48	3	2
Pumps nes	1067	42	48	4	2
Kitchen furniture, wooden, nes	1563	70	46	3	2
Wallpaper, coatd/coverd on the face side w a decoratd layer of plas-	394	46	45	11	9

tics					
Parts and accessories nes for use on machines of heading No 84.65	447	47	44	10	5
Seats with wooden frames, upholstered nes	3023	68	43	1	1
Bedroom furniture, wooden, nes	1918	70	43	2	1
Reservoirs, tanks, vats & sim ctnr, cap >300L (ex liq/compr gas typ)	678	49	42	6	3
Parts of mach for making pulp of fibrous cellulosic material	351	45	41	12	10
Printed matter, nes	640	58	40	6	3
Sawing machines for working wood/cork/ bone/hard rubber/plastics	474	59	38	8	3
Wood articles nes	674	67	35	5	4
Brochures, leaflets and similar printed matter, in single sheets	587	65	35	6	2
Builder's joinery and carpentery of wood nes	787	65	35	4	3
Chemical wood pulp, soda/sulphate, non-conifer, semi-bl/bleachd,	1330	92	35	3	2
Sacks and bags, of paper, nes; including cones	534	75	34	**6**	2
Handkerchiefs, cleansing or facial tissues and towels, of paper	769	82	33	4	3
Pts of mach for makg up pulp, paper/paperboard, incl cuttg mach	536	52	32	6	2
Glues or adhesives, prepared nes	361	65	31	9	4
Dryers for wood, paper pulp, paper or paperboard	173	49	31	18	8
Paper, in rolls or sheets, weighing >150 g/m2, <225 g/m2, uncoated,	243	75	31	13	11

Source: OECD; C. Hazley estimates.

As with imports, an analysis of trade composition has also been conducted for exports, over the period 1992 to 1999. The summary of this analysis, shown in Table I-11 on the following pages confirms some of the above conclusions with respect to the pulp and paper industry. For example, the share of pulp and paper products exported to the CEEC region has grown from 36% to 40%, whilst that for pulp and paper machinery and equipment has remained stable at 15%. Printed products also represent a sizeable share of exports at 10%. Despite growing in absolute value terms, packaging machinery and equipment now represents a lower proportion of exports from the EU. However, based on discussions in the latter half of Part II of this report, it is conceivable that most of the investments in packaging machinery and equipment occurred in the early to mid 1990s. Thus the drop in share of exports to the CEEC region, may be as expected.

There is also a substantial amount of wood working machinery and equipment and printing machinery and equipment being exported. However, it appears that printing machinery makes up less of the total proportion more recently.

Table I-11 Composition Analysis of Top 60 EU Exports to the CEECs (1992-1999)

Product Group	Top 60 (1992)		Top 60 (1999)	
Composition Analysis (as % of top 60 total)	Value ($ mill)	% of total	Value ($ mill)	% of total
Paper products	838	36	2201	**40**
Pulp & Paper machinery & equipment	356	15	837	15
Printed products	261	11	524	10
Printing machinery & equipment	145	6	222	4
Wood products	100	4	412	**8**
Woodworking machinery & equipment	131	6	266	5
Furniture products	152	6	329	6
Speciality inputs	90	4	219	4
Packaging machinery & equipment	278	12	388	**7**
Total value of top 60 exports	*2354*		*5441*	

Source. OECD; C. Hazley estimates.

I-7 Finland and CEEC

I-7.1 Trade between Finland and the CEECs – opportunities or threats?

At the general level, trade between Finland and the CEEC region has been growing over the past decade. Imports from the CEEC10 region have grown from 3.1 percent in 1993 to 4.1 percent in 1999. In terms of Finnish exports to the CEEC10 region, exports have grown from 4.5 percent in 1993 to about 7.3 in 1999, where it appears to have stabilised at that level. Finnish exports to the EU still represent the main destination, accounting for about 56 percent of all Finnish exports.

To examine to how important the CEEC region is for different sectors of the Finnish economy, the top 60 Finnish exports to the CEEC region have been identified. Table I-12 lists the top 60 Finnish exports to the CEEC10 countries (by value in 1999). To investigate the dynamics of each product group, the analysis also includes an estimate of the share of total exports of each product group to the CEEC region over time. In this way, it is possible to show which product exports to the CEECs have become more important and which have become less important, thus growth in share of exports is represented.

The top Finnish exports to the CEEC10 region are predominantly from two Finnish manufacturing sectors, the pulp and paper industry and the electronic and electrical equipment sector (including telecommunications equipment). By far, electronic products make up the largest proportion of top exports. In addition, the very high shares of these products exported from Finland, indicates that the CEEC region is much more important for the electronic sector. It is also noticeable that for most of these products, the share of exports from Finland has grown from almost nothing in 1992, to well over 50%, in 1999, in most cases (in some cases the share is as high as 86%).

In contrast, whilst there are numerous product exports from the Finnish pulp and paper industry to the CEEC region, the low shares of total exports of these products suggests that the CEEC region is much less significant to the pulp and paper industry. Moreover, looking at the growth in share of exports since 1992 (ranging from about 3% in 1992 to about 5% in 1999), it is clear that growth has been lagging behind the growth in total product exports to the CEEC region (which ranges from about 4% in 1992 to around 8% in 1999). Of course, one should keep some perspective in this analysis. In fact, four of the top eleven exports to the CEEC region are pulp products.

Thus, even though the CEEC market attracts only 5% of the total paper exports from Finland, the market is significant although slowly growing. In this respect, it is no surprise that Finnish companies have been much less active in making capital investments in the CEEC region, in comparison with other western pulp and paper producers. This is discussed in more detail in Part II of this report, but it would appear that Finnish investment in the region will grow in the future.

Table I-12 Top 60 Finnish Exports to the CEEC10 Region

PRODUCT	Exports to the CEECs as a % of Total product exports from Finland					Value ($ mill)
	1992	1993	1995	1997	1999	1999
Total Exports to the CEEC10 region	**4**	**5**	**6**	**7**	**8**	3144
Transmission apparatus, for radioteleph incorp recept ap	7	9	8	12	8	278
Parts suitabl f use solely/princ w the app of transmis app	3	8	10	8	8	88
Monolithic integrated circuits, digital	0	1	5	59	58	78
Telephonic or telegraphic switching apparatus	25	9	12	16	9	59
Paper, fine, light weight coated, in rolls or sheets	**1**	2	2	4	**4**	57
Paper, fine, woodcontaining, in rolls or sheets, uncoated,	**1**	1	1	3	**5**	54
Parts of electri apparatus for line telephone or line telegraphy	2	5	6	10	13	51
Monolithic integrated circuits, nes	0	0	8	59	71	50
Paper, multi-ply, in rolls or sheets, clay coated, nes	**3**	4	6	6	**6**	43
Indicator panels incorporatg liquid crystal device/light emittg diode	1	16	3	35	86	40
Paper, fine, woodfree, rolls/sheets, </=150 g/m2, clay coated	**5**	6	5	5	**4**	36
Flat rolled prod, i/nas, painted, varnished or plast coated, >/=600mm wide	8	11	28	38	36	33
Electric conductors, for a voltage not exceeding 80 V, nes	3	39	59	58	69	30
Printed circuits	0	0	4	39	64	29
Automobiles w reciprocatg piston engine displacg > 1500 cc to 3000 cc	1	2	2	6	4	27
Static converters, nes	4	4	6	8	6	27
Parts & accessories of automatic data processg machines & units thereof	3	9	37	23	20	24
Paper, fine, woodcontaining, in rolls or sheets, clay coated, nes	**2**	4	2	2	**4**	22
Taps, cocks, valves and similar appliances, nes	5	8	9	12	12	20
Structures & parts of structures, i/s (ex prefab bldgs of headg no.9406)	1	6	9	12	12	19
Paper, fine, cut to size or shape, nes	**3**	4	5	5	**5**	18
Transporter or bridge cranes	0	0	1	8	93	18
Newsprint, in rolls or sheets	2	3	2	2	3	17
Electrical app for switchg/protec elec circuits, not exced 1, 000 V, nes	4	8	20	23	33	16
Paper, fine, woodfree, in rol/sheets, >/=40g/m2, </=150g/m2, uncoated,	**2**	4	4	2	**3**	16
Input o output units, whether o not presentd w the rest of a system etc	1	2	2	3	8	16
Wheeled tractors nes	8	11	6	8	4	15
Paints & varnishes based on polyesters, dispersed in a non-aqueous medium	19	21	11	12	41	15
Motor vehicle parts nes	5	11	12	14	15	15
Film and sheet etc, nes of plastics	6	9	11	12	10	14
Electrical plugs and sockets, for a voltage not exceeding 1, 000 volts	5	9	19	28	46	14
Chemical wood pulp, soda/sulphate, non-coniferous, semi-bl/bleachd, nes	**1**	1	0	1	**5**	13
Chemical wood pulp, soda or sulphate, coniferous, semi-bl or bleached, nes	**2**	1	1	1	**3**	13
Electric accumulators, nes	26	9	1	8	43	13
Recorded media for sound or other similarly recorded phenomena, nes	2	11	11	41	22	12
Automatic washing machines, of a dry linen capacity not exceeding 10 kg	2	7	10	5	21	12
Electrical machines and apparatus, having individual functions, nes	3	7	10	24	33	12
Refrigerating or freezing display counters, cabinets, show-cases, etc	10	14	22	24	27	12
Machines & mechanical appliances nes having individual functions	5	8	7	5	7	11
Coffee, roasted, not decaffeinated	38	16	26	22	35	11
Articles, iron or steel, nes	2	4	11	12	19	11
Medicaments nes, in dosage	3	6	10	6	7	11
Paints & varni based on polymers dissolv in a non aqueous solv nes	10	16	21	23	33	11
Parts for use with the apparatus of headg no. 85.35, 85.36 or 85.37, nes	5	4	25	26	43	11
Aerials & aerial reflectors of all kinds; parts suitable f use therewith	2	4	5	8	8	9
Electric conductors, for a voltage >80V but not exceeding 1, 000 V, nes	2	3	9	12	16	9
Undenatrd ethyl alc <80% alc cont by vol & spirit, liqueur & spirit bev nes	30	27	21	28	18	9
Containers, packing, nes (including record sleeves) of paper	**5**	9	20	60	**76**	9

Foil, aluminium, backed, not exceeding 0.2mm thick excluding any backing	6	10	23	23	21	9
Pneumatic tire new of rubber f motor car incl station wagons & racg cars	2	4	7	8	9	9
Front end shovel loaders	0	1	9	14	20	9
Fertilizers cntg nitrogen, phosphorus & potassium in packs weighg </=10kg	0	2	5	12	9	8
Books, brochures, leaflets and similar printed matter, nes	**6**	3	5	8	**19**	8
Machines for manufacturing or hot working glass or glassware	6	2	2	4	14	8
Polyesters nes, unsaturated	6	13	22	34	42	8
Optical fibre cables, made up of individually sheathed fibres	10	2	13	22	23	8
Parts of cranes, work-trucks, shovels, and other construction machinery	2	3	2	7	8	8
Webs, mattresses, boards and similar nonwoven products of glass fibres	1	6	44	32	45	8
Paper, in rolls o sheets, coated/impregnatd o coverd with plastics, nes	**2**	4	6	5	**5**	8
Electrical capacitors, fixed, ceramic dielectric, multilayer, nes	0	0	41	86	75	8
Transformers electric power handling capacity not exceeding 1 KVA, nes	4	3	20	39	28	7
Filtering or purifying machinery and apparatus for water	12	10	15	7	36	7
Pipes and tubes, refined copper	1	2	3	5	7	7
Paper, self-adhesive, in rolls or sheets, nes	**3**	5	2	5	**5**	7
Parts of mach for making pulp of fibrous cellulosic material	**4**	7	3	4	**8**	7
Articles of plastics or of other materials of Nos 39.01 to 39.14 nes	2	4	11	15	14	7
Paper, fine, woodfree, in rolls or sheets, >150 g/m2, clay coated	**7**	6	4	4	**4**	7
Mach f mixing/kneading/crushing/grindg etc nes havg individ function	9	9	10	11	20	7
Lifting, handling, loading or unloading machinery nes	2	2	2	3	5	7

Source: OECD International Trade by Commodities Statistics; C. Hazley estimates.

I-7.2 Finnish exports to the EU - Competition from CEEC-based producers.

Comparing product categories were Finland has experienced a decline in market share in the EU with imports from the key competitor regions from outside the EU, reveals that central and eastern European countries (CEECs) compete in many areas with Finland. Product areas include plywood sheets, other paper, kraft paper and paper for household purposes – areas ranked amongst Finland's top 30 exports to the EU.

In comparing the top 30 Finnish forest cluster exports to the EU[13], in terms of market shares, it is evident that, whilst the CEEC-based importers are not the main competitors in every product area, they nevertheless represent substantial competition for Finnish exports. Table I-13 Top Finnish exports to the EU (1998), is shown overleaf. CEEC-based importers command market share positions, which are at least 30%, or more, of Finland's share in 13 key product areas produced by the Finnish forest cluster. In particular, this is especially the case in packaging papers, plywoods, and some fine paper grades. One should note the wide variety of packaging papers produced by CEEC-based competitors (sack kraft-, kraft-, fluting- papers etc). Thus it would appear that packaging is a key area for CEEC producers.

In the case of packaging papers such as fluting, this may be expected since packaging papers are typically low in value added and therefore do not transport over long distances economically. In the case of plywood, Finland is one of the largest producers and exporters in the EU, and this is seen as a very competitive area for Finland. However, EU imports of plywood from the CEEC region suggests that CEEC-based producers are gaining in competitiveness in this area.

In summary, it would appear that Finnish exports to the EU are experiencing increased competition from CEEC-based producers. Therefore, in the following sections an attempt is made to assess the level of competitiveness of the CEECs in comparison with Finland.

[13] About two-thirds of Finnish forest cluster exports are to the EU – the EU is Finland's main market.

Table I-13 Top 30 Finnish Exports to EU, 1998– Competition from Eastern Europe

Product Category (only top 30 Finnish Forest Cluster Exports to EU are listed)	Finnish Exports to World 1998 (mill $)	Finnish Share of EU15 Imports (%)	CEEC10 Share of EU15 Imports (%)
440710 Lumber, coniferous (softwood) 6 mm and thicker	**1545**	19.3	**14.5**
441212 Plywood, at least 1 outer ply of non-coniferous wood nes (ply's <6 mm)	**386**	45.7	**12.4**
441219 Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	**132**	16.8	**6.2**
441830 Parquet panels, including tiles of wood	83	7.0	6.6
441890 Builder's joinery and carpentry of wood nes	75	7.7	**20.0**
470321 Chemical wood pulp, soda or sulphate, coniferous, semi-bl or bleached, nes	**384**	9.7	0.5
470329 Chemical wood pulp, soda/sulphate, non-coniferous, semi-bl/bleachd, nes	**274**	10.5	2.0
480100 Newsprint, in rolls or sheets	**638**	14.2	0.6
480240 Paper, wallpaper base, in rolls or sheets, uncoated	66	25.1	0.2
480252 Paper, fine, woodfree, in rol/sheets, >/=40g/m2, </=150g/m2, uncoated, nes	**598**	16.7	**5.6**
480260 Paper, fine, woodcontaining, in rolls or sheets, uncoated, nes	**1253**	38.9	1.0
480300 Paper, household/sanitary, rolls of a w >36 cm, sheets one side >36 cm	70	8.0	4.0
480419 Paper, Kraftliner, in rolls, o/t unbleached, uncoated	91	14.8	1.5
480439 Paper, craft, rolls or sheets, </=150g/m2, uncoated, nes	72	15.7	**4.2**
480459 Paper, craft, rolls or sheets, >/=225g/m2, uncoated, nes	**135**	79.3	0.5
480510 Paper, fluting (corrugating medium), in rolls, semi-chemical, uncoated	**129**	28.4	**11.2**
480640 Paper, glassine, oth glazd transparent o translucent, in rolls o sheets	**128**	47.8	0.4
481011 Paper, fine, woodfree, in rolls or sheets, </=150 g/m2, clay coated	**778**	16.7	0.8
481012 Paper, fine, woodfree, in rolls or sheets, >150 g/m2, clay coated	**166**	8.6	0.0
481021 Paper, fine, light weight coated, in rolls or sheets	**1667**	43.2	0.0
481029 Paper, fine, woodcontaining, in rolls or sheets, clay coated, nes	**687**	36.4	0.1
481091 Paper, multi-ply, in rolls or sheets, clay coated, nes	**801**	34.5	0.4
481121 Paper, self-adhesive, in rolls or sheets, nes	**153**	12.4	0.2
481131 Paper, in rolls o sheets, bl, >150g/m2, ctd, impreg o cov with plastics, nes	**209**	15.3	0.1
481139 Paper, in rolls o sheets, coated/impregnatd o coverd with plastics, nes	**142**	6.5	2.7
482359 Paper, fine, cut to size or shape, nes	**406**	23.1	**6.8**
482390 Paper and paper articles, nes	**100**	9.9	1.5
848180 Taps, cocks, valves and similar appliances, nes	**183**	1.5	2.5
843991 Parts of mach for making pulp of fibrous cellulosic material	**112**	22.4	1.3
843999 Parts of mach for making or finishing paper or paperboard mach	**156**	7.7	**7.3**

Source: OECD, C. Hazley estimates.
Note: Products highlighted in bold are amongst Finland's top 30 Forest Cluster Exports to the World.

I-8 Comparative Advantage

I-8.1 Comparative Advantage of CEEC-based producers

In terms of 'total forest area', the addition of the 10 CEECs will add about one-third, whilst in terms of 'forest & other wooded land', the increase will be about one-quarter. However, both these figures are slightly misleading, since it is exploitable forest area that matters to the forest-based and related industries. Hence, EU-Enlargement to include the 10 CEECs will increase the area of exploitable forests by about 28 per cent, a substantial increase.

Table I-14 Increase in Forest Area in the CEEC Region

	Total forest area (mill Ha)	Forest & other Wooded Land* (mill ha)	Exploitable Forest* (mill ha)
Bulgaria	3.9	3.348	3.222
Czech Rep	2.6	2.63	2.581
Estonia	2.0	2.144	1.854
Hungary	1.8	1.719	1.653
Latvia	2.9	2.994	2.366
Lithuania	1.9	2.046	1.876
Poland	8.8	8.732	8.474
Romania	6.4	6.68	1.216
Slovak Rep	1.9	2.02	1.7
Slovenia	1.0	1.077	1.077
CEEC10	**33.2**	**33.4**	**26.02**
EU15# (mill ha)	**102.3**	**132.7**	**92.3**
EU25 (mill ha)	**135.5**	**166.1**	**118.3**
% increase	32.4	25.2	28.2

Source: * UNECE Timber Database; # Eurostat

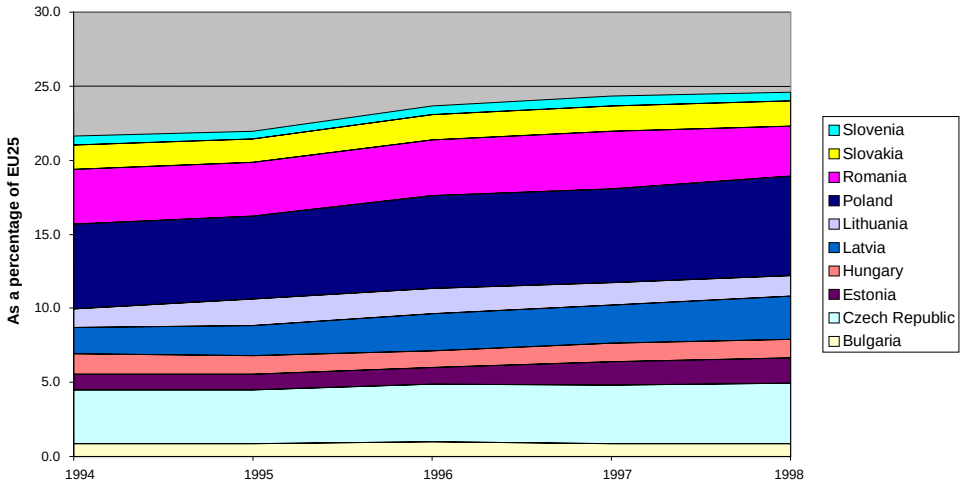
Although the above indicates huge potential in terms of raw material supplies for the forest-based industries, it does not show how the industry has been developing. However, if one examines the extent of tree removals within the CEEC10 area over recent years (1994-98), then we begin to see signs of increasing activity. In fact, whilst the level of tree removals in the EU has, on average, remained much the same, the level of tree removals within the CEEC10 area has been rapidly increasing.

In Figure I-2, the CEEC10 area has been added to that of the EU15 to examine the impact of EU-Enlargement in terms of tree removals. What this shows, is that the share of CEEC10 tree removals in an enlarged EU has grown from about one-fifth to one-quarter, over the 1994-98 period. In particular, tree removals in Poland, Latvia, and Estonia have increased quite rapidly. Hence, one could already hypothesise that this is an indication of rapid developments within the forest-based industries of Eastern Europe.

Similarly, by adding the CEEC10 area to that of the EU15 (say the EU25) it is possible to examine the impacts of EU-Enlargement right across the forest-based and related industries, and demonstrate how developments in the CEEC10 area are already affecting the EU, and especially Finland. It should be stressed that although total forest-based industry exports from each respective area are being examined, most forest cluster exports are between neighbouring countries. Indeed, within the EU, two-thirds of exports are intra-EU trade. In

addition, as forest cluster imports from Eastern Europe now represent the EU's second largest importer, after N. America, it is likely that most CEEC10 forest cluster exports are to the EU. This view is strengthened by the fact that CEEC region trade has re-orientated itself away from the CIS, and is now targeted predominantly towards the EU. One must remember, however, that looking at the aggregate level masks developments at the country level.

Figure I-2 Tree Removals in Enlarged EU25



Source: UN Timber Database.

In terms of paper and paperboard in an enlarged EU (EU25), it is apparent that although production will add only about 5%, both the share of production and exports has generally been increasing over recent years within this area. This is in contrast to developments within Finland. Whilst production has increased slightly, the relative share of exports has decreased somewhat, although these still represent almost one-quarter of paper and board exports within the EU25. At the same time though, one should remember that competition is between grades of paper and board. For example, CEEC exports of semi-chemical fluting represent about 14% EU exports, higher than that indicated when looking at aggregate level.

Figures I-3 and I-4 present cost competitiveness of two main categories of paper and paperboard. Whilst printing and writing papers are not a major export from the CEEC region, CEEC-based producers are increasingly raising levels of production and exports. Whilst low cost may indicate that exports are lower in value added, the short distances to the main EU markets, for many of the CEEC-based producers, may also mean that CEEC exports are able to compete in some areas. If one takes Finland as the main benchmark indicator, it is also notable that the price of some CEEC producers is as low as Finland's.

In terms of other paper and paperboard, much of which is used in the packaging industry, it is notable that many of the CEEC-based producers have prices lower than that of Finland or Sweden, amongst some of the largest exporters of packaging papers and boards.

It is therefore apparent that CEEC-based producers are able to compete on price in paper and paperboard grades. However, it is very likely that these products are in lower end market niches, or more 'commodity' grades.

Figure I-3 Cost competitiveness of Printing & Writing paper exports from the CEEC region

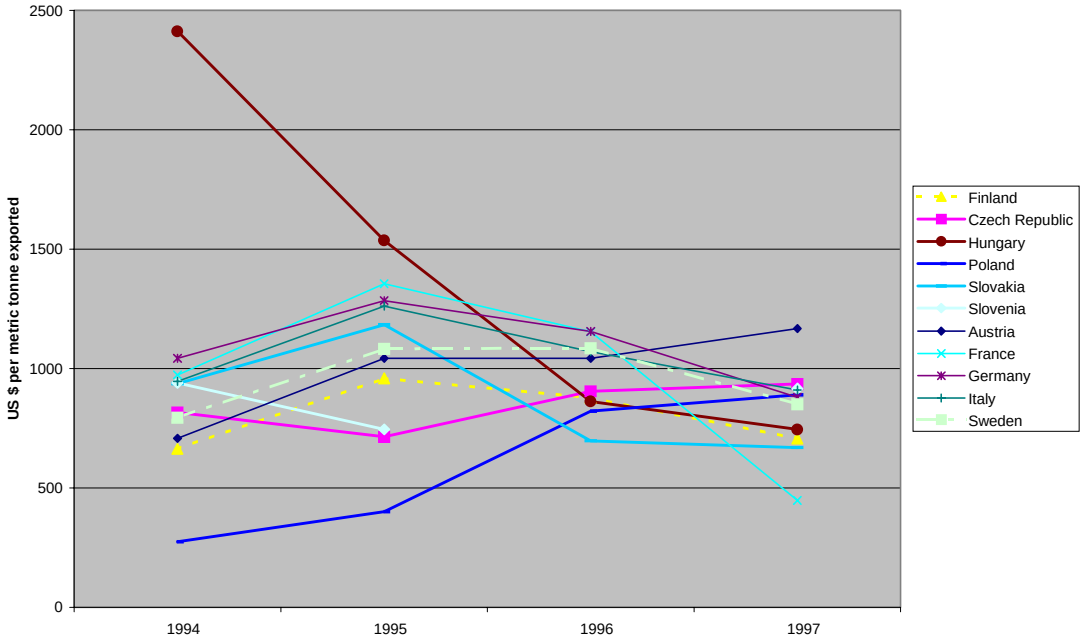
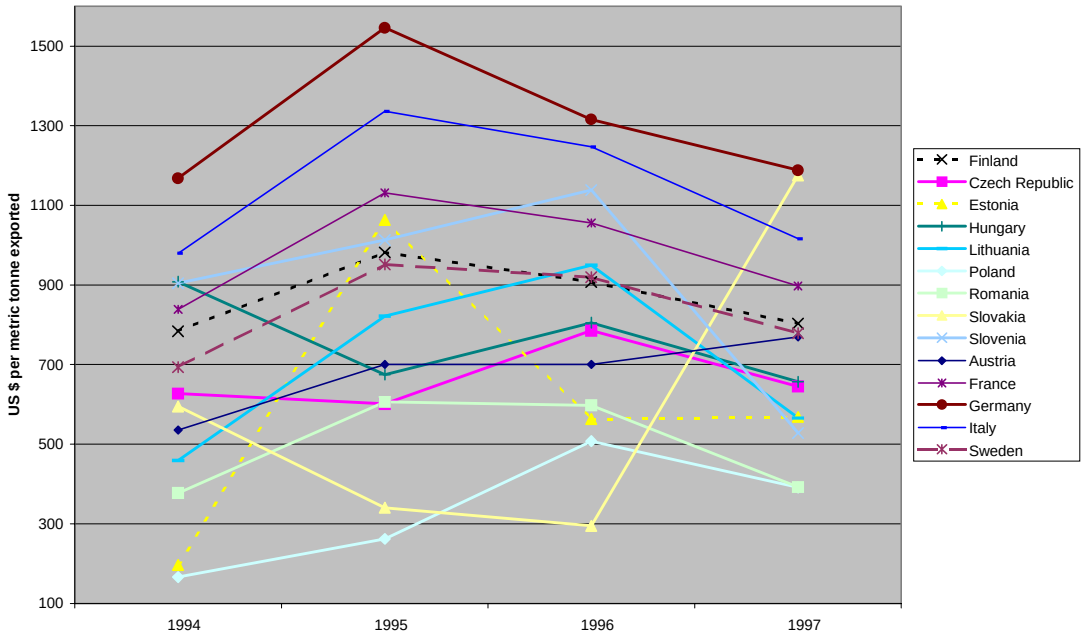
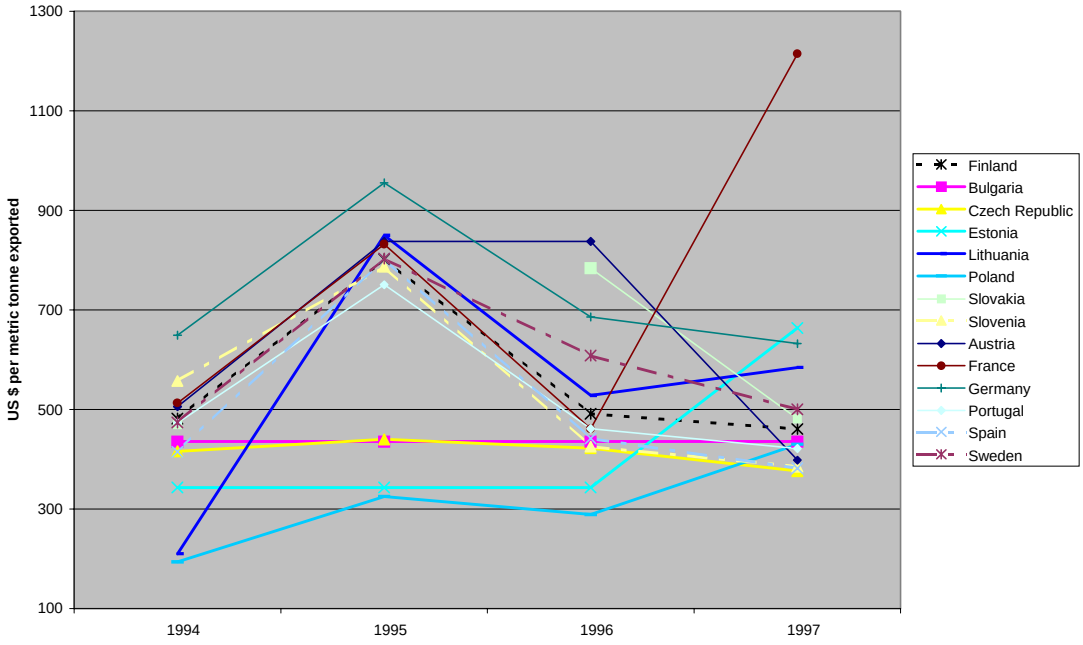


Figure I-4 Cost competitiveness of Other Paper and Paperboard exports from the CEEC region



In terms of woodpulp, the CEEC10 area will again only add about 6%, and although production has slightly increased, exports have remained about the same. In Finland's case, the share of production has grown to more than one-third, whilst exports have remained about the same. However, it must be remembered that, generally speaking, most Finnish pulp exports are to supply Finnish-owned production units in Europe. As with paper and paperboard, CEEC-based producers appear to have a relatively low cost basis, in comparison with leading producers and exporters such as Sweden and Finland.

Figure I-5 Cost competitiveness of Chemical woodpulp exports from the CEEC region



In the mechanical wood sector the CEEC10 shares are not only larger, but are growing faster than that of Finland. For example, in terms of wood-based panels, both production and exports have grown from around 13-14 percent to about 17%, whilst Finland's share of production has remained stable at just under 4%, it's share of exports has slightly dropped from 8% to under 7%. Based on earlier export figures, it is clear then that CEEC producers are expanding exports of both plywood and fibreboard panels – the former a key area for the Finnish forest cluster.

Figure I-6 Cost competitiveness of Plywood exports from the CEEC region

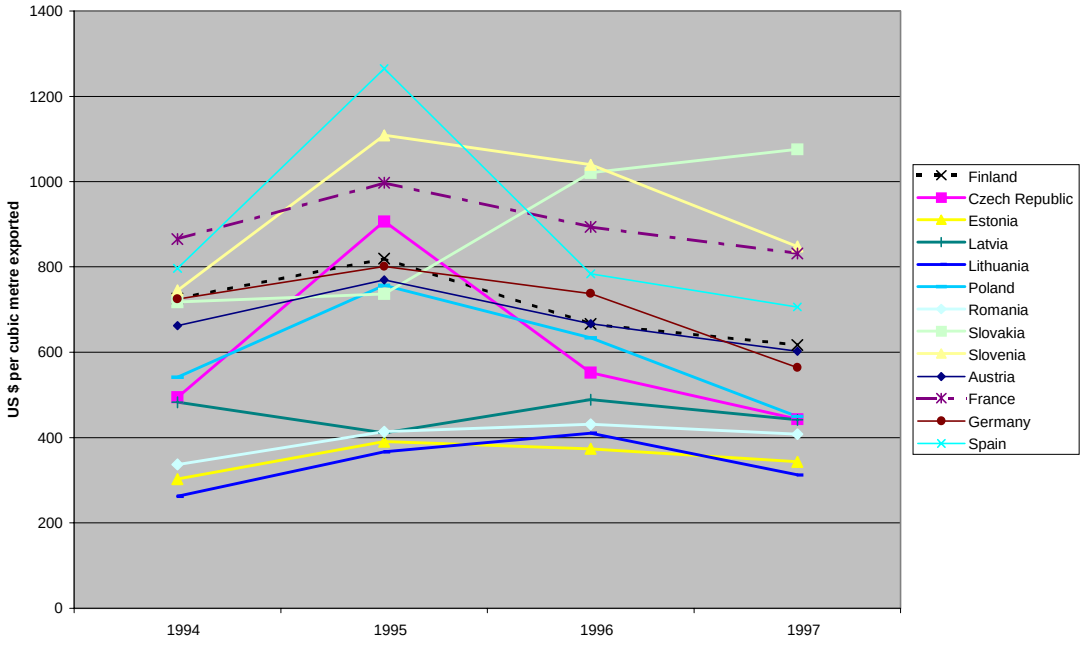


Figure I-7 Cost competitiveness of Particleboard exports from the CEEC region

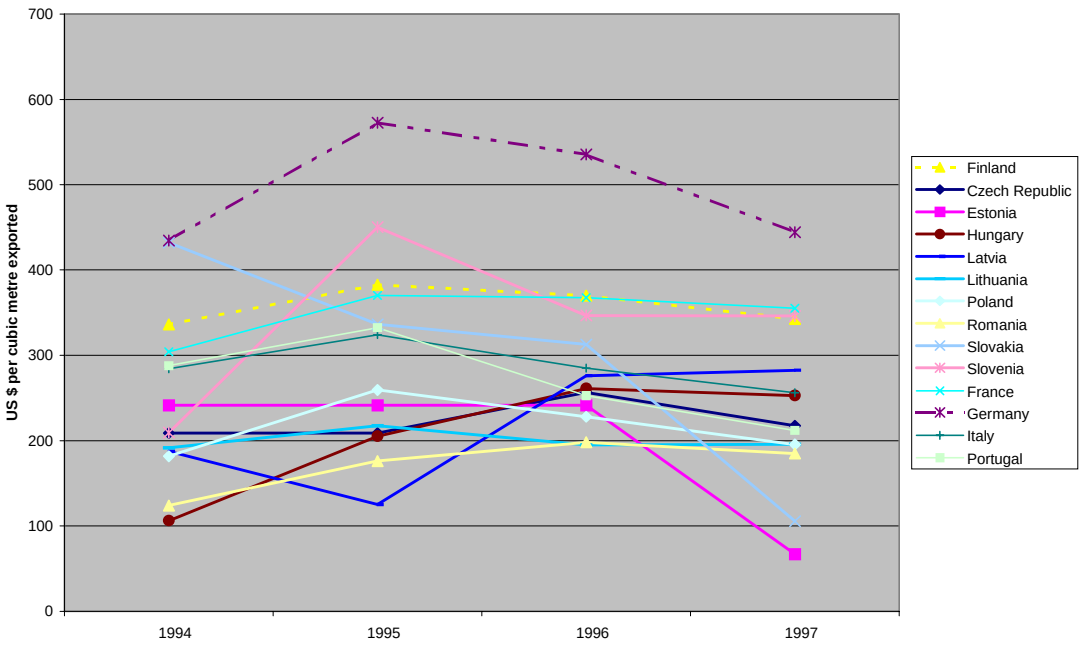
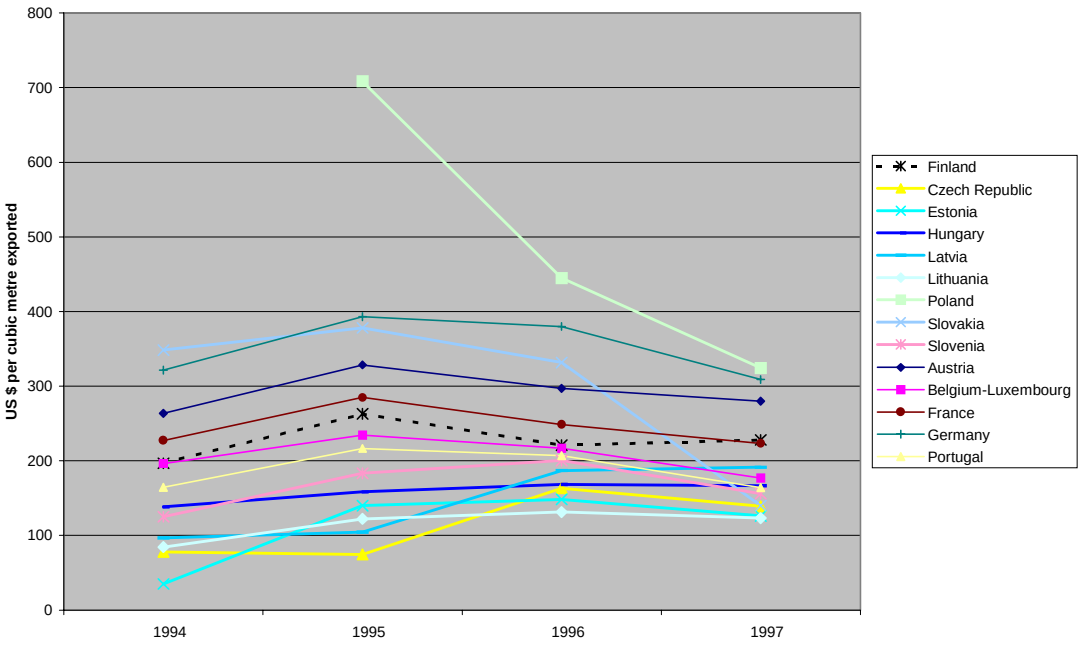


Figure I-8 Cost competitiveness of Fibreboard exports from the CEEC region

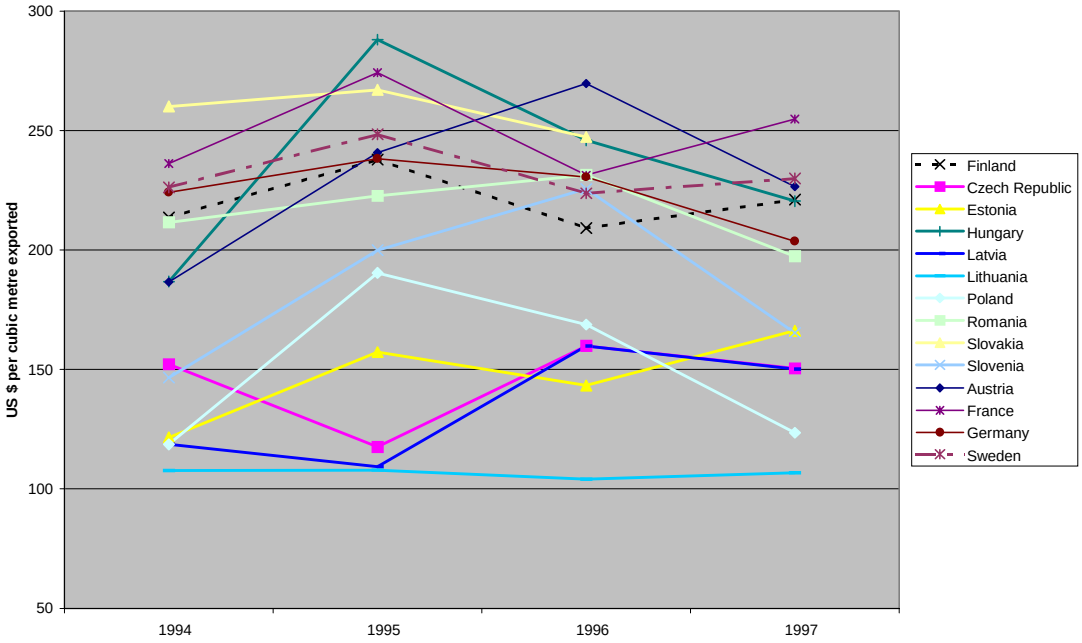


In reference to each of the main products within wood based panels it is fairly evident that CEEC-based producers have a much lower cost-basis than the main producers in each of the main EU producing countries. For example Finland is the largest producer and exporter of plywood, yet CEEC producers apparently export plywood at lower prices. In terms of particleboard, Germany is one of the largest producers and exporters (Finland less so), but again CEEC-based producers appear to export at lower prices. In the area of fibreboard, CEEC-based producers export at much lower prices. Whilst, Finland is not one of the largest pro-

ducers or exports of fibreboards, it is conceivable that fibreboards will increasingly substitute plywood panels.

Similarly, in the production and export of sawnwood, the CEEC10 share has grown from about 17% to almost 25% of exports and around 21% in the case of production. In Finland's case, the share of production has slightly dropped to about 21%, whilst exports have remained about the same at about 13%. In 1995, sawnwood was the second largest forest cluster export from Finland to the EU. Again, CEEC-based producers are competing in a key area with Finland. Moreover, CEEC producers appear to be exporting sawnwood at much lower prices than Finland, as shown in figure I-9 below.

Figure I-9 Cost competitiveness of Sawnwood exports from the CEEC region.



At the general level, industrial output of the forest-based and related industries within the CEEC10 area has also been growing rapidly over the past few years, in most cases registering double digit annual growth (especially in Estonia, Latvia and Poland). Moreover, the output of the forest-based and related industries is also growing faster than the annual growth of total industry, so it is not simply a matter of taking up the slack in capacity caused by the massive slump in output at the start of transition.

Table I-15 Growth in Industrial Output in Eastern European Forest-based and related industries (annual percentage change)

Country	Total Industry 1997	Wood, paper and printing 1997	Total Industry 1998	Wood, paper and printing 1998
Estonia	13,4	**36,0**	1,5	**23,1**
Latvia	15,0	**35,9**	2,0	**16,7**
Poland	11,5	**15,1**	4,7	**12,4**
Czech Republic	4,5	**10,5**	1,6	**6,3**
Hungary	11,1	**15,4**	12,6	**5,4**
Lithuania	0,8	**5,2**	7,0	**3,5**
Slovak Republic	2,0	**14,2**	4,6	-2,0
Bulgaria	-10,2	-21,3	-9,4	-
Slovenia	1,0	-17,1	3,7	-7,3
Romania	-5,9	-12,2	-17,0	-34,5

I-8.2 Competitiveness in Cost of Labour - wage level differentials

Within the main industries, which make up the forest cluster, a comparison of wage levels confirms the substantial wage differentials between EU producers and the so-called 'low-cost' producers of Eastern Europe. Without exception, CEEC10 producer's wage levels are - at best - under 50% of the lowest EU wage levels in each of the main branches of production. Although, the data on relative wage levels is not recent, latest figures on GDP per capita suggest that the differentials are still of the same magnitude, even today. The issue of convergence is discussed in more detail in Part II. With the exception of Slovenia, whose GDP per capita is similar to that of Portugal, most CEEC10 countries have GDP per capita levels, which range from about 50% to as low as 25% of the EU average. Therefore it is fairly obvious that CEEC-based producers have a significant cost advantage.

Table I-16 Wage Differentials between EU and CEEC Countries (1997)

Country	Salary per Employee ($US pps)					
	Sawmilling & planning of wood	Products of Wood	Paper & paper products	Publishing	Printing & related service activities	Furniture
EU producers						
Austria	17713	20678	33075	32511	28662	18224
Finland	22256	20932	31551	26529	24540	19426
France	25729	19386	25696	36891	25224	20695
Germany	24269	27466	29913	35467	31668	26706
CEEC10						
Bulgaria	534	642	930	579	968	605
Czech Republic	3078	3130	3924	5365	4265	3101
Estonia	Na	Na	Na	Na	Na	Na
Hungary	2481	*2907	4571	4267	2861	2280
Latvia	1606	3383	2528	3950	3052	2042
Lithuania	1458	1763	2820	3590	3311	1991
Poland #	Na	2918	4559	4608	4608	3051
Romania	812	812	1014	1021	1021	841
Slovak Rep	2728	2732	3910	5720	3938	2737
Slovenia	Na	10540	15546	Na	Na	Na

Source: UNIDO; C. Hazley estimates. (*1994, #1996)

Despite the relative cost advantage of labour in the CEECs, it is important to point out that the above figures are not unit costs of production. In the CEEC region, many enterprises still carry too much employees in comparison with their western counterparts. Thus, some degree of inefficiency will exist, since CEEC producers typically utilise more employees to produce one unit of production in comparison to one unit of production in the west.

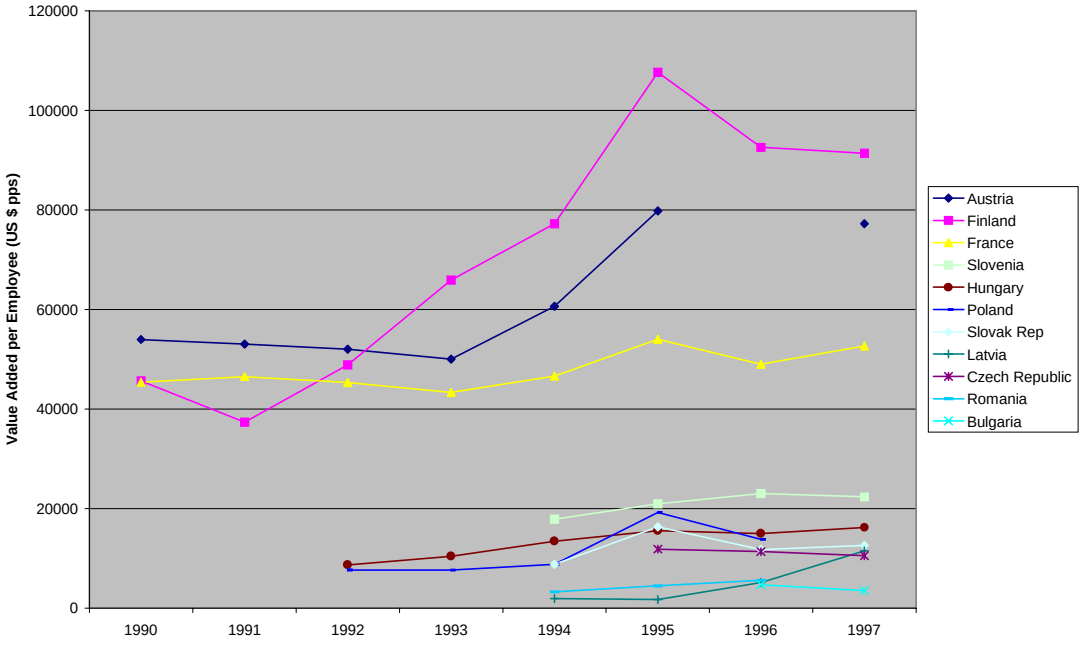
However, in most of the above sectors, employment levels are being reduced, at the same time as production levels are increasing. Hence, some areas of production are likely to be achieving higher levels of efficiency, through the shedding of labour. A further consideration worth mentioning is that of the link between foreign ownership and restructuring in the CEECs, as mentioned earlier. Empirical research on firms in the CEEC region has shown that foreign firms perform better in terms of restructuring and hence are more competitive. For example, flexibility of the labour market is important because it permits the rapid reallocation of resources to the most efficient uses and thus it is vital for economic growth. Hence, it is suggested that a good indicator of restructuring is measured by the excess job

reallocation rate. Firms and sectors that engage in restructuring destroy low productivity jobs and create high productivity ones. This leads to high job turnover and an increase in labour productivity and is particularly relevant for the emerging CEEC economies in order to move from a central planning system to a competitive market-based economy. See earlier section discussing empirical evidence on restructuring in the CEECs.

I-9 Rising Productivity

Cost advantage is one thing but merely having an advantage is not what counts it is how this advantage is put to use, that matters. To examine this aspect, an attempt has been made to compare levels of productivity, using value-added per employee as a measure. In comparison with the EU average it appears as though productivity levels in the CEECs are rising at the same rate. However, whilst employment levels in the EU have been dropping – and so helping to raise the rate of VA per employee – the employment levels in the CEEC region have been growing – thereby reducing value-added per employee levels. Therefore, it appears that productivity is actually growing faster in the CEEC region. Figure I-10 provides an indication of productivity in the pulp and paper sector in the CEEC region.

Figure I-10 Productivity of pulp and paper producers in the EU and the CEECs



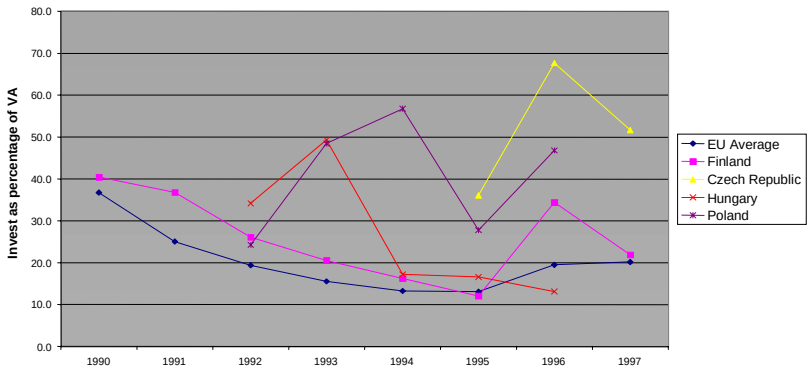
Source: OECD, UNIDO, C. Hazley estimates.

In the above figure, data for France presents a good indication of average EU levels of productivity in the pulp and paper industry. As can be seen, productivity levels are rising but still have a long way to go before catching up with average levels in the EU, not to mention the high levels of Finland. Nonetheless, it is worth remembering that production plants in the CEEC region tend to be much smaller than in major exporting countries such as Finland, Sweden and Austria. Moreover, the CEEC pulp and paper industry has been moving more towards paper conversion than paper production. Paper converting plants tend to be smaller in scale and hence, levels of productivity will again be less than in major paper producing countries such as Finland. Therefore, as CEEC producers have much lower prices than typical EU producers, it would appear that the low levels of value added (as implied above), suggest that competitiveness is based mostly on cost.

I-10 FDI into the CEEC forest-based and related industries - some examples

Despite the obvious cost advantage, one should remember that it is continuous upgrading of factors of production that helps not only to maintain a competitive position but also spawns innovation. Therefore, an attempt has been made to examine investments in machinery and equipment within the forest cluster and to compare the CEECs with that of the EU. In fact, if one compares investments in machinery and equipment as a percentage of value-added, it is evident that CEEC producers have been investing relatively more than EU countries – Finland included. Figure I-11 provides a comparison for the pulp and paper industry.

Figure I-11 Investments in machinery and equipment in the pulp and paper industry



In Figure I-11 it is quite evident that investment levels in the CEECs must be substantial, however, what type of investments are these, who are making them and in what sector of the pulp and paper industry are they being made. Section II of this report examines these issues in more detail, however, analysis shows that vast amounts of foreign investment is being made in the CEEC pulp and paper industry. One of the key target countries for pulp and paper industry investment has been Poland, which has also attracted substantial amounts of Foreign Direct Investment (FDI) in all areas of the forest cluster, as shown in Tables I-17 to I-22. In fact, FDI into the forest cluster in Poland represents a massive 12% of all FDI being 'pumped' into the Polish manufacturing industry by foreigners. With almost 40 million inhabitants Poland offer huge market potential. In addition, its proximity to Germany also make it a viable location to sight new low-cost production operations.

Table I-17 Foreign Direct Investment into Poland (Millions of USD)

Sector Investments	1997	1998	1999
Manufacturing	11042	15912	16419
Pulp, paper, pub & print	1158	1354	1360
Furniture and consumer goods			361
Wood & wooden products		392	240
Total forest cluster	1158	1746	1961
% of Manufacturing	*10.5*	*11.0*	*11.9*
Total FDI	20588	30651	35508
% of FDI	*5.6*	*5.7*	*5.5*

Source: PAIZ (The Polish Agency for Foreign Investment)

Table I-18 FDI into the Polish Pulp, Paper & Paperboard sector

			FDI as of 1999 (mill of USD)
IPC**	USA	Pulp and paper	465
Framondi	Austria	Paper industry	175
Intercellulosa AB	Sweden	Cellulose, paper, cardboards	108
Proctor & Gamble	USA	Personal hygiene products	132
Amcor	Australia	Paper packaging prod	26
David S. Smith Packaging	UK	Paper industry	22
Munksjo AB	Sweden	Packaging	13
Overseas Enterprises Company	Switzerland	Packaging	12
Metsä Serla	Finland	Paper industry	10
KZP Projekti Uddevalla AB	Sweden	Paper industry	9
Stabernack Jr. Partner	Germany	Packaging Prod	7
Inter Paper Holding AG	Lichtenstein	Paper prod	6
SCA Molnlycke	Netherlands	Personal hygience prod	4
Otor	France	Paper prod	2
Kronotec	Lichtenstein	Paper industry	1
Total FDI			*991*

Source: PAIZ (The Polish Agency for Foreign Investment)

Table I-19 FDI into the Polish Printing and Publishing sector

			FDI as of 1999 (mill of USD)
Passauer Neue Presse	Germany	Press	98
Orkla Media	Norway	Press	49
H. Bauer Verlag	Germany	Print & pub	29
GTE International	USA	Pub & print	26
Gruner + Jahr	Germany	Publishing	11
Luxembourg Cambridge Holding Group	International	Publishing	8
R. R. Donnelley Intern Inc	USA	Publishing	8
Nynex International Publishing Co	USA	Publishing	5
Seregni SpA	Italy	Printing	4
Cartotechniche Chierese e Tiferante	Italy	Printing services	3
Jurgen Marquard	Germany	Publishing	2
Total Investments			*243*

Source: PAIZ (The Polish Agency for Foreign Investment)

Table I-20 FDI into the Polish Forest industry related machine building

			FDI as of 1997 (mill of USD)
Beloit Corp	USA	Machinery for Paper Ind	26
Stihl	Germany	Man of forestry tools	2

Source: PAIZ (The Polish Agency for Foreign Investment)

Table I-21 FDI into the Polish Furniture sector

			FDI as of 1999 (mill of USD)
White eagle industries	USA	Furniture	80
IKEA*	Sweden	Furniture prod & dist	150
St. Lewandowski	Sweden	Furniture prod	20
K-H Klose Sitzmoebwerke	Germany	Furniture prod	11
MM Beteiligungen	Germany	Furniture prod	7
Skane Gripen Aktiebolag	Sweden	Furniture prod	3
Schieder	Germany	Furniture prod	2
Alno AG	Germany	Furniture prod	2
Flair Polstermoebel GmbH	Germany	Furniture prod	2
Assman GmbH	Germany	Furniture prod	2
Jockenhoefer Verwaitung GmbH	Germany	Furniture prod	2
B.V. Foedor	Netherlands	Furniture prod	1
Carl E. Klote	Sweden	Furniture prod	1
Total Investments			*282*

Source: PAIZ (The Polish Agency for Foreign Investment)

Table I-22 FDI into the Polish Mechanical Wood sector

			FDI as of 1999 (mill of USD)
Krono-Holding**	Switzerland	Wood products & Furniture	153
Steffen Pionki	Germany	Wood industry & Furniture	4
TLH Verwaltungs und Beteiligungs	Austria	Wood industry	3
Vekra AG	Germany	Window panels prod	3
Svenska Scanmark	Sweden	Wood industry Sawmill	3
Aluplast	Germany	Windows and doors	2
Arnold Dammers	Germany	Construction woodwork	2
Come Holz Project	Germany	Wood products	1
Dresdner Fensterbau	Germany	Window prod	1
Total investments			*171*

Source: PAIZ (The Polish Agency for Foreign Investment)

I-11 Possible impacts of EU-enlargement on the Finnish forest industries

Continued unrest in the Balkans region in south-east Europe demonstrates, yet again, that peace in Europe is not assured. EU-enlargement to the east, is therefore not only seen as a means to gain access to new markets, but a process which will also deliver increased stability, security and better living standards for the inhabitants of the CEEC region, and Europe as a whole.

Despite some issues becoming bargaining tools, EU-enlargement will nevertheless go ahead at different rates for each of the candidate countries, in line with economic development in each country. As such, the impacts of enlargement will continue to be felt more gradually, as has been the case over the last decade. Given that trade re-orientation has already occurred, for the most part, improvement of transportation links to and from the CEEC region, may not make such a huge difference to the forest industry, directly. However, some current trends point to the conclusion that developments in central and eastern Europe, will alter the landscape in terms of the location of production facilities in some key areas for the Finnish forest industry, as discussed below.

Wood and wood products industry:

In the area of sawnwood, CEEC producers already have high shares of the EU import market. Evidence, presented here also shows that CEEC producers are able to export their products at substantially lower prices. Given the relatively low cost of labour, and other inputs, not to mention the advantageous proximity to main EU markets, likely means that CEEC-based producers of sawnwood will continue to gain market share in the EU region, but perhaps in niche areas (related to raw material characteristics).

In regards to the question of whether CEEC producers of wood and wood products are moving up the value added ladder, it appears that some countries are making improvements in this area, while others are slipping down. Evidence shows that some countries have began to export more raw material type products, whereas other countries have been able to add more value to the raw material, before exporting it. Whilst, this may suggest more competition within the CEEC region itself, it is also indicative of the lack of investment in some countries as well. As the focus of this report has been more on fibre-based packaging industry, it has not been possible to look further into investments made in the wood and wood products sector.

In the area of wood based panels, CEEC producers of plywood, particleboard and fibreboard appear to be very active and competitive within EU markets. CEEC producers of these products also appear to have a significant cost advantage, being able to export at lower

prices. In some countries, plywood products are increasingly being substituted with lower cost fibreboard and particle board. Although, Finland does not produce a great deal of fibreboard, CEEC producers do, and hence this will likely affect the ability of Finnish producers of plywood to maintain, never mind increase, market shares in EU exports. Whether this will result in higher levels of specialisation for Finnish producers and closure of certain facilities producing lower value-added plywood products, is not clear. However, one method for companies to maintain market share is to shift production capacity outside Finland, into the CEEC region, and hence opportunities for companies with production know-how will likely emerge more as a necessity than as a choice. Alternatively, the challenge must be to find new ways of adding value to the products before they are shipped.

Pulp and paper industry:

One of the most profound changes, which will indirectly affect the future of the Finnish fibre-based packaging sector, is that of the shift in the manufacturing base of various sectors of industry to lower cost producing countries of the CEEC region. In this way, a great deal of demand for packaging and advertising material is already being and will continue to be created closer to centre of Europe, in several of the central and eastern European countries. Already, Hungary, the Czech Republic and Poland have attracted substantial investments in manufacturing plants in several sectors.

Within the packaging industry, the service oriented nature of working with the customer means that packaging plants must be in close proximity to the customer's plant. Therefore, in the long term a larger proportion of certain grades of packaging paper and board will shift from Finland closer to the customers. Whilst it is hoped that growth in packaging demand will be met by increased capacity in the CEEC region, and that any loss of production in Finland will be met by growth in other areas of packaging, a key issue is whether it will be possible to keep the higher value added production capacity in Finland. However, given the cost competitiveness of 'other paper and paperboard' exports from the CEECs, and the fact that most of the production output is transportation packaging, competitiveness is mostly in the lower value added grades, and hence, in the medium term, it is likely that Finnish companies will be able to serve foreign markets with higher value added carton boards.

In regards to the higher value added printing and writing papers, CEEC-based production is fairly minimal, however, as evidenced in Part II, levels of investment and production in graphic papers are growing quickly. Whilst, most of the growth in demand in graphic papers is being fed mostly by imports, in the long run, it must be anticipated that more substantial investments will be set up closer to the demand. Conceivably then, there is a threat that some CEEC-based producers could utilise location/cost advantages to gain market share of main EU markets (as exemplified by some investors in Slovenia and the Czech Republic).

In the area of pulp fibre raw materials, an opportunity for Finnish companies to gain access to additional sources of good quality wood fibre via the potential construction of a pulp mill in the nearby Baltic countries. Indeed, it would seem that the Baltic countries will become a pulp-fibre basin by 2005/6, by when three possible pulp mills will come on stream. Nonetheless, political and environmental considerations will likely dictate whether any or either of the projects actually go ahead. Should all current projects actually go ahead, there would likely exist some degree of over supply, in the short term, and hence, this would impact pulp prices in Europe, and potentially reduce input costs for mills which are not integrated. However, in the long term there would also exist the possibility of setting up a large paper mill near one of the pulp mills. Whether this constitutes an opportunity or threat would really

depend on present negotiations between respective investors and governments in the Baltic countries concerned.

Furniture industry:

The evidence presented here clearly shows that wood furniture are among some of the key products exported from the CEEC region. In nearly all the CEECs, exports of wooden furniture make up a high proportion of FBI exports to the EU. Given that the CEEC producers have substantially lower labour costs, together with the fact that wood furniture production is more labour intensive, then it may be no surprise that CEEC-based producers of wooden furniture have gained considerable shares of the EU import market, over the past decade. In the short- to medium-term, this low cost advantage does not seem likely to disappear, since, convergence of living standards and wage levels appears to be occurring only very slowly at best.

FDI into the Polish furniture industry appears to confirm that CEEC exports of furniture to the EU are increasingly stemming from foreign owned plants, and hence, these exports are not purely low added value type products. Therefore, it is unlikely that Finnish furniture manufacturers will be able to compete in terms of costs, and so will find it tougher to make progress in the higher end of furniture products. Relocation of knock-down furniture production to the CEECs through companies such as IKEA has been occurring over the past number of years, and will likely continue while significant cost advantages exist. Although, it is thought that foreign investment in Baltic furniture production had been mainly in the production of furniture components, producers will endeavour to move up the value added ladder away from sub-contracting relationships to produce finished items of furniture. For Finnish producers therefore, increasing competition in the domestic market will come from companies operating from Baltic countries.

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Appendix I-A.1 Top EU Imports from Bulgaria 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC	Ave EU importer (%)	Bulgaria share	Bulgaria (value $ mill)
Furniture, wooden, nes	4589	57	18	4	0	13,0
Chemical wood pulp, soda/sulphate, non-conif, semi-bl/bleachd, nes	2417	49	2	4	0	10,9
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	0	9,3
Lumber, non-coniferous nes	986	13	17	1	1	7,9
Seats with wooden frames, nes	742	31	18	2	1	7,7
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	4	7,7
Fuel wood	39	30	60	2	13	5,3
Fiberboard >0.5 g/cm2 <0.8 g/cm2 nes	174	66	7	5	3	4,8
Kaolin and other kaolinic clays, whether or not calcined	772	50	3	3	1	4,1
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	4	3,7
Bedroom furniture, wooden, nes	1509	65	20	4	0	3,1
Lumber, Beech	428	36	31	2	1	3,0
Seats with wooden frames, upholstered nes	2383	62	27	4	0	3,0
Articles of apparel and clothing accessories, of paper, nes	60	34	5	2	5	2,9
Wood articles nes	1119	33	31	2	0	2,3
Wallpaper and similar wall coverings, nes	161	91	4	7	1	2,2
Casks, barrels etc (cooper's prods) & parts of wood, incl staves	108	46	8	3	2	2,2
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	49	12	3	0	1,9
Tableware and kitchenware, of wood	164	24	13	2	1	1,8
Particle board of wood	1491	84	8	6	0	1,6
Logs, poles, coniferous nes	1335	40	30	3	0	1,6
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176	29	25	2	1	1,5
Wallpaper, coatd/coverd on the face side w a decoratd layer of plastic	174	95	2	6	1	1,4
Lumber, Oak	607	21	12	1	0	1,4
Wood charcoal (incl shell or nut charcoal)	107	17	25	1	1	1,4
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	40	6	3	0	1,3
Anhydrous ammonia	356	32	13	2	0	1,2
Mach-tls for workg wod/crk/bne/hrd rubber/hrd plas/sim hrd mat nes	352	80	4	5	0	1,2
Fiberboard >0.8 g/cm2 nes	340	83	5	6	0	1,2
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	0	1,1
Planing/millg or mouldg (by cutting) mach for workg wood/plastic etc	193	85	6	6	1	1,1
Logs, non-coniferous nes	1010	20	22	1	0	1,0
Sodium hydroxide (caustic soda) in aqueous solution	537	82	4	6	0	1,0
Panels, 1 outer ply coniferous wood nes	153	71	18	5	1	1,0
Pallets, box pallets and other load boards, wooden	732	64	33	4	0	0,9
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	0	0,7
Mach which can c/o diff typ of mach op w/o tl chang bwn op f wood	211	90	3	6	0	0,7
Paper, household/sanitary, rolls of a w >36 cm, sheets 1 side >36 cm	714	79	3	5	0	0,6
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	0	0,6
Parts of printing machinery & machines for uses ancillary to printing	1094	59	2	4	0	0,5
Registers, account books, note books, diaries & similar artls of paper	426	58	3	4	0	0,5
Paper, fluting (corrug medium), in rolls, semi-chemic, uncoated	301	78	13	6	0	0,5
Pumps nes	681	63	1	4	0	0,4
Grinding/sandg o polishg mach for workg wood/cork/bone/hard rubb	85	78	3	5	0	0,4
Particle board of other ligneous materials	65	86	6	6	1	0,4
Sawing machines for working wood/cork/ bone/hard rubber/plastics	334	71	3	5	0	0,3
Press f the mfr of part/fib board/f treat wood etc nes hvg indiv func	179	86	2	6	0	0,3
Packing or wrapping machinery nes	1206	69	2	5	0	0,3
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	0	0,3
Paper, Kraftliner, in rolls, unbleached, uncoated	1208	52	5	4	0	0,3
Knives & blades for leather, paper, tobacco machines & other industs	186	62	4	4	0	0,2

Appendix I-A.2 Top EU Imports from the Czech Republic 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	*Czech Republic	*Czech value ($ mill)
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	3	191,8
Logs, poles, coniferous nes	1335	40	30	3	10	133,2
Trade advertising material, commercial catalogue and the like	1915	80	6	5	6	105,8
Furniture, wooden, nes	4589	57	18	4	2	72,5
Chemical wood pulp, sulphite, coniferous semi-bleached or bleached,	335	46	18	4	15	51,2
Pallets, box pallets and other load boards, wooden	732	64	33	4	7	51,0
Builder's joinery and carpentery of wood nes	731	47	24	3	6	42,1
Taps, cocks, valves and similar appliances, nes	4950	75	3	5	1	36,7
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	9	33,2
Wood articles nes	1119	33	31	2	3	29,1
Seats with wooden frames, upholstered nes	2383	62	27	4	1	28,7
Bedroom furniture, wooden, nes	1509	65	20	4	2	26,9
Paper, sack craft, in rolls, unbleached, uncoated	300	77	17	6	9	26,9
Sanitary articles of paper, incl sanit towels & napkin (diapers) f babies	1985	91	3	6	1	22,9
Kaolin and other kaolinic clays, whether or not calcined	772	50	3	3	3	22,1
Pigments and preparations based on titanium dioxide	1628	74	4	5	1	19,3
Books, brochures, leaflets and similar printed matter, nes	3402	59	2	4	1	18,6
Paper, fine, woodfree, in rol/sheets, >/=40g/m2, </=150g/m2, uncted,	2896	84	6	6	1	17,1
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	5	16,9
Parts of printing machinery & machines for uses ancillary to printing	1094	59	2	4	2	16,7
Particle board of wood	1491	84	8	6	1	15,8
Seats with wooden frames, nes	742	31	18	2	2	14,5
Doors and their frames and thresholds, of wood	672	53	17	4	2	14,0
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	13	13,8
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	10	13,3
Windows, French-windows and their frames, of wood	410	62	25	4	3	13,3
Chemical wood pulp, soda or sulphate, conifer, semi-bl or bleached,	3258	39	1	3	0	12,5
Shuttering for concrete constructional work, of wood	87	60	40	4	14	12,5
Filtering or purifying machinery and apparatus for liquids nes	608	62	3	4	2	11,7
Wood (lumber) continuously shaped coniferous (softwood)	321	83	8	6	3	11,0
Parquet panels, including tiles of wood	794	69	8	5	1	10,8
Offset printing machinery nes	1490	80	1	5	1	10,6
Paper, wrapping, sulphite, rolls/sheets, uncoated	76	60	15	4	14	10,4
Newsprint, in rolls or sheets	3279	69	1	5	0	10,3
Parts of mach for making or finishing paper or paperboard mach	675	75	4	5	1	9,2
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	1	9,2
Packing or wrapping machinery nes	1206	69	2	5	1	9,0
Office furniture, wooden, nes	694	81	9	5	1	8,8
Sacks and bags, of paper, nes; including cones	424	74	6	5	2	8,2
Sheets nes, panels/tile etc of asbestos-cement, cellulose fib-cement	69	75	16	5	12	7,9
Lumber, Oak	607	21	12	1	1	7,5
Panels, 1 outer ply coniferous wood nes	153	71	18	5	5	7,5
Paper, craft, rolls or sheets, </=150g/m2, uncoated, nes	312	87	5	6	2	7,4
Sawdust and wood waste and scrap	131	70	15	5	6	7,3
Pictures, designs and photographs	268	71	4	5	3	7,1
Logs, Beech	252	68	16	5	3	6,8
Corrugatd sheets of asbestos-cement, of cellulose fibre-cement	90	91	8	6	8	6,8
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	40	6	3	1	6,8
Envelopes of paper	328	83	5	6	2	6,6
Paper, craft, in roll/sheet, bl>95%chem pulp,</=150g/m2 clay ctd	202	72	3	5	3	6,4
Paper, in rolls or sheets, weighing 150 g/m2 or less, uncoated, nes	834	88	2	6	1	6,3
Machinery for making up paper pulp, paper or paperboard nes	191	60	4	4	3	6,3

Appendix I-A.3 Top EU Imports from Estonia 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Estonia	Estonia value ($ mill)
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	2	114,1
Logs, poles, coniferous nes	1335	40	30	3	8	100,2
Logs, non-coniferous nes	1010	20	22	1	7	71,2
Furniture, wooden, nes	4589	57	18	4	1	35,7
Bedroom furniture, wooden, nes	1509	65	20	4	1	21,7
Seats with wooden frames, upholstered nes	2383	62	27	4	1	15,3
Wood in chips, coniferous	165	64	15	5	9	15,2
Wood articles nes	1119	33	31	2	1	13,5
Lumber, non-coniferous nes	986	13	17	1	1	11,8
Particle board of wood	1491	84	8	6	1	10,6
Pallets, box pallets and other load boards, wooden	732	64	33	4	1	10,1
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	49	12	3	2	9,5
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	4	8,1
Builder's joinery and carpentery of wood nes	731	47	24	3	1	8,1
Windows, French-windows and their frames, of wood	410	62	25	4	2	7,3
Seats with wooden frames, nes	742	31	18	2	1	7,2
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	1	6,8
Anhydrous ammonia	356	32	13	2	2	6,4
Sawdust and wood waste and scrap	131	70	15	5	4	5,1
Paper, sack craft, in rolls, unbleached, uncoated	300	77	17	6	1	3,2
Wood (lumber) continuously shaped coniferous (softwood)	321	83	8	6	1	3,1
Binders, folders and file covers, of paper	165	72	13	5	2	2,8
Lumber, Oak	607	21	12	1	0	2,4
Wooden frames for paintings, photographs mirrors or similar objects	203	39	11	3	1	2,1
Fiberboard not worked or surface covered nes (0.35 g/cm2 & less)	32	74	24	6	6	2,0
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	1	2,0
Parts of mach for making or finishing paper or paperboard mach	675	75	4	5	0	1,9
Panels, 1 outer ply coniferous wood nes	153	71	18	5	1	1,7
Fuel wood	39	30	60	2	4	1,6
Fiberboard nes (0.35 g/cm2 & less)	81	40	16	3	2	1,4
Newspapers, journals and periodicals, nes	2173	85	1	6	0	1,4
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	40	6	3	0	1,4
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	0	1,3
Envelopes of paper	328	83	5	6	0	1,3
Doors and their frames and thresholds, of wood	672	53	17	4	0	1,3
Kitchen furniture, wooden, nes	829	91	3	6	0	1,3
Statuettes and other ornaments of wood	222	17	3	1	1	1,3
Paper, sack craft, in rolls, o/t unbl, uncoated	135	92	6	6	1	1,2
Pictures, designs and photographs	268	71	4	5	0	1,0
Paper, craft, rolls/sheets,</=150g/m2, unbleached, uncoated, nes	193	83	9	6	1	1,0
Paper, Kraftliner, in rolls, unbleached, uncoated	1208	52	5	4	0	0,8
Tableware and kitchenware, of wood	164	24	13	2	1	0,8
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	0	0,8
Books, brochures, leaflets and similar printed matter, nes	3402	59	2	4	0	0,8
Paper, fine, woodfree, in rol/sheets,>/=40g/m2,</=150g/m2, uncoated	2896	84	6	6	0	0,8
Office furniture, wooden, nes	694	81	9	5	0	0,8
Parts of mach for making pulp of fibrous cellulosic material	204	80	1	5	0	0,8
Poles, piles etc, coniferous, pointed but not sawn	41	47	48	3	2	0,7
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	0	0,7
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	1	0,6
Wood charcoal (incl shell or nut charcoal)	107	17	25	1	1	0,6
Registers, account books, note books, diaries & similar artcls o paper	426	58	3	4	0	0,6
Poles, piles etc, non-coniferous, pointed but not sawn	20	41	37	3	3	0,5
Veneer, coniferous (softwood) less than 6 mm thick	155	58	2	4	0	0,5

Appendix I-A.4 Top EU Imports from Hungary 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Hungary	Hungary value ($ mill)
Seats with wooden frames, upholstered nes	2383	62	27	4	2	54,5
Paper, fine, woodfree, in rol/sheets,>/=40g/m2,</=150g/m2, uncoated	2896	84	6	6	1	38,4
Lumber, non-coniferous nes	986	13	17	1	4	36,5
Furniture, wooden, nes	4589	57	18	4	1	33,0
Pallets, box pallets and other load boards, wooden	732	64	33	4	4	30,6
Logs, non-coniferous nes	1010	20	22	1	3	29,5
Paper, copying/transfer, nes	71	52	38	4	38	26,8
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	2	20,0
Lumber, Oak	607	21	12	1	3	17,8
Sanitary articles of paper, incl sanit towels & napkin (diapers) f babies	1985	91	3	6	1	17,7
Doors and their frames and thresholds, of wood	672	53	17	4	3	17,2
Taps, cocks, valves and similar appliances, nes	4950	75	3	5	0	14,5
Parquet panels, including tiles of wood	794	69	8	5	2	12,8
Logs, poles, coniferous nes	1335	40	30	3	1	12,0
Lumber, Beech	428	36	31	2	3	11,4
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	0	9,3
Paper, fine, cut to size or shape, nes	1291	75	7	5	1	9,3
Wood articles nes	1119	33	31	2	1	9,3
Logs, Oak	116	66	13	5	8	9,0
Books, brochures, leaflets and similar printed matter, nes	3402	59	2	4	0	8,8
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	2	8,6
Paper, in rolls or sheets, weighing 150 g/m2 or less, uncoated, nes	834	88	2	6	1	8,1
Sacks and bags, of paper, nes; including cones	424	74	6	5	2	7,6
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	1	7,2
Paper, in rolls o sheets, coated/impregnatd o coverd with plastics,	1333	79	2	5	1	6,9
Builder's joinery and carpentery of wood nes	731	47	24	3	1	6,6
Particle board of wood	1491	84	8	6	0	6,6
Fuel wood	39	30	60	2	16	6,4
Seats with wooden frames, nes	742	31	18	2	1	5,9
Cartons, boxes and cases, of corrugated paper or paperboard	1022	87	1	6	1	5,8
Logs, Beech	252	68	16	5	2	5,4
Matches	58	62	18	4	9	5,0
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176	29	25	2	3	4,8
Bedroom furniture, wooden, nes	1509	65	20	4	0	4,4
Sodium hydroxide (caustic soda) in aqueous solution	537	82	4	6	1	4,3
Moulded or pressed articles of paper pulp, nes	165	80	4	5	3	4,3
Wood charcoal (incl shell or nut charcoal)	107	17	25	1	4	4,1
Office furniture, wooden, nes	694	81	9	5	1	4,0
Wooden frames for paintings, photographs mirrors or similar objects	203	39	11	3	2	4,0
Poles, piles etc, non-coniferous, pointed but not sawn	20	41	37	3	20	3,9
Windows, French-windows and their frames, of wood	410	62	25	4	1	3,6
Chemical pulps of other fibrous material (o/t cotton linters)	37	43	9	5	9	3,5
Fiberboard >0.8 g/cm2 nes	340	83	5	6	1	3,3
Paper, fluting (corrugating medium), in rolls, semi-chem uncoted	301	78	13	6	1	3,3
Paper, sack craft, in rolls, unbleached, uncoated	300	77	17	6	1	3,2
Cartons, boxes & cases, folding, of non-corrug paper or board	1486	90	1	6	0	3,2
Casks, barrels etc (cooper's prods) & parts of wood, incl staves	108	46	8	3	3	3,1
Paper, greaseproof, in rolls or sheets	101	67	8	5	3	3,0
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	1	2,8
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	2	2,7
Aluminium sulphate	22	68	25	6	12	2,6

Appendix I-A.5 Top EU Imports from Lithuania 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Lithuania	Lithuania value ($ mill)
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	1	71,3
Furniture, wooden, nes	4589	57	18	4	1	23,9
Lumber, non-coniferous nes	986	13	17	1	2	20,7
Wood articles nes	1119	33	31	2	1	15,0
Pallets, box pallets and other load boards, wooden	732	64	33	4	2	12,0
Logs, non-coniferous nes	1010	20	22	1	1	11,5
Bedroom furniture, wooden, nes	1509	65	20	4	1	9,2
Logs, poles, coniferous nes	1335	40	30	3	0	6,0
Seats with wooden frames, upholstered nes	2383	62	27	4	0	6,0
Lumber, Oak	607	21	12	1	1	5,4
Builder's joinery and carpentery of wood nes	731	47	24	3	1	4,6
Seats with wooden frames, nes	742	31	18	2	1	4,2
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	49	12	3	1	3,9
Kitchen furniture, wooden, nes	829	91	3	6	0	2,7
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176	29	25	2	1	2,5
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	1	2,2
Paper, corrugated, in rolls or sheets	190	90	2	6	1	1,8
Windows, French-windows and their frames, of wood	410	62	25	4	0	1,8
Fiberboard not worked or surface covered nes (0.35 g/cm2 & less)	32	74	24	6	5	1,7
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	0	1,6
Particle board of wood	1491	84	8	6	0	1,4
Wood (lumber) continuously shaped coniferous (softwood)	321	83	8	6	0	1,2
Casks, barrels etc (cooper's prods) & parts of wood, incl staves	108	46	8	3	1	0,8
Panels, 1 outer ply coniferous wood nes	153	71	18	5	1	0,8
Fiberboard >0.8 g/cm2 nes	340	83	5	6	0	0,8
Tools, tool bodies & handles, brooms/brush bodies & handls of wood	79	39	14	3	1	0,7
Poles, piles etc, coniferous, pointed but not sawn	41	47	48	3	2	0,7
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	1	0,6
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	0	0,6
Doors and their frames and thresholds, of wood	672	53	17	4	0	0,6
Cutting machines for paper pulp, paper or paperboard of all kinds	236	72	1	5	0	0,5
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	40	6	3	0	0,5
Tableware and kitchenware, of wood	164	24	13	2	0	0,4
Fiberboard nes (0.35 g/cm2 & less)	81	40	16	3	0	0,4
Densified wood, in blocks, plates, strips or profile shapes	67	59	7	4	1	0,4
Paper, craft, rolls or sheets, </=150g/m2, uncoated, nes	312	87	5	6	0	0,3
Wood in chips, coniferous	165	64	15	5	0	0,3
Sawdust and wood waste and scrap	131	70	15	5	0	0,3
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	0	0,3
Office furniture, wooden, nes	694	81	9	5	0	0,2
Pictures, designs and photographs	268	71	4	5	0	0,2
Sanitary articles of paper, incl sanit towels & napkin (diapers) f babies	1985	91	3	6	0	0,2
Parquet panels, including tiles of wood	794	69	8	5	0	0,2
Fuel wood	39	30	60	2	0	0,2
Logs, Beech	252	68	16	5	0	0,1
Pts of mach for makg up paper pulp, paper or board, incl cuttg mach	393	70	3	5	0	0,1
Mach f fil/clos/seal/etc.btle/can/box/ bag/ctnr nes, mach f aeratg bev	878	73	1	5	0	0,1
Trade advertising material, commercial catalogue and the like	1915	80	6	5	0	0,1
Wood charcoal (incl shell or nut charcoal)	107	17	25	1	0	0,1
Lumber, Beech	428	36	31	2	0	0,1

Appendix I-A.6 Top EU Imports from Latvia 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Latvia	Latvia value ($ mill)
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	6	350,0
Logs, non-coniferous nes	1010	20	22	1	9	88,2
Logs, poles, coniferous nes	1335	40	30	3	6	80,2
Lumber, non-coniferous nes	986	13	17	1	4	38,3
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	49	12	3	6	35,0
Builder's joinery and carpentery of wood nes	731	47	24	3	3	23,9
Furniture, wooden, nes	4589	57	18	4	0	22,4
Wood articles nes	1119	33	31	2	1	14,3
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	40	6	3	2	10,5
Pallets, box pallets and other load boards, wooden	732	64	33	4	1	10,1
Bedroom furniture, wooden, nes	1509	65	20	4	1	8,2
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	1	7,7
Wood in chips, coniferous	165	64	15	5	3	5,4
Particle board of wood	1491	84	8	6	0	4,9
Panels, 1 outer ply coniferous wood nes	153	71	18	5	3	4,9
Anhydrous ammonia	356	32	13	2	1	4,7
Seats with wooden frames, nes	742	31	18	2	1	4,5
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	2	4,1
Seats with wooden frames, upholstered nes	2383	62	27	4	0	3,8
Wood (lumber) continuously shaped coniferous (softwood)	321	83	8	6	1	3,5
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	3	2,9
Sawdust and wood waste and scrap	131	70	15	5	2	2,7
Wood in chips, non-coniferous	38	83	11	6	7	2,7
Fuel wood	39	30	60	2	5	2,1
Poles, treated/painted etc	48	84	9	6	4	2,0
Windows, French-windows and their frames, of wood	410	62	25	4	0	1,6
Wood charcoal (incl shell or nut charcoal)	107	17	25	1	1	1,5
Lumber, Oak	607	21	12	1	0	1,1
Shuttering for concrete constructional work, of wood	87	60	40	4	1	1,1
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	1	1,1
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	0	1,0
Fiberboard >0.8 g/cm2 nes	340	83	5	6	0	0,9
Paper, in rolls or sheets, clay coated, nes	168	84	4	6	0	0,7
Kitchen furniture, wooden, nes	829	91	3	6	0	0,7
Books, brochures, leaflets and similar printed matter, nes	3402	59	2	4	0	0,6
Splitting/slicing or paring mach for wrkg wood/cork/bne/hrd rubber etc	54	87	4	6	1	0,6
Tools, tool bodies & handles, broom/brush bodies & handles of wood	79	39	14	3	1	0,5
Doors and their frames and thresholds, of wood	672	53	17	4	0	0,5
Offset printing machinery nes	1490	80	1	5	0	0,5
Poles, piles etc, coniferous, pointed but not sawn	41	47	48	3	1	0,5
Office furniture, wooden, nes	694	81	9	5	0	0,4
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176	29	25	2	0	0,4
Paper, in rolls o sheets, coated/impregnatd o coverd with plastics, ne	1333	79	2	5	0	0,4
Poles, piles etc, non-coniferous, pointed but not sawn	20	41	37	3	2	0,4
Paper, in rolls or sheets, weighing 150 g/m2 or less, uncoated, nes	834	88	2	6	0	0,3
Brochures, leaflets and similar printed matter, in single sheets	564	79	1	5	0	0,2
Lumber, Beech	428	36	31	2	0	0,2
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	0	0,2
Paper, in rolls or sheets, weighing 225 g/m2 or more, uncoated, nes	279	87	1	6	0	0,2
Mach f fil/clos/seal/etc.btle/can/box/ bag/ctnr nes, mach f aeratg bev	878	73	1	5	0	0,2
Cutting machines for paper pulp, paper or paperboard of all kinds	236	72	1	5	0	0,2

Appendix I-A.7 Top EU Imports from Poland 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Poland	Poland value ($ mill)
Seats with wooden frames, upholstered nes	2383	62	27	4	20	476,2
Furniture, wooden, nes	4589	57	18	4	7	333,4
Wood articles nes	1119	33	31	2	21	233,1
Bedroom furniture, wooden, nes	1509	65	20	4	11	164,7
Pallets, box pallets and other load boards, wooden	732	64	33	4	15	111,5
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	2	97,8
Paper, fine, woodfree, in rol/sheets,>/=40g/m2,</=150g/m2, uncoated	2896	84	6	6	3	77,6
Paper, fine, cut to size or shape, nes	1291	75	7	5	5	69,2
Particle board of wood	1491	84	8	6	5	68,1
Builder's joinery and carpentery of wood nes	731	47	24	3	7	54,3
Paper, Kraftliner, in rolls, unbleached, uncoated	1208	52	5	4	4	53,3
Windows, French-windows and their frames, of wood	410	62	25	4	11	46,6
Seats with wooden frames, nes	742	31	18	2	5	39,8
Lumber, Beech	428	36	31	2	8	34,5
Doors and their frames and thresholds, of wood	672	53	17	4	5	31,8
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	13	27,6
Office furniture, wooden, nes	694	81	9	5	4	27,4
Taps, cocks, valves and similar appliances, nes	4950	75	3	5	1	26,2
Anhydrous ammonia	356	32	13	2	7	25,9
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176	29	25	2	14	24,9
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	7	24,2
Lumber, Oak	607	21	12	1	4	22,7
Pigments and preparations based on titanium dioxide	1628	74	4	5	1	22,4
Lumber, non-coniferous nes	986	13	17	1	2	20,6
Poles, piles etc, coniferous, pointed but not sawn	41	47	48	3	40	16,5
Paper, fluting (corrugat medium), in rolls, semi-chem, uncoated	301	78	13	6	5	15,5
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	40	6	3	2	14,8
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	2	14,7
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	2	14,7
Wood charcoal (incl shell or nut charcoal)	107	17	25	1	14	14,6
Paper, sack craft, in rolls, unbleached, uncoated	300	77	17	6	5	14,5
Binders, folders and file covers, of paper	165	72	13	5	9	14,2
Paper, fine, woodcontaining, in rolls or sheets, uncoated, nes	2069	80	1	5	1	13,2
Books, brochures, leaflets and similar printed matter, nes	3402	59	2	4	0	12,9
Parts of mach for making or finishing paper or paperboard mach	675	75	4	5	2	12,9
Kitchen furniture, wooden, nes	829	91	3	6	1	12,1
Chemical wood pulp, soda/sulphate, non-coniferous, semi-bl/bleachd,	2417	49	2	4	0	12,0
Melamine	187	59	14	5	6	11,9
Parquet panels, including tiles of wood	794	69	8	5	1	11,6
Paper, multi-ply, in rolls or sheets, clay coated, nes	1408	95	1	6	1	10,9
Sodium hydroxide (caustic soda) in aqueous solution	537	82	4	6	2	10,5
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	49	12	3	2	10,3
Newspapers, journals and periodicals, nes	2173	85	1	6	0	10,2
Logs, poles, coniferous nes	1335	40	30	3	1	9,6
Fiberboard >0.5 g/cm2 <0.8 g/cm2 not worked or surface covered	366	92	3	6	3	9,3
Wooden frames for paintings, photographs mirrors or similar objects	203	39	11	3	4	8,8
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	6	8,7
Tableware and kitchenware, of wood	164	24	13	2	5	8,4
Trade advertising material, commercial catalogue and the like	1915	80	6	5	0	8,3
Fiberboard >0.8 g/cm2 nes	340	83	5	6	2	7,9
Fiberboard nes (0.35 g/cm2 & less)	81	40	16	3	9	7,7
Newsprint, in rolls or sheets	3279	69	1	5	0	7,1
Paper, household/sanitary, rolls of a w >36 cm, sheets 1 side >36 cm	714	79	3	5	1	6,9
Paper, Kraftliner, in rolls, o/t unbleached, uncoated	534	79	2	6	1	6,7
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	2	6,7
Clothes hangers of wood	50	28	29	2	13	6,4
Paper, craft, rolls/sheets,</=150g/m2, unbleached, uncoated, nes	193	83	9	6	3	6,3

Appendix I-A.8 Top EU Imports from Romania 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Romania	Romania value ($ mill)
Furniture, wooden, nes	4589	57	18	4	5	221,6
Bedroom furniture, wooden, nes	1509	65	20	4	3	38,4
Seats with wooden frames, upholstered nes	2383	62	27	4	1	34,0
Lumber, Beech	428	36	31	2	7	30,8
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	1	28,6
Logs, poles, coniferous nes	1335	40	30	3	2	25,6
Seats with wooden frames, nes	742	31	18	2	3	24,8
Parquet panels, including tiles of wood	794	69	8	5	3	24,0
Wood articles nes	1119	33	31	2	2	19,4
Melamine	187	59	14	5	7	13,6
Builder's joinery and carpentery of wood nes	731	47	24	3	2	11,9
Taps, cocks, valves and similar appliances, nes	4950	75	3	5	0	11,8
Lumber, non-coniferous nes	986	13	17	1	1	10,9
Wood marquetry and inlaid wood; caskets and cases for jewellery etc	176	29	25	2	4	7,7
Doors and their frames and thresholds, of wood	672	53	17	4	1	7,4
Logs, non-coniferous nes	1010	20	22	1	1	6,5
Mach-tls for workg wod/crk/bne/hrd rubber/hrd plas/sim hrd mat etc	352	80	4	5	2	6,3
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	2	6,2
Particle board of wood	1491	84	8	6	0	6,2
Lumber, Oak	607	21	12	1	1	5,7
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	1	5,2
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	1	5,0
Logs, Beech	252	68	16	5	2	4,7
Clothes hangers of wood	50	28	29	2	8	4,3
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	0	3,4
Paper, craft, rolls or sheets, </=150g/m2, uncoated, nes	312	87	5	6	1	3,2
Plywood nes, at least 1 outer ply of coniferous wood (ply's <6 mm)	641	40	6	3	0	3,0
Paper, craft, rolls or sheets, </=150g/m2, unbleached, uncoated,	193	83	9	6	2	2,9
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	49	12	3	0	2,6
Wood charcoal (incl shell or nut charcoal)	107	17	25	1	2	2,4
Kitchen furniture, wooden, nes	829	91	3	6	0	2,3
Pallets, box pallets and other load boards, wooden	732	64	33	4	0	2,1
Sodium hydroxide (caustic soda) in aqueous solution	537	82	4	6	0	2,1
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	2	2,0
Logs, Oak	116	66	13	5	2	2,0
Paper, Kraftliner, in rolls, unbleached, uncoated	1208	52	5	4	0	1,7
Wooden frames for paintings, photographs mirrors or similar objects	203	39	11	3	1	1,7
Windows, French-windows and their frames, of wood	410	62	25	4	0	1,5
Sacks and bags, of paper, nes; including cones	424	74	6	5	0	1,5
Cases, boxes, crates, drums & similar packings; cable-drums, wood	133	67	24	4	1	1,5
Wood (lumber) continuously shaped coniferous (softwood)	321	83	8	6	0	1,4
Tableware and kitchenware, of wood	164	24	13	2	1	1,4
Panels, 1 outer ply coniferous wood nes	153	71	18	5	1	1,3
Casks, barrels etc (cooper's prods) & parts of wood, incl staves	108	46	8	3	1	1,2
Paper, sack craft, in rolls, unbleached, uncoated	300	77	17	6	0	1,2
Chemical wood pulp, soda or sulphate, conifer, semi-bl or bleached,	3258	39	1	3	0	1,1
Office furniture, wooden, nes	694	81	9	5	0	0,9
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	0	0,9
Chemical wood pulp, sulphite, coniferous semi-bleached or bleached,	335	46	18	4	0	0,9
Tools, tool bodies & handles, broom/brush bodies & handles of wood	79	39	14	3	1	0,9
Mach f fil/clos/seal/etc.btle/can/box/ bag/ctnr nes, mach f aeratg bev	878	73	1	5	0	0,8
Packing or wrapping machinery nes	1206	69	2	5	0	0,8
Knives & blades for leather, paper, tobacco machines & other industr	186	62	4	4	0	0,7
Statuettes and other ornaments of wood	222	17	3	1	0	0,6

Appendix I-A.9 Top EU Imports from Slovakia 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Slovakia	Slovakia value ($ mill)
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	1	38,4
Logs, poles, coniferous nes	1335	40	30	3	2	29,1
Paper, fine, woodfree, in rol/sheets,>/=40g/m2,</=150g/m2, uncoated	2896	84	6	6	1	20,5
Paper, fluting (corrugat medium), in rolls, semi-chem, uncoated	301	78	13	6	7	20,3
Furniture, wooden, nes	4589	57	18	4	0	19,5
Lumber, Beech	428	36	31	2	5	19,3
Toilet paper	631	91	5	6	3	19,3
Bedroom furniture, wooden, nes	1509	65	20	4	1	15,7
Logs, Beech	252	68	16	5	6	15,6
Chemical wood pulp, soda/sulphate, non-coniferous, semi-bl/bleachd,	2417	49	2	4	1	13,0
Seats with wooden frames, upholstered nes	2383	62	27	4	1	12,3
Paper, household/sanitary, rolls of a w >36 cm, sheets 1 side >36 cm	714	79	3	5	2	11,3
Books, brochures, leaflets and similar printed matter, nes	3402	59	2	4	0	11,2
Office furniture, wooden, nes	694	81	9	5	2	10,8
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	3	10,7
Sanitary articles of paper, incl sanit towels & napkin (diapers) f babies	1985	91	3	6	0	9,8
Shuttering for concrete constructional work, of wood	87	60	40	4	10	8,6
Pallets, box pallets and other load boards, wooden	732	64	33	4	1	7,8
Builder's joinery and carpentery of wood nes	731	47	24	3	1	7,8
Parquet panels, including tiles of wood	794	69	8	5	1	6,4
Paper, fine, cut to size or shape, nes	1291	75	7	5	0	6,3
Lumber, Oak	607	21	12	1	1	5,5
Pts of mach for makg up paper pulp, paper or board, incl cuttg mach	393	70	3	5	1	4,8
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	1	4,7
Lumber, non-coniferous nes	986	13	17	1	0	4,7
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	1	4,7
Wood articles nes	1119	33	31	2	0	4,1
Textile fabrics used in paper-making or similar machines, <650 g/m2	111	87	4	6	4	4,0
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	0	3,7
Newspapers, journals and periodicals, nes	2173	85	1	6	0	3,7
Plywood, at least 1 outer ply of non-conifer wood nes (ply's <6 mm)	619	49	12	3	1	3,5
Handkerchiefs, cleansing or facial tissues and towels, of paper	658	86	3	6	1	3,3
Seats with wooden frames, nes	742	31	18	2	0	3,2
Printed matter, nes	490	69	3	5	1	2,7
Tablecloths and serviettes, of paper	304	91	4	6	1	2,7
Panels, 1 outer ply coniferous wood nes	153	71	18	5	2	2,6
Windows, French-windows and their frames, of wood	410	62	25	4	1	2,6
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	2	2,5
Paper, sack craft, in rolls, unbleached, uncoated	300	77	17	6	1	2,4
Packing or wrapping machinery nes	1206	69	2	5	0	2,3
Paper, Kraftliner, in rolls, unbleached, uncoated	1208	52	5	4	0	2,1
Logs, non-coniferous nes	1010	20	22	1	0	2,0
Envelopes of paper	328	83	5	6	1	1,8
Parts of printing machinery & machines for uses ancillary to printing	1094	59	2	4	0	1,8
Sheets nes, panels/tile etc of asbestos-cement, cellulose fib-cement	69	75	16	5	3	1,7
Sodium hydroxide (caustic soda) in aqueous solution	537	82	4	6	0	1,7
Sawdust and wood waste and scrap	131	70	15	5	1	1,7
Logs, Oak	116	66	13	5	1	1,7
Paper, in rolls o sheets, coated/impregnatd o coverd with plastics nes	1333	79	2	5	0	1,6
Paper, Kraftliner, in rolls, o/t unbleached, uncoated	534	79	2	6	0	1,6

Appendix I-A.10 Top EU Imports from Slovenia 1999

EU-CEEC trade 1999	EU Imports from World ($ mill)	Share (%) of which is:				
		EU15	CEEC10	Ave EU importer (%)	Slovenia	Slovenia value ($ mill)
Furniture, wooden, nes	4589	57	18	4	1	54,6
Doors and their frames and thresholds, of wood	672	53	17	4	6	38,7
Paper, fine, woodfree, in rolls or sheets, </=150 g/m2, clay coated	3198	90	1	6	1	31,6
Lumber, Beech	428	36	31	2	6	26,2
Books, brochures, leaflets and similar printed matter, nes	3402	59	2	4	1	25,4
Seats with wooden frames, nes	742	31	18	2	3	22,8
Windows, French-windows and their frames, of wood	410	62	25	4	5	22,5
Veneer, non-coniferous nes, less than 6 mm thick	934	40	9	3	2	18,3
Pigments and preparations based on titanium dioxide	1628	74	4	5	1	17,6
Builder's joinery and carpentery of wood nes	731	47	24	3	2	16,8
Taps, cocks, valves and similar appliances, nes	4950	75	3	5	0	16,0
Seats with wooden frames, upholstered nes	2383	62	27	4	1	13,8
Paper, fine, woodfree, in rol/sheets,>/=40g/m2,</=150g/m2, uncoated	2896	84	6	6	0	12,2
Wood articles nes	1119	33	31	2	1	11,9
Bedroom furniture, wooden, nes	1509	65	20	4	1	11,6
Shuttering for concrete constructional work, of wood	87	60	40	4	13	11,6
Tablecloths and serviettes, of paper	304	91	4	6	3	9,4
Lumber, non-coniferous nes	986	13	17	1	1	9,4
Melamine resins	195	72	6	6	5	9,2
Chemical wood pulp, sulphite, conifer semi-bleached or bleached nes	335	46	18	4	2	8,3
Lumber, coniferous (softwood) 6 mm and thicker	5680	65	16	4	0	7,8
Handkerchiefs, cleansing or facial tissues and towels, of paper	658	86	3	6	1	7,7
Logs, non-coniferous nes	1010	20	22	1	1	7,5
Office furniture, wooden, nes	694	81	9	5	1	7,1
Paper, fine, woodcontaining, in rolls or sheets, uncoated, nes	2069	80	1	5	0	5,7
Tableware and kitchenware, of wood	164	24	13	2	3	5,6
Wood (lumber) continuously shaped non-coniferous (hardwood)	606	39	7	3	1	5,6
Planing/millg or mouldg (by cutting) mach for workg wood/plastic etc	193	85	6	6	3	5,5
Toilet paper	631	91	5	6	1	5,5
Kitchen furniture, wooden, nes	829	91	3	6	1	5,4
Parts and accessories nes for use on machines of heading No 84.65	370	67	12	4	1	5,3
Reservoirs, tanks, vats & sim ctnr, cap >300L, (ex liq/compr gas type)	350	62	26	4	1	5,2
Chemical wood pulp, sulphite, nonconiferous, semi-bl or bleached, ne	141	67	4	6	3	4,7
Paper, multi-ply, in rolls or sheets, clay coated, nes	1408	95	1	6	0	4,5
Paper, in rolls or sheets, clay coated, nes	168	84	4	6	2	4,1
Logs, Beech	252	68	16	5	2	4,1
Particle board of wood	1491	84	8	6	0	4,0
Sanitary articles of paper, incl sanit towels & napkin (diapers) f babies	1985	91	3	6	0	3,8
Paper, in rolls/sheets, coated/impregnatd o coverd with plastics, nes	1333	79	2	5	0	3,6
Cartons, boxes & cases, folding, of non-corrug paper or board	1486	90	1	6	0	3,5
Panels, 1 outer ply non-coniferous wood nes	104	52	32	3	3	3,5
Lumber, Oak	607	21	12	1	1	3,5
Newsprint, in rolls or sheets	3279	69	1	5	0	3,5
Paper, fine, cut to size or shape, nes	1291	75	7	5	0	3,4
Cartons, boxes and cases, of corrugated paper or paperboard	1022	87	1	6	0	3,4
Phenolic resins	266	84	3	6	1	3,3
Pallets, box pallets and other load boards, wooden	732	64	33	4	0	3,0
Envelopes of paper	328	83	5	6	1	2,8
Fiberboard >0.8 g/cm2 not worked or surface covered	214	60	27	4	1	2,7
Panels, 1 outer ply coniferous wood nes	153	71	18	5	2	2,7
Clothes hangers of wood	50	28	29	2	5	2,7
Mach f fil/clos/seal/etc.btle/can/box/ bag/ctnr nes, mach f aeratg bev	878	73	1	5	0	2,6
Tools, tool bodies & handles, broom/brush bodies & handles of wood	79	39	14	3	3	2,6
Trade advertising material, commercial catalogue and the like	1915	80	6	5	0	2,5

Part II - The Packaging Industry in Central and Eastern Europe

Introduction to Part II

In Part I of this report, it was shown that most of the potential for the Finnish forest industry in central and eastern Europe appeared to exist for the pulp and paper industry. In this section, the report attempts to explore this potential in more detail. In particular, Part II details levels of production, exports, and imports of paper and paperboard and also discusses growth of consumption. A description of recent investments within the CEEC pulp and paper industry, is also added to demonstrate the main areas of activity in terms of pulp and paper grade and target countries.

As most of the short-medium term potential lies in the fibre-packaging industry, this section discusses products and trends within the packaging industry, and also describes some of the main players within the industry. The section concludes with a brief discussion of the packaging industry, based on interviews with several Finnish companies and then attempts to suggest how developments in central and eastern Europe will affect the Finnish fibre-based packaging industry in the long-term.

II-1 Overview of the pulp and paper industry in central and eastern Europe.

In terms of production, the paper industry in the ten candidate countries for EU membership of central and eastern Europe only produce about 4,7 million tonnes of paper and board per year. Of this figure, the largest producers are Poland, the Czech Republic, Slovakia, Slovenia and Hungary. The largest area of production is that of printing and writing papers, amounting to 1.34 million tonnes in 1999. Within this product group, uncoated woodfree papers account for about three-quarters of the total. The largest producers of printing and writing papers are Poland, Slovenia, Slovakia, Hungary and the Czech Republic. Production of coated printing and writing papers is very minimal, and mostly takes place in Slovenia.

Corrugating materials is the next largest area of paper and board production in central and eastern Europe. In 1999, some 1.3 million tonnes of corrugating materials was produced. The largest producers of corrugating materials are Poland, the Czech Republic, Hungary, Slovakia and Romania to a lesser extent. Most corrugated material production utilises waste-based materials. Detailed figures of individual grades within corrugating materials for the largest producer of corrugating materials Poland, are not available. However, based on figures available, the largest producer of waste-based liner is the Czech Republic, whilst the main producers of waste-based fluting are Hungary and Slovakia.

Other wrapping papers are another key area with around 0.7 million tonnes of production, Poland and the Czech Republic being the largest producers. Board production and tissue production amounts to less than 0.5 million tonnes per year. The main producers of paperboard are Poland and Slovenia, whilst the biggest producers of tissue are Poland and Slovakia.

In terms of pulp production, CEEC producers manufactured about 2.3 million tonnes of pulp in 1999. Chemical pulps are the main pulps produced. Bleached sulphate is the main grade of pulp produced, with unbleached sulphate the second largest category. Poland, Slovakia and the Czech Republic are the main producers in these areas. Bleached sulphite is the next major grade, being mostly produced in the Czech Republic. Mechanical pulp and semi-chemical pulp grades are also produced to a lesser degree, with Poland and Slovakia the main producers in each category respectively. Production figures for pulp and paper are detailed in table II-1.

Part II - The Packaging Industry in Central and Eastern Europe

Table II-1 Production of Pulp and Paper in central and eastern Europe, 1999

Production – 1999	Poland	Czech Rep	Slovakia	Slovenia	Hungary	Romania	Bulgaria	Estonia	Lithuania	Latvia	CEEC10
Paper & Board											
Newsprint	**149**	**104**	**0**	**67**	**0**	**41**	**0**	**0**	**0**	**0**	**361**
Printing & Writing papers	**515**	**158**	**208**	**220**	**203**	**28**	**1**	**0**	**1**	**1**	**1335**
uncoated woodfree	421	98	203		191	28				1	942
coated woodfree	0	13	5	106	0	0				0	124
uncoated mechanical	94	47	0		11	0				0	152
coated mechanical	0	0	0		0	0				0	0
Corrugating Materials	**537**	**219**	**158**	**9**	**168**	**114**	**64**	**0**	**24**	**3**	**1296**
virgin fibre liner		50			0	30				0	80
waste-based liner		146	21		2	28	38			2	237
virgin fibre fluting		0				21				0	21
waste-based fluting		23	137		166	35	28			1	390
case materials											0
Other wrapping papers	**276**	**179**	**52**	**3**	**49**	**53**	**28**	**48**	**1**	**0**	**689**
wrapping papers											0
other packaging grades											0
Tissue	**145**	**29**	**118**	**59**	**34**	**32**	**8**	**0**	**8**	**0**	**433**
sanitary and household											0
Board	**198**	**31**	**53**	**150**	**0**	**17**	**9**	**1**	**3**	**15**	**477**
folding boxboard											0
Other paper	3	50	13		2	4		1	0	1	74
Total Paper and Board	**1823**	**770**	**602**	**508**	**456**	**289**	**110**	**50**	**37**	**20**	**4665**
Pulp											0
Mechanical	105	62	8	33		24			0		232
Semichemical	69		87			34	6				196
Bleached sulphate	350	124	270	0	0	76	20		0		840
Unbleached sulphate	318	151	18		0	46	27				560
Bleached sulphite	0	208	0	105	0	4			0		317
Unbleached sulphite		21		16	0	17			0		54
Dissolving	9										9
Other		0	11		5				0		16
Total pulp	**851**	**566**	**394**	**154**	**31**	**201**	**53**	**48**	**0**	**0**	**2298**
Market pulp	100	326	92	60		46	6		0		630

Source: Pulp & Paper International, Annual Review, July 2000.

In terms of exports of paper and board from central and eastern Europe about 2.3 million tonnes were exported in 1999. Of this figure, the largest exporters are Poland, Slovakia, the Czech Republic, Slovenia and also Hungary but to a lesser extent. The largest exports are printing and writing papers, at 0.8 million tonnes in 1999. Within this product group, uncoated woodfree papers account for most exports. The largest exporters of uncoated woodfree papers are Poland, Slovakia, and Hungary. Exports of coated woodfree printing and writing papers, the next largest export, is mainly from Slovenia, who also happens to export newsprint as well.

Corrugating materials are the next largest area of paper and board exports from central and eastern Europe. About 0.5 million tonnes of corrugating materials were exported in 1999. The largest exporters of corrugating materials are Poland, Slovakia, and Hungary. Most of the corrugated material exported is waste-based fluting. Based on figures available, the largest exporters of waste-based fluting are Slovakia and Hungary. As before, detailed figures of corrugating materials for the largest exporter of corrugating materials Poland, are not available.

Exports of other wrapping papers amounted to 0.44 million tonnes in 1999, with Poland and the Czech Republic being the largest exporters. Exports of Tissue and Board were as little as 0.2 million tonnes each. The main exporter of paperboard was Slovenia, whilst the biggest exporter of tissue was Slovakia.

In terms of exports of pulp, CEEC producers exported about 0.5 million tonnes of pulp in 1999. Chemical pulps are the only pulps exported. Bleached sulphite is the main grade of pulp exported, the Czech Republic is the main exporter, along with Slovenia, but to a smaller degree. Bleached sulphate is the second largest grade of pulp exported, with Slovakia, the Czech Republic and Poland the main exporters. Bleached sulphite is the next major grade, being mostly produced in the Czech Republic. Mechanical pulp and semi-chemical pulp grades are not exported. Figures detailing exports of pulp and paper are shown in table II-2.

Imports of paper and board in central and eastern Europe totalled 2.8 million tonnes in 1999, meaning that the CEECs are net importers of paper and board. Of this figure, the largest importers are Poland, the Czech Republic, Hungary, Slovakia and Romania to a lesser degree. The largest imports are printing and writing papers, at 1.22 million tonnes in 1999. Coated printing and writing papers are the main imports representing 50% of all printing and writing papers imported.

Coated woodfree papers are the largest grade of printing and writing paper imported, with Poland and the Czech Republic the key importers. Both these countries are also the main Importers of coated mechanical papers. However, imports of uncoated mechanical papers are also quite significant, and again Poland is the main destination. Although imports of uncoated woodfree papers are significant, it is worth noting that the CEECs are net exporters of these grades.

Table II-2 Exports of Pulp and Paper from central and eastern Europe, 1999.

Exports 1999	**Poland**	**Czech Rep**	**Slovakia**	**Slovenia**	**Hungary**	**Romania**	**Bulgaria**	**Estonia**	**Lithuania**	**Latvia**	**CEEC10**
Paper & Board											
Newsprint	**30**	**57**	**0**	**60**	**0**	**4**	**0**	**1**	**1**	**0**	**153**
Printing & Writing papers	**231**	**91**	**179**	**170**	**99**	**19**	**0**	**6**	**3**	**4**	**802**
uncoated woodfree	213	61	177		98	19				2	570
coated woodfree	6	17	1	97	1	0				0	122
uncoated mechanical	12	12	0		0	0				1	25
coated mechanical	6	1	1		0	0				2	10
Corrugating Materials	**140**	**62**	**117**	**3**	**86**	**48**	**4**	**3**	**5**	**3**	**471**
virgin fibre liner		19			1	17				1	38
waste-based liner		33	7		0	0	0			2	42
virgin fibre fluting		0				10				0	10
waste-based fluting		10	110		85	21	2			0	228
case materials											0
Other wrapping papers	**135**	**184**	**31**	**1**	**25**	**12**	**2**	**47**	**0**	**3**	**440**
wrapping papers											0
other packaging grades											0
Tissue	**52**	**7**	**99**	**45**	**2**	**1**	**3**	**2**	**1**	**0**	**212**
sanitary and household											0
Board	**41**	**10**	**26**	**115**	**1**	**7**	**2**	**0**	**1**	**5**	**208**
folding boxboard											0
Other paper	3	44	10		0	0		1	1	1	60
Total Paper and Board	**632**	**455**	**461**	**394**	**213**	**91**	**11**	**60**	**12**	**16**	**2345**
Pulp											0
Mechanical	0	0	0	0		0			0		0
Semichemical	0		0			0	0				0
Bleached sulphate	41	62	75	0	0	16			0		194
Unbleached sulphate	0	0	0		0	0	0				0
Bleached sulphite	0	183	0	54	0	0			4		241
Unbleached sulphite		12		0	0	0			0		12
Dissolving	5										5
Other		2	10		0				0		12
Nonwood pulp					12						12
Total Pulp	**46**	**259**	**85**	**54**	**12**	**16**	**6**	**0**	**4**	**0**	**482**
Market pulp	46	259	85	54		16	6		4		470

Source: Pulp & Paper International, Annual Review, July 2000.

Imports of corrugating materials in central and eastern Europe amounted to 0.6 million tonnes in 1999. The largest importers of corrugating materials were Poland, the Czech Republic, and Hungary. Most of the corrugating material products imported are linerboards. Based on figures available, the largest importers of linerboards are the Czech Republic, Hungary and probably Poland, although as before, detailed figures of corrugating materials for Poland, are not available. Imports of fluting are much less however, the CEECs are net exporters of waste-based fluting.

Imports of board amounted to 0.26 million tonnes in 1999, with Poland, the Czech Republic and Hungary the largest importers. Imports of tissue and other wrapping papers were somewhat less, however, the CEECs are net exporters of both tissue and other wrapping papers.

In regards to imports of pulp, the CEECs imported some 0.82 million tonnes of pulp in 1999 and are therefore net importers. Chemical pulps are the largest pulps imported. Bleached sulphate is by far the main grade of pulp imported, with Poland, Hungary, the Czech Republic and Slovenia the main importers. Imports of bleached sulphite are significant, and here Slovenia, Hungary and Slovakia are the main importers. However, the CEECs are actually net exporters of bleached sulphite. Imports of mechanical pulp are fairly minor, but most are targeted at Slovenia. Figures detailing imports of pulp and paper are shown in table II-3.

II-2 Potential of the pulp and paper industry in central and eastern Europe[14]

Some pulp and paper companies have already moved into Eastern Europe during the early to mid 1990s. And whilst some have had their fingers burned, the vast majority remain convinced that the long-term gains will be worth the wait. At present, imports to Eastern Europe are feeding most of the growing consumption levels, especially as it has become easier to import since trade barriers and import duties have been substantially reduced. This situation was expected to prevail as long as Western producers have spare capacity and transportation costs remain relatively low.

However, this suggests that in the long term, many opportunities will exist for new production capacity to substitute imports. It therefore follows, that, if sufficient capacity is planned in Eastern European mills, and trade is made even simpler, then the low cost manufacturing base in Eastern European countries may offer significant potential to supply Western markets, especially where plants are set up close to the current EU border and logistics are favourable. In fact, a description of recent investments in central and eastern Europe (covered later) already demonstrates that new capacity is not only replacing imports in some grades, but beginning to export to main EU markets as well.

[14] This section draws on: 'Go east young man' - Pulp and Paper International, pp 35-39, April 1999.

Table II-3 Imports of Pulp and Paper in central and eastern Europe, 1999.

Imports – 1999	**Poland**	**Czech Rep**	**Slovakia**	**Slovenia**	**Hungary**	**Romania**	**Bulgaria**	**Estonia**	**Lithuania**	**Latvia**	**CEEC10**
Paper & Board											
Newsprint	**25**	**39**	**25**	**9**	**91**	**6**	**30**	**12**	**19**	**13**	**269**
Printing & Writing papers	**607**	**216**	**88**	**40**	**120**	**50**	**10**	**27**	**23**	**41**	**1222**
uncoated woodfree	64	50	12		23	33				9	191
coated woodfree	245	90	34	18	0	6				7	400
uncoated mechanical	200	29	27		15	5				14	290
coated mechanical	98	47	14		35	6				12	212
Corrugating Materials	**227**	**133**	**34**	**59**	**72**	**29**	**8**	**13**	**10**	**17**	**602**
virgin fibre liner		35			33	6				6	80
waste-based liner		43	0		12	19	2			8	84
virgin fibre fluting		30				0				2	32
waste-based fluting		25	0		27	4	0			1	57
case materials											0
Other wrapping papers	**15**	**18**	**41**	**6**	**22**	**17**	**0**	**4**	**0**	**9**	**132**
wrapping papers											0
other packaging grades											0
Tissue	**64**	**45**	**10**	**6**	**15**	**12**	**0**	**9**	**0**	**8**	**169**
sanitary and household											0
Board	**111**	**61**	**3**	**3**	**40**	**25**	**3**	**2**	**4**	**8**	**260**
Other paper	15	34	5		40	28		10	16	4	152
Total Paper and Board	**1064**	**546**	**206**	**123**	**400**	**167**	**54**	**76**	**72**	**100**	**2808**
Pulp											0
Mechanical	5	0	0	18		0			0		23
Semichemical	0		0			0	0				0
Bleached sulphate	230	113	30	89	120	2			0		584
Unbleached sulphate	12	6	0		19	0					37
Bleached sulphite	10	2	33	43	39	0			5		132
Unbleached sulphite		0		0	0	0			0		0
Dissolving	10										10
Other		28	4		0				1		33
Nonwood pulp					3						3
Total Pulp	**267**	**149**	**66**	**150**	**182**	**2**		**1**	**6**	**1**	**824**
Market pulp	267	149	66	150		2			6		640

Source: Pulp & Paper International, Annual Review, July 2000.

As is typical in the development of emerging markets, the large multinationals were first to venture in, which have then been followed by packaging converters. Moreover, according to PPI, 'logic dictates that is just a matter of time before paper and board producers follow'. 'Nonetheless, most investments in Eastern Europe tend to be in the packaging field, with little opportunities emerging in the graphic paper sector'. This is because excess capacity in the graphic paper sector in Western Europe already exists, and products can be easily imported. Table II-4 lists a number of significant investment projects in the packaging industry in central and eastern Europe, as of spring 1999. However, since the beginning of 1999, there have been numerous investments and a great deal of activity in the CEEC pulp and paper industry. Details of which are covered later in the section on 'recent investments in central and eastern European pulp and paper industry'.

Table II-4 Investments into the Packaging Industry in the CEEC Region

Investor	Paper grade	Target country	Target Company/Mill (1000s ton/year)	Comments
Mayr-Melnhof (Austria)	Carton-board	Poland, Hungary, Czech Rep, Slovenia	Kolicevo Karton (120 t/y)	Mostly greenfield investments Plans to export to neighbouring countries
SCA (Sweden)	Corrugated board Tissue	Slovakia, Czech Rep, Has Packaging plants in Poland and Hungary	1999, Obalex 1998, Start-up of Tissue plant in Poland	Sourcing linerboard and fluting from SCA's existing plants Capacity expansions planned in Poland
AssiDomän (Sweden)	Corrugated board	Czech Rep, Poland,	1998, 70 mill m2/yr corrugated mill in Czech. 1998, 30 mill m2/yr box plant in Konin, Poland	Plans to add further 60-80 mil m2/yr corrugator by 2000 to integrate sheet and box production at Konin – currently sourcing from SCA's mills in Czech Rep & Germany
Rossmann (France)	Corrugated board	Romania, Poland, Hungary	Romanian plants have performed successfully.	Rossman has extended in the region with 2 corrugated board plants in Poland and Hungary
Model (Switzerland)		Czech Rep	Two plants	Experienced rapid growth
Kappa Packaging (Netherlands)	Corrugated board and paper	Czech Rep, Poland	85 mill m2/ yr corrugated board and 50k t/yr paper at Karton Morava. Also has two packaging plants in Poland, Expac and Drezdenko	
Munksjö (Sweden)	Corrugated board	Poland	1998, 70 mill m2/y start-up at Zebrak and a 25 mill m2/yr at Pruszkow	Greenfield plant in Pruszkow
Metsä Tissue (Finland)	Tissue	Poland	Warsawskie Zaklady Papiernicze	Acquisition

Source: Pulp and Paper International, April 1999.

One of the driving forces enhancing the implementation of political and economic reform is that of EU Accession. Most countries see EU membership as a means to attract foreign direct investment, open trade links and to secure much needed funds for infrastructure development. For the Eastern European paper industry itself, this may translate into more efficient mills and higher product quality. On the environmental side, significant investments have been and continue to be made via the assistance of key investment banks such as the EBRD. See table II-5 below.

Table II-5 Recent EBRD projects with significant environmental investments/benefits

Project	Country	Total project cost (mill Euro)	EBRD Finance (mill Euro)	Project Description
Sepap Steti Pulp and Paper Mill	Czech Rep	167	59	Capital expenditure programme to increase, improve and diversify pulp capacity. Environmental improvements through the provision of new totally chlorine free (TCF) bleaching plant, installation of a new 'Super batch' process and upgrading of the boiler system to achieve greater energy efficiency. (Sepap is part of AssiDomän from Sweden.)
PCA Budafok Paperboard Recycling	Hungary	16	6	Upgrading of dryer and topliner system to reduce the need for virgin fibre; a closed water filter system to save energy costs and address environmental issues. In addition, a programme to upgrade waste water effluent quality and mitigation measures for waste water treatment are also part of the investment project.
Kwidzyn Paper Mill	Poland	272	28	Loan to modernise paper machinery at the mill near Elbag, which produces bleached and semi-bleached pulp and various papers. The chlorine bleaching process is being phased out. (Kwidzyn paper mill is part of International Paper Corporation - USA).
Trebruk Kostrzyn Paper Mill	Poland	51	28	Loan to finance installation of new paper manufacturing machinery. The highly inefficient and polluting pulp mill is being shut down, whilst and investment programme to mitigate the waste-water discharges and air emissions will bring the plant into full compliance with environmental regulations. (Kostrzyn Paper Mill is now owned by the Trubruk Group, Sweden).
Papirnica Kolicevo Carton Board Plant	Slovenia	36	13	Loan and equity investment to upgrade existing equipment, invest in state-of-the –art process and quality control equipment, and the upgrading of the waste-water treatment (adding a biological treatment stage) plant to meet discharge standards. About 90% of the plant's raw material is waste paper. (Papirnica Kolicevo is owned by Mayr-Melnhof, Austria).
Sical (Ambro) Pulp and Paper mill	Romania	42	8	Loan to double paper production capacity, improve cost competitiveness, mitigate air emissions and effluent discharges. Improvements in the treatment of black liquor waste water and sludge and the reuse of ash filtrate to comply with EU standards. (Sical is an French corrugated board packaging producer).
Sarrió Slovenija Carton Board Plant	Slovenia	23	18	Capital investment plan to increase capacity by 30% and to upgrade the waste-water treatment system to meet EU standards. The installation of a gas co-generation power plant will help to reduce energy costs. The investment will increase productivity and enable production of higher quality carton board. (Sarrió is a subsidiary of SAFFA one of the largest producer's of carton board in Central and Eastern Europe).
Celhart AD	Bulgaria	40	28	Parallel loan and equity investments by EBRD and IFC to improve capacity of the kraft paper/sack production facilities. Environmental improvements will significantly reduce wastes requiring handling, reduce sulphur emissions and particulates. (Celhart is owned by the Turkish Isiklar group).
Kondopoga Pulp and Paper Mill	Russia (Karelia)	209	46	Loans to increase the newsprint capacity (up to 700,000 tonnes per year in total) and to reduce production and use of sulphite by replacement of the bi-sulphite pulp mill with a more environmentally friendly thermo-mechanical pulping system. In 1997, Kondopoga was the largest Russian producer and exporter of newsprint – exporting some 75% to Europe and Asia.
Kner Printing House	Hungary	16	9	Loan to upgrade machinery at the Central and Tevan printing shops at Bekescsaba – the company's main products are packaging materials and boxes.

Source: EBRD

Although PPI, has commented that 'many local paper mills are relatively small operations that have suffered from lack of environmental investment, and so are unlikely to attract western investment', one should be careful not to interpret this point in the wrong way. For example, the list of recent EBRD investment projects show that there has indeed been a considerable amount of investment across the CEEC region into various sizes of mills. Moreover, although it is also thought that the candidate countries may be able to negotiate longer transition periods in the area of environmental

regulations, due to political considerations (i.e. long delays before accession are thought to be too risky, whilst some countries wish to prevent labour migration, amongst other things) and hence, certain issues may become bargaining tools, strict environmental regulations have already been brought into force within the pulp and paper industries in many of the candidate countries. See section on 'Enlargement issues likely to affect future competitiveness of the CEECs'.

Even though EU-Enlargement is expected to present many transitional difficulties, most financial groups are prepared to overlook the potential problems, simply because Eastern Europe can provide something which Western Europe cannot – high growth potential. Indeed, it is believed that the massive economic restructuring will pave the way for Eastern Europe to enhance consumer confidence and consumption levels, in Europe, at least in the long-term.

Despite the fact that most attention has focused on the packaging sector, most imports are printing and writing papers. Unsurprisingly, there have also been investments into the Eastern European graphic paper sector – The Austrian Neusiedler Group in Hungary (woodfree printing and writing papers); Papirnica Goričane in Slovenia (coated printing and writing papers using a new Voith-Sulzer SpeedFlow coater); SCP (Severoslovenské Celulózky a Papierne) in Slovak Republic (woodfree printing and writing papers) to name a few. However, one of the largest comes from a US group, World Alliance Merchant Finance (Wamfco), which unveiled plans for a 150,000 ton/year coated woodfree mill in the Czech Republic. Wamfco, which opted for a greenfield-type investment planned to start construction in 1999, with a planned start-up in 2001, sees huge growth potential in the coated woodfree market, and intends to export its' production initially.

On the other hand, some companies have different strategies. The Swiss-based group Mercer International seeks out undervalued companies in small niche markets, reasoning that the low per capita paper consumption rate means there is huge growth potential. Mercer are particularly interested in paper grades that are close to the consumer – ie wallpaper grades or wrapping paper for foodstuffs – rather than the mass commodity grades that require a great deal of capital investment. Mercer has indicated that it is likely to expand into Poland, Hungary, the Czech Republic and even Romania.

A further point worth discussing here is that of how markets for printed matter will develop in Central and Eastern European markets. While per capita consumption of printed matter, in Eastern Europe and Russia is presently about 10% of the EU average, the key issue is whether or not the printed matter industry will follow the same development trajectory as travelled in the West, or whether it will simply leap over some stages.[15]

For example, printing industries in many of the CEECs have long histories, dating back to the 'middle-ages'. However, under the centrally-planned communist regime, printing and publishing was severely restricted and censored. Smaller printers where liquidated whilst the larger ones were concentrated into large groups. Moreover, new equipment was only purchased from the former Soviet Union and Eastern Germany, and machines were under police supervision.

[15] Finland's forest cluster up to the year 2020: Can the forests continue to nurture Finland's economy. Jyrki Kettunen, page 319. In: The Green Kingdom – Finland's Forest Cluster. Metsämiesten Säätiö Foundation, June 1999.

However, since the collapse of communism and the re-introduction of democracy, the printing and publishing sector has been rejuvenated, via the unleashing of the pent-up demand for information. Indeed, the industry has been growing rapidly and in many cases productivity and employment are growing faster than in the EU, whilst levels of investment are also higher than in the EU. One need only point to the case of the high demand for glossy consumer magazines in Russia, to contemplate the potential for the printed matter industry to skip over several stages in development.

Indeed, Mercer's approach may seem more applicable given the geographic structure of economic development in the CEEC region. For example, as in Europe, it is thought that clusters of economic regions within countries (including those, which may also cross national borders) are expected to continue developing at a much faster rate than other regions. These regional groupings have above average GDP per capita levels and thus have ready markets for goods. Whereas many other regions have below average GDP per capita's suggesting that production strategies aimed at mass markets may meet with varying degrees of success. See section II.4 for a general discussion on regional development in Europe and especially 'Competition among regions'.

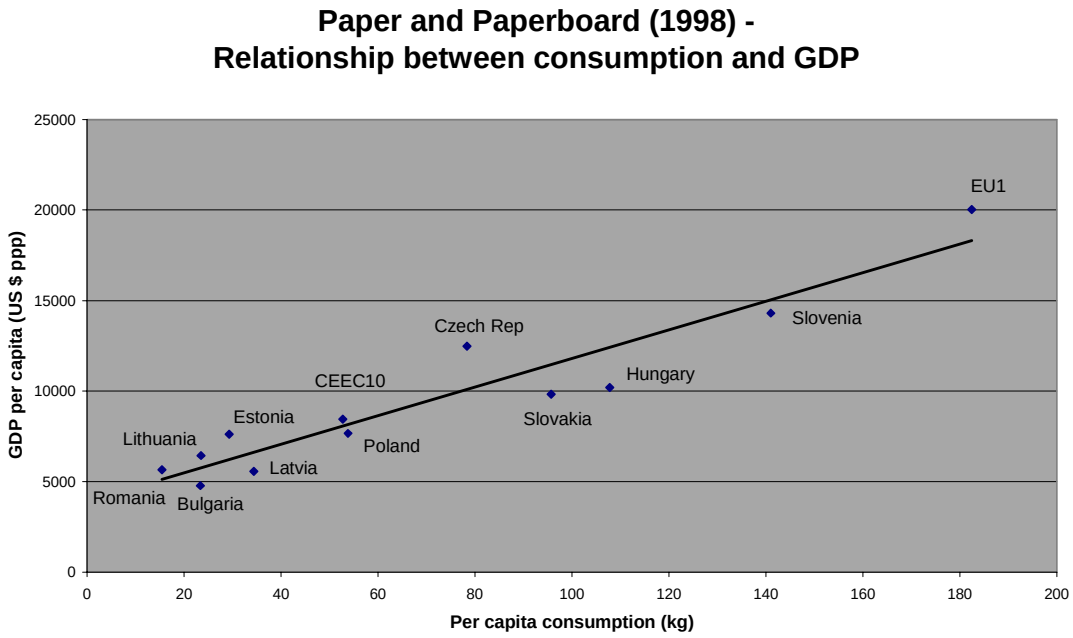
In recent years, it has been speculated that Western European paper and board demand is approaching maturity. At the same time though, consumption rose by 15% between 1992 and 1997. In some countries the growth rate has been even higher. Nonetheless, in Eastern European markets, strong growth in demand has been experienced. In fact, paper and board consumption in Poland, the Czech Republic, Hungary, Slovakia, Romania, Slovenia and Croatia have shown a rise of 47% between 1993 and 1997.

II-3 Paper and Paperboard Consumption in central and eastern Europe

Even with the growth in consumption levels as mentioned above, there is still a long way to go before most of the CEEC region catches up to anything near the consumption of paper and board in Western Europe. However, there is some question as to whether consumption patterns and levels will ever follow or even resemble those found in western Europe. The following section discusses consumption patterns and growth in key paper and board grades and attempts to show why growth in paper and board consumption is not simply a matter of following growth in GDP.

Figure II-1 below, provides a comparison of paper and board consumption in relation to GDP per capita. As can be seen, current levels of paper and board consumption in central and eastern Europe are generally only 50% of that of the EU. At the same time the graph, appears to suggest that as GDP per capita increases, then consumption of paper and board per capita also increases.

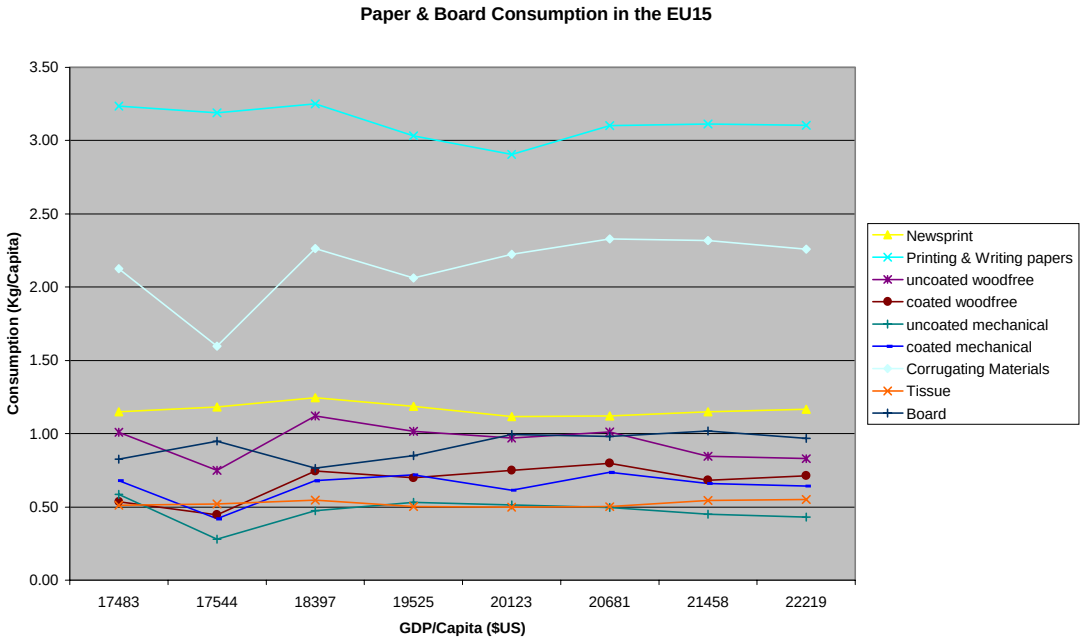
Figure II-1 Relationship between paper and board consumption and GDP



Source: PPI, C. Hazley estimates.

To investigate how consumption has been developing over recent years within the EU, levels of paper and board consumption per capita have been plotted against GDP per capita without scaling growth in GDP. In this way, GDP simply represents development over time. With few exceptions, it can be seen that whilst levels of GDP per capita have increased, consumption per capita of each grade of paper and board has not actually increased but remains fairly stable over time. Figure II-2 shows paper and board consumption in the EU between 1992 and 1999.

Figure II-2 Paper and Board consumption in the EU (1992 to 1999)



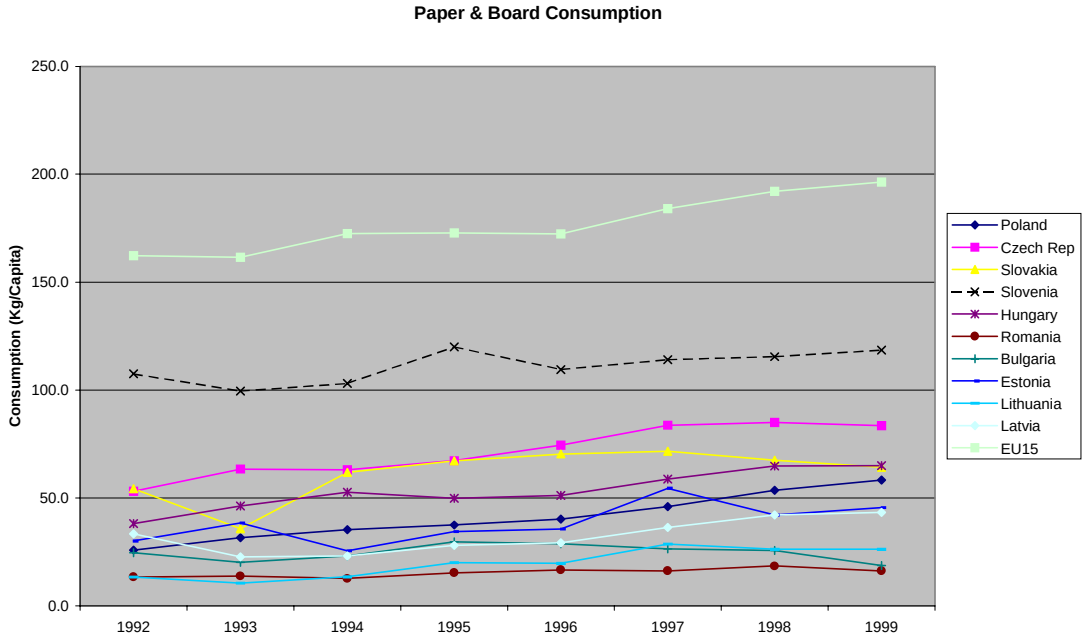
Source: PPI, C. Hazley estimates.

Thus, as this probably confirms the notion that paper consumption in the EU is mature, consumption growth is therefore likely to be more a factor of population growth than changes in consumer behaviour. Exceptions to this appear to be within coated printing and writing papers and perhaps corrugating materials, which exhibited a slight upward trend over the 1990s.

The question then is how are consumption patterns in central and eastern Europe developing. Given the huge disparity in consumption levels of paper and board between the EU and countries in central and eastern Europe, is growth occurring due to changes in consumer behaviour, growth in GDP, population growth, or something else. To examine this issue, consumption of paper and board is plotted for each grade in each of the countries of central and eastern Europe, in reference to that of the EU.

In this way, where growth rates appear to be rising at faster rates than in the EU, it is more than likely that growth is occurring due to changes in consumer behaviour rather than population growth (population has actually been falling in most of the EU candidate countries) or perhaps due to a fundamental structural change within manufacturing industries of Europe (for example, the general relocation or shift of production to lower-cost producing countries in central and eastern Europe - giving rise to growth in demand for key grades of paper and board).

Figure II-3 Paper and Board consumption in the CEECs (1992 to 1999)



Source: PPI, C. Hazley estimates.

At the general level of paper and board consumption it appears that per capita consumption in Poland, the Czech Republic and Hungary is growing at the same or slightly higher rate than in the EU. In the other central and eastern European countries, however, it appears that consumption rates are growing less than the EU.

In terms of newsprint consumption, per capita consumption in the EU grew from 20 kg/capita in 1992 to about 26 kg per person in 1999. In consumption in each of the CEECs has been growing much less than in the EU, remaining below 10 kg per capita, although there are some indications of more recent growth in countries such as the Czech republic.

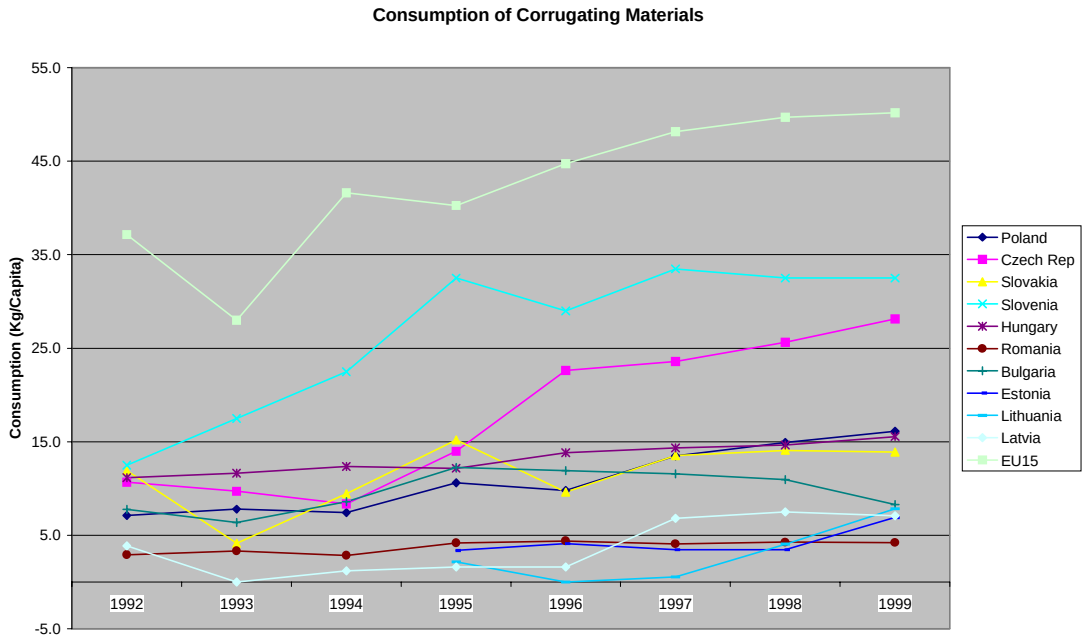
Consumption of printing and writing papers, has experienced a mixed picture. In the EU, consumption has grown from 56 kg/capita in 1992 to almost 70 kg per person in 1999. Consumption levels have generally grown at a faster rate in Poland, Hungary and the Czech republic and now stand about 25 kg per capita. Although Slovenia had a similar level of consumption as the EU in 1992, it now consumes printing and writing papers at a lower rate of 45 kg. All remaining countries have exhibited growth in consumption at a much slower rate, or even declined in the case of Bulgaria.

Tissue consumption in central and eastern Europe also reveals mixed trends. In the EU, per capita consumption has grown from around 9 kg/capita in 1992 to more than 13 kg per person in 1999. The Czech republic has experienced the largest growth in tissue consumption growing from about 1 kg/capita in 1992 to more almost 7 kg per person in 1999. Although consumption of tissue has stayed below 5 kg per capita, there appears to be some growth in the later years since 1997. Again, Slovenia's consumption of tissue was about the same level as the EU in 1992, but now appears to have dropped to similar levels of the other CEECs since 1997.

In terms of board consumption, EU levels have grown from around 15 kg/capita in 1992 to more than 22 kg per capita in 1999. Despite showing great fluctuations, board consumption in Slovenia seems to have grown similar to the EU. With the exception of Poland, board consumption in nearly all the CEECs has grown much slower than in the EU, or even dropped, and remains below 10 kg per capita.

In the consumption of corrugating materials in the EU, consumption levels have grown from about 37 kg/capita in 1992 to more than 50 kg per capita in 1999. Consumption of corrugating materials in central and eastern Europe has generally grown in most countries. In particular, consumption of corrugating materials has grown most in Slovenia (to 33kg), the Czech Republic (to 28 kg) and Poland (to 16 kg). Consumption is also growing in Hungary and Slovakia and more recently in the Baltic countries but at a slower rate.

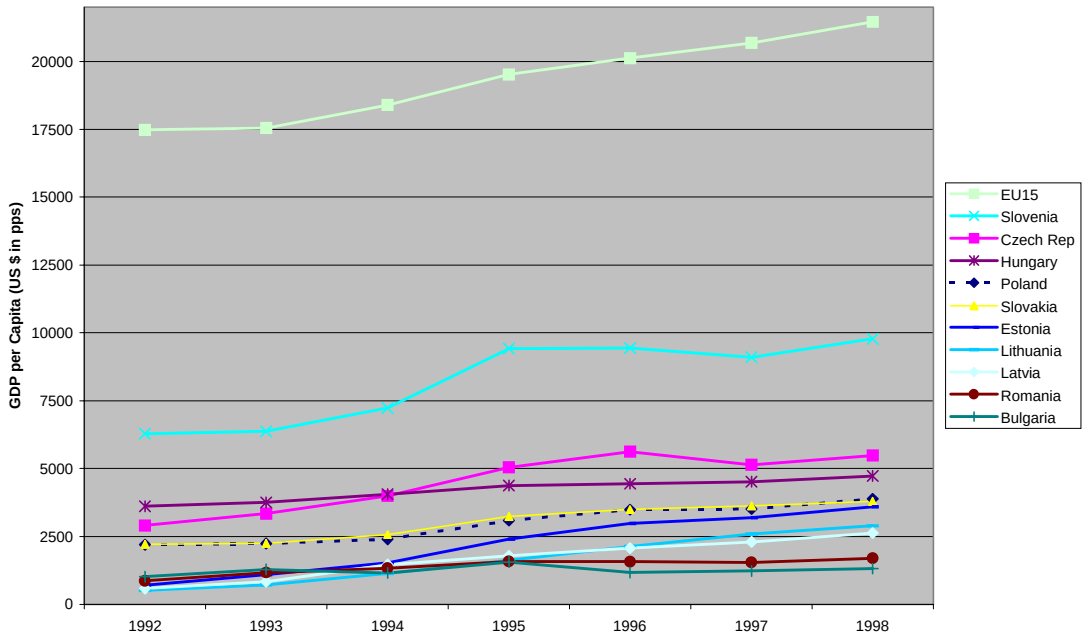
Figure II-4 Consumption of corrugating materials in the CEECs (1992 to 1999)



Source: PPI, C. Hazley estimates.

In summary, it appears that consumption is growing in printing and writing papers and corrugated materials, within countries of the CEEC region. However, it is also clear that there is very little 'catching up' of consumption levels as those found in the EU. In fact, the wide disparity between consumption levels in the EU and the CEEC region appears to be a factor of economic development in the European region.

Figure II-5 Growth in GDP per capita in central and eastern Europe



Source: EBRD Transition Report 2000; C.Hazley Estimates.

Figure II-5 plots the growth in GDP per capita in relation to that of the EU. What this shows, is that while levels of GDP per capita are growing in each of the EU candidate countries of central and eastern Europe, the growth rates in most of the countries are not as fast as the EU. Therefore, even though GDP per capita appears to be growing in the CEECs, consumption of paper and board does not appear to follow in every case. The question then is what is happening. To understand why growth patterns are different, it is necessary to explain some fundamental developments in Europe in respect of regional economic development.

II-4 Regional development in Europe

Within Europe, there are huge disparities between countries within the EU and the central and eastern European countries and between regions within EU and CEEC countries. Therefore one must be very cautious in making any judgements as to consumption patterns based on aggregate level data at the national level. The following sections explain the conceptual background to European integration and why one should examine economic development at the sub-national or regional level, and perhaps why consumption levels differ from that of western Europe.

II-4.1 Conceptual background to the process of European integration

Despite the rapid technological and economic advances witnessed since the end of the Second World War, the 'new' Europe of today, is nevertheless experiencing significant and enduring territorial inequalities. In both Europe and North America, two main issues have surfaced to explain this phenomenon. One school of thought suggests that 'sub-national regional economic life is becoming increasingly significant in a global economy', whilst another, puts forward the notion that it is 'the importance of different scales of geographical and economic interactions, from local to global', that explains uneven development of European capitalism.[16]

In the global political economy, proponents identify three main tendencies: First of all, the growing and unstoppable dominance of transnational corporations (TNCs); secondly, the increasing redundancy of the nation state; and thirdly, the emergence of regions as the major new sites for economic activity. It is also argued that globalisation is being driven by the unimpeded flow (across national borders) of the 'four I's – Industry, Investment, Individuals and Information, neither of which are geographically constrained or politically conditioned. Not only is the nation state seen as a meaningless territorial unit, but it is also claimed that all meaningful control would be better transferred to *region* states. Indeed, empirical evidence would appear to provide a sound basis for this argument in Euroland. See box 1.

Box 1 – Competition among Regions[17]

Since the introduction of the Euro, 'competition between individual Euroland countries for jobs and capital investment is likely to be shifting to competition among regions'. Nonetheless, the question is whether this will enhance convergence of per capita incomes or will it merely serve to help widen the gap between the rich and poor regions of Euroland, and thus Europe as a whole?

With the introduction of the Euro, regions have shed their national currencies and acquired new scope for their own activities in economic policy terms. 'Competition among regions is likely to be increasingly replacing competition between individual countries'. Already there is broad consensus amongst economists, that 'in the future, good regional economic policies will be rewarded with increasing capital spending,

[16] Regional trajectories and uneven development in 'the new' Europe: rethinking territorial success and inequality. By Adrian Smith, Al Rainnie and Mick Dunford.

[17] This section draws on: Competition among the Regions of Euroland. Andreas Rees and Michael Sonnenholzner, HWWA (Hamburg Institute of International Economics), INTERECONOMICS, March/April 2000.

whilst bad policy will be punished by an exodus of capital'. However, there is no such consensus as to the economic consequences, which the competition for jobs and capital spending will entail for the regions.

For example, on the one hand, some economists believe that there will be a gradual harmonisation of per capita incomes within the Euroland, arguing that 'cross-border competition without currency fluctuations provides more equality of opportunities and therefore results in an economic catching up process by the poorer regions'. On the other hand, however, other economists believe that 'the existing divide in incomes within Euroland, will continue to grow, since the damaging competition among regions for jobs and capital investment will result in an enduring divide between regions with a high per capita income and poor regions'. Consequently, 'redistribution measures in the form of intra-European revenue sharing – such as expansion of the EU's structural and Cohesion funds – will be indispensable'.

Based on empirical evidence and applying commonly used yardsticks Rees and Sonnenholzner examined the question of convergence or divergence of real per capita income in Euroland and found that while there was convergence between the EMU countries (over several decades), this was not the case on a regional level in Euroland. Indeed, evidence also suggests the existence of individual economic clusters. These 'islands of growth and innovation have arisen in some areas of Euroland'. 'These clusters of regions are characterised by an excellent economic policy framework and ready markets for goods, and where technological spillover effects from neighbouring regions may be having a beneficial influence, reinforcing trends and leading to above average growth' (national examples include Hesse, Bavaria and Baden-Württemberg in Germany and a cross border example includes North-Rhine Wesphallia in Germany, the Walloon region of Belgium and Zuid Nederland in the Netherlands). However, at the opposite end of the scale, examples are also very evident across Europe.

Convergence theory suggests that 'labour migrates into those countries and regions where the highest wages are paid and businesses invest in areas where their capital generates the highest return'. Nevertheless, mobility of labour is not enough to explain the convergence in per capita incomes among the European national states. The reason for this is simple. Given the language barriers and bureaucratic obstacles labour mobility has played a comparatively small role. 'Consequently, the convergence in living standards must primarily have been the result of movements of capital at both the regional and national levels'. However, the question of why did more investment flow into peripheral areas than into the prospering core – both in Euroland and the US – still remains.

Rees and Sonnenholzner suggest that there are four different conceivable answers:

1. 'Convergence is primarily an expression of fiscal redistribution in favour of the poorer regions' – via transfers or tax reductions to regions under economic shock;
2. 'The historical convergence among the member states of today's EMU is attributable only to the use of exchange-rate policy' – 'In the past, nations could devalue their currency if per capita income dropped in their particular country. However, currency devaluations in real terms are likely to stabilise per capita income in the short term only. Currency devaluations alone are not enough to explain several decades of sustained convergence among EMU countries'.

3. 'Convergence is the result of economic policies competing to offer the best conditions in terms of location' – In the US, 'regions were tax levels fell below the national average experienced greater economic growth'. Therefore, this is expected to be similar in Euroland. 'As economic policy sets the parameters for fiscal policy and infrastructure expansion, favourable parameters will be rewarded by investors' capital. Moreover, as competition acts as an incentive and sanctioning mechanism, countries with low per capita income are especially motivated. Only when their conditions are more favourable than those in centres of growth, can they stand a chance of more inward investment and a boost to standards of living'. 'Therefore, the lack of harmonisation in per capita incomes of the European regions would be attributable not to the lack of fiscal equalisation but to the lack of competition'.
4. 'Convergence at the country level is a result of well-balanced economic structure within a particular country' – 'The concentration of particular industry segments in certain national regions that we are witnessing thus no longer prevents convergence in national per capita incomes. If this were true, the chances for convergence in a Europe of the regions would be limited'.

Therefore, 'should Euroland's economic policy be a balance between competition among the regions and fiscal equalisation to correct economic divergence'. According to Rees and Sonnenholzner financial transfers are 'sweet poison' – 'attempts at levelling out per capita income restrict a region's own initiative and could cripple the forces driving the convergence process'. Instead, they suggest that 'it would be much better to improve the conditions underlying competition among Euroland's regions'. To facilitate this they offer three approaches:

1. 'Boosting subsidiarity – Regional economic policy needs more room to act, hence economic policy making authority should be delegated from the country to the regional level'.
2. 'Abolition of nation-wide wage settlements – Maintaining nation-wide wage settlements put regions with below-average per capita incomes at a disadvantage. Advantages in the shape of lower wage costs can not be put to use, resulting in lack of capital inflows'.
3. 'Increased efforts by the EU Commission in terms of monitoring regional subsidisation practice – Subsidy payments to boost investment could be the ugly side of competition among the regions, since it is not always the best underlying conditions that determine capital inflows, but the wallet (as evidence has shown in the US with the Fed having to take action). Hence, wealthy regions would appear to have the advantage in this respect'.

Whilst the authors suggest that competition between regions is the method most likely to provide for sound economic performance and gradual convergence of per capita incomes in Euroland, they nevertheless state that 'in the short term, the gap in per capita incomes will widen'. For example, 'it is possible that some regions will generate a greater lead in living standards thanks to favourable economic policy, and that the possible consequences could be that a spread to neighbouring regions will create islands of growth and innovation, but that competition among the regions will [eventually] result in the catching up of the poorer regions'.

Rees and Sonnenholzner also suggest that there are some practical considerations for companies here. 'Should they position themselves in areas with below-average per capita incomes and hope for the economy in those regions to catch up'. Poor regions could implement strategies consisting of low tax rates and infrastructure measures to attract foreign capital. However, 'being present in select areas that already enjoy a strong economy is also a promising approach'. 'Such areas involve highly receptive markets that make it easier for a business to sell its products'. 'On the other hand they can not benefit from the clusters that are forming, since when neighbouring regions form a centre of growth they thus expand their economic advantage even further'.

As Europe's position within the global economy continues to be augmented via increasing integration and future enlargement, it is characterised as being 'comprised of a series of territorial units of successful regional economies centred around areas such as the 'Third Italy' and 'Baden Wurtemburg' and economically strong and large metropolitan regions in the core of the EU.

These sub-national regions are seen as Marshallian industrial districts – which achieve their competitiveness and capacity for innovation through local clustering or as global city regions in which financial and producer-service functions dominate. Clustering, permits savings via joint procurement and use of resources and by pooling labour, financial and physical capital and infrastructure. Co-operation and trust are vital for technological improvement. Therefore, as agglomeration enables local to prevail over national, it is local and regional economies that are seen as the motor of the global economy.

Nonetheless, despite the fact that emphasis on the 'successful' regions only really represents the tip of the ice-berg within the EU, the bottom of the ice-berg – or group of 'less successful' regions – is set to get much bigger with approaching eastern enlargement. For example, using per capita income (in purchasing power parity) for 1996 relative to the EU average, the wealthiest EU Member State was Luxembourg, with 168% of the average, whilst the wealthiest central European country was Slovenia, with 59% of the EU average (the poorest was Latvia with 18%).

Moreover, although membership of these countries will add some 105 million people, to increase the population of the EU by 28%, it will only add between 3.4% and 8.5% to EU GDP. Consequently, average EU per capita GDP would likely drop by around 15%. Hence, under current criteria applied to EU member states, all applicant countries would be eligible for Cohesion Fund support in addition to the support through the Structural programmes. As such, 'eastern enlargement is estimated to cost some Euro 42 billion, and would account for between 7% of Slovenia's GDP and 51% of Lithuania's'.[18]

II-4.2 National Disparities in Europe

Within the EU, national disparities in GDP per capita, relative to the EU average in 1996, indicates substantial differentials between the present fifteen member states, ranging from 66% of the EU average in Greece to 168% in Luxembourg. However,

[18] Regional trajectories and uneven development in 'the new' Europe: rethinking territorial success and inequality. By Adrian Smith, Al Rainnie and Mick Dunford.

based on the latest figures on GDP per capita in PPS (average between 1995-97) for the central and eastern European countries, not one of these countries have a GDP per capita above Greece, with the vast majority (8 out 10) lying well below 47% of the EU average.[19]

In terms of wealth generation in the EU, there are four identifiable clusters. Luxembourg occupies the premiere position and produces the highest per capita income. The second area comprises Belgium, Denmark, Austria, Germany, the Netherlands, France, Italy, and Sweden with per capita GDP ranging from about 101% for Sweden, to 114% in the case of Belgium. In fact, this core of countries lies at the heart of EU wealth generation. A third group of countries lies just below the EU average and includes Finland, the UK and Ireland (Ireland having improved rapidly while the UK has declined over recent years). The fourth group which now comprises three of the four so-called 'Cohesion Countries' includes Greece, Portugal and Spain, with GDP per capita ranging from 66% to 77% of the EU average, respectively.

In central and eastern Europe, there is also a pattern of wide disparities across the region as measured by GDP per capita in PPS (average between 1995-97). The two wealthiest CEECs are Slovenia with 66% and the Czech Republic with 64% of the EU average. A second group is comprised of Hungary and Slovakia with 47% and 44% of the EU average, respectively. A third grouping of countries can also be made which includes, Bulgaria and Latvia at the bottom with 25%, then Lithuania (29%), Romania (32%) and finally, Estonia and Poland with 34% of the EU average each.

II-4.3 Regional Disparities in Europe

There are also wide disparities in economic development *between* regions within the EU and the CEECs. Indeed, these differences provide a major obstacle to greater cohesion in a more integrated Europe. In terms of regional per capita GDP, relative to the EU average, huge differentials exist, ranging from 353% in Frankfurt am Main to 24% in the Polish region of Swietokrzyskie. Of the 50 regions in the candidate countries of Central Europe, 48 registered a per capita GDP below 75% of the EU15 average for the period 1995 to 1997. The 75% threshold level was exceeded only by two regions, Praha in the Czech Republic, and Bratislavsky in Slovakia, which recorded figures of 119% and 96%, respectively. The regional figures (calculated using the same principles as used for the regional classification of EU Member States) demonstrate that 48 of the 50 CEEC regions would qualify for EU funding.

In general, there are tremendous differences among the CEEC regions, especially between capital city regions and the rest of the country. Whilst at one end of the scale the lowest figure was recorded in the Polish region of Swietokrzyskie 24%, at the other end of the scale, the figure for the region of Praha was roughly five times higher at 116%. With the exception of Praha all other Czech regions recorded a figure for GDP per capita that was between 50% to 60% of the EU average. Similarly in Slovakia, the Bratislavsky region (with 96%) tends to raise the average GDP per capita since the figures for the three other regions range between 34% to 38%. Moreover, five out of Poland's 16 regions, all three regions in Bulgaria, together with Latvia and the North-East region of Romania, were the ten poorest regions, with GDP per capita

[19] Eurostat news release No 48/2000 - figures published 18 April 2000.

that were around 25% of the EU average. Table II-6 provides the full list of figures of Per Capita GDP in Central and eastern European countries.

'Within the EU there were a significant number of German regions and two French regions with average EU per capita income levels above 200%. However, GDP per capita figures for these regions are also inflated by the scale of net inward commuting – Frankfurt am Main, Munich, Darmstadt and Wolfsburg in Germany, plus Paris and Hauts de Seine in France. A large proportion of the regions located 125% above the EU average, were West German. However, most of the above average regions were metropolitan economies clustered around an axis, that extends from Greater London through Belgium and the Netherlands along the Rhine and into Lombardy and Emilia Romagna in the North of Italy – an area commonly referred to as the 'blue banana'.

In actual fact, this is the precise location of most of the forest-based and related industries within the EU. Based on data on over 20,000 firms, ETLA plotted the location of firms within the EU. This showed that whilst the industry is spread throughout the EU, the vast majority of firms are located in the same regions commonly referred to as the 'blue banana'. See Map of Europe.

Figure II-6. Map showing location of forest-based and related industries in the EU

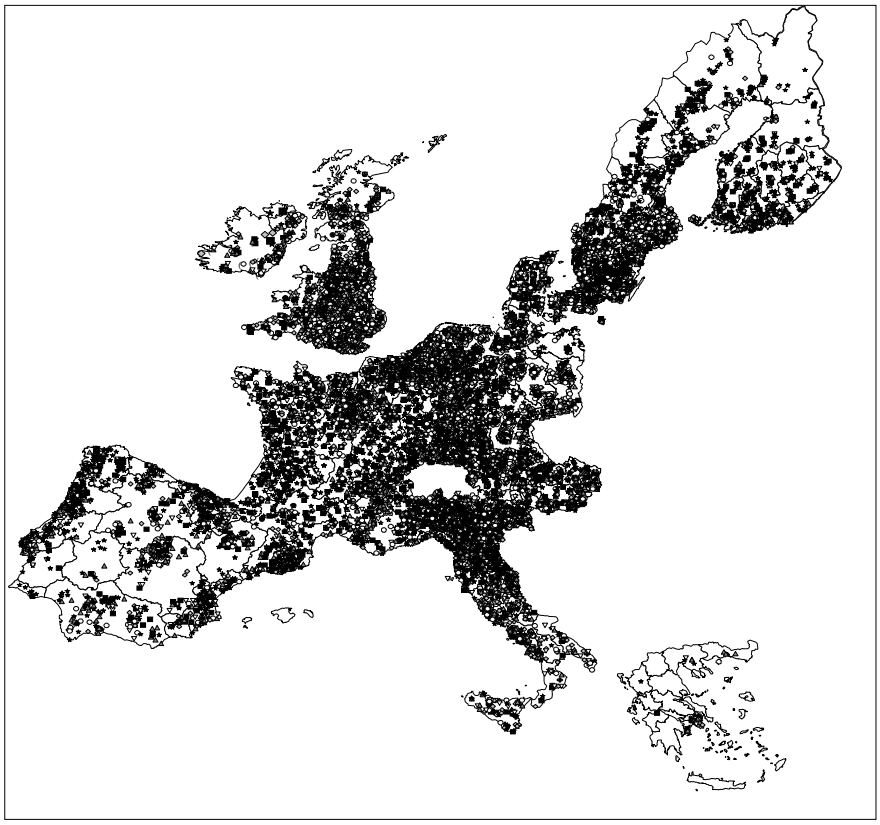


Table II-6 Regional per capita GDP in central and eastern European Countries

REGION	GDP (average for 1995-97)		GDP per capita - average for 1995-97 (PPS)	GDP per capita in PPS (average for 1995-97)	
	(ECU mio)	(PPS mio)		EU15 = 100	EU15 + CEEC10 = 100
EU15	6917129	6917129	**18463**	**100**	
CEEC10	274259	730666	**6950**		
EU15 + CEEC10	7191388	7647795	15940		**100**
BULGARIA	**8918**	**38592**	**4616**	**25**	**29**
SOFIA STOLITSA GRAD	1357	5872	4917	27	31
SEVERNA BALGARIJA	3429	14837	4562	25	29
YUZHNA BALGARIJA	4133	17884	4569	25	29
CZECH REPUBLIC	**43960**	**121336**	**11761**	**64**	**74**
PRAHA	9593	26472	21923	*119*	138
STREDNI CECHY	3641	10051	9085	49	57
JIHOZÁPAD	4794	13232	11197	61	70
SEVEROZÁPAD	4384	12105	10708	58	67
SEVEROVÝCHOD	5510	15208	10188	55	64
JIHOVÝCHOD	6315	17429	10478	57	66
STREDNI MORAVA	4503	12429	9988	54	63
OSTRAVSKO	5221	14409	11170	61	70
ESTONIA	**3414**	**9146**	**6220**	**34**	**39**
HUNGARY	**36685**	**87867**	**8621**	**47**	**54**
KÖZÉP MAGYARORSZÁG	15259	36540	12661	69	79
KÖZÉP DUNÁNTÚL	3731	8931	8009	43	50
NYUGAT DUNÁNTÚL	3747	8974	9005	49	56
DÉL DUNÁNTÚL	2847	6823	6869	37	43
ÉSZAK MAGYAROSZÁG	3240	7765	6002	33	38
ÉSZAK ALFÖLD	3894	9328	6054	33	38
DÉL ALFÖLD	3966	9505	6954	38	44
LITHUANIA	**6425**	**19707**	**5311**	**29**	**33**
LATVIA	**4139**	**11731**	**4708**	**25**	**30**
POLAND	**111858**	**242229**	**6272**	**34**	**39**
DOLNOSLASKIE	8247	17870	5985	32	38
KUJAWSKO-POMORSKIE	5274	11432	5458	30	34
LUBELSKIE	4760	10309	4597	25	29
LUBUSKIE	2577	5584	5491	30	34
LÓDZKIE	7445	16132	6021	33	38
MALOPOLSKIE	8259	17885	5594	30	35
MAZOWIECKIE	21106	45643	9020	49	57
OPOLSKIE	2752	5962	5461	30	34
PODKARPACKIE	4660	10094	4782	26	30
PODLASKIE	2628	5694	4658	25	29
POMORSKIE	6385	13831	6369	34	40
SLASKIE	16573	35901	7328	40	46
SWIETOKRZYSKIE	2765	5992	4508	*24*	28
WARMINSKO-MAZURSKIE	3234	7003	4810	26	30
WIELKOPOLSKIE	10336	22374	6704	36	42
ZACHODNIOPOMORSKIE	4858	10523	6102	33	38
ROMANIA	**28684**	**132580**	**5863**	**32**	**37**
NORD-EST	3861	17843	4713	26	30
SUD-EST	3743	17301	5867	32	37
SUD	4152	19196	5468	30	34
SUD-VEST	2830	13083	5387	29	34
VEST	2818	13027	6267	34	39
NORD-VEST	3408	15755	5485	30	34
CENTRU	3757	17362	6506	35	41
BUCURESTI	4114	19012	8204	44	51
SLOVENIA	**15094**	**24190**	**12164**	**66**	**76**
SLOVAKIA	**15082**	**43288**	**8049**	**44**	**50**
BRATISLAVSKÝ	3810	10928	17657	*96*	111
ZÁPADNÉ SLOVENSKO	4630	13288	7080	38	44
STREDNÉ SLOVENSKO	3253	9341	6911	37	43
VÝCHODNÉ SLOVENSKO	3390	9731	6356	34	40

Source: Eurostat news release No 48/2000 - figures published 18 April 2000.

Part II - The Packaging Industry in Central and Eastern Europe

Despite the fact that between the 1980s and 1990s national disparities narrowed significantly within EU member states, it is recognised by the European Commission (1996 Cohesion Report) that disparities between regions of the EU remained mostly unchanged, whilst within member states regional income disparities widened. In fact, there is a great deal of empirical evidence to show that the conceptual framework, upon which regional policies and thus transfers are based, is fundamentally flawed. Evidence from the Cohesion countries points to the conclusion that, since regional policies face a trade-off between equity and efficiency, it will be very difficult to attain higher national growth and at the same time to decrease regional inequalities. Hence, based on current regional policies there is serious doubt as to whether regional policies in Europe can actually deliver what they set to do. See box 2.

Research at the World Bank also suggests that the likelihood of convergence of economic performance in the near future in 'the new' Europe is doubtful. The technological gap, between east and west, is substantial and will be difficult to close. To add to this, the evidence within the CEEC region is of a distinct process of sub-national regional uneven development. Capital accumulation is increasingly centred in core areas, such as capital city regions and western border areas, whilst development strategies are leading to the peripheralisation of the more marginal regions, which are increasingly being left behind. This is particularly the case the further east one goes.

Box 2 – Are European Regional Policies Delivering? [20]

Within the EU, sums devoted to regional policies now represent one third of the Community Budget – the second largest item after the Common Agricultural Policy. In fact, the rapid rise in regional policy spending has coincided with the accession of the so-called Cohesion Group members (Greece, Ireland, Portugal and Spain). Transfers represent some 3% of GDP in these countries (actually it is double this amount, since national funding must match transfers), and by 1999 the total figure was expected to have reached Euro 33 billion – about 0.5% of Europe's GDP. However, with the future EU-Enlargement to the Central and eastern European countries, where per capita GDP levels are much lower than the Cohesion Countries, it is evident that a major overhaul of European Regional Policies is implicit. For example, 'based on the subsidies paid to East Germany, it is estimated that the EU would have to transfer $300 billion a year to the ten Central and Eastern European Candidate Countries'.[21]

Despite the prospect of increasing transfers, there is a great deal of empirical evidence to show that the conceptual framework, upon which regional policies and thus transfers are based, is fundamentally flawed or at best weak. Nonetheless, the European Commission believes that transfers to the poorest regions are beneficial to them, and will not only reduce regional inequalities but will also benefit all of Europe.

For example, 'according to neo-classical theory of international trade, a low level of productivity is no impediment to benefiting from trade gains based on comparative advantage'. 'Furthermore, neo-classical theory of growth with decreasing returns of scale predicts that trade liberalisation of capital movements will accelerate conver-

[20] This section draws heavily on: 'Are European regional policies delivering', by Philippe Martin. In EIB Papers – Volume 4 No 2, 1999 (European Investment Bank).

[21] 'Was it worth it?' – Business Central Europe, November 1999.

gence – since decreasing returns will mean that regions with low incomes, and low availability of capital, should have a high return on capital and hence this should therefore attract capital movements'. However, 'active policies to help the most disadvantaged regions cannot be justified in a neo-classical framework of perfect competition and without economies of scale, since the process of integration should accelerate convergence between regions.

Contrary to the neo-classical paradigm, the theories of endogenous growth do not predict convergence between rich and poor regions even when movements of capital are free. Moreover, recent models of economic geography show that regional integration, by reducing transaction costs between regions, may lead to self-sustaining inequality. Therefore, the new theories of economic geography and endogenous growth, which both emphasise the importance of economies of scale, imperfect competition and localised spillovers, would appear to be more appropriate.

If this framework is adopted, with its 'emphasis on the positive effects of local spillovers and on economies of scale, this also implies that there are positive effects from agglomeration and hence from regional inequalities'. 'If economies of scale and localised spillovers explain increased regional inequalities, this necessarily implies that efficiency gains accrue from the existence of economic agglomeration'. Moreover, the existence of these beneficial effects of agglomeration suggest that Europe's economic geography is insufficiently agglomerated and specialised. With this in mind, 'it is illogical to claim that the diminution of regional inequalities – supposedly facilitated by regional policies – will generate efficiency gains at pan-European level'. Therefore, 'to oppose concentration and geographic specialisation is also to renounce their beneficial effects'.

'Spatial concentration has an impact on the rate of innovation and hence on the long-term growth of the overall economy, because the cost of innovation in the richer region falls as the agglomeration of economic activities increase'. 'Geographic concentration of production activities increases opportunities to reduce cost of innovation and consequently to increase its rate of growth, with beneficial effects for the economy as a whole'.

Empirical evidence also suggests that there is indeed a trade-off between regional equity and a country's growth. Among the Cohesion group, the two countries that have achieved a high rate of growth and converged in per capita income terms towards the rest of the EU – Spain and Portugal – have also experienced the greatest regional divergence. In addition, it is also estimated that about half the income inequality existing between regions of the EU is accounted for by domestic inequality between regions within individual countries. In fact, during the 1980s and 1990s per capita income differentials have been narrowing between countries but widening between regions within countries.

These results indicate that 'the neo-classical growth model holds at the country level, whereas a model of endogenous growth, with elements of geographic economics, holds for regions of individual countries'. And that, 'the mechanisms which generate increasing returns, and hence potential divergence, are therefore more powerful at local rather than national level'. Martin summarises several hypotheses to explain this difference:

1. 'Spillovers deriving from increasing returns are geographically limited, since they depend on social interactions between individuals';
2. 'Migration may be the origin of agglomeration phenomena but in Europe labour migration is low due to cultural and linguistic barriers';
3. 'It is possible that transaction costs between regions within each country are much lower than transaction costs between regions of different countries, because of the existence of exchange risk between countries' – which has only just disappeared via Monetary Union and the introduction of the Euro.

Martin provides two reasons to explain why intervention is necessary. Firstly, 'when firms decide where to locate they do not take into account the impact of this choice on the well-being of immobile economic agents'. Secondly, 'in deciding where to locate, businesses will also not take into account the positive effects of agglomeration on the rest of the economy, particularly the innovation sector'. Adding that, 'there is therefore a difficult choice between these two considerations which regional policies should take into account'. However, with the aid of two examples Martin shows that the effects of regional policies are rather complex and even paradoxical.

In the first example, a simple monetary transfer is made from the rich to the poor region. The induced effect is seen to weaken the agglomeration phenomenon, since the increase in incomes in the poor region will stimulate relocation of firms to the region that has relatively increased its purchasing power. In addition, the decline in agglomeration is accompanied with more dispersed economic geography which is less conducive to spillovers, and hence in a lower growth rate.

One of the main objectives of European regional policies is to transform supply conditions, and indeed, some 30% of EU structural funds are allocated to the financing of infrastructure, mostly for transport infrastructure. According to Martin, the main consequence of financing such public infrastructure is to reduce transaction costs – which is the European Commission's primary objective to enable the poor regions to benefit from the advantages of the single market. However, 'lowering transaction costs has a widely differing impact on economic geography depending on whether the reduction is mainly in costs *within the region* or *between the regions'*.

In the former, a reduction in transaction costs *within* the poor region, by increasing the effective demand for locally produced goods will have the consequence of attracting new firms to this region. Therefore, industrial agglomeration will diminish to the benefit of the poor region, but this will lead to a lower rate of innovation (a decline in agglomeration will also be accompanied by a more dispersed economic geography which is less conducive to spillovers) and greater income inequality as businesses in the rich region, now facing less competition, will increase their profits.

In the latter, where regional policy tends to reduce transaction costs between two regions, the exact opposite occurs. This is because such a reduction will provide firms an incentive to relocate to the richer region where they can now benefit from economies of scale, while selling in the poor region aided by lower inter-regional transaction costs. Hence, this will accentuate agglomeration, since it will raise the long-term growth rate and reduce income inequality by reducing monopolistic business profits. However, induced agglomeration is not necessarily unfavourable at the national level, as the rate of innovation of the economy as a whole is boosted.

Therefore, it is evident that regional policies face a trade-off between equity and efficiency. Whilst evidence from the Cohesion countries already points to the conclusion that it will be very difficult to attain higher national growth and at the same time to decrease regional inequalities – based on current regional policies – this also suggests that it will be virtually impossible to attain this objective in the new member countries of Central and Eastern Europe.

Building upon the above analysis, Martin shows that a policy aimed at reducing regulatory barriers to innovation or the costs of innovation makes it possible to simultaneously achieve objectives of reducing regional inequalities and increasing the rate of growth. Policies involved could include R&D subsidies, education infrastructure, lowering barriers to entry on goods markets, making capital markets more conducive to new start-ups.

According to Martin, a reduction in the cost of innovation tends to increase the rate of growth. By boosting competition, this increases the rate of innovation, reduces business profits and hence inequalities between two regions. At the same time, industrial agglomeration in the rich region will also diminish. Hence, a public policy, which is least regional in its application, enables the regional policy objective to be achieved.

However, 'when infrastructure-improvement policy focuses on lowering the cost of conveying information rather than the cost of transporting goods, the effect is quite different'. 'By fostering the effects of inter-regional spillovers, such a policy enables the rate of innovation for a given geography to be accelerated, since the innovation sector benefits more from spillovers generated by geographically remote firms'. 'These policies would have the objective of increasing the capacity of poor regions to absorb new technologies and to increase spatial diffusion of innovation. This could be done by financing infrastructure in telecommunications and in education'.

Moreover, a reduction in the cost of conveying information is theoretically more favourable to regional equity than a reduction of transporting goods. For example, over the last 20 years the decrease of transport costs has been shown to lead to more agglomeration. However, Martin suggests that had the telecommunications infrastructure been similar in all regions of Europe, the speed of convergence (i.e. the average annual percentage reduction in the inter-regional income gap) would have been 4.1% rather than an actual 1.3% over the period 1978-1992. If calculated on transport infrastructure, the speed of convergence would have been 2%.

With this in mind, it is interesting to note that whilst the EBRD continues to make substantial investments into the telecommunications infrastructure across the CEEC region the European Commission forges ahead with its transport infrastructure projects. 'As of the end of December 1999, the EBRD had approved financing totalling Euro 1.5 billion for 56 telecommunications projects, with a total project cost of Euro 8.1 billion', with a further Euro 0.6 in the pipeline.[22] Moreover, the EBRD has now broadened its operations to encompass information technology and media. In a number of countries the telecoms sector has reached such a stage of maturity that it can

[22] EBRD activities in telecommunications, informatics and media – 'Ringing in the changes' EBRD web site: http://www.ebrd.com/english/opera/sector/telecommunications/telecoms.htm

now deliver advanced telecoms services. In contrast, the European Commission, which states "TENs are a factor for the reinforcement of the single Market", continues to move forward with its TEN transportation networks: 'Priority projects and those located in areas eligible for Structural and Cohesion Fund have received around Euro 1.8 billion between 1995-99'. 'Between 2000 and 2006, the commission estimates that TEN projects will require some Euro 5 billion'.[23]

Therefore, it is possible that convergence may indeed occur much faster in specific regions within central and eastern European countries, and as a consequence rapid development within certain industry sectors at the regional level, may also be a possibility.

II-4.4 Regional Development theories

Within the area of regional development there are two main themes. The first focuses on the *role of firms* whilst the second concentrates on the *relations between firms and regional institutions* to examine and explain regional development.

Within the first theme, which focuses on the role of firms, there are two key elements: i) the role of large externally-owned manufacturing plants and ii) the role of small and medium enterprises and endogenous development trajectories in industrial districts. Focusing largely on inward investment projects, research in the former area has 'attempted to identify the conditions under which foreign-owned plants become the basis for the creation of 'embedded' regional development in which an upgrading of domestic supply networks occurs'. Within the second element focusing on small and medium enterprises, the emphasis has been on 'explaining the seemingly enduring strength of localised agglomerations in an increasingly globalised and interconnected world'. Here it is argued that 'dense networks of flexibly specialised inter-firm cooperation found in industrial districts help to explain the enduring role of success of local agglomeration economies'. However, it is argued that the problem with this research is its assumption that there is only one best way (lean production, the learning firm, the learning region etc) for restructuring to occur, since continuous restructuring of economic practices means that there are a variety of possible solutions.

Research in the second theme, which focuses on the relations between firms and regional institutions, suggests that 'dense local tissues of corporate and institutional interaction are important in explaining the success of industrial agglomerations'. Firm-institution relations have been characterised as being 'untraded interdependencies' ('conventions and norms of interaction that foster collective and localised learning and promote 'trust' between economic actors'). This research focuses upon the governance of regional economies by institutions and the role of learning across institutional formations in promoting innovation and strategic upgrading of local economies. Therefore, according to this research, 'regional success is rooted in the way in which local resources and institutions are mobilised to enhance competitiveness, trust and innovation'.

[23] '14 TEN Priority Projects' The European Commission web site: http://europa.eu.int/en/comm/dg07/tentpp9807/index.htm

However, the treatment of politics of inward investment suggest that institutional interactions favour particular interests over others (multinational capital). In addition, these also tend to ignore the social dimensions of regional economic development, such as increasing income inequality and poverty. Furthermore, workers and in particular the role of organised labour, are in most cases absent from any analysis, even though they are especially relevant to the restructuring of CEEC economies.

'These 'new regionalist' accounts of regional performance therefore confine themselves to the limited success stories of firms, sectors and/or regions'. In addition, 'they fail to indicate the relative importance of the firms, sectors and/or regions within the context of wider systemic processes of uneven development that underpin the variegated map of winners and losers in Europe'. Consequently, development programmes formulated on the basis of these one-time-space contexts can, realistically, only be expected to be applicable to sites with the same regional trajectories. Therefore, as much of this research focuses on how best to transfer success from one environment to another, the key issue is the extent of 'real' convergence, or should we say divergence, of regional economies in the 'new Europe'. Moreover, there is also limited scope to actually transfer successful prerequisites to the central and eastern European countries given the fact that the success stories are based on a set of West European examples.

As much of the focus of 'new regionalism' has been on how to best transfer success from one environment to another, emphasis is placed on building the wealth of regions, with upgrading of economic, institutional, and social base seen as being the prerequisite for entrepreneurial success. It is argued that the wealth of regions can be built via a variety of mechanisms such as follows:

1. The development of clusters of inter-related industries with deep roots in a local skill or capabilities base to enhance international competitive advantage;
2. Enhancing regional performance by learning to learn and adapt to changing environment and to predict and shape future trajectories of growth, and being able to evolve in order to adapt;
3. By broadening and mobilising of the local institutional base to enhance associations between state and non-state actors to unlock potentials; and
4. By the creation of socially inclusive entrepreneurship and employment to nurture skills, expertise and capabilities.

As the above represent a basis for alternatives to market-dominated regional economies, a 'third way' has also been proposed in recent years. The third way is an attempt to set up networks of intermediate institutions between market and state, with the view to counterbalance the influence of large corporations and dominant state institutions – i.e. to provide regions with a 'voice'.

However, there are a number of concerns with 'new regionalism', which still remain. The first, is the issue of the increasing internationalisation of the state – who's role is now one of helping the domestic economy to adjust to the global economy, with regional governments role now being limited to making its soft and hard infrastructure as attractive as possible to mobile international capital. Despite the concerns, the introduction of the Euro has reinforced the argument that the state is becoming less meaningful since national governments have ceded currency control to the European

Central Bank, thus relinquishing some of their powers at the national level. Secondly, the new forms of the so-called 'inclusive' work practices and management techniques based on the concepts of re-skilling and teamwork may be less significant than the intensification of the modern day labour process itself. Indeed, disempowerment of workers is characteristic of the new working practices being implemented in many foreign investment projects throughout the CEEC region. Thirdly, these new working practices increasingly offer no-union or one-union agreements thus eroding the basis for democratic negotiation even further. Fourth, the increased network relations between firms may be the based more upon unequal power between companies than upon equity and reciprocity due to subtle coercion of companies wishing to keep their suppliers' or customers. Finally, 'institutional thickness' of state and non-state interactions may be no guarantee for long-term innovation, learning and competitiveness since institutional lock-in can constrain as much as promote change.

What then is the potential for the implementation and development of wealth of regions type policies in an increasingly inter-dependent European economy. According to Smith, Rainnie and Dunford (1999), 'the scope is limited for three reasons'. 'First, there are limits to the extent to which inward direct investment can provide the basis for enhanced wealth of regions'. 'Corporate strategies of multinational companies investing in the CEEC region are generally not conducive to the enhancement of regional economic performance'. 'Strategies tend to capitalise on the low wage, low cost locational advantages of the region and upon gaining access to new markets'. Hence 'it is unlikely that the substantial development gap between east and west will be overcome by enhancing the role of western corporations in the region'. Secondly, regional capacities within the CEEC region have been eroded due to the 'de-industrialisation of large parts of the region since the early 1990s' on one hand, and the 'continued adherence to neo-liberal policies and macroeconomic prudence under a regime of global governance' on the other. Finally, because of the legacy of state socialism the regional institutional structures of the CEECs can be characterised as 'thin' having left few actors to build upon.

Moreover, Smith et al, argue that relating this geography of economic activities to mechanisms of wealth creation and re-distribution perhaps provides a better understanding of the uneven development pattern in Europe. Furthermore, 'an understanding of the production and flow of value associated with different forms of economic activities in different locales may well provide a key starting point to understanding the production of uneven development in 'the new Europe''.

Commodity or value chains have three main dimensions. First, 'commodity chains have a specific input-output structure that links various nodes of production, distribution and consumption into a chain of economic activity through which value-added is produced'. Second, 'commodity chains have a territoriality aspect to them, since various activities, nodes and flows within a chain are geographically situated, with implications for levels and processes of development depending upon where a locale is within the chain'. Finally, 'commodity chains have a structure of governance that determines how financial, material, and human resources are allocated and flow within a chain'. Governance is a crucial part of such a framework, and what governs these flows of value are the mechanisms of organisation within the chains: buyers or suppliers, capital or labour.

II-4.5 What is a value chain?[24]

'The value chain describes the full range of activities that are required to bring a product from its conception, through its design, its sourced raw materials and intermediate inputs, its marketing, its distribution and its support to the final consumer'. The concept of the value chain was used extensively in the 1960s and 1970s and adopted in the late 1970s and 1980s industrial studies in the form of the filière (which means 'thread' to represent the complete thread of the value chain).

More recently, 'the prominence of the value chain as an analytical structure arose from the work of Michael Porter'. 'An important supplement to the concept of the value chain is the idea that many chains are characterised by a dominant party (or sometimes parties) who becomes responsible for upgrading activities within individual links and co-ordinating interaction between the links'. This role of 'governance' has two basic forms: those cases where the co-ordination is undertaken by buyers ('buyer-driven commodity chains') and those in which producers play the key role ('producer-driven commodity chains').

Moreover, it has been shown that 'production for the world market does not guarantee sustainable income growth'. 'It is not so much entry into the world market which provides for sustainable income growth, but rather the manner in which this insertion takes place'. In particular, 'the spread of global capabilities in manufacturing has meant that in many sectors, added value is increasingly found in design, buying and marketing rather than in production itself' (It is often forgotten that nowadays, distribution and marketing costs often account for a larger share of the final price of a good than the cost of actual manufacture).

'Analysis of value chains identifies those areas of production which are subject to intensifying competition, and hence declining terms of trade'. At the same time, 'it exposes those processes which allow poor countries and poor producers to upgrade their activities in a manner which can provide for sustainable income growth'. Consequently, the value chain concept 'not only facilitates research but also provides practical insights into policy at both the corporate and government levels'. For example, it is possible that two or more value chains may be competing for the same raw material or the same customers.

As wage levels depend also on the level of the prices of consumer goods in a country, which in turn determines the purchasing power of – or living standard achievable with – a given wage rate, it is important in value chain analysis to recognise that price levels vary considerably between countries, and that wage rates vary less among countries in real terms than in money terms when converted to say US dollars. However, it is a serious mistake in value chain analysis to lose sight of money wages, since this is what firms care about when making decisions. For example, the choices of transnational firms or networks of firms as to where to locate each stage of supply chain depend on the dollar wages of countries, and how official exchange rates move in relation to purchasing power parity rates both in the short and long term.

[24] This section draws on: Value Chains: An economist's perspective, Adrian Wood. Institute of Development Studies. September 1999.

There are two economic theories of what determines comparative advantage which are relevant to value chains. One stresses differences among countries in resource supplies – i.e. raw materials come from countries with suitable land and that labour-intensive stages of production tend to be located in countries with low wages. The other stresses differences in technology – that countries tend to specialise in activities in which their inhabitants are especially knowledgeable. However, both these theories make extreme and opposite assumptions about international diffusion of technical knowledge, the former supposing knowledge to be freely available everywhere, the latter that particular bits of knowledge are locked up in particular countries. However, an intermediate position which seems more relevant to value chains is that knowledge can move from one country to another, but only at a price.

Another question about value chains is why some countries are involved in so many of them, while other countries are involved in so few (particularly developing ones). Economists offer two explanations for this. The first concerns transport costs and barriers to trade. Countries where these barriers are high will tend to be less involved in all sorts of international trade, including trade within value chains. Whilst the second one lies in external economies of clustering. The more chains a country is already involved in, the easier it is to become involved in additional chains, because there are economies of scale in the supply of infrastructure, skilled labour, support services and information. This answer has different implications for policy, favouring more active intervention to attract and retain internationally footloose activities in which a country has a potential comparative advantage.

II-4.6 How should the forest based and related industries be viewed in central and eastern Europe.

One of the main conclusions of ETLA's research into the forest-based and related industries of the EU was that there is no such entity as the EU forest cluster, instead, the competitive elements of the industry exist as a series of industrial districts, clusters and agglomerations. These are scattered throughout the EU and are found at local, regional and less so at national levels. At the same time, they are also interconnected through a series of complex relationships – be they multinational suppliers, producers or small firms as part of a local network – information and technology is transferred from one competitive region or district to another via various mechanisms. In addition, numerous examples have been identified to show that production nodes of the value chain are strung across several countries, from raw material supplier to end-user throughout the EU and even further afield.

However, some branches or sectors of the forest-based and related industries do appear to coincide with individual themes of either of the previously mentioned regional theories. Therefore, in any analysis of these industries it would seem appropriate to select the most applicable theory which best characterises the success or failure of these industries at the most suitable level of analysis. For example, success in the most competitive wood furniture industries is explained using the industrial district or agglomeration theories, whereas the in the case of the pulp and paper industries, success is best explained using Porter's industrial cluster methodology. More importantly, however, what nearly all the above success stories point to is that of success being spatial in nature and that national borders do not confine nor do developments taking place within those borders alone account for the success of those industries.

Hence, it is clear that industrial development should be viewed at the firm and industry level on a regional basis and that the position within the value chain must also be assessed appropriately. As such, the following section secribes in some detail the recent investments in the pulp and paper industry of central and eastern Europe.

II-5 Recent investments in pulp & paper industries of central and eastern Europe

In previous sections, it was suggested that the vast majority of investment into the CEEC pulp and paper industry, was confined to the packaging industry. Whilst this is mostly true, it should be clear from the following details that significant investments are also being made in some of the higher value added product areas such as paper board and also printing and writing papers. This is especially the case in the more economically developed regions of the countries concerned, i.e. the Czech Republic, Slovenia, Slovakia and Hungary to a lesser extent. The following section, therefore highlights some of the more recent investment projects being implemented, both by foreign investors and local producers and briefly provides an overview of the pulp and paper industry in each country of the CEEC region. Investment details also help to show which end of the value or commodity chain these investments are aimed at.

Poland

In 1999, pulp production in Poland dropped following the shut-down of the dissolving pulp line at Frantschach Swiecie and the unbleached kraft pulp unit in Krapkowice. Nonetheless, production of paper and board grew by 6.5%, whilst market conditions improved for some paper grades especially in the latter half of 1999. Wastepaper shortages, however, prevented producers from expanding production of paper and board even further.

Raw material shortages have been compounded by environmentalists. Protesters have argued that wastepaper is harmful to the environment and not a crucial source of fibre for papermaking, and this has resulted in the government legislating a limit on wastepaper imports. Moreover, Poland exported some 17,000 tons of wastepaper to Germany in 1999. On top of this, current paper collection is inefficient resulting in a rather low wastepaper recovery rate at around 32%, suggesting much scope for improvements.

Due to the limitations in pulp and wastepaper capacity, consumption growth is increasingly being fed by imports. Coated papers are not produced domestically in Poland and hence, these are among the main imports.

The Polish market is one of the largest in central and eastern Europe, so it is no surprise that most of the main foreign investors from the western European pulp and paper industry are represented in some way.

In addition, due to the large potential, attracting many investors in numerous product grades, most sectors of the industry are quite fragmented. This is especially the case in the packaging industry, which appears to have attracted the most investors. Hence, whilst the packaging industry appears to offer high potential in Poland, consolidation within the packaging industry is also very likely in the near future.

Czech Republic

Most Czech paper producers have been privatised and now belong to foreign papermakers. The country is exposed to cut-price imports in most paper grades. The Czech pulp and paper industry began to recover from the economic downturn in 1998 in the region. During 1999, paper and board production and consumption both dropped by almost 2%. The main investments took place in newsprint production at Norske Skog's plant and in mechanical printing and writing papers at Jihoceske Papirny at the Vetrni mill. Although kraft pulp production dropped by 1.6%, this was mainly due to the shutdown at AssiDoman's Sepap mill for modernisation purposes. Biocel Paskov also invested in its sulphite pulp operations. In 2000, operating rates were expected to rise even more due to improved market prices. However, in comparison with other European paper industries indicated that the Czech paper industry needed to become more responsive and flexible to global trends affecting the industry.

From the overview of recent investments it is very evident that most are targeted towards the packaging industry, in areas such as sack paper, corrugating materials, cartonboard, folding box board and pulp used to manufacture corrugating materials. However, there are also significant investments in the higher value added printing and writing papers. What is also noticeable, is that many of the investments into raising capacity and quality aim not only to export to markets in eastern Europe, but also expect to export to main western European markets.

Slovakia

According to the Slovakian papermaker's association, some SKr 9 billion (4184 million) will be invested in the Slovakian pulp and paper industry over the next four years. More than SKr 6 billion will be invested by SCP (Severoslovenske Celulozky a Papierne) alone. SCP plans to raise capacity of its uncoated woodfree production and bleached pulp, with further capacity expansions planned in graphic papers.

In the year 2000, the Slovakian pulp and paper industry performed quite well. Revenues increased by 28% to SKr 21 billion (SCP accounted for more than half of this) with pre-tax profits growing by SKr 157 million to SKr 895 million. Almost 80% of the total revenues were earned from exports. It is also claimed that Slovakia has sufficient amounts of local raw materials for pulp and paper to satisfy the increasing demand for pulp and paper. Moreover, it is forecast that consumption of paper in Slovakia will increase from the current level of 55kg per capita per year to 100kg per capita within 5 years.[25] As such, future investments are aimed at processing the country's abundant wood supplies.

SCP is Slovakia's largest paper mill and is also the biggest paper exporter with export markets in Germany, Czech Rep, Italy, France, Austria and Poland. In 2000, SCP's revenues rose 44% to SKr 11.2 billion, but this was mainly due to higher international paper prices. The company, 50% owned by Neusliedler of Austria (itself is a subsidiary of South Africa's Mondi Ltd), produced 340 tonnes of paper in 2000 – 73,000 more than in 1999 – of which about two-thirds were exported.

[25] Pulp and paper online March 2001.

SCP has sold off its hygiene operations at the Harmanecke papierne and Papieren Slavosovce, to Eco-Invest and Salis, as part of its strategy to focus on its core business of graphic papers. Following these transactions and mention of further negotiations by these companies, it was thought that a series of acquisitions in central Europe would begin, in an attempt to create a more substantial hygiene paper group capable of competing in the main European markets.

Investments have been made mostly by several western pulp and paper companies, namely SCP, the Slovakian company Tento Zilina, and AssiDomän (whose packaging operations were recently acquired by Kappa of the Netherlands). Investments have been targeted at printing and writing papers, cartonboard and corrugating materials as well as tissue products. Some companies also appear to export the vast majority of their output to western Europe.

Hungary

During 1999, the Hungarian paper industry grew by 5.3% more than the previous year. However, as domestic consumption has remained flat at about 640,000 tonnes/year, excess production was exported. Exports of printing and writing papers grew rapidly by 46% and likewise exports of corrugating materials rose by 18%. As the additional 5.3% gain in production output was accompanied with a 8.0% drop in personnel, production efficiency also improved.

Dunapack made a number of investments abroad. It invested in a new corrugated box mill in Romania, enabling expansion of capacity and transfer of its technical knowledge. Dunapack also constructed a new 50 million sacks/yr paper bag mill in the Ukraine. In addition, the company made a joint investment with Mosburger of Austria in a new corrugated box mill in Poland with a capacity of 40,000 tonnes/yr.

Austrian companies have acquired about 60% of the Hungarian paper and board plants. Production and consumption of printing/writing papers and corrugated materials have shown strong growth. Wastepaper usage has also increased in corrugated materials production, even though the recovery rate is still low.

Most of the investments appear to be within the packaging sector, with substantial investments being made in corrugating materials and cartonboard production. Finnish companies Metsä-Serla and Stora Enso have been more active in Hungary. It is also worth noting that Hungary has been targeted by numerous multinational consumer electronic manufacturers, who have set up substantial production plants (Nokia, Phillips etc). These units provide huge potential for packaging companies.

Slovenia

There is a strong tradition in paper manufacturing in Slovenia, which dates back to the 16th century, with industrial papermaking stretching back 145 years. During the 1990s however, the Slovenian paper industry suffered mainly due to the loss of markets in the former Yugoslavia, due to the Balkans war. In recent years, prospects for the industry have improved. In 1999, the Slovenian paper industry had a record year, producing more than 500,000 tons for the first time. However, increased production levels were generally achieved through full order books and not via substantial invest-

ments in new capacity. As a result most companies ended the year in profit, with Kolicvo Karton (making some $6 million in profit) the best performer.

Sales of the Slovenian pulp and paper industry grew to $500 million, with more than 75% coming from exports. The most important export markets were Germany, Croatia, Italy and Austria. Slovenian paper manufacturers invested more than 30 million on upgrades in 1999. Amongst the most important improvement projects were the new coater at the Goricane paper mill and the sheeter in Vipap Krsko.

Investments are mostly in the packaging sector, in cartonboard and corrugating materials, but there are substantial investments in graphic papers.

Romania

Privatisation is still incomplete. The P&P federation has taken steps to reduce imports, whilst the sector is looking for foreign investors for mills. During 1999, pulp and paper industry output in Romania decreased by 2% in line with the general economic deterioration. However, whilst total exports rose by 2.4%, exports of paper and board grew by 15.2%. Total imports feel by 12% and likewise paper and board imports also dropped by 16.1%. Romania imports most paper and board grades. The highest levels of imports are, in particular, printing and writing papers, coated multilayered board and technical papers and boards.

Romania has now introduced several economic reforms in preparation of EU membership. Changes in privatisation laws have removed minimum selling prices, whilst poor performing state-owned companies have been shut down or gone into liquidation. In the pulp and paper industry, three mills were closed down and a further 11 mills have been put forward for privatisation. Four mills have already been privatised, and it is conceivable that the whole Romanian pulp and paper industry will be in private hands by 2001.

In 1999, some $17 million worth of private funds were invested into the Romanian pulp and paper industry. Ambro Suceava upgraded its softwood kraft pulp line to increase capacity, and also modernised one of its machines to raise capacity of packaging paper and corrugated materials. Celrom Turnu Severin modernised its fluting machine and Dunapack Rambos upgraded its corrugated board line. RondoCarton Cluj started up a new corrugated board and converting plant.

Despite these investment projects in private companies, machines at state-owned plants remain out-of-date. As these companies simply do not have the resources to fund the necessary upgrades of equipment, they are becoming even less competitive than they were before. Hence, privatisation is seen as the only way that these companies will be able to modernise their facilities.

Nearly all recent investment projects are within the packaging industry.

Bulgaria

1999 was not a good year for the Bulgarian pulp and paper industry. Production and trade of the industry dropped by more than 35%, with output at only 25% of its total

capacity. The massive drop in production levels was caused by a number of factors, including, unsuccessful privatisation of the industry, the breakdown of trade links through war in Yugoslavia, and the dire lack of investment by foreign and domestic companies.

For example, despite the fact that many of the mills were privatised, this did not automatically rid the industry of out-of-date manufacturing processes and technologies, At the same time, many companies hired people without the necessary managerial and specialist knowledge, resulting in a failure to introduce new management practices and organisational structures required in the current pulp and paper industry. Hence performance of the new enterprises did not live up to expectations.

The war in Yugoslavia in 1999, had a severe impact on the Bulgaria's economic performance. Trade relations were completely severed with Western Europe. Consequently, output dropped and demand for pulp and paper products also collapsed. At the same time, exports of pulp and paper to Yugoslavia and the neighbouring countries also reduced substantially.

Investment in the Bulgarian pulp and paper industry in 1999 was only $30 million, but this was not enough to build much needed new plants and machinery. Only one small rebuild took place in 1999. Despite the problems of 1999, and the fact that two mills had gone into liquidation in 1998, Bulgarian mills managed to survive 1999. However, some mills were forced to reduce or even stop production altogether. In the year 2000, pulp and paper production was expected to increase somewhat, whilst the Bulgarian GDP was anticipated to grow by 3 to 4%.

Transport connections across the Danube are due to be upgraded in the near future. As affects of war in Balkans finally subside, further investments anticipated.

Most investments are acquisitions rather than in capacity expansion or improving quality.

Estonia

Despite the continued economic slowdown in Estonia during 1999, foreign investment continued to pour in. Lindegaard, the Norwegian group, acquired the paper converting operations of Kohila Paper Mill, having previously purchased the paper converter, Walki Paberisto, from UPM-Kymmene.

Several potential schemes to build pulp mill plants are still underway in Estonia. These range from large 500,000 tonnes per year softwood and hardwood markets pulp mills, involving the Estonian government and several investors (US) in one consortium, Mainor, the Tolaram Group and other international investors in another consortium, to the Norwegian Larvik group, who plan to build a 100,000 tonnes per year unit. However, it is thought that the Mainor scheme has disappeared with Mainor pulling out of the scheme.

Most investment has been in converting operations and is limited to a few companies. However, the pulp mill investment plans are likely to go ahead, resulting in Estonia becoming a major supplier of pulp to Europe.

Lithuania

During 1999, the Lithuanian economy suffered due to the adverse affects of financial crisis in Russia. Consequently, consumption of paper and paperboard declined by 4% on the previous year. Three of Kaunas' PMs were shut down in 1999, leaving only 5 paper and board mills in Lithuania, with a capacity of 140,000 tons per year. In 1991, the capacity was around 230,000 tons per year.

Nonetheless, the Lithuanian Ministry of Economy has proceeded with its development plans assessing the feasibility of building a pulp mill in Lithuania. In March 2000, it was decided that the potential pulp mill should focus on bleached kraft pulp. Further studies regarding possible exports markets, paper products, site selection and the possibility of a new paper mill have been carried out. The Lithuanian government (in Conjunction with an Asian International Co-operation agency) has been studying the possibility of building a pulp mill to capitalise on the country's vast timber resources. In April 2001, the project was given the go ahead by the Lithuanian government and now discussions with investors are due to begin. The pulp mill will come on stream in 2006.

There are few investment projects within the Lithuanian pulp and paper industry, but given the country's proximity to Finland and Sweden, this is not surprising, since the Lithuanian market can essentially be served by imports. As with Estonia the most important development for the industry is the likely go ahead of the Lithuanian pulp mill.

Latvia

Latvia's main exports are wood and wood products which accounted for 37% of total exports in 1998. Products exported included sawn timber, chipboard and fibreboard, plywood, roundwood and pulpwood. Around 58% of exports go to the EU.

Within the domestic pulp and paper industry in Latvia, there has been a dearth of investment for decades. However, after a number of years of investigation and months of negotiation, Metsäliitto of Finland, Södra of Sweden and the Latvian government have reached a joint agreement for the launch of their pulp mill project. The new company called 'Baltic Pulp' aims to investigate further the feasibility of building a modern bleached kraft pulp mill with a capacity of 600,000 tonnes/yr in Latvia. The final decision on the $950 million investment will not be made until the end of 2002.

In 1998, output from the pulp and paper industry amounted to $44 million, however domestic production accounted for just 5% of this figure. Lack of investment has meant that only three of Latvia's paper machines are still functioning, and these are all at the Ligatne Paper Mill. Increasingly, producers are switching to converting operations, especially in the packaging sector.

As with Lithuania, there are very little investment projects, with most demand being fed by imports. As in the other Baltic countries, the huge pulp mill plant, which is likely to go ahead suggests that Latvia will become another key source of fibre supplies for the European region.

Summarising recent investments within the pulp and paper industry of central and eastern Europe, it is evident that much of the investment activity is targeted towards different aspects of the packaging industry. Projects range from producing raw material inputs of pulp, production of corrugating materials, converting operations, production of various grades of packaging paper and board, to the higher value added carton boards for consumer packaging. At the same time, there are also significant investment projects to produce higher value added printing and writing papers. However, as most of the immediate potential for Finnish companies appears to exist in the packaging sector, the following sections discuss this packaging industry and its potential in more detail and then attempts to suggest how this may impact the Finnish pulp and paper industry in the long term.

II-6 Packaging Potential for the Finnish Forest Cluster[26]

The turnover of the packaging industry in Western Europe is around $100 billion per annum. Whilst packaging can be divided into two broad categories, transportation packaging and consumer packaging, the food industry is the predominant user - accounting for some 70% on average. As such, the packaging industry has increased as industrialisation and urbanisation has increased, although demographic changes are also a contributing factor. Hence, emerging markets - such as those in Central and Eastern Europe, adding over 105 million people - are viewed as great potential for future development of the packaging industry. For example, improvements in income per-capita are often accompanied by increasing consumption (consumer packaging).

In the past, competition amongst different packaging materials has focused mostly on cost efficiency, however, advertising and environmental factors have become increasingly important, and have affected fibre-based packaging much less. An additional advantage of fibre-based packaging is that its surface lends itself more easily to printing than other types of material.

Nonetheless, the packaging sector is dominated by its' customers, who are about five times the size. Consequently, this has restricted technological development. In addition, retail stores have also become more powerful in terms of distribution channels and hence will likely affect transportation and packaging solutions more in the future, in that there will probably be greater use of local raw materials and a focus on packaging costs. At the same time though, the increase in global brand names will have the opposite affect since quality and reputation will be key factors in packaging technology.

In terms of environment, health and safety, the latter has become much more important in the packaging industry to guarantee chemical, microbiological and hormonal integrity. Although a major challenge exists in the use of fibre-based packaging for the food industry – to provide an impervious layer – new fibre and web technology may be able to overcome this problem and thus further increase the competitiveness of fibre packaging. 'New web technologies make it possible to form the necessary sealing layer out of paper to combat infiltration by microbes, water or gases, without

[26] This section draws heavily on: Finland's forest cluster up to the year 2020: On the future of packaging. Jyrki Kettunen, page 320-324. In: The Green Kingdom – Finland's Forest Cluster. Metsämiesten Säätiö Foundation, June 1999.

the need for separate coating'. At the same time though, the development of composite packaging materials would also seem a logical step here.

In the area of consumer packaging, Central and Eastern European and Russian markets are of most interest to the Finnish forest cluster. In the EU, environmental disputes - related to safety issues - are reducing the use of fibre-based packages in both the cosmetics and pharmaceuticals industries, and thus growth in container board must be sought else where. And although some growth in fluid packaging – especially for diary products and juices – is expected within the EU, the main focus is already in Central and Eastern European markets.

In addition, as the corrugated board box is one of the most important transportation packages for the Finnish forest cluster, the development of the corrugated board markets in Central and Eastern Europe and Russia is of particular interest to producers in Finland. For example, it is anticipated that the need for transportation packaging will quickly grow as these economies develop. Therefore, export trade and technological know-how will provide areas of potential to the Finnish forest cluster.

According to one industry expert[27], it is hoped that Finnish packaging companies will evolve in the direction of "companies relying on the structure of the markets attempting to be independent of their sources of raw materials, striving instead to achieve close networking with their customers", or that they will at least be able to cross the boundaries represented by different materials.

Moreover, "the packaging industry in Finland will be able to succeed only through substantial inputs of technology and simultaneous expansion into markets of Central and Eastern Europe and Russia with traditional products. Success should also be sought by networking with customers in need of large packages and by breaking free from their mode of thinking based on raw materials".

II-7 Fibre-based Packaging Products and Grades

Packaging products are composed of various raw materials such as paper and board, plastic, aluminium, glass. Today the tendency is increasingly towards combinations of several materials meaning that sharp distinctions are not always possible. In this section the emphasis is on paper or fibre-based packaging. In regards to the end use of packaging materials, there are numerous consumer products which incorporate paper and board as the main packaging material. These consumer products include: liquid containers for drinks and dairy products, packaging boards for perfumery and pharmaceutical and food products, wrapping papers for food products amongst other uses. See Table II-7 Packaging papers and boards below.

A corrugated container or box is one of the most efficient forms of packaging for distributing goods. Corrugated containers are designed to protect products during shipping but increasingly, nowadays, they feature enhanced graphics to increase the market appeal of the contents of the box, to consumers. They are made from a semi-rigid paper product known as corrugated sheet or board which is printed, folded and glued or stapled to form the corrugated box. Containerboard is the generic term used to describe certain grades of paper, mainly linerboard and medium, which are used primarily for the production of corrugated sheet or board.

[27] Mr Jyrki Kettunen, Vice President of R&D in Metsä-Serla.

Corrugated sheet or board is made from several layers of containerboard laminated together. Corrugated sheet is commonly made from two layers of linerboard and one layer of medium sandwiched between. Corrugating medium or fluting is the wavy material used in the corrugated sheet or board. Fluting refers to the wave shapes pressed into the medium by the corrugator and is categorised by the size of the wave. A corrugated sheet is made by combining the different layers of board on the corrugator. Adhesive is applied to the tips of the medium 'flutes', which are then faced on both sides with linerboard to form a rigid structure for making boxes.

Table II-7 Packaging papers and boards

Packaging Grade	Sub-Category	Production Process	End-Uses
Case Materials	Kraftliner Testliner Semi-chemical Fluting Waste-based Fluting	Made from any combination of virgin and recovered fibres and can be bleached, unbleached or mottled	Papers and boards mainly used in the manufacture of corrugated board
Folding Boxboard	Cartonboard	Made from virgin or recovered fibres, and has good folding properties, stiffness and scoring ability.	Used mainly in cartons for consumer products such as frozen food and for liquid containers
Wrappings (up to 150 g/m²)	Sack Kraft Wrapping Krafts Sulphite and Grease Proof papers	Made from any combination of virgin and recovered fibres, bleached or unbleached. May be subject to various finishing and/or marking processes.	Wrapping and Packaging Papers
Other Papers for packaging purposes		Mostly produced from recovered fibres e.g. greyboards, and go for conversion, which may be for end uses other than packaging.	Papers and boards for packaging purposes other than above.

Source: Forest-based and related industries of the EU - Industrial clusters, districts and agglomerations, C. Hazley, ETLA.

Medium or fluting can be made from both virgin or recycled fibre. It is typically made from semi-chemical pulp using hardwoods and recycled fibre. Semi-chemical medium contains some long fibres to improve paper machine runnability and to reduce the tendency of the medium to crack or break upon corrugating. Semi-chemical medium is normally manufactured on conventional fourdrinier paper machines, or twin-wire machines. Recycled medium, which is produced at newer mills using the latest technology, is considered functionally equivalent to semi-chemical medium. Hardwood chips are the main furnish, along with old corrugated containers (recycled) and new double-lined corrugated cuttings. Nowadays, recycled furnishes for board production are very much 'en-vogue' in Europe, but this is not the case in North America where the average recycled content is 50%, well behind the rest of the world. Typically, the amount of secondary fibre used in semi-chemical medium may be as much as 50 per cent.

In world markets the US and Europe control 60 to 70% of the world corrugating medium market capacity. In 1999, they held 21 million tonnes of capacity, each with around 50%. It is anticipated that the corrugating medium market in Europe will grow significantly in the coming years, with much of the growth in recycled medium in western Europe. The corrugated medium market is generally considered to be more competitive and regionalised than the linerboard market. This is simply because corrugated medium is a bulky product which can not be transported economically over long distances.

Table II-8 Largest Semi-Chemical Fluting Producers in Europe

Company	1000s of Tonnes
Stora Enso	500
Metsä-Serla	250
La Rochette	150
AssiDomän	130
D. S. Smith	125
Sande	80
Swiecie	70
J. Smurfit Group	40
Cartiera I.C.L. Alce	40

Linerboard is the grade of containerboard used as the inner and outer layers of corrugated sheet which sandwiches the corrugated medium to form a rigid structure. Linerboards are typically made into corrugated boxes for shipping a variety of consumer goods, which include computers, furniture, tools, resins, toys, fruits, vegetables, meats, poultry, and even paper itself. There are two main types of linerboard: kraftliner and testliner. The word kraft is the German word for strong. Kraftliner is the strongest form of linerboard and is manufactured from virgin wood fibre. However, kraftliner can sometimes contain 20 per cent recycled material. Testliner is made from recycled paper and often contains 100 per cent recycled material. Linerboard is made in various basis weights.

Unbleached kraft linerboard is made from kraft pulp and is the strongest of the linerboard grades. The kraft process - developed about 100 years ago - utilises softwood chips, which have long fibres and so help make the strongest board. Unbleached kraft linerboard generally contains about 80 per cent sulphate or kraft pulp from virgin wood fibre. However, the percentage of recovered paper fibre used in unbleached kraft linerboard continues to grow since the use of recovered paper can help lower production costs. Most kraft linerboard is produced on wide, conventional fourdrinier paper machines at speeds of up to 2000 fpm (feet per minute - US). Recycled machines typically run at speeds higher than this.

The corrugated box market tends to be more competitive and regionalised, with a large number of players and more elastic supply – with most box plants running below full capacity. Linerboard prices are typically the major factor in determining corrugated box prices. Mottled-white linerboard is linerboard with a white top surface that provides an improved surface for printing. This is achieved by adding a layer of white fibre to one side during manufacture.

One of the fastest growing business areas in corrugated industry is graphics packaging, where retail customers increasingly use multi-coloured displays and boxes to help sell their consumer products. Graphics packaging includes litho-laminated products, preprinted linerboard, and flexo direct printing with four or more colours. It is believed that the graphics packaging sector has potential for double-digit annual growth in the future.

Table II-9 -Largest Kraftliner Producers in Europe

Company	1000s of Tonnes
J. Smurfit Group	730
SCA	700
AssiDomän	660
Metsä-Serla	530
Portucel	220
Peterson	200
Korsnäa	190
Stora Enso	150
Seka	150
Swiecie	30

In recent years, linerboard is being used in smaller flute corrugated packaging in 'point-of-purchase' retail displays, and for packaging consumer products. Until recently, the industry was divided into two distinct groups, 'folding cartons' and 'corrugated', with consumer packaging being considered the domain of folding cartons. Today, however, it is difficult to distinguish between the different uses and definitions. For example, mini-flutes have gained significant shares of the traditional folding carton market, providing manufacturers and consumers with the high-quality surface design of folding cartons, and the stacking strength and cushioning of the lighter-weight, and sturdier corrugated flute. As such, mini-flutes have become a popular choice for producing a range of linerboard and laminated boxes.

In 1999, world containerboard production totalled some 92 million tonnes. The US is one of the largest exporters of kraft linerboard and as such the US domestic market price tends to have an impact on linerboard prices world wide. In 1999, apparent consumption of containerboard or 'case materials' in Europe amounted to 19 million tonnes, with about 87 per cent being made from recovered paper. The largest corrugated box producers in Europe are Germany, Italy, France, Spain and the UK.

White kraftliner grades are considered to be less sensitive to the economic cycle and much more profitable than brown liner products. The European market for kraftliner amounts to some 4 million tons, one million of which is white top grades. Demand for corrugated cases incorporating high quality printed text and graphics is increasing, further boosting demand for white top liner products. The white top kraftliner market has been growing at around 4%/yr.

Other developments at integrated kraftliner mills further facilitate the this trend. For example, the proportion of birch pulp used in the top layer of white top liner can be increased, resulting in the company being able to produce a thinner top layer. Therefore, this enables the company to increase the base layer of stronger unbleached long fibre pulp, which is much stronger.

Kraft paper or sack paper is used for its strength and is primarily used to make bags or sacks. Kraft paper is made from virgin fibre and is used for paper bags, multiwall sacks (such as, pet foods, garden seeds, fertiliser, cement, agricultural feed and chemicals), and other consumer and industrial packaging.

Paperboard, cartonboard or boxboard is another common packaging material. Paperboard is made by pressing layers of paper or paper pulp together to make a stiff board. This board can then be coated if needed to improve the surface for printing and then printed with pictures and product information. It is then converted into containers to hold a wide variety of products from food containers such as cereal boxes to packaging for video games and gift boxes. Generally speaking, folding cartons do not need to be as strong as corrugated containers, since the product has nearly reached its final destination when presented to the consumer in the folding carton.

Cartonboard or folding boxboard refers to a product with a range of applications rather than a particular type of board i.e. packaging and food service applications. The main types of paperboards used are coated bleached kraft, coated unbleached kraft, and clay-coated recycled. Bleached paperboard is made from bleached chemical sulphate kraft pulp (also known as solid bleached sulphate board - SBS), and typically utilises a mixture of softwood and hardwood pulp depending on the end-use requirements. For example, a higher proportion of long fibre softwood is used in liquid packaging board, to provide superior tear and tensile strength characteristics. Whereas, a higher proportion of hardwood fibre improves the board's surface smoothness for printing.

Unbleached kraft boxboard has traditionally been produced from 100 per cent unbleached sulphate pulp. Increasingly, however, mills add amounts of kraft clippings and recovered paper to the kraft pulp furnish. The main use of unbleached kraft boxboard is for beverage carriers. These include: six-packs of bottled beer, soft drinks, wine coolers, mineral water and 24-unit multi-packs for cans. Products made from unbleached kraft boxboard (coated or uncoated) are much stronger and durable than similar products made from bleached paperboard or recycled boxboard grades.

Generally speaking, the strength of kraft boxboard allows dual packaging capabilities – as a primary shipping container, and, as a display carton. Coated kraft boxboard lends itself much easier to high-quality printing, as well as film and foil laminating. With these qualities, kraft board has had a profound impact on the folding carton market. Hence, coated unbleached kraft board (CUK) or solid unbleached sulphate (SUS), can successfully compete with recycled clay-coated newsback (CCNB) and solid bleached sulphate board (SBS).

Kraft boxboard provides better stiffness, tear resistance, and moisture resistance than SBS and better printing and strength characteristics than CCNB. Kraft boxboard is often used in larger-sized packages for detergents and other non-food items and as institutional packaging for wholesale distribution. Coated kraft board may also be used as the outer ply for small corrugated containers used to package consumer products.

Clay coated recycled paperboard is made from 100 per cent recovered paper, which is collected from paper manufacturing and converting plants and post consumer sources. Consequently, both the raw material and the production process utilised are very different to that used at kraft mills. Recycled paperboard is a multi-ply material normally made on a cylinderboard machine using re-pulped secondary fibre. Successive layers of recycled paperboard are formed on a separate cylinder and then transferred onto a moving belt of felt. This enables more flexibility in selecting the thickness and weight of the finished board. Some cylinder machines have been converted to high speed,

three-ply, multi-foudrinier configurations to produce lightweight coated recycled paperboard for folding cartons. Recycled paperboard mills tend to be older and smaller than other types of paper mills.

Over the past two years prices for boxboard/containerboard have been on the increase in both North America and Europe, helped by the strong global economic growth. However, end-use markets for boxboard are quite mature, especially in North America, meaning that trend growth rates are still modest. Demand for folding carton is also being restricted by the competition from other packaging solutions, including mini-flute corrugated boxes. Boxboard/cartonboard prices are sensitive to fibre costs, hence the sharp increases in pulp and wastepaper prices has also been a key factor in determining the recent rise in boxboard/cartonboard prices.

Table II-10 Largest Folding Boxboard Producers in Europe

Company	1000s of Tonnes
Stora Enso	820
Metsä-Serla	550
MoDo Paper (now part of Metsä-Serla)	200
Cascades	200
Mayr-Melnhof	150
Rena	50
Reno De Medici	40
Strömsdal	40
Ausserdat Rey	30

The primary uses of recycled setup boxboard (also known as non-bending chipboard) are for rigid boxes, book binding boards, and game boards. Grades include plain chipboard, news vat-lined chip, filled news, and white vat-lined chip. Plain chip is made from mixed wastepaper, while news vat-lined has one side lined with ONP (old news papers) to give it a smooth clean appearance. Filled news is lined on both sides with ONP. White-lined has a white surface on one side, by incorporation of the use of higher grades of mixed office wastepaper or de-inked pulp.

In the US, the folding carton market is mature. Moreover, bleached board has lost market share to both flexible packaging and other grades of paperboard, due to increasing demand for recycled and unbleached packaging products and increased price competition among the main grades of paperboard.

Liquid packaging board has traditionally been used to package milk. In recent years, however, plastic containers have become more popular as milk packaging. Nonetheless, other types of liquid packaging have increased. This is especially the case for fruit juices, where paperboard can maintain freshness and quality just as good as plastic containers. The most recent development has been the development of multi-ply barrier cartons that extend the shelf life and freshness of milk, juice, and other beverages. Aseptic liquid packaging board was developed in Europe by Tetra Pak. The Swedish company Tetra-Laval AB is estimated to hold a 90 per cent share of the world market.

Ovenable paperboard was a further innovative packaging system, which remains at the leading edge of technology for the bleached paperboard industry. Ovenable paper-

board – which can used in both conventional and microwave ovens – is made by coating bleached paperboard with polyethylene terephthalate (PET) resin and pressing or die cutting the SBS sheet into trays.

In the disposable foodservice market, bleached board has faced tough competition from plastics. Sales and exports of converted cups, plates, trays, and nested and liquid tight containers have remained steady in recent years, although the shipment of paper cups has witnessed recent growth due to their use in market promotions by the fast the food industry, not to mention the cost advantages over plastic cups in larger sizes.

II-8 The Future of Fibre-Packaging - Some Key Trends [28]

Since the mid-1980s, containerboard demand has grown at a faster rate than the paper industry average. Between 1990 and 1997, the growth rate was 4.5% per year, whilst that for paper and board was only 2.6%. In the long term, however, the growth rate is expected to be around 2.8% per year. Rapid growth in demand is anticipated to continue in white top linerboard and waste-based grades, although growth prospects for unbleached kraftliner and semi-chemical fluting are not believed to be as strong.

Since 1980, the share of waste-based grades of the containerboard market has grown from 34% to more than 50% in 1998, whereas that of virgin fibre-based grades have lost their leading position in most markets. In kraftliner and semi-chemical fluting grades the content of recycled fibre has increased much more than in the 1980s.

During the 1990s, worldwide consumption of corrugating medium and waste-based linerboard grew by around 7% per year. In particular, waste-based containerboards, such as testliner and wellenstoff, have been very successful mostly due to their cost competitiveness. Another area of high-growth has been that of white-top linerboard, which averaged about 6.5% growth per year during the 1990s. Growth in these markets has been driven, primarily, by consumer and display packaging with improved printability characteristics.

World economic growth, industrial production, and trade are typically the key drivers of demand for containerboard and corrugated board packaging. Nowadays, however, there are other factors which influence demand. These include globalisation and consolidation of end-use industries and retail trade, the increased growth of self-service stores and the emergence of e-commerce which has introduced new means of business and product development.

Amongst some of the key trends emerging, is the use of micro-flutes in containerboard and corrugated boards in direct competition with folding cartonboards (as previously mentioned). It is anticipated that demand for micro flutes will be driven by the trend towards reduction of overall packaging costs, the rapid growth of consumer electronic products, convenience and fast foods, amongst other trends.

In addition, even though corrugated board packaging has shown to be less environmentally sensitive than other packaging products, due to recyclability of fibre-based

[28] This section draws on: 'Unwrapping the future of packaging', Pulp & Paper International, January 2000.

packaging material, the increasing emphasis on the weight of transportation packaging and development of re-usable packaging systems will continue to influence demand growth in containerboard.

In terms of global production of containerboard, north America accounts for most at 39%, western Europe around 21%, and Asian countries about 28%. Latin America makes up about 6%, whilst that of eastern Europe provides only 3%, with the remainder being provided by Africa and Oceania. Nordic countries utilise large-scale production facilities which are the most modern, whilst north America utilises large units as well but machines are not very modern. Typically, containerboard plants in eastern Europe, and other developing countries, consists of smaller and older production units.

It is anticipated that north American and western European producers will still dominate the global containerboard industry over the next ten years, despite rapid growth in demand in developing regions. Both north American and western European producers benefit from competitive advantages, such as good availability of raw materials, advanced technology, high value-added products and a high degree of integration. As such, it is forecast that north America and the Nordic countries will continue to be the leading net exporters of containerboard to other regions.

Table II-11 World's largest Consumer Packaging Board Producers (2001)

Company	Millions of Tonnes
International Paper (US)	2.3
Stora Enso (Finland, Sweden)	2.2
Westvaco (US)	1.6
Riverwood International (US)	1.2
Mayr-Melnhof (Austria)	1.1
Reno De Medici (Italy, Austria)	0.9
Asia Pulp and Paper (Asian)	0.85
Mead (US)	0.85
Cascades (US)	0.75
Smurfit Stone (Ireland, US)	0.7

Source: Jaakko Poyry.

In terms of volume, north America and western Europe have traditionally been the main source of growth, providing more than half the consumption growth in the last decade. However, it is forecast that the fastest growing markets will be found in eastern Europe, the Middle East, China and the rest of Asia and Latin America.

Despite the vast forest resources and huge demand potential in Russia and eastern European countries, ongoing political, financial, institutional and logistical problems, persist in many of these countries, and so restrict demand in the containerboard industry in this region. However, it is nevertheless believed that the eastern European region could well develop into a major region of export surplus, depending on future economic development. According to Jaakko Pöyry Consulting's report: 'World Containerboard Outlook up to 2010', eastern Europe is forecast to provide the highest long-term consumption growth for containerboard with an annual growth rate of about 5%, although the actual growth in terms of quantity will be around 140,000 tons per year.

The most concentrated containerboard industries are found in Oceania, Africa, Japan and north America. However, in western Europe, containerboard industries are relatively fragmented, with the top five companies operating about 25-40% of total capacity, depending on the region.

Table II-12 Largest Containerboard Producers in Western Europe (1999)

Company	Capacity in Tonnes (market share)
Smurfit Group (excluding *SSCC)	3.1 million (23.9%)
SCA (Svenska Cellulosa AB packaging)	2.4 million (12.4%)
Kappa Packaging (Netherlands)	Recently acquired packaging operations of AssiDoman (Sweden)
Saica (Spain)	
DS Smith (UK)	

* Smurfit Stone Container Corp.

Concentration in the containerboard industry has typically occurred at the national and regional level through mergers and acquisitions of rival firms and integration with local and/or regional converting industries. As well as horizontal integration abroad, companies have also elected to expand international operations via investments in converting industries in rapidly growing markets. Moreover, the trend towards higher concentration whereby stronger companies strive for growth, through acquisitions and investments in high growth markets, will likely gather pace. Consequently, whilst this trend will probably result in greater market stability, it will probably necessitate closures of existing capacity in some locations.

Hence, this conceivably could result in closure of lower value added production and relocation of capacity to other regions in eastern Europe (especially where proximity to the customer is essential -ie customer responsiveness). Furthermore, in the long term this could result in higher degrees of specialisation of some higher value added packaging grades in Finland, as has occurred in printing and writing grades of paper.

Along with increasing concentration in the containerboard supplier industry in Europe, there is also a growing trend on the buyer side. This is especially the case in consumer goods manufacturing industries, who represent the main end-users of corrugated board packaging. Indeed, it is anticipated that these industries will continue to consolidate and globalise, resulting a fewer, and more powerful buyers with centralised purchasing operations.

Furthermore, Multi-national end-users will also help to shape the future structure of the packaging industry. Multi-national end users typically expect to receive the same service globally, as they receive in their "home' markets. Therefore, it is likely that these companies will act as a catalyst in the globalisation of the containerboard and corrugated board industry. On top of this trend, converters will still need to be flexible enough to serve the small to medium sized customers.

Notwithstanding the above, the retail industry is expected to have an major influence on packaging design and materials. In particular, it is thought that north American and European retail chains will focus more on emerging markets of Asia, and eastern Europe, whilst seeking to derive synergies from harmonisation of design and quality of transport packaging. Hence, it is likely that these requirements will be met by better

co-operation and interaction between different actors throughout the containerboard supply chain.

II-9 Main investors in the CEEC fibre-based packaging industry

As can be seen from the earlier section detailing investments in the CEEC pulp and paper industry, the main foreign investors with operations in central and eastern Europe are predominantly Austrian, Swedish, and Finnish. In particular, the main players are: the Austrian companies Mayr-Melnhof (activities in Poland, Czech Rep, Hungary, Slovenia, Romania), Frantschach (Poland, Czech Rep), Prinzhorn (Hungary, Romania); Swedish companies SCA (Czech Rep, Hungary, Slovakia and Poland), AssiDomän (Czech Rep, Slovakia), Munksjö (Poland), Korsnas (Czech Rep, Poland, Romania); and Finnish companies Stora Enso (Poland, Hungary, Estonia, Latvia, Lithuania and Russia), Metsä-Serla (Hungary); and also the US companies International Paper (Poland) and Westvaco (Czech Rep).

There are also a number of other important European players with less presence in central and eastern Europe. These include: UK company David S. Smith (activities in Poland,) the German company Prowell (Czech Rep). More recently, however, Kappa of the Netherlands acquired the packaging operations of AssiDomän and now has become one of the largest players in the CEEC region. In most cases the above investors have made huge investments into increasing capacity and quality, and although many state that they intend to focus on domestic markets, many investments are also designed to function as exporters to key markets in the region. Details of some of the main players are described below.

In March 2001, the Dutch company **Kappa Holdings**[29] acquired **AssiDoman's** corrugated and containerboard operations for SEK 10 billion ($1 billion). As a result of this purchase, Kappa's capacity rose by 1.06 million tonnes per year. Kappa will now have a total output of 3.17 million tonnes/yr of packaging materials. Most of the production capacity, 2.14 million tonnes/yr, is geared to produce corrugated case materials, whilst the remaining 1.03 million tonnes/yr is dedicated to cartonboard.

As part of the package, Kappa will also take control of 66 converting plants in 16 countries. These additional units will increase Kappa's corrugated board capacity by 2.2 billion m²/yr. According to Kappa, this deal will take their corrugated case materials and board capacity to the leading position ahead of Jefferson Smurfit and SCA. In addition, the deal also provides Kappa with complete coverage of the European market, whilst providing a better balance of virgin fibre and recycled grades.

The deal includes AssiDoman's Sturovo mill in Slovakia and the Frövi mill in Sweden. Combined these two mills produce a total of 430,000 tonnes/yr of cartonboard, whilst the Sturovo unit also produces 160,000 tonnes/yr of semi-chemical fluting. The package also includes 220,000 tonnes/yr of testliner and fluting capacity in Ania, Italy, and Lecoursonnois plant in France, in addition to some 70 board plants producing 2,075 billion m²/yr.

[29] Kappa Holdings is a vehicle created by the venture capital companies, Cinven and CVC Capital Partners. Kappa Packaging became part of the UK private equity company CVC Capital Partners' asset list in 1998.

AssiDoman has previously sold its sack and barrier coating business units to the Austrian company Frantschach in August 2000, and spun off its Karlsborg and Skarblacka mills forming a 50:50 packaging joint venture, Billerud, with Stora Enso through its Gruvon mill (All mills in Sweden). Nov 2000. Billerud will be engaged in the sack and kraft paper and case materials sectors, and will also produce smaller amounts of market pulp and liquid packaging board.

In 2000, AssiDoman's Corrugated and Containerboard businesses had revenues of SEK 12.48 million, and held about 7% of Europe's corrugated containerboard market. However, as the company believed that 10% market share was necessary to have a strong position, it is clear that the business was not seen as a strong area for AssiDoman. Nonetheless, the deal is in line with AssiDoman's strategy to focus on forest land ownership. AssiDoman is the largest publicly owned owner of forestland in Europe with some 2.4 million ha of productive forestland in Sweden.

In 2000, Kappa Packaging had a turnover of Euro 1.66 billion, (up by 350 million on 1999). Reportedly, some industry analysts suggest that the deal now means that there are three pan-European players in the packaging industry. Moreover, this will mean that it will be much more difficult for competitors to dislodge any of the top three as they continue to acquire the smaller players in the packaging industry.

The Swedish company **Svenska Cellulosa AB (SCA)**, began its latest expansion already back in march 1999, when it announced its plans to double its packaging capacity in eastern Europe over the following five years. At that time, SCA confirmed that it planned to strengthen its position at existing packaging plants in Hungary, the Czech Republic, Slovakia and Poland. Whilst the company's main priority was consolidation in western Europe, it believed that there would be more synergies between eastern and western Europe over time, but that there was a need to find the right balance between risk and reward.

In 2000, SCA had a turnover of SEK 67.2 million (approx. $7 million). Of this total, the packaging business area accounted for 24.6 million, an increase of 24% on 1999. The growth was partly attributable to acquisitions and partly to increased sales prices. Despite rising raw material and energy costs operating profits rose by 34% in the packaging business area. Towards the end of 2000, SCA acquired the corrugated business of Metsä-Serla, Metsä Corrugated. At the same time, SCA divested its interests in Modo Paper to Metsä-Serla.

SCA has also expanded in the US, acquiring tissue and packaging operations from Georgia Pacific, as part of its global strategy. SCA has stated that it aims to provide global packaging solutions for customers in the high technology sector, adding that they aim to follow the Ciscos, the Nokias and the Ericssons around the world.

At the end of 2000, **Prowell, GmbH**, headquatered in Offenbach southern Germany, began constructing a new corrugated cardboard plant at Rokycany, near Pilsen, in the Czech Republic. This is in keeping with the growth trend in the packaging industry in Central and Eastern Europe, and the changing industrial structures, a decade after transformation. Prowell’s strategy is manufacturing corrugated cardboard sheets exclusively for the processing industry. The plant will be completed in 2001.

Despite the fact that the company is only eight years old, the new sheet feeder plant will increase Prowell's total output to about 400,000 tons per year. Prowell will now have four sheet feeder plants in Europe, i.e. in France, southern Germany, MagdeBurg eastern Germany and now Rokycany, Czech Republic. The company's subsidiary Propapier GmbH in MagdeBurg, eastern Germany, supplies Prowell sheet feeder plants with testliner and waste-based fluting.

Prowell installed new equipment at its greenfield mill in MagdeBurg last September, with a start-up in January 2001, at a cost of DM 260 million ($117 mill). With a planned operating speed of 1300m/min – the world's fastest – it was thought that the testliner and waste-based fluting machine would have an output of some 275,000 tonnes per year. However, since start-up the machine has performed very well an now the expected capacity will be 300,000 tonnes per year. Initially, the machine will run at half capacity, reaching full capacity by the end of the year. While 60% of the machine's output is earmarked for Prowell's own corrugated sheet production, the remainder will be sold on the open market, mostly in central Europe.

Prowell has attempted to provide value added service-oriented handling for suppliers, manufacturers and customers by creating a supply chain management system covering the entire value chain. The company has achieved this by the online networking of its customers, production and logistics For example it has integrated its own corrugated base paper production (Propapier), with its manufacture of corrugated cardboard sheets and by the development of a new logistics subsidiary, Prologistik. In addition, the company also provides a service module for the marketing sector, which is at the disposal of all Prowell customers.

About DM 50 million ($21 million) is being invested in the new corrugated cardboard plant at Rokycany, Czech Republic, which will have an output of 125,000 tons/yr. With an operating width of 3.3m (a world first) the new sheet feeder plant will provide 35% more productivity than standard plants, a completely new innovation in this sector. Online networking of all works will provide fast and flexible flow of materials and a further module as part of the Prowell group supply chain strategy.

The construction of the plant in the strategic location of Rokycany, near Pilsen, in the Czech Republic, will place Prowell in the position of market leader for corrugated cardboard sheets with complete supply coverage in the centre of Europe and the new markets of the OECD countries in the future.

The Austrian Cartonboard manufacturer, **Mayr-Melnhof**, has been very active in central and eastern Europe in recent years. Since its initial public offering in 1994, Mayr-Melnhof has become the leading packaging producer of folding cartons. Sales of the packaging division have quadrupled from Euro 130 million (1993) to Euro 480 million in 2001, with about 85% of sales in Europe. Annual tonnage converted has also grown rapidly, from 95,000 to 320,000 tons.

In 1999, the company revealed its expansion plans stating that it had some $200 million at its disposal. Towards the end of 2000, it announced that it was still on the look out for more acquisitions in Europe. The company said that it had some Euro 200 million ($173 mill) available for expansion in liquidity and securities following its

financial performance in 2000. The company also has a low gearing ratio, which will enable it to increase its leverage in future acquisitions.

During 2000, Mayr-Melnhof upgraded its Neuss Mill in Germany, installing a new Voith Sulzer NipcoFlex shoe press and a stock preparation unit. The investment was expected to raise the mill's white-lined chipboard capacity to 270,000 tons per year. In addition, the company also began installing a new Voith Sulzer NipcoFlex shoe press and rebuilding the wet end and drive of its board machine no. 3 in the Kolicevo Mill in Domzale, Slovenia, the largest capital investment for the company this year. The upgrade was expected to raise capacity by 13% in 2000.

During the first 6 months of 2000, the company achieved record levels in sales and production of cartonboard and packaging. In the cartonboard division, sales grew by 46% on 1999 levels, with Eastern Europe registering the strongest growth. In the packaging division, sales grew by 24%, most notably in the high value added segment of cigarette and confectionery packaging, which was boosted by positive economic development in western Europe and recovery in Eastern European markets. The packaging division was also strengthened by securing a large contract as sole supplier to all Kellogg's European production operations.

Due to the strong revival of Eastern European markets and subsequent rapid increase of the company's packaging facilities there, the company announced its plans to invest more in eastern Europe. The company said that it would install a second production line at its converting plant in Romania. In Hungary, the company planned to invest in its converting plant. In Poland, the company intended to invest in its packaging plant and cigarette packaging joint venture.

In particular, due to the continuous expansion of the packaging business in Eastern Europe, especially in cigarette and confectionery packaging, the company planned to increase its folding carton production in eastern Europe. Mayr-Melnhof Romania and Neupack Polska each started-up additional production lines at the end of 2000. In addition, capacity would also be doubled at the cigarette packaging facility, Wall Mayr-Melnhof Gravure, Krakow, in Poland. According to the company, these investments would enable it to meet the increasing demand from multinational consumer goods producers and to strengthen its position as the leading folding carton producer in eastern Europe.

According to Mayr-Melnhof, the year 2000 had benefited from good demand in both western and eastern Europe, providing good results for its cartonboard and packaging divisions. However, the company said that it had to deal with massive rises in raw material costs in terms of fibre and energy, which it managed to pass on to customers. Despite some cartonboard customers beginning to place orders more cautiously in 2001, the company anticipated that the positive economic outlook and the drop in fibre prices would mean that cartonboard prices would remain stable.

In April 2001, the company announced its reorganisation plans for future expansion. The packaging division will now be divided into two organisational units; General Packaging and Cigarette Packaging, with both being placed under separate management. In addition, a divisional advisory board will be set-up to implement the growth strategy, acquisitions and expansion of strategic alliances.

The Austrian group **Frantschach** has also been expanding in eastern Europe. In May 2000, the company acquired AssiDoman's sack and kraft products operations for $487 million. The deal included AssiDomän's Dynäs mill in Sweden and the Sepap mill in the Czech Republic, as well as its sack converting and barrier coating operations. In August 2000, the company sold off its Zellstoff Pols pulp mill in Austria to fellow Austrian, Heinzel group, who trade in paper, wood and pulp. The deal was part of Frantschach's strategy of focusing on packaging and sack paper, and the additional financial resources will help further expansion of the company.

II-9.1 The Polish Packaging Industry

With almost 40 million people, Poland is one of the largest countries in central and eastern Europe which provides probably the most potential in absolute terms. Since mid 1999, the Polish packaging market has shown a positive trend, in line with growing demand and rising prices for packaging grades throughout Europe. Domestic demand for fluting and liner grades in Poland has exceeded supply or been in balance.

Until recently, Polish producers were able to meet most of the growing demand. However, any shortfall is now being met by imports from Germany, raising concern among polish suppliers as to the potential impact this will have on the market.

Prowell, the German corrugated board producer has recently invested $117 million in a new testliner and waste-based fluting mill. The 300,000 tonne/yr unit being built near Magdeburg in eastern Germany, started-up in January 2001. Prowell intended to convert most of the paper output at its own corrugated board plants, but also indicated that some tonnage may be sold in central and eastern Europe, depending on market conditions.

Poland's domestic suppliers are therefore concerned that any extra capacity entering the Polish market – via Prowell - would increase imports and even flood the market. Nonetheless, the increase in demand has allowed producers to increase their production, while simultaneously raising prices as a result.

During the first half of 2000, kraftliner producers were able to raise their prices. The containerboard market is normally strong in the last quarter, suggesting the a further prices rise was possible. The price of wellenstoff rose by one-third over the first three-quarters of 2000. Prices of semi-chemical fluting increased by 20%, while testliner prices grew rapidly by 30%.

Corrugated producers have also experienced an upturn in 2000. According to the Swedish company Munksjo, the Polish corrugated market grew by about 10% during 2000. However, it is thought that the corrugated sector was boosted by the increase in demand from the consumer goods sector, which is strongly tied to the Russian market. In 1998, Poland's packaging producers witnessed the rapid decline of their market when the Russian economy experienced a deep depression. Nonetheless, packaging producers managed to recover somewhat, operating at 50-60% of capacity. Moreover, as the Russian economy picks up (as it did in 2000) and continues to grow as forecast for 2001, Polish packaging suppliers expect to secure new outlets for their products.

II-10 Assessing the growth potential of the packaging industry in the CEEC region

In assessing the growth potential of the packaging industry companies have many issues to take into consideration. Countries and regions differ in many ways. Some countries are further developed in packaging industry terms and often operate close to western standards. Others, however, are well behind but may offer higher potential. Indeed, this is the case the further east one considers.

The size of market is also another way of looking at the potential. In this case, Russia is naturally a very large market, and hence, most businesses realise that they can not afford to be left out of Russia. As one of the packaging industry's major customers, the food industry has been quick to move into the larger markets – especially Russia. As such packaging companies tend to follow.

Initially, the food industry was able to import packaging materials to many parts of the region, since local suppliers could not match quality/delivery requirements. However, in order to protect local producers, governments (especially further east) introduced high tariffs on packaging imports. Hence, this meant that it became non-viable to supply packaging materials via imports alone.

Generally speaking, there are two main types of packaging: Transportation and consumer packaging. Hence, for the different types of packaging, the potential must be assessed differently. In transportation packaging, local packaging production is generally required. Transport packaging materials are generally low-cost products, which means that to maintain economic viability, they are not trucked or shipped more than 100 km. However, the higher value-added nature of consumer packaging products, means that it is a more viable proposition to serve market demand in this sector by exports. Therefore, the potential demand for transport packaging may be assessed by examining the growth in those industries, which utilise corrugated boxes for the shipment of goods.

With consumer packaging, the issue is further complicated, since demographics and levels of consumerisation come into play. Consumer packaging normally contains higher value-added products, and incorporates a great deal of graphical printing and display on the package, designed to attract the consumer to the product. Therefore, as these products are aimed at the more sophisticated and discerning consumer – middle-higher end of the market, the development of the middle class and its associated spending power is crucial to the development of the consumer packaging industry.

It is well known that in the former communist countries of central and Eastern Europe, there were two extremes, rich and poor. During the initial stages of transition, things did not alter that much, excepting that the rich became the 'neuveau riche' whilst the poor became relatively poorer. However, as economic transformation became more widespread, a new class of consumers emerged – the middle class. In the more economically advanced countries, these consumers have grown in number and now represent a large segment of the consumer, whereas in the least well-developed countries – such as Russia, they only appear in some of the larger urbanised areas. As such, the size of the market for consumer packaging is dictated by proportion of the

middle class in any region or country. Indeed, this ties into the aspect of regional development as discussed earlier.

Another aspect of development is related to the scale effect of customers. More than 50% of packaging materials are used by the food industry. Hence, the packaging industry normally follows the food industry into any market. For example, food producers initially import their products. However, to protect local producers, governments typically introduce high tariffs. Hence, foreign food multinationals set up local operations. Citing the need for high quality raw materials, reliability of deliveries and anything else that helps to develop branding, food producers try to use imported packaging materials. As the cycle is repeated, the packaging material producers therefore follow the multinationals. This is not the case with every type of packaging material, however, since plastic pellets are very easily transported and therefore provide a cost advantage to local plastic container package production over fibre-based packaging material producers.

Generally speaking, most producers look at the map of Europe and decide where the main customers are, before setting up a local operation. Again, if one looks at the food industry this is quite clear, they are located in the regions with the highest GDP/capita, and likewise their whole logistical infrastructure is developed accordingly.

There are also a number of other considerations in assessing the viability of making an investment in the central and eastern European packaging industry. The first key consideration is risk. Pulp and paper facilities tend to be very highly capital intensive operations. Therefore, political and economical stability is generally a crucial factor, in any investment. Notwithstanding, the size of market is also a driving consideration. Hence, investors will take exceptional risk in large markets such as Russia, simply because they know that they can not afford to be left out of market with such huge potential.

It should also be remembered that packaging producers tend to follow the large multinationals into emerging markets. Some multi-nationals have a great deal of market power, and thus to keep these large customers, requires substantial effort and an acceptance of a certain amount of risk. For example, some packaging suppliers supply up to 35% of their output to one large customer. This may not appear to be much, but when one considers that this customer may demand a range of 300 products and that the supplier stores these products in inventory until needed, then it is easy to see the substantial amount of risk involved should relations turn sour. Naturally, parting company must be a slow transition process from both party's point of view, but this nevertheless highlights the risk stakes involved in following the larger multinationals into new emerging markets.

Having said that, packaging operations tend to be much smaller than a typical pulp or paper mill. Local operations are not considered to be much of a problem. The key considerations are generally the potential market, financing of the project, and whether the plant is a 'greenfield' investment or acquisition. Greenfield plants will normally involve the use of expatriates as key personnel until the operation is effectively established. As mentioned previously, any acquisition will involve the introduction of new technology, which will result in shedding of labour. Typically, this

means sending expatriate workers to manage and run the plant. Depending on the CEEC country, expatriates are used more or less. For example, local workers are mostly used in the more developed countries whereas in countries further east, expatriate workers are mostly used.

Another consideration is that entry levels are very high, not only in terms of capital intensity but also in terms of customer relationships. Customer relationships are vital since the supply of packaging materials is more of a service, which requires constant effort, flexibility and responsiveness. Moreover, in many cases, packaging material producers store materials for their key customers.

II-10.1 Main Customers of the Packaging Industry

In the consumer packaging side, one of the largest users of packaging materials is the tabacco industry. Multinationals are well established in most CEEC countries and nowadays they are being served by locally-based packaging producers. However, in the larger markets of Russia, Poland, Bulgaria and even Romania, most of the packaging materials are imported. This is because branding of the packaging is deemed a crucial marketing tool, which necessitates the upmost quality and service (even the printed colour of packaging must be exact), something which local producers in these latter countries can not easily supply.

The pharmaceutical industry is another key user of consumer packaging. However, whilst present levels of consumption of these products is fairly low, it is anticipated that this segment of the market has much growth potential in the future.

Confectionary product manufacturers are also a significant user of consumer packaging. Whilst production tends to be local, there is very little high value added white box production being manufactured in the CEEC region, hence much of this is imported. Fast food packaging such as that for McDonalds is another key segment.

On the Transportation Packaging side, Dairie produce manufacturs are a substantial user of packaging materials. However, hygiene is a crucial factor, meaning that quality must be safe and reliable. In the CEEC region, levels of hygiene and quality needs to be improved in order to facilitate the future development of the fibre packaging industry. Foreign investment is likely to raise levels of hygiene, as new technologies being introduced will soon diffuse amongst the local industries, who must adapt these new technologies in order to compete. In the Dairy product sector, industry concentration is growing, with companies such as Danone continually expanding eastwards.

Breweries are another key customer for the packaging industry. Breweries use high quality printed board – particularly white boards (Multi-beer packs). A key development in the future is connected to the decrease of glass packaging. Already, wine is being packaged in plastic/fibre packaging boxes and whilst the technology is not yet suitable to package beer in this way – due to the problem of sealing in ther carbon dioxide – it will probably not be too long before the technology is perfected.

II-10.2 Barriers restricting development of the CEEC packaging industry

During the communist era, the packaging industry in central and eastern Europe operated in quite a different manner compared to the Western packaging industry. Pack-

aging was not viewed as a priority, even though one of its functions is preserving the contents of the package and protecting the product from damage, not to mention preventing wastage of foods etc. On top of this, there was simply no consideration given to using packaging as a marketing device. Moreover, the lack of modern production technology also resulted in low quality packaging products.

During the early stages of transition, at the beginning of the 1990s, multi-national companies producing food, tobacco and other consumer goods products, began moving into central and eastern Europe. However, these companies had to import their packaging materials since local packaging products did not meet their requirements. As a result, locally produced consumer goods products found it hard to match the quality of the western style packaged goods let alone compete with quantity of output.

Consequently, these trends provided clear opportunities for western packaging companies to either export from their production plants in western Europe or to set-up new manufacturing operations within countries of central and eastern Europe. In some cases companies (Cofinec Group), adopted different strategies such as following the multi-national companies into the region. Cofinec, which has manufacturing operations in the region, supplies folding cartons and flexible packaging to multinationals operating in Hungary, Poland and the Cezch Republic. More recently, Metsä-Serla acquired Cofinec's operations in Hungary.

As previously mentioned, local producers of packaging materials were adversely affected by the entry of the larger western packaging material producers. To enable local producers to survive, investment in modern processing machinery and equipment was seen as vital for the continued existence of local packaging producers. As western producers have moved in to the region, technology diffusion of modern processes and techniques was expected to increase the competitiveness of local producers (assuming finances were available for capital investments). Consequently, the reliance in imports of western packaging is expected to decline as investment levels of both foreign and domestic packaging producers increase. This trend is already apparent, when examining the more economically developed countries.

In recent years, the fibre-based packaging industry has not experienced and serious problems in most of the countries in central and eastern Europe, other than that of normal problems expected when doing business in a less developed country. However, there are several restrictions, which currently hamper development.

Good *raw materials* are probably the biggest restriction to development. In most cases the CEEC paper and board machinery is very old. This means that raw materials must be imported or local plants must be rebuilt. Whilst corrugating medium and linerboard production mills may exist in some countries, the production of FBB from virgin fibre does not and consequently this is usually imported. This gives rise to further problems since relatively high tariffs may be used to protect local industry. However, this is more of a problem the further east one goes – especially in Russia.

As regards setting up a pulp production plant, there are many obstacles, which probably exclude this as a viable proposition. First of all there are logistical considerations. To produce 500, 000 tons of pulp, the mill would need about 5-6 million cubic meters of wood fibre. Given the state of present infrastructure, in many of these countries, which do contain vast raw materials, this is not generally an economically viable

proposition in most cases. Moreover, there are also the political considerations, not to mention the environmental concerns, which must be satisfactorily addressed.

As regards to a new paper or board mill, it would be preferable to build a completely new plant, since this means the creation of new employment and a boost to the local economy, but this is quite an expensive proposition. Alternatively, investors may opt for an acquisition, hoping to make savings. However, there are some political considerations to be addressed. Any western investors will typically want to install new technology to raise operating efficiency levels. Since the idea is to automate most of the production processes, any upgrade will inevitably result in the shedding of labour. Immediately, trade union representatives, government officials and so on will be opposed to any change, which involves the loss of employment. Hence, as new members join the EU and adopt current labour practices as in the west, companies will be able to operate under more flexible labour laws.

On the logistical side, the use of computers is widespread and local systems tend to work.. In the area of printing technology, CEEC printing standards are generally on a power with western standards.

Labour is normally well educated and much cheaper than in western countries. However, recruiting good personnel is a major hindrance to development, since language problems amongst employees mean that communications are sometimes problematic. Nonetheless, local managers are naturally preferred since local bureaucracies still represent a major obstacle on a day-to-day basis. Typically the more advanced countries present less of a problem, but even Poland still provides many obstacles in this sense.

II-11 Conclusions on the future of the CEEC packaging industry and the ramifications for the Finnish fibre-based packaging industry

There are several ongoing trends impacting the packaging industry in central and eastern Europe. In Part I of this report, the relative cost advantage of countries in central and eastern Europe was demonstrated. In addition, in Part II, it was also shown that, contradictory to the commonly held beliefs that transition countries of central and eastern Europe are catching up with those countries of western Europe, it appears that the catch-up process is not widespread, and that continued economic disparities will exist for many years. It is therefore no surprise that many western multinationals have set-up, shifted, and have even relocated, production facilities to lower-cost producing countries of central and eastern Europe with the view to exporting to the main EU markets. Hence, demand for transportation packaging - containerboard grades such as fluting, linerboards - has increased in the CEEC region, as evidenced by the description of recent investment projects.

As multinationals continue to invest in the CEEC region, taking advantage of the low-cost production base, demand for packaging materials will continue to increase even more. Already, evidence suggests that there is a fundamental restructuring of some sectors of industry in Europe due to increasing specialisation, for example in consumer electronics (many multinationals such as Nokia, Phillips, Electrolux etc have set up major production units in eastern Europe). In addition, it is also noticeable, that the number of converting enterprises has been decreasing in western Europe, whilst the opposite is occurring in central and eastern Europe.

Hence, although the present increase in demand for packaging materials may be focused more towards transportation packaging, the growth of consumer goods manufacturing industries will give rise to increased demand for higher value added packaging boards such as carton board and folding boxboard (not to mention micro fluting). The packaging industry is a local business, so companies must obtain a local presence. It is therefore very likely that there will be further investment in capacity in the CEEC region in the future. Alliances are seen as the best method, if win/win situations can be found between the packaging supplier and key customers.

Therefore, in the short-term, the continued growth in demand for more transportation packaging will result in the capacity increases in central and eastern European countries and reduction of capacity or even closure, at plants in countries further away from the main markets. However, as western packaging companies will continue to focus more on the higher value added packaging grades such as cartonboard, folding boxboard and micro-fluting, developments in central and eastern Europe will increase levels of specialisation.

In the long-term, however, developments in central and eastern Europe are bound to be subject to not only how each country performs economically (will economic convergence with the EU occur rapidly, if at all) and how the region's fortunes progress with its neighbours further east. For example, many of the countries have strong trade links with Russia, and so their future development will especially be tied to how Russia performs in the coming years. It is conceivable, therefore, that companies making efforts to establish operations further east rather than further west (i.e. in the more economically advanced CEEC countries) may gain through first mover advantage in the future.

In Finland's case, companies have not been as active in central and eastern Europe in previous years. Nonetheless, the region is still of great importance to the Finnish packaging industry. It is therefore inevitable that in the medium term new production capacity will be built or acquired in central and eastern Europe, especially in the area of transportation packaging, where customer responsiveness and flexibility is essential. Moreover, the trend towards waste-based packaging materials will increase pressure on Finnish companies (who mostly utilise virgin fibre) to innovate even more. In the long term, therefore, increased specialisation within consumer packaging will raise the risk stakes for companies maintaining higher value added production operations in Finland.

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