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The integration process as a determinant of the intra-industry trade

S U M M A R Y

Trade structure is usually defined as an inter or intra-industrial type (IIT). The pattern of production and trade that emerges after opening the economies of transition is partly driven by relative factor prices and endowment and partly by economies of scale and scope, but much depends on historical experiences. The first determinacy will lead to the increasing inter-industry trade, so the country which has labor force exports labor-intensive products and imports capital-intensive products because capital is its rare factor. The more dissimilar countries' endowments are, the greater inter-trade volume will be. This concept of trade is based on Heckser-Ohlin theorem. The second factor will generate IIT, the exchange of similar manufactured goods, with companies specialized in different varieties of similar goods.

Economic theory predicts that the volume of IIT depends on two groups of determinants; the first group is related to country and the second one to industry. The determinants related to country are: the level of economic development, size of market, distance between countries, trade orientation, economic integration and trade barriers. In this paper, we will analyze some of the previously mentioned determinants. In this research, the Grubel-Lloyd index will be used to calculate the intensity of intra-industry trade at the 2-digit Combined Nomenclature levels aimed at determining the relative importance of IIT as opposed to the inter-industry trade in the trade exchange between Croatia and the EU as well as between the EU and some other transition countries. IIT will be estimated for the whole trade and across industries in the case of Croatia. A time series approach will be used to estimate any trend in the ratio of intra-industry trade to total trade in relation to the EU. These analyses should consider how trade has changed in the period of trade liberalization, including the integration process. On the basis of the collected statistical data, the IIT and inter-industry indexes will be calculated. Besides, we will analyze if there is a vertical or horizontal intra-industry trade. According to the economic theory, the removal of trade barriers through bilateral and multilateral negotiations has positive impacts on IIT but the results do not support the hypotheses, especially in the case of Croatia, where IIT decreases as the integration process goes on.

Key words: intra-industry trade, GL index, determinants, integration, Croatia

1. INTRODUCTION

In the last sixty years the world economy has become more integrated as institutions and the regional integration process have lowered barriers and increased the mobility of goods,

services, capital and people. The process of liberalization and globalization effects countries, especially small ones, in several fields but the strongest is the effect on trade. The reduction of trade barriers and the establishment of a free trade area between countries result in static and dynamic effects or trade creation and trade diversion. In this paper we will analyze the effects of economic integration on the trade creation through IIT. When country applies a more liberalized trade policy, its companies have access to cheaper and sophisticated inputs, new and advanced technology, while consumers gain access to new differentiated foreign goods, cheaper in many cases. Integration process generates a large more competitive market with a higher trade relation and improves trade between two or more countries. The mentioned effect is greater, the economy is less competitive and the tariffs are higher before integration, while it is negligible for states that are very competitive at the beginning of strong economic connection.

The EU membership has grown from six to 15 nations, with 10 more in May 2004.The European Union has experienced the most historical and largest enlargement so far in its history with the last accession of ten new members. The effects of trade creation could be analyzed on the example of the countries that applied EU-15 and the new ten countries added last year. The trade between the EU Member States was expanding during the 1990s between the EU countries and Greece (after 1981), Spain and Portugal (after 1986) and Austria, Finland and Sweden (after 1995). The trade flows between the Central and Eastern European countries and the EU have increased steadily since the early 1990s.

The effects of economic integration can also be seen in the changing pattern of trade, which tends to become more similar between countries as they become more interdependent. So, integration process necessary leads to an increase in IIT and a decrease in inter-industry trade between countries involved in the economic integration.

Since the introduction of the concept of IIT by Balassa in the 1960s, a large number of empirical papers have appeared and defined the IIT theoretical background. IIT is defined as the simultaneous export and import of commodities which are grouped in the same industry. An interest in IIT has arisen mainly due to the incapability of Traditional Trade Theory of comparative advantage in explaining the simultaneous export and import of the same products between countries. The Studies on IIT have focused on methodology on how to measure IIT and estimations of econometric models appropriate for testing the Theory of IIT and developing the determinants of IIT. In identifying the determinants of IIT, some studies have

focused on country-specific while others have focused on industry-specific determinants. There has been a large amount of empirical literature investigating and testing various country-specific and industry-specific hypotheses together.

IIT could be divided into two parts, vertical and horizontal IIT. Vertical IIT is a term used for the IIT of commodities that are of different qualities, while horizontal IIT is used to describe the simultaneous export and import of goods that are of the same quality.

The level of IIT is higher in the case of manufactured than non-manufactured goods as well as in that of goods processed in a more sophisticated manner than labor or low technology processing goods; also IIT is more common in sectors where there is a significant product differentiation like cars, and is insignificant in sectors with standardized products such as natural resources. IIT poses a fewer adjustment problems than inter-industry trade and thus economic integration is less problematic for member economies if it entails to a large extent intra-industry specialization. The research on IIT considering Croatia is very important because this country is expecting to start the negotiation process with the EU.

This paper is structured as follows: introduction is presented in the fist part, theoretical approach is explained in the second part. The third chapter analyzes the determinants of IIT while the fourth part presents the research into the Croatian trade pattern and the impact of integration process onto this pattern. Conclusion remarks are pointed out in the final part.

2. IIT: DEFINITION AND MEASURMENT

Total trade between two countries could be divided into inter and intra-industry trade. Inter-industry trade means exports and imports in products of different industries and is a consequence of unbalanced factor endowments. Inter-industry trade is a well-known one-way trade, where different products belonging to different industries are exchanged. The theoretical background of inter-industry trade is represented by the Theory of comparative advantage (Traditional Trade Theory). This Theory assumes that trade pattern of country is determined by relative supplies of factors of production. Country will produce and export goods which are produced by their abundant factors or products that can be produce relatively cheaper than the others. On the other side, country will import products whose production costs are relatively high.

After the 1960s, the Traditional trade theory (Theory of comparative advantage) was incapable of explaining the increasing trade between countries of similar factor endowments and development levels. The models by Krugman (Krugman, 1979; Krugman, 1981) and Helpman and Krugman (Helpman, Krugman, 1985), known as “New Trade Theory”, showed formally for the first time that scale economies and product differentiation (a greater variety of products) could be a basis and source of international trade and aggregate welfare gains. So, the new theoretical approach largely emphasizes the existence of imperfect competition and scale economies at the market and has introduced intra-industry trade (IIT), which can be defined as a two-way exchange of similar products that belong to the same industry.

The former type of trade prevails between countries with different relative factor endowments and usually unequal level of income and economic development, whereas the latter takes place between developed and rich industrialized countries with similar factor endowments and development level.

2.1. The definition of IIT

The phenomenon of IIT has received some increasing attention since the 1960s, when Verdon (Verdon, 1960) and Balassa (Balassa,1966) found an evidence of increasing IIT in the years following the foundation of a customs union in Europe. Balassa developed the first index to be used for measuring IIT. Ten years later, Grubel and Lloyd published their well-known work on IIT and introduced the most common GL index. IIT in the economic literature is also defined as the two-way exchange of goods within standard industrial classifications (OECD, 2002) but it has been explained through different approaches. IIT means trade in similar but slightly differentiated products or due to some attributes or quality levels.

We can say that IIT is a measure of similarity referring to the export and import flows between two countries. In recent years, so much attention has been paid to the distinction between the two main different types of IIT, horizontal and vertical ones. The vertical and horizontal IIT is determined by different factors. The first represents the trade among goods that are similar in terms of quality and the second one refers to the trade of products of different quality.

2.2. Measurement of IIT

Balassa (Balassa, 1996) proposed the fist index of IIT that measures a degree of trade overlap or simultaneous import and export of products within an industry. Balassa's index represents the ratio of net trade to gross trade. Its value spreads between 0 and 100, where 0 represents a perfect trade overlap as well as a pure inter-industry trade.

$$Bj = \left(\frac{|X_i - M_i|}{(X_i + M)}\right) * 100 \quad (1)$$

X_i and M_i are export and import values of goods within industry j.

In order to calculate the level of IIT in the whole economy, Balassa has taken an unweighted average as:

$$B = \frac{1}{n}\sum B_j \quad (2)$$

Where n is a number of industries, but economists after Balassa used a more weighted index such as

$$B = \sum_j w_j B_j \quad (3)$$

Where w_j is a share of industry j in total trade

The most commonly used indicator of measuring IIT is the Grubel-Lloyd index based on a commodity group transaction. The Grubel-Lloyd index (Grubel, Lloyd, 1975) is calculated as:

$$IIT = GL_i = \left(\frac{[(X_i + M_i) - |X_i - M_i|]}{(X_i + M_i)}\right) * 100 \quad (4)$$

Where X_i and M_i represent values of export and import of industry $_i$.

Index takes a value between 0 and 100, while 0 represent an absence of IIT or there are no products in the same class that are both imported and exported whereas 100 means that the entire trade belongs to IIT or the value of exports is equal to the value of imports of the same products. Some authors emphasize that it is necessary to adjust this index but Vonna (Vonna, 1991) has suggested that the above-mentioned index does not need to be adjusted.

The GL index is static as an increase or a decrease in the GL index value is not necessarily associated with IIT increasing or decreasing. Caves (Caves, 1981) and Hamilton and Kniest (Hamilton, Kniest, 1991) have shown that an equal increase in the exports and imports inside the industry caused by trade liberalization would raise the quantity of IIT, but the GL index would remain unchangeable. In order to resolve this problem, Hamilton and Kniest (Hamilston, Kniest, 1991) developed the Marginal IIT index which measures new trade flows.

In calculating IIT, it is also important to know whether IIT belongs to a horizontal or vertical type since IIT is composed of two different parts. Horizontal IIT occurs when similar products are simultaneously exported and imported due to product differentiation while vertical IIT happens when there is a two-way trade of goods within the same industry but in different production stages. Horizontal IIT can be defined as the trade in similar products with differentiated varieties (computers of a similar class and price range), while vertical IIT means the trade in vertically differentiated products that are distinguished by quality and price. A good example of vertical IIT is the Italian textile industry, Italy exports high-quality clothing and imports lower-quality clothing. Implying this example to the Croatian economy, we can state that Croatia exports low-quality textile products and imports designers' clothes.

Horizontal IIT enables countries with similar factor endowments to benefit from the economies of scale by specializing in "niche" products. The trade in vertically differentiated products may reflect different factor endowments, a particular skill of workforce (country exports low-quality products) or high fixed research and development costs (country exports high-quality products). Stiglitz (Stiglitz, 1987) argued that the prices of commodities reflect the level of quality and prices can be used as an indicator of quality and as an indicator of horizontal and vertical IIT. The most widespread procedure for decomposing vertical and horizontal IIT is to use a unit value and a relative unit value. A unit value is a turnover in export or import in $ or other currency per metric ton while a relative unit value is the ratio between an export unit value and an import unit value. If a relative unit value lies outside the range selected - in this case 15 per cent on either side of unity, trade is defined as the vertical intra-industry trade. A relative unit value higher than 1.15 shows that the export price is higher than the import price due to a cost disadvantage or a quality advantage of the trade partner.

$$\frac{UVx}{UVm} \rangle 1+\alpha \text{ or } \frac{UVx}{UVm} \langle 1-\alpha \qquad (5)$$

An industry is subject to horizontal IIT when the relative unit value is within a specific range.

$$1-\alpha \leq \frac{UVx}{UVm} \leq 1+\alpha \qquad (6)$$

Transportation and freight costs are usually assumed to account for +/- 15 percent of the value of goods, so α is taken as 0.15. Only in a specific situation could α be 0.25. Relative unit value as an indicator of price cannot exactly represent the quality premium of exports or quality disadvantage of imports if the values of those flows are accounted on different bases. In Croatia, export is evidenced on FOB (free on board) and imports on CIF (include cost of insurance and freight) basis and, in these circumstances, export is under-evaluated in comparison with import.

Kandogan (Kandogan, 2003a;b) developed a new method for decomposing IIT. The mentioned method does not calculate a unit value and, therefore, it does not need the quantity data of exports and imports, which could be unpredictable and not precise. Kandogan uses the value of export and import at a high and very low level of aggregation or at industry and custom's item level. At a very low level of aggregation, the amount of matched trade in one custom's item represents horizontal IIT. The rest of IIT in this industry refers to the trade of different products or products in different stages of production inside an industry and we call it vertical IIT. The unmatched part of the total trade in an industry is known as inter-industry trade.

In recent years, more and more studies have shown the dominance of vertical IIT. Fontagne and Freudenberg (Fontagne, Freudenberg, 2002) showed that, in the period 1980-1994, the share of vertical IIT within the European Union's countries rose significantly from the share less than 35 per cent in 1980-1985 to about 45 per cent in 1999. Diaz (Diaz, 2002) found that the member countries with a higher relative level of incomes (the North) export predominantly higher quality products, the opposite situation is evidenced in the countries with a lower level of income (the South).

3. MAIN FACTORS OF IIT

According to economic theory, the determinants of IIT could be divided into the country and industry-specific ones. Country specific determinants include the factors considering trade orientation and strategic policy of a country. Trade orientation represents a way in which a country enters the international trade of goods and services and is implemented through trade policy. Trade policy through tariffs, quotas and non-tariff barriers has a direct control over imports and, through export subsidies, it can boost the export activities of a country.

The trade orientation and trade policy of a country depend on its level of development and its market size and could be open or closed. Today, every country tries to be involved in the world market or some regional integration process, to decrease trade barriers because of the liberalization and globalization process in the world economy. Finally, the last factor within trade policy is the geographical position of a country.

Applying the previously mentioned elements of trade orientation and policy to IIT, we can derive the main determinants of IIT. The first country-specific factor of IIT is the level of development and it is positively connected. Developed economies have enough capacity and technological potential to raise new and differentiated products. A high level of development means a high level of personal income and sophisticated demand which also raise highly differentiated demand. In many studies, there is used gross domestic or national product per capita to capture this determinant. The recourse intensity of production has also been used since developed economies are assumed to have greater stocks of capital. The level of development is also important in explaining the intensity of IIT. When two countries are at the same level, the IIT between them will be higher. It is generally expected to face a negative relationship between the IIT and inequality of two levels of economic development. In order to measure the above-mentioned difference, we could use the absolute value difference between the GDP per capita of the two countries under research. If the level of development is measured as an intensity of resources, then the absolute value difference is also used to measure the inequality.

When some national economy has a small internal market, measured as a number of inhabitants or total GDP or GNP, the international trade is much more required. The countries with a small internal market would be more open and they would also implement the open

trade orientation, leading to the improvement of IIT. On the other side, a small economy does not have enough potential for raising differentiation in products and exploitation of economies of scale. A higher IIT is expected if a national market is larger and a country implements the open trade policy.

Economic integration means that a country is a part of a greater customs union or a large single market, has a unique trade policy with other members. In these conditions, member countries as a part of the integration have low trade barriers or eliminate them, low transaction costs and, in many cases, very similar culture, history, language or some other important element which explains why trade between some regions is easier to happen. If countries are in the integration process and have lower trade barriers, described as an average tariffs level, the IIT between them is expected to be intensive.

Countries are expected to trade more if they are larger with high economic potentials and if the distance between their capitals is shorter. Liberalization has a strong positive impact on IIT. A common border and the same language also represent variables with positive effects on the IIT volume.

The industry-specific determinants are connected with the characteristic of an industry. These include product differentiation, economies of scale, market structure, product life cycle and foreign direct investment. The number of products within an industry shows the level of differentiation of product in that industry, and, as we mentioned before, increased opportunities for product differentiation increase the intensity of IIT. In order to measure product differentiation, economic literature also uses R&D, advertising, marketing and sales costs relative to total sales. These variables are all assumed to vary positively with IIT. When a company is larger, it has a great opportunity to exert economies of scale and IIT would be more intensive. Economic literature and research have shown a strong relationship between IIT and monopolistic competition, stronger than in the relationship between IIT and oligopoly. IIT will be higher if product is close to the end of its product life due to the development of some specific attributes required for product's remaining at the market. FDI promotes IIT through upgrading a technological pool in a country, increasing productivity and, consequently, national income and, as empirical studies show, countries with high and increasing inflows of foreign direct investment (FDI) have experienced the fastest increase in IIT. This is consistent with the increasing presence of multinational companies in the lower-

income countries (OECD, 2002). The primary goal of the foreign affiliates located in less developed countries is to produce manufactured goods for other markets, including the country of the parent company. This phenomenon is directly related to the internationalization of production, i.e. to the increase in production which is located in one country but controlled by a multinational corporation based in other country (Cantwell, 1994). The trade between multinational companies and their affiliates located in lower-income countries, often known as intra-firm trade, is likely to be responsive to the high degree of IIT between the North and the South.

4. IMPLICATION OF THE INTEGRATION PROCESS IN EUROPE ON THE CROATIAN TRADE PATTERN

In May 1999, the European Commission suggested that the countries in the South Eastern Europe that had not been a part of any other mechanism for the institutionalization of the relations with the EU adopt the long-term policy of the EU called the Stabilization and Association Agreement (SAA). This Agreement was designed to improve the existing EU policy towards that part of Europe and to push the development process in these countries. The final goal of the SAA is to adopt these countries as associate members of the EU, after concluding their stabilization and association process.

The relationship between Croatia and the EU has been improving since 2000, especially since October 2001, when Croatia signed the Stabilization and Association Agreement (SAA). On 21 February 2003, Croatia applied for the EU membership and now is waiting for the date on which to start the EU membership negotiations.

The pattern of production and trade that emerges after opening the transition economies is driven by two forces: factor endowments and economies of scale. The first factor would rise up to inter-industry trade; for example, the exchange of clothing for pharmaceutical goods. The higher relative factor prices are, the greater the volume of inter-industry trade is. The second determinant will cause IIT: the exchange of similarly manufactured goods, with firms specializing in different varieties of similar products, and relying increasingly on foreign suppliers to provide intermediate inputs and components used in their production process. (Hoekman, Djankov, 1996). The more similar and closer countries are in terms of all the components (economic similarity, geography, culture…), the greater the volume of IIT is.

4.1. Trade performance of Croatia

This section contains an overview of the basic indicators of the Croatian foreign trade, by product groups and partner countries. Besides, it includes the research on the level of IIT between Croatia and the EU countries at low and high data aggregation and on the type of IIT. Here, we compare the Croatian trade pattern and changes in specializations and trade patterns of some transition countries. The analysis covers the period from 1992 to 2003.

For Croatia, as a small country with 4.5 billion inhabitants and 25,526 billion of € (5,747 € per capita) in 2003, i.e. a small internal market, the importance of foreign trade is great. Before the collapse of 'ex-Yugoslavia', Croatia had a very intensive trade with Slovenia and other former Yugoslavian states but it was not a foreign trade at that time. According to this, Croatia requires a dynamic growth of foreign trade and reorientation to the new market in order to recover its 1980s trade flows. Taking into account these theoretic facts, it is expected that Croatia has a very low level of IIT, because its main trade partner is the developed EU[1] Croatia has been grouped with the countries whose GDP per capita is below 50% of the European average, namely with Bulgaria, Estonia, Latvia, Lithuania, Romania and Turkey.

Croatia's total trade (export + import) increased significantly from 8.9 million $ in 1992 to 20.4 million in 2003, increase of 8.4 percent during this period. The average growth rate of export was 3.6 per cent while import increased from 4.4 million to 14.2 million. So, this increase in total trade was a result of a higher growth rate of import and a very low growth rate of export. The trade deficit was going up during the whole period and, in 2003, it was $ 8 million, which was 2 million higher than exports. If we take 1992 as a based year, the exports in 2003 were 40 per cent higher while the imports were three times larger (Figure 1).

[1] In 2003, the GDP of the EU-25 was 9.754,008 million of €. The Croatian GDP per capita represented only 44 per cent of the EU-25 (Eurostat, 2004). GDP per capita in Luxembourg[2], expressed in terms of purchasing power standards[3] (PPS), was more than twicecomapred with the EU25 average in 2003, while Ireland was about one third above the average, while Denmark, Austria, the Netherlands and the United Kingdom around 20% above the average. Belgium, Sweden and France were about 15% above the average, and Finland, Germany and Italy were around 10% above the EU-25 average. Spain was 5% below the EU25 average, and Cyprus about 15% below it. Greece, Slovenia, Portugal and Malta were between 20% and 30% below the average. The Czech Republic was around 30% below the average and Hungary about 40% below it. Slovakia was just above half the average, while Estonia, Lithuania, Poland and Latvia all recorded figures between 40% and 50% of the EU25 average. http://www.finfacts.com/biz10/gdpeuropeanunion.htm; 05-04-2005.

Figure 1: Exports, imports and balance of trade for Croatia, 1992-2003.

Source: Croatian Bureau of Statistics, Zagreb

The Croatian exports and imports were mostly related to the EU during 1992-2003. The EU represented more than 50% in total exports and imports; more precisely, 52% was the EU share in total exports and 55% in total imports. The decline of Croatian exports was accompanied by a significant loss in the EU market share. At the beginning of the 1990s, the Croatian share in he EU imports was 0.34 and, ten years later, it declined below 0.20 per cent. The main characteristic of the period under analysis refers to a decreasing share of Croatian exports to developed countries and an increasing share of exports to developing countries, due to the recovery of exports by the shipbuilding industry (Malta, Cyprus).

Among the EU countries, the most important market for Croatian companies was Italy with the average share of 21%, Germany with the average share of 17.7 per cent. Croatia also exported more to Slovenia (average share 13.07 per cent) and Bosnia and Herzegovina. The most important markets from which Croatia imported were Germany with the average share of 19.2 per cent, Italy with the average share of 17.8 per cent and Slovenia with the average share of 7.13 per cent.

4.2. Structure of the Croatian export and import to the EU market by products

At the EU market, Croatian exporters have mainly sold ships, boats, electrical equipment and machineries, clothing, woods, footwear, furniture, plastic and organic chemicals as well as items of iron and steel (Table 1). The above-mentioned thirteen products represented more

than 70 per cent of the total export to the EU markets. In the last eighth years, Croatia has been exporting to the EU market primary goods and resource-intensive goods, which represented about a half of the total export, low technology based products (about 37%), middle technology products (about 12 %), while high quality products of high technology participated with hardly 3.5%.

Table 1: The main Croatian products exported to the EU market, 1995-2003

Share in percent

Products		1995-1999	2000-2003	Change in %
89	Ships, boats and floating structures	10,3	14,1	37,0
85	Electrical machinery and equipment	7,3	8,6	17,8
61	Apparel and clothing , knitted or crocheted	3,4	5,3	56,1
62	Apparel and clothing, not knitted or crocheted	9,5	6,5	-32,0
44	Wood and articles of wood	5,0	5,1	0,2
84	Boilers, machinery and mech. Appliances	4,0	5,1	27,3
64	Footwear, gaiters and the like	4,8	3,6	-24.9
27	Mineral fuels, oils and products	8,3	8,7	4,5
94	Furniture; lamps and lighting fittings	2,9	3,2	7,6
39	Plastics and plastic products	6,3	3,7	-40.4
73	Items of iron or steel	2,2	2,4	7,4
29	Organic chemicals	2,3	2,9	25,2
76	Aluminum and items thereof	1,9	2,2	18,1
TOTAL		68,3	71,4	4,4

Source: Croatian Bureau of Statistics, Zagreb

The Croatian import specialization considering the EU market is particularly strong in the following products: automobiles, electronic equipment and machineries, ships, plastic products, pharmaceutical products, paper, mineral flues, instruments, furniture and iron and steel (table 2). The import is more technology intensive than export.

Table 2: The main Croatian products imported from the EU market, 1995-2003

Products		1995-1999	2000-2003	change
87	Vehicles other than railway or tramway	8,8	12,1	37,6
84	Boilers, machinery and mech. Appliances	12,0	12,7	5,9
85	Electrical machinery and equipment	6,7	8,2	21,3
89	Ships, boats and floating structures	2,6	3,4	30,7
39	Plastics and plastic products	3,3	3,7	12,7
73	Articles of iron or steel	2,4	2,7	14,3
30	Pharmaceutical products	1,9	2,5	30,9
48	Paper and paperboard	3,0	2,9	-4,0
27	Mineral fuels, oils and products	9,8	10,6	7,2
90	Instruments and apparatus	2,2	2,1	-7,7
94	Furniture; lamps and lighting fittings	1,8	2,0	13,5
72	Iron and steel	2,3	2,4	5,5
TOTAL		56,9	65,3	14,7

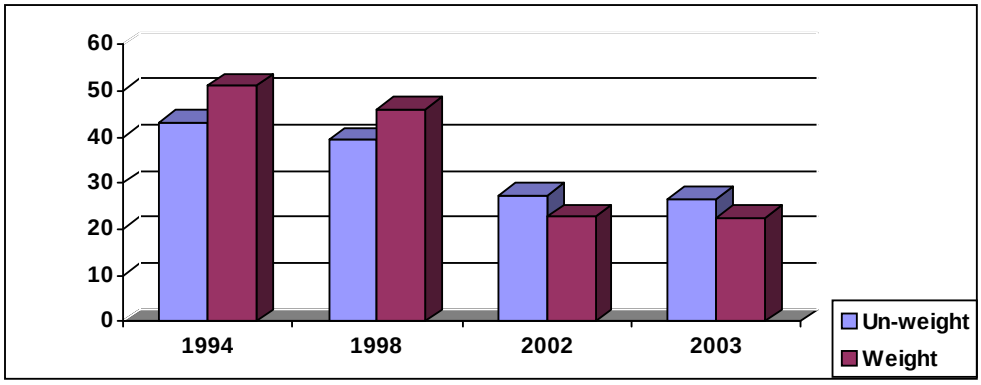
Source: Croatian Bureau of Statistics, Zagreb

During the period under research only two product groups, paper and instruments, experienced a decline in the import share while the import of other main products increased. If we compare the export and import structure presented through the main products, seven of them are on both sides, which shows a relatively high similarity of trade flows. However, this very high level of data aggregation excludes any proper scientific discussion on IIT.

4.3. Pattern of trade between Croatia and the EU

According to economic theory, the extent of IIT is typically much higher across categories of manufactured goods than it is across non-manufactured goods, and it is the highest for some more sophisticated manufactured products such as: chemicals, machinery, transport equipment, electrical equipment and electronics. (OECD, 2002) Croatia has exported some of the above-mentioned products but the analysis at the lower level of data aggregation shows that those exported products are semi-products or low-quality goods and at 2-digital level of Combined Nomenclature. The Croatian model of trade with the EU-15 has been exclusively inter-industry one in the last ten years.

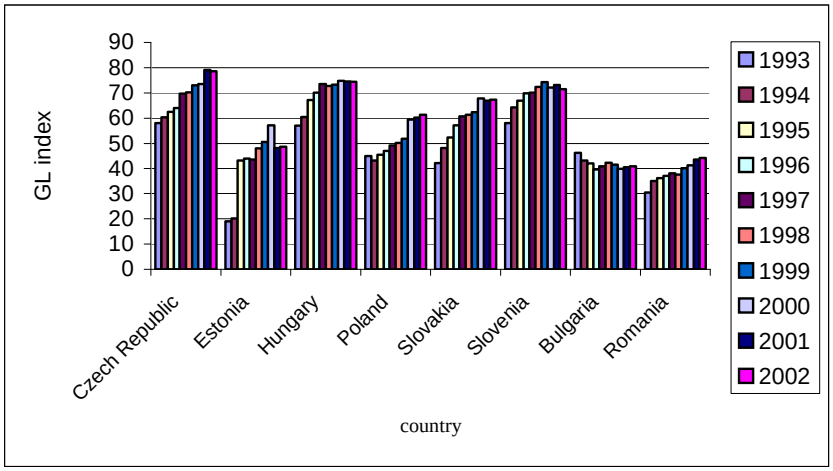
Figure 2: The GL index between Croatia and the EU-15, 1994-2003.



Source: own calculation based on data of Croatia Bureau of Statistics, Zagreb

The data presented by Figure 2 show both un-weighted and weighted GL indexes but both of them emphasize the worst position of Croatian business sector in the exchange with the EU. If we calculate the weighted GL index, Croatia had a poor intra-industry trade with the EU in 1994, but, in 2003, the GL was only 22.4 per cent. The un-weighted GL index showed that the Croatian trade pattern was an inter-industry one during the whole period, the GL index decreased from 36.2 per cent to 27.4 per cent. Comparing the level of IIT between the EU and some other transition countries, Croatia had the lowest GL index among them, it was sometimes twice lower (Czech Republic), Figure 3.

Figure 3: The GL index of some transition countries in the exchange with the EU, 1992-2002.



Source: own calculations, on the basis of COMEXT database, 2-digit level

The IIT level of the above-chosen transition countries ranges from below 20 % of Estonia (1993) to 79% of the Czech Republic (2001). As Figure 3 shows, the countries that are at a higher level of development (Slovenia, Czech Republic) or have strong FDI inflows (Hungary, Poland) experienced a higher GL index before the European Agreements and their GL indexes were also increasing after some stronger approach to the EU. We can conclude that the trade between the EU countries and transition ones is relatively IIT (high level of IIT) for all the CEECs countries but studies also show that vertical IIT accounts for 80 to 90 percents of the total IIT (Gabrish, Segnana, 2002).

These findings are consistent with the economic theory and determinants of IIT, there is a strong correlation between the share of IIT and the stage of economic development of a country as well as between the intensity of trade relations and trade orientation. Despite economic theory, Bulgaria recorded a decreasing IIT while Romania slightly increased it. It is important to stress that the GL index for Croatia was lower than for Romania and Bulgaria in 2002.

During the last ten years, Croatia has developed IIT only in five products: oil seeds and oleaginous fruits; miscellaneous grains, seeds and fruit; industrial or medical plants; straw and fodder (12); tobacco and manufactured tobacco substitutes (24); other vegetable textile fibers; paper yarn and woven fabrics of paper yarn (53); special woven fabrics; tufted textile products; lace; tapestries; trimmings; embroidery and furniture; medical and surgical furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified; illuminated signs, illuminated name-plates and the like; prefabricated buildings (94). All of these products are resource and labor intensive goods, homogeneous products manufactured at perfect competitive markets and their most important feature refers to their price. In 2003, apart from the above-mentioned products, the GL index higher than 50 per cent was noticed in other twelve products but only (94) special woven fabrics; tufted textile products; lace; tapestries; trimmings; embroidery and furniture; medical and surgical furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified; illuminated signs, illuminated name-plates and the like; prefabricated buildings are on the list of the most important Croatian trade products, Table 3.

Table 3: The trade pattern between Croatia and the EU by products, in 1994 and 2003

Year	1994	2003
Inter-industry trade	03;14;17;31;32;40;49;57;65;71	01;02:09;16;20;21;27;28;29;30;36;39;41;42;43;47;48;54;55;59;61;63;64;65;68;69;70;71;72;73;76;79;85;91;95;96;97
Intra-industry trade	01;02;09;10;16,20,21;27;28;29;30;36;39;41;42;43;47;48;54;55;56;59;60;63;64;68;69;70;72;73;74;76;79;85;91;95;96;97.	03;10;14;17;31;32;40;49;56;57;74.
Inter-industry trade	04;05;06;07;08;11;13,15;18;19,22;25;26;28;33;34;35,37;38;44;45;46;50;51;52;60;62;66;67;75;78;80;81;82;83;84;86;87;88;89;90;92;93.	
Intra-industry trade	12;24;53;58;94	

Source: Own calculation based on the data provided by the Croatian Bureau of Statistics, Zagreb; For product's name, see Appendix 1

In comparison with other transition countries, Croatia has a lower level of IIT with the EU and the trade in the main import and export products is primarily inter-industry, so this is the main reason why Croatia has the GL index lower than Bulgaria and Romania. The next important and diverse characteristic, valid only for Croatia, is a very strong and dominant vertical IIT. However, the only product where the horizontal IIT and GL higher than 50 per cent was noticed included special woven fabrics; tufted textile products; lace; tapestries; trimmings; embroidery and furniture; medical and surgical furniture; bedding, mattresses, mattress supports, cushions and similar stuffed furnishings; lamps and lighting fittings, not elsewhere specified; illuminated signs, illuminated name-plates and the like; prefabricated buildings (94), according to own calculations. The relative unit value outside the range was also evidenced in (09) coffee, tea, mate and spices; (27) mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes and (95) toys, games and sports requisites; parts and accessories thereof, but their GL indexes were reduced in 2003 and they experienced inter-industry trade. We can conclude that about 97 per cent of the trade reveals vertical IIT, which is significantly higher than in other transition countries.

4.4. **Evaluation of the impact of integration on the extent of IIT**

At the beginning of the 1990s, the calculated GL index for the Croatia-EU trade was 87.1 per cent or Croatia recorded IIT with fourteen European countries (four of them were not the EU members at that time). The GL index is here calculated on the total export and import data and this is the reason why it has a much higher value than the previously-mentioned one. The higher IIT extent was recorded with Slovenia (93.3), Italy (93.2), Germany (91.5), the Netherlands (86.9), and France (86.3), while the lowest IIT was experienced with Austria (60.5). The trade with other small EU countries or fares from Croatia was inter-industry and the same was with some Eastern European countries, which did not have a strong relationship with the EU in this period.

In the middle of the 1990s, Croatia had a very poor relationship with the EU and IIT decreased from 87.1 per cent to 61.4 in that period. The same trends were evidenced bilaterally, IIT declined with all the EU members except Portugal and non-EU members except Estonia, Latvia and Malta. In July 1999, Croatia stipulated SAA and a better relationship with the EU had an impact on the IIT. The positive growth rate of GL index was recorded with eleven European countries. According to the below presented data, a strong approach to the EU resulted in the changes of decreasing trends of IIT (Appendix 2).

Table 4: Croatian trade pattern with the EU before and after SAA

	Before	After
Intra-industry trade	Austria, Belgium, Cyprus, France, Greece, Ireland, Italy, Latvia, Hungary, Netherlands, Germany, Poland, Portugal, Spain, Sweden, United Kingdom	Austria, Greece, Ireland, Italy, Lithuania, Germany, Portugal, Slovenia, Sweden
Inter-industry trade	Czech, Denmark, Estonia, Finland, Lithuania, Luxemburg, Malta, Slovakia	Belgium, Czech, Denmark, Estonia, Finland, France, Latvia, Luxemburg, Hungary, Malta, Netherlands, Poland, Slovakia, Spain, United Kingdom

Source: Appendix 2

As data in Table 4 shows, Croatia had intensive IIT with Austria, Denmark, Finland, Ireland, Italy, Luxemburg, Spain and Sweden as well as with Estonia, Lithuania and Hungary. Our

comparison of the level of IIT in recent years and those at the beginning of the 1990s shows that the Croatian pattern of trade has strongly been reoriented from IIT to inter-industry trade, whereas only with some transition countries Croatia has improved the trade pattern.

We can also analyze the effects of economic integration on the experience of the EU countries. The EU has grown with successive waves of accession. Denmark, Ireland and the United Kingdom joined in 1973 to be followed by Greece in 1981, Spain and Portugal in 1986, and Austria, Finland and Sweden in 1995. The last enlargement in 2004 included the ten new countries, such as: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia. Bulgaria and Romania have yet expected to follow in 2007. Croatia and Turkey would be beginning their membership negotiations in 2005.

The trade between the EU Member States was expanding during the 1990s, the increase being particularly pronounced for Finland and Sweden following their accession to the EU. At the same time, there was an even stronger increase in the trade of all Member States, especially Ireland, with countries outside the Union. This reflects two factors: first, the continued process of globalization and the further reduction of trade barriers in the context of the Uruguay round; secondly, the higher rate of growth of markets in the rest of the world, especially the USA, than in the EU.

The effects of economic integration can also be seen in the changing pattern of trade, which tends to become more similar between countries as they become more interdependent. The evidence on trade flows indicates that the extent of IIT is high for all the EU Member States and has trends of increasing. This index, calculated for the EU12 countries' intra-EU trade from 1988 to 1998, shows that Greece, Ireland and Portugal still have a considerably lower degree of IIT than all other countries, which is suggestive of the existence of a 'development gap' regarding their productive structure. In Portugal, however, IIT has increased significantly, even though the index is still lower than for all other countries except Greece. For most other countries, the index has increased, with the biggest increase having taken place for Spain, which has now a higher level than many other Member States (European Commision, 2001)

Table 5: Countries with a high and an increasing IIT during the 1990s

Country	1989-91	1992-95	1996-2000	change
Czech Republic	n.a	66,3	77,4	11,1
Slovak Republic	n.a	69,8	76,0	6,2
Mexico	62,5	74,4	73,4	10,9
Hungary	54,9	64,3	72,1	17,2
Germany	67,1	72,0	72,0	5,0
United States	65,5	65,5	68,5	5,0
Poland	56,4	61,7	62,6	6,2
Portugal	52,4	56,3	61,3	8,9

Source: OECD, 2002

As Table 5 shows, among the countries with the higher growth rate of IIT over the 1990s, are four Eastern European transition economies, the Czech Republic, Hungary, Poland and Slovakia and their negotiations with the EU were intensive during this period. The above-mentioned trends could be explained partly by FDI flows because those states were characterized by a high amount of FDI over the 1990s, especially with some particular European countries but partly by trade policy, higher liberalization and integration process.

4.5. Croatia before and after SAA

The EU signed The Stabilization and Association Agreement (SAA) with Croatia on 29 October 2001. Croatia applied for the EU membership in February 2003. In April 2004, the European Commission issued a positive opinion (‘avis’) on this application and recommended the opening of accession negotiations. This recommendation was pointed out by June 2004 when the European Council decided that Croatia was a candidate country and that the accession process should have been launched. In December 2004, the European Council requested the Council to agree on a negotiating framework with a view to opening the accession negotiations with Croatia on 17th March 2005 but the foreign ministers of the EU postponed imminent talks on Croatia's EU entry. As a result of a relatively weak two-way trade between Croatia and the EU, the trade balance of Croatia remained highly negative. Croatia, with 25.526 million € of GDP and nearly 6.000 € per capita, which presented only

44% of the EU average, is a small country and the development gap between Croatia and the EU is very high.

Integration has a positive impact on improving intra-industry trade between partners but in case of Croatia it was not to happen. Before SAA, the Croatian trade pattern was intra-industry because it has a two-way trade with sixteen countries and, only with some small and far European countries, the trade was one way. After some stronger approaching to the EU, the number of countries with which Croatia had an inter-industry trade increased from eight to sixteen. In recent years, Croatia has had a trade overlapping only with Austria, Italy, Ireland, Germany, and Sweden (developed European countries) and also with Greece, Portugal, Lithuania and Slovenia.

If we consider the level of IIT as an indicator of the level of industrial advancement, the data clearly suggest that Croatia does not have highly advanced industrial bases and there is a very considerable loss of competitiveness (GL index has been decreasing). As we know, according to Economic Theory, the adjustment based on specialization within the same industry may be less costly than the adjustment to inter-industry trade which implies a new industrial investment and labor reallocations. If IIT is large enough, the labor mobility will be less required. The cost of being unemployed is higher under the inter-industry adjustment because workers accumulate human capital which is not portable between different sectors and structural unemployment will be high. When a sector with high IIT contracts, workers are forced to move to the expanding exportable-producing sector, but they move between firms in the same sector, with lower adjustment costs (Lovely and Douglas, 2002).

We can conclude that the development difference between Croatia and the EU is high and this country has not kept up the pace with the other transition economies. Due to a weak economic performance of business sector, the liberalization had a negative effect on the level of competitiveness and the level of IIT which recorded a decreasing trend. After a stronger approach to the EU, the Croatian trade pattern was switched from intra-industry (51.1) to inter-industry. Among the analyzed transition countries, Croatia has suffered the highest reduction of GL index.

5. **Conclusion**

The Republic of Croatia, as a small country, should base its development on an outward orientation and a stronger inclusion in the world commercial trends, which emphasizes the need of a high competitive economy. According to its low level of development and the market orientation to the EU market, we also expect a low intensity of IIT. The initial liberalization wave at the beginning of the 1990s increased IIT. As the research has stated, a very high level of IIT was recorded with Slovenia, Poland, Germany, Italy, the Netherlands and France; the medium one with Austria, Belgium, Ireland, Hungary, Greece, the United Kingdom and Portugal while a very low with Lithuania. The absence of technical and financial aid from the European Union, low interest of foreign investors, low-quality privatization, and non- stimulating macroeconomic policy, namely undefined commercial policy, resulted in the IIT decline. In the second analyzed period, 1994-1999, a high level of IIT was only recorded with Poland and Slovenia, the medium level one with Cyprus, Greece, Ireland, Italy, Latvia, Germany and Portugal while a low level one was noted with Austria, Belgium, Malta, the Netherlands and the United Kingdom.

In June 1999, Croatia stipulated SAA but the stronger integration with the EU does not have not positive effects on IIT. In the period after 2000, Croatia had a high level of IIT only with Italy; the medium extent was seen with Greece and Ireland, Lithuania and Slovenia, while the low one was recorded with Austria, Cyprus, Germany and Portugal. Despite economic literature and research results on the transition economies, the Case of Croatia shows that the integration process may have a negative impact on IIT when the country has a low level of competitiveness which causes a high adjustment costs. The pattern of production and trade that emerges after opening the Croatian economies was driven only by factor endowments and not by the economies of scale. This increase the inter-industry trade and because of the relatively significant difference in factor prices, the volume of inter-industry trade was increased. Croatian companies are not specialized in producing different products and they cannot exchange similar manufactured goods with firms specialized in different varieties of similar products. Integration has stimulated and improved the level of IIT if the difference between member countries and additional member is not too high and if there are strong FDI inflows, which was not in Croatian case due to relatively significant difference in factors prices. In the absence of FDI and improvements in competitiveness, the integration always turns the trade pattern from intra into inter-industry.

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Appendix 1:

(01) LIVE ANIMALS; (02) MEAT AND EDIBLE MEAT OFFAL; (03) FISH AND CRUSTACEANS, MOLLUSCS AND OTHER AQUATIC INVERTEBRATES; (04) DAIRY PRODUCE; BIRDS' EGGS; NATURAL HONEY; EDIBLE PRODUCTS OF ANIMAL ORIGIN, NOT ELSEWHERE SPECIFIED OR INCLUDED; (05) PRODUCTS OF ANIMAL ORIGIN NOT ELSEWHERE SPECIFIED OR INCLUDED; (06) LIVE TREES AND OTHER PLANTS; BULBS, ROOTS AND THE LIKE; CUT FLOWERS AND ORNAMENTAL FOLIAGE; (07) EDIBLE VEGETABLES AND CERTAIN ROOTS AND TUBERS; (08) EDIBLE FRUIT AND NUTS; PEEL OF CITRUS FRUITS OR MELONS; (09) COFFEE, TEA, MATE AND SPICES; (10) CEREALS; (11) PRODUCTS OF THE MILLING INDUSTRY; MALT; STARCHES; INULIN; WHEAT GLUTEN; (12) OIL SEEDS AND OLEAGINOUS FRUITS; MISCELLANEOUS GRAINS, SEEDS AND FRUIT; INDUSTRIAL OR MEDICAL PLANTS; STRAW AND FODDER; (13) LACS; GUMS, RESINS AND OTHER VEGETABLE SAPS AND EXTRACTS; (14) VEGETABLE PLAITING MATERIALS; VEGETABLE PRODUCTS NOT ELSEWHERE SPECIFIED OR INCLUDED (15) ANIMAL OR VEGETABLE FATS AND OILS AND THEIR CLEAVAGE PRODUCTS; PREPARED EDIBLE FATS; ANIMAL OR VEGETABLE WAXES; (16) PREPARATIONS OF MEAT, FISH OR CRUSTACEANS, MOLLUSCS OR OTHER AQUATIC INVERTEBRATES; (17) SUGARS AND SUGAR CONFECTIONERY; (18) COCOA AND COCOA PREPARATIONS; (19) PREPARATIONS OF CEREALS, FLOUR, STARCH OR MILK; PASTRYCOOKS' PRODUCTS; (20) PREPARATIONS OF VEGETABLES, FRUIT, NUTS OR OTHER PARTS OF PLANTS; (21) MISCELLANEOUS EDIBLE PREPARATIONS; (22) BEVERAGES, SPIRITS AND VINEGAR; (23) RESIDUES AND WASTE FROM THE FOOD INDUSTRIES; PREPARED ANIMAL FODDER; (24) TOBACCO AND MANUFACTURED TOBACCO SUBSTITUTES; (25) SALT; SULPHUR; EARTHS AND STONE; PLASTERING MATERIAL, LIME AND CEMENT; (26) ORES, SLAG AND ASH; (27) MINERAL FUELS, MINERAL OILS AND PRODUCTS OF THEIR DISTILLATION; BITUMINOUS SUBSTANCES; MINERAL WAXES; (28) INORGANIC CHEMICALS: ORGANIC OR INORGANIC COMPOUNDS OF PRECIOUS METALS, OF RARE-EARTH METALS, OF RADIOACTIVE ELEMENTS OR OF ISOTOPES; (29) ORGANIC CHEMICALS; (30) PHARMACEUTICAL PRODUCTS; (31) FERTILIZERS; (32) TANNING OR DYEING EXTRACTS; TANNINS AND THEIR DERIVATIVES; DYES, PIGMENTS AND OTHER COLOURING MATTER; PAINTS AND VARNISHES; PUTTY AND OTHER MASTICS; INKS; (33) ESSENTIAL OILS AND RESINOIDS; PERFUMERY, COSMETIC OR TOILET PREPARATIONS; (34) SOAPS, ORGANIC SURFACE-ACTIVE AGENTS, WASHING PREPARATIONS, LUBRICATING PREPARATIONS, ARTIFICIAL WAXES, PREPARED WAXES, SHOE POLISH, SCOURING POWDER AND THE LIKE, CANDLES AND SIMILAR PRODUCTS, MODELLING PASTES, DENTAL WAX AND PLASTER-BASED DENTAL PREPARATIONS; (35) ALBUMINOUS SUBSTANCES; MODIFIED STARCHES; GLUES; ENZYMES; (36) EXPLOSIVES; PYROTECHNIC PRODUCTS; MATCHES; PYROPHORIC ALLOYS; COMBUSTIBLE MATERIALS; (37) PHOTOGRAPHIC OR CINEMATOGRAPHIC PRODUCTS; (38) MISCELLANEOUS CHEMICAL PRODUCTS; (39) PLASTICS AND PLASTIC PRODUCTS; (40) RUBBER AND ARTICLES THEREOF; (41) HIDES AND SKINS (OTHER THAN FURSKINS) AND LEATHER; (42) ARTICLES OF LEATHER; SADDLERY AND HARNESS; TRAVEL GOODS, HANDBAGS AND SIMILAR CONTAINERS; ARTICLES OF ANIMAL GUT (OTHER THAN SILK-WORM GUT); (43) FURSKINS AND ARTIFICIAL FUR;

ARTICLES THEREOF; (44) WOOD AND ARTICLES OF WOOD; WOOD CHARCOAL; (45) CORK AND ARTICLES OF CORK; (46) WICKERWORK AND BASKETWORK; (47) PULP OF WOOD OR OF OTHER FIBROUS CELLULOSIC MATERIAL; WASTE AND SCRAP OF PAPER OR PAPERBOARD; (48) PAPER AND PAPERBOARD; ARTICLES OF PAPER PULP, PAPER OR PAPERBOARD; (49) BOOKS, NEWSPAPERS, PICTURES AND OTHER PRODUCTS OF THE PRINTING INDUSTRY; MANUSCRIPTS, TYPESCRIPTS AND PLANS; (50) SILK; (51) WOOL, FINE AND COARSE ANIMAL HAIR; YARN AND FABRICS OF HORSEHAIR; (52) COTTON; (53) OTHER VEGETABLE TEXTILE FIBRES; PAPER YARN AND WOVEN FABRICS OF PAPER YARN; (54) MAN-MADE FILAMENTS; (55) MAN-MADE STAPLE FIBRES; (56) WADDING, FELT AND NONWOVENS; SPECIAL YARNS; TWINE, CORDAGE, ROPE AND CABLE AND ARTICLES THEREOF; (57) CARPETS AND OTHER TEXTILE FLOOR COVERINGS; (58) SPECIAL WOVEN FABRICS; TUFTED TEXTILE PRODUCTS; LACE; TAPESTRIES; TRIMMINGS; EMBROIDERY; (59) IMPREGNATED, COATED, COVERED OR LAMINATED TEXTILE FABRICS; ARTICLES FOR TECHNICAL USE, OF TEXTILE MATERIALS; (60) KNITTED OR CROCHETED FABRICS; (61) ARTICLES OF APPAREL AND CLOTHING ACCESSORIES, KNITTED OR CROCHETED; (62) ARTICLES OF APPAREL AND CLOTHING ACCESSORIES, NOT KNITTED OR CROCHETED; (63) OTHER MADE UP TEXTILE ARTICLES; SETS; WORN CLOTHING AND WORN TEXTILE ARTICLES; RAGS; (64) FOOTWEAR, GAITERS AND THE LIKE; PARTS OF SUCH ARTICLES; (65) HEADGEAR AND PARTS THEREOF; (66) UMBRELLAS, SUN UMBRELLAS, WALKING-STICKS, SEAT-STICKS, WHIPS, RIDING-CROPS AND PARTS THEREOF; (67) PREPARED FEATHERS AND DOWN AND ARTICLES MADE OF FEATHERS OR OF DOWN; ARTIFICIAL FLOWERS; ARTICLES OF HUMAN HAIR; (68) ARTICLES OF STONE, PLASTER, CEMENT, ASBESTOS, MICA OR SIMILAR MATERIALS; (69) CERAMIC PRODUCTS; (70) GLASS AND GLASSWARE; (71) NATURAL OR CULTURED PEARLS, PRECIOUS OR SEMI-PRECIOUS STONES, PRECIOUS METALS, METALS CLAD WITH PRECIOUS METAL, AND ARTICLES THEREOF; IMITATION JEWELLERY; COIN; (72) IRON AND STEEL; (73) ARTICLES OF IRON OR STEEL; (74) COPPER AND ARTICLES THEREOF; (75) NICKEL AND ARTICLES THEREOF; (76) ALUMINIUM AND ARTICLES THEREOF; (78) LEAD AND ARTICLES THEREOF; (79) ZINC AND ARTICLES THEREOF; (80) TIN AND ARTICLES THEREOF; (81) OTHER BASE METALS; CERMETS; ARTICLES THEREOF; (82) TOOLS, IMPLEMENTS, CUTLERY, SPOONS AND FORKS, OF BASE METAL; PARTS THEREOF OF BASE METAL; (83) MISCELLANEOUS ARTICLES OF BASE METAL; (84) NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES; PARTS THEREOF; (85) ELECTRICAL MACHINERY AND EQUIPMENT AND PARTS THEREOF; SOUND RECORDERS AND REPRODUCERS, TELEVISION IMAGE AND SOUND RECORDERS AND REPRODUCERS, AND PARTS AND ACCESSORIES OF SUCH ARTICLES; (86) RAILWAY OR TRAMWAY LOCOMOTIVES, ROLLING-STOCK AND PARTS THEREOF; RAILWAY OR TRAMWAY TRACK FIXTURES AND FITTINGS AND PARTS THEREOF; MECHANICAL, INCLUDING ELECTRO-MECHANICAL, TRAFFIC SIGNALLING EQUIPMENT OF ALL KINDS; (87) VEHICLES OTHER THAN RAILWAY OR TRAMWAY ROLLING-STOCK, AND PARTS AND ACCESSORIES THEREOF; (88) AIRCRAFT, SPACECRAFT, AND PARTS THEREOF; (89) SHIPS, BOATS AND FLOATING STRUCTURES; (90) OPTICAL, PHOTOGRAPHIC, CINEMATOGRAPHIC, MEASURING, CHECKING, PRECISION, MEDICAL OR SURGICAL INSTRUMENTS AND APPARATUS; PARTS AND ACCESSORIES THEREOF; (91) CLOCKS AND WATCHES AND PARTS THEREOF; (92) MUSICAL INSTRUMENTS; PARTS AND ACCESSORIES FOR SUCH ARTICLES; (93) ARMS AND AMMUNITION; PARTS AND ACCESSORIES THEREOF; (94) FURNITURE; MEDICAL AND SURGICAL FURNITURE; BEDDING, MATTRESSES, MATTRESS SUPPORTS, CUSHIONS AND SIMILAR STUFFED FURNISHINGS; LAMPS AND LIGHTING FITTINGS, NOT ELSEWHERE SPECIFIED; ILLUMINATED SIGNS, ILLUMINATED NAME-PLATES AND THE LIKE; PREFABRICATED BUILDINGS; (95) TOYS, GAMES AND SPORTS REQUISITES; PARTS AND ACCESSORIES THEREOF; (96) MISCELLANEOUS MANUFACTURED ARTICLES; (97) WORKS OF ART, COLLECTORS' PIECES AND ANTIQUES; (98) COMPONENTS OF COMPLETE INDUSTRIAL PLANTS OF CHAPTER 63: POWER PRODUCTION, INCL. PRODUCTION AND DISTRIBUTION OF STEAM AND HOT WATER; (99) OTHER PRODUCTS

Appendix 2: GL index for Croatia and EU-25, 1992-2003

Country	1992-95	1996-1999	2000-2003	Change 1999/95	change 2003/1999
Austria	**60,5**	**55,3**	66,6	-8,5	**20,3**
Belgium	**75,7**	**52,8**	47,9	-30,3	-9,2
Cyprus	49,7	**64,3**	53,1	29,3	-17,5
Czech Rep	46,6	34,7	26,4	-25,5	-23,9
Denmark	42,0	17,2	24,8	-59,2	**44,3**
Estonia	19,8	34,2	49,8	***72,6***	**45,6**
Finland	43,7	10,8	22,5	-75,4	**108,8**
France	**86,3**	46,5	46,4	-46,1	-0,4
Greece	**76,3**	**71,1**	62,8	-6,8	-11,7
Ireland	**78,2**	**72,6**	79,5	-7,2	**9,6**
Italy	**93,2**	**76,4**	83,9	-18,1	**9,8**
Lithuania	17,7	7,1	37,2	-60,0	**424,3**
Latvia	**53,6**	**79,1**	73,0	47,5	-7,8
Luxemburg	31,5	7,1	30,9	-77,5	**336,4**
Hungary	**70,8**	38,8	40,9	-45,2	**5,6**
Malta	17,6	**53,5**	28,0	***204,4***	-47,7
Netherlands	**86,9**	**52,7**	40,9	-39,4	-22,3
Germany	**91,5**	**63,7**	57,0	-30,4	-10,6
Poland	**91,8**	**84,4**	29,5	-8,0	-65,1
Portugal	**68,7**	**74,2**	50,7	***8,0***	-31,6
Slovakia	46,5	44,3	34,3	-4,9	-22,5
Slovenia	**93,3**	**82,2**	73,9	-11,9	-10,1
Spain	**68,5**	25,0	36,1	-63,5	**44,4**
Sweden	42,6	25,4	39,5	-40,4	**55,3**
U Kingdom	**65,1**	**54,4**	47,5	-16,4	-12,7
EU-12/EU-15	87,1	61,8	64,0	-29,1	3,6

Source: own calculation based on data of Croatian Bureau of Statistics