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INTRA-INDUSTRY TRADE: THE CASE OF EUROPEAN UNION'S AGRI-FOOD SECTOR

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INTRODUCTION

Today is time of increasing interdependence and interaction of national economies, while the rapid development (explosion) of International Economic Relations (IER). From year to year growth rate of world trade exceeds the growth rate of the real output of world economy, especially among the developed countries. World trade statistics indicate that many commodity groups appear both in the imports and exports of a country, within the same industry. This phenomenon of simultaneous exports and imports of similar goods within the same industry has been defined as "Intra-industry trade" or "Two-way trade". The emergence of this phenomena which has been not consistent with traditional trade theories predictions, has led to many discussions among economists. Specifically, these traditional theories, based on the Ricardian theory[1] and H-O-S model[2],*(the factor proportion theory, Hecksher (1919,1949), Ohlin (1933) and Samuelson (1948, 1949,1953)* predict that given certain underlying assumptions, a country will not simultaneously export and import products in the same industry because "Nation trade with each other for fundamentally the same reasons that individuals or regions engage in exchange of goods and services to obtain the benefits of specialization" (H.E. Kreinin, 1979, p.214). Both theories predict the emergence of inter-industry trade.

More interesting aspects concerning intra-industry trade (IIT) are that the intensity of IIT is more pronounced among developed countries, which have similar demand patterns, homothetic tastes, technologies and relative endowments of productive factors. One explanation for the emergence of IIT is that the products simultaneously exported and imported within an industry are close but not perfect

[1] The Ricardian theory suggests that countries have inherent technological differences. All countries gain from trade if each country specializes in products in which it has a relative cost advantage and exports the excess products of those industries.

[2] The Hecksher-Ohlin-Samuelson theory or Factor Proportion Theory focus attention on relative factor endowments as the basis for comparative advantage and as the main determinants of trade patterns. All countries gain from trade if each country specializes in the production of those products that use intensively its relatively abundant productive resources, and exports the excess products of those industries.

substitutes. These products are differentiated, although they may be produced by essentially the same technique, within the same industrial process.

This thesis is concerned with two basic issues. First, whether the existence of intra-industry trade is a real phenomenon of the modern trade patterns or merely a "statistical artifact" due to "categorical aggregation" in the compilation of international trade statistics. There has been considerable debate on this issue with inconclusive results. Balassa (1967, 1971, 1979), Lancaster (1960, 1980), Hesse (1974), Grubel and Lloyd (1975), Aquino (1978), Linder (1961) argue that intra-industry trade is a stable characteristic of an industry, and, therefore, is a real phenomenon on both theoretical and empirical grounds. On the other side, critics like Finger (1975), Lipsey (1976), Tiberi (1981), Gray (1979), and Pomfret (1978) argue that intra-industry trade is mainly a statistical illusion. Doubt arises as a result of data compilation. It is maintained that the trade data are arbitrarily grouped in industry products that are produced using different input mixes and are not close substitutes. These economists assert that intra-industry trade would disappear if narrower group definitions were used. While this seems to be a partially satisfactory explanation for the apparent contradiction of the one market one price principle, it probably constitutes a retreat from, rather than an indication of, the Hecksher-Ohlin hypothesis. In order to avoid this doubt various attempts have been made to estimate the intensity of IIT at finest levels of disaggregation. Different measures of IIT have been computed and analyzed. The empirical results are documented in Chapter 3. These results indicate the importance of intra-industry trade in EU's agri-food trade.

The second issue arose with respect to identify and understand the nature of intra-industry trade flows and to empirically analyze the potential country-specific and industry-specific determinants of IIT in EU. Specifically to shed light on the different types of intra-industry trade (Abd-el-Rahman 1991, Fontagné and Freudenberg, 2001, Moro-Egido, 2010), depending on the type of product differentiation prevailing in each industry; on the framework for analyzing the competitiveness of trade flows by the price and quality competition in IIT between

EU-countries (AIGINGER, 1997,1998, Gelhar and Pick, 2002, Ninni, 2006); on the relationship between IIT and various economic factors relating country attributes and industry characteristics (Bergstrand, 1982, Helpman and Krugman, 1985, Anderson and van Wincoop, 2003). Various testable hypotheses have been drawn from the emerging theoretical discussion in Chapter Four. The methodology involving the measurement of IIT has been analyzed in Chapter Three. Different values of IIT indices have been computed and examined in also in Chapter Four and Three. These estimated values of IIT indices have been used as dependent variables in relation to the determinants of IIT. The empirical tests of these hypotheses are presented and examined in Chapter Four. These results indicate the importance of vertical intra-industry trade in agri-food market of European Union.

In this study, all two basic issues are examined and an effort has been made to provide further evidence on the extent and the determinants of the intra-industry trade specialization in European Union.

CHAPTER 1

Classical theories of international trade

1.1 Traditional theories of international trade

In the second half of the XVIII century, mercantilist policies became an obstacle for the economic progress. Adam Smith (1776) in his book "The Wealth of Nations", published in 1776 explains the variation in prices and, consequently, international trade as a result of the absolute advantages in production costs of one country in comparison with another.

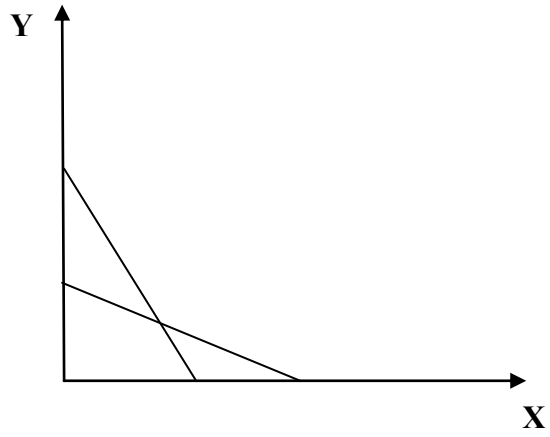
The essence of Adam Smith theory is that the rule that leads the exchanges from any market, internal or external, is to determine the value of goods by measuring the labour incorporated in them.

In order to demonstrate its theory, Adam Smith analyzed for the beginning country A, using one factor of production, the productivity of labour, evaluated in the necessary of hours needed to produce a unit of measure of the products X and Y. He used a unifactorial system of economy.

Symbolizing H-hours, L-labour, the unitary necessary of labour for product X is H_{LX} and for Y H_{LY}.

Because all the economies have limited resources, there are limits in the level of production, and if a country wants to produce much of one product it has to give up producing another goods, existing in this case renounce of trade (Figure 1.1).

Figure 1.1 The production possibility frontier



We have a single factor of production- labour, which results in productivity. This country has a resource of labour of 8+4=12 hours.

- with 4 hours of labour the country can produce 1 kilo of cheese
- with 8 hours of labour the country can produce 1 liter of wine

The production possibility frontier illustrates the variety of the mixing of goods that can be produce by the economy. The opportunity cost is the number of measure units of product Y to which the economy has to give up in order to produce one supplementary unit of product X (Table 1.1).

Table 1.1 Specialization in production and the advantage from trade through absolute advantage

Country	Products units of product/units of time			
	Without trade		After specialization and trade	
	X	Y	X	Y
A	6	3	12	-
B	3	6	-	12
TOTAL	9	9	12	12

Country A is more productive then B in the production of X and it has an absolute advantage in this product and country B is more productive then B in producing product Y. It is reasonable and in the benefit of 2 countries to concentrate all resources of labour to the product for which they have absolute advantage.After specialization, exchanging products, both countries gain from trade.

Ricardo (1817), by-turn, shows that not absolute but relative advantages is a necessary condition of international trade. Consider the example of Ricardo's model of two countries (A and B) the two products (X and Y) (Table 1.2).

Table 1.2 Specialization in production and the advantage from trade through relative advantage

Country	Productivity hours/monetary units		Opportunity cost	
	X	Y	X	Y
A	1	2	0.5	2.0
B	6	3	2.0	0.5

In this case, Country A has absolute advantage in producing both products. However, in the absence of a trade, opportunity costs of production X in country A are lower, than the production of product Y. The converse is true for country B. Comparative costs are transforming into absolute price advantages, that by-turn creates the conditions for international trade. As a result of trade change prices of products X and Y, which leads to a change in production structure and specialization of each country on a product that is produce at a lower opportunity cost, i.e. have a comparative advantage. Thus, country A will produce and export goods X and country B - Y. In this case, trade is profitable for both countries.

1.2 Heckscher-Ohlin model and paradox of Leontief

Ricardo defines comparative advantages in production costs as the main reason for specialization and development of trade. The reasons of origin of the comparative advantages, such as different levels of technological development, equipment of production factors and their effects on foreign trade have not been analyzed. This step has been made by the Swedish economists Heckscher (1919) and Ohlin (1933) in the early twentieth century. As a result, was to create a harmonious theory of international trade, later called the theory of the Heckscher-Ohlin model. This theory is based on the suggestion that countries in various degrees are endowed by factors of production (such as labor and capital). The next important assumption of this theory is that the production of both commodities factors is used with different intensity: the production of one product is used extensively factor "labor" (labor-intensive goods), and the production of another - a factor "capital" (capital-intensive goods). In this case, if the country is provided a lot of labor force, so labor-intensive goods would be relatively cheap. In the absence of trade, costs on the production of capital-intensive goods in this country - and hence prices - are higher than in a country that has a lot of capital, but too little by labor. Establishment and development of trade leads to adjustment of prices on goods and specialization of each country. The rise in prices on "cheap" – in the conditions of absence of trade – good leads to that each of the countries will specialize on production of those goods, for the production of which is intensively used factor is available in this country in quantity. Import of the same country will be goods, for the production of which requires intensive use of a lack of factors. This is basic proposition of the theorem Heckscher-Ohlin model.

Thus, the factor-intensive of exported and imported goods is an indicator for the empirical testing of this theory. However, the first empirical test made by Leontief in 1953, questioned the conclusion Heckscher and Ohlin. Based on the results of research of the U.S. economy, which are considered capital-intensive country, exported labor-intensive goods and imported capital-intensive, this contradicts the theory. These results, which became known as the "Leontief

paradox" (1953), stimulated the expansion of the Heckscher-Ohlin model, it adaptation to the real world. In an attempt to explain this paradox Leontief himself extended the notion “factor- equipment of country”. He pointed to the need to consider not only the physical availability of the factor, but also its quality, notably to consider the factor “labor” not only as physical capital, but also as human capital (human capital), i.e. share "work" or labor force for skilled and unskilled. With this differentiated determination of the factor "labor" Leontief attempted to explain the results of its test (1).

At extension of simple model of Heckscher and Ohlin, i.e. if to consider more than two countries, two factors and two products, there is a problem of empirical verification of the theory, because factor-intensity can not be more used as an indicator of factor endowments (factor- equipment) country. Vanek (1968) introduced the concept of “*factor content of trade”* and defined that the country has a large number of factors (abundant in factor), if the ratio of presence of this factor in the country to world presence exceeds a country share in world GDP. If the ratio is less, we are talking about "deficient" factor. According to Leamer (1980) in the given country factor has a large number (in abundance), if its share in total world reserves over the shares of other factors (labor, land, etc.). Based on these definitions and according theorem Heckscher-Ohlin model implies that the factor is available in sufficient quantities then, if it factor-intensity (compared with other factors) is higher in production than in consumption. Therefore, a country exports goods, which intensively use sufficient evidence and import products, which require intensive use of “scarcity” factors. At empirical check of the theorem Heckscher-Ohlin by object of research there are not foreign trade structure, but structure of production and consumption.

1.3 The phenomenon of Intra-industry international trade

As already known, the traditional theory suggests that, if no intervening influences in the opposite direction from the demand side, the pattern of trade is determined by the relative endowment of factors (capital and labor). The relatively abundant factor costs less than other; therefore the prices of products incorporating mainly the first will be relatively minor. As the competition in international markets is based on the price differences, an open economy will get the maximum benefit from trade by specializing in products whose production processes require a greater use of the abundant factor and importing others.

Therefore, according to the traditional theory, the strong increase in international trade that has occurred over the past thirty years would have to manifest itself mainly in cross exchanges between different sectors. The "peripheral" countries should specialize in goods that are high in agricultural and mineral resources, while the "central" countries in equipment for industrial applications. In other words, international trade will have an inter-industry nature.

The empirical data, however, show clearly that this has not happened. It seems rather obvious that substantial trade flows between countries are not at all related to any concept of specialization. A significant part of the increase in international trade is in fact attributed to the growth of the exchange of products belonging to the same industrial sectors, giving rise to the phenomenon of so-called intra-industry trade. That term is in fact recently appeared in the literature on international trade, to designate the cross-exchange between countries of similar goods or still belonging to the same product sector.

There has been considerable debate on the economic analysis of the phenomenon of intra-industry trade. An interesting aspect concerning the explanation of intra-industry trade is that empirical studies have preceded theoretical considerations. It has often been pointed out in the literature that empirical work in this field has far outpaced theoretical development. According to

Tharakan (1983): «Although there was some amount of "patch work theorising" in this, together with the contribution of Gray (1973),… and recent theoretical contributions of Lancaster (1980), Krugman (1981), and Brander (1981), the intra-industry trade has, by and large, remained an empirical phenomenon in search of a theory (Tharakan, 1983, pp. 2-3).

However, it has also been recognized that the economic analysis of intra-industry trade has come a long way since Verdoorn's (1960) seminal study. Remarkable extensions of the factor proportions theory have taken since then. Kojima's (1964) study of the pattern of international trade among developed countries seems to have further stimulated the development of a new philosophy on the frontiers of trade. As he observed: «A significant finding...which presents opportunities for further inquiry is the rapid growth of horizontal trade of manufactured goods among highly developed, homogeneous and industrial countries. We need to uncover the forces underlying this conspicuous trend and define any new philosophy that may have evolved which is contrary to the traditional comparative costs theory (Kojima, 1964, pp. 16-36).

The significance of the above findings consisted of the fact that within the framework of the Heckscher-Ohlin theorem, there was no room for such simultaneous exports and imports by countries of products which are very close substitutes in consumption or in terms of factor input requirements in production. Economists, as usual, have different opinions. Scholars such as Balassa (1967, 1971, 1979), Gray (1973), Hesse (1974), Grubel and Lloyd (1975), Aquino (1978), Falvey (1981), Krugman (1981), Brander (1981), Krugman and Helpman (1984) and others, believe that no new theory is required to explain the phenomenon of intra-industry trade. According to Krugman (1979, p.14) «…the case for an extended theory is stronger than the negative reason that factor proportions theory doesn’t work, so that something else is needed. There is also a positive reason: a model which combines scale economies and factor proportions makes some substantive predictions which seem to be borne out in practice».

Corden (1979) has his own suggestions of redistributing the weight given to the existing theories with a down grading of the factor-proportions theorem. As Cordon observed: «The recognition of the phenomenon of intra-industry trade has not given rise to any new theories of trade and has not required any new theories ... The empirical importance of intra-industry trade only affects the weight which is given to existing theories».

Finger (1975) argues that "Trade Overlap" is consistent with factor proportions theory so long as factor input requirements vary more within product groups than between them.

These divergent views in the international trade literature led to the emergence of *new trade theories*, which are examined in the next chapter with the help of the more recent trade theories.

CHAPTER 2.

Theoretical review of the intra-industry trade

2.1 Cases of intra-industry trade explained by the traditional theory

In the context of traditional theory, founded a plausible explanation of the following cases in intra-industry trade of identical goods: 1) that resulting from small breakdown of statistical compilation of data on international trade, and 2) that in the cross-border areas, and 3) that from the re-exportation; 4) that from cyclicity reveal on the seasonality of production, 5) that originated from the need for diversification of supply and product markets.

2.1.1. Statistical illusion

The first objection against intra-industry trade was formulated as early as in the 70s. Many theorists have seen intra-industry trade as a result of an incorrect aggregation of goods into product groups called "industries" (e.g. Finger, 1975, 581-588; Lipsey, 1976, 313-314). Their main argument was that by aggregating goods into industries different definitions of goods' similarity are applied. And some streams of exchange treated as intra – industry did not fit in with any similarity definition. In fact, if the data are too aggregates, the same commodity class ultimately embracing products which are very different from each other, both for the manner in which they are produced , both for the tasks which are intended to play in intermediate production (in the case of non-finished products) and final consumption. But if the products are grouped in each category are not close substitutes in consumer demand and if the intermediate and final production differs considerably in the intensity of the various factors used, then the traditional theory, which indicates the specialization on the basis of the proportion of factors used, would remain valid, in general, and each country would export the product

subcategory in which it enjoys a comparative advantage from the side of the production costs (Tiberi, 1981).

The product group 3 contains goods, similarity of which is the most comprehensively defined one (Table 2.1.1). However, the trouble with group 3 is that its goods are relatively rare in the real life. Additionally, even this definition can give raise to some questions when applied to the differentiated goods. Especially, a problem arises when we analyse differentiated goods. It is controversial whether a car like *Peugeot* is similar to *Volkswagen*, even if both are produced with relatively similar technologies and production factors. Both are used for similar purposes, but it doesn't mean that consumers view them as perfect substitutes (Czarny, 2001). Different sorts of beer may be better examples of the close substitutes. However many consumers are not indifferent between *Beck* and *Heineken* at all.

Table 2.1.1 Standard international trade classification system of industrial grouping by using 5-digit classification number

SITC Codes	Description of the industry
3……..	Mineral fuels, lubricants and related materials
33…….	Petroleum, petroleum products and related materials
335…….	Residual petroleum products, n.e.s., and related materials
3354…….	Petroleum bitumen, petroleum coke and bituminous mixtures, n.e.s
33542….	Petroleum coke

The problem becomes even more acute if we consider product groups 0 and 1 as well[3]. The international trade classification SITC (especially in its most aggregated form on the 1 – digit level) seems to be placed somewhere between product groups 0 and 1. It consists of food, beverages and tobacco but also raw materials, chemicals and manufactures. Even on the higher levels of disaggregation the problem of differences between goods in one group does not disappear. E.g. Pomfret (1991, 77) writes about SITC 793 (ships and boats) containing both kayaks and supertankers. This problem arises also by use of other statistical classifications. Bergstrand (1982, 45) reports about US Standard Industrial Classification and its product group SIC 363 containing such household appliances as stoves, freezers and washing machines. These goods are produced with the different techniques and are not close substitutes to each other.

The statistical illusion put forward by the supporters of the traditional theory to explain the intra-industry trade has very impressive effect of reducing the impact of evidence, but not to affect the paradoxical nature of the phenomenon. In fact, even if a statistical effect due to excessively aggregated data, remain also a good percentage of intra-industry trade that is not attributable to a substantial difference in the techniques used.

2.1.2. Trade in cross-border areas

The share of intra-industry trade, more significant when a smaller the country is geographically considered, arises from the so-called trade in cross-border areas o border trade. It is those flows incoming and outcoming of similar goods due to the simple geographical proximity and associated transport costs.

In the absence of major imbalances in the exchange rate, there is a high probability that among firms located in the area close to each other even if they were part of different countries become established supplier relationships, giving rise to international trade in goods also similar. Border trade flows are often also

[3] Group of products by Standart International Trade Classification – 0 Food and live animals; 1 Beverages and tobacco.

favored by factors of similarity ethnic-linguistic-cultural of regions and between foreign neighbors.

These findings are generally in agreement with the study by Loertsher and Wolter (1980) and Gandolfo (1978). It is posited that similar culture, language and neighborhood between trading partners go hand in hand with similar preference patterns and habits and therefore further facilitate intra-industry trade.

It's clear that this explanation of the intra-industry trade becomes more important, when smaller the country concerned and the higher, when the impact of transport costs on the value of the individual goods.

2.1.3. The re-export and post-trade

Another explanation of intra-industry trade refers import and export of goods after mere storage and distribution by an international wholesaler (so-called entrepot trade), or after simple manipulations, such as packaging, bottling etc., leaves them essentially unchanged prior to exporting them to another country (so-called re-export trade).

Such property, in fact, does not undergo a transformation usually sufficient to justify their re-c1assification in a voice statistical different. It follows, therefore, that their import followed by subsequent re-exportation of the same gives rise to a corresponding cross trade of similar goods.

That recurring issue with trade data was discussed in detail by Feenstra (1996) and Gordon and Feenstra (2001). In many cases the country of origin (O) reports entrepot (T) as the destination of the shipment. Meanwhile the entrepot country does not report the import and the final importer (F) reports the original exporter (O) as the origin. This creates a surplus (between O and T) and a deficit (between O and F). In the example above, country (F) reports an import from (O), which is not reported (as an export to F) by country (O), are creating a discrepancy. Nicita and Olarreaga (2001) are advised to use mirrored export. From "Statistic on the trading of goods" (2006) were also noted Intra-EU statistical discrepancies. Triangular trade can affect comparisons of both intra- and extra-EU trade. In the

intra-EU context triangular trade is said to exist in the case of a company in Member State A which sells goods to a company in Member State B, which in turn sells them to a company in Member State C, although the goods are "physically" forwarded only once - from A to C. In cases such as this, intra-Community trade statistics should record a dispatch from A bound for C, and an arrival in C of goods from A. There is, however, a considerable risk that A or C will regard Member State B as its trading partner. An example illustrating another problem linked to indirect movements, in particular when combined with the special treatment of transit trade adopted by some Member States is given below. The phenomenon described is known as the "Rotterdam" effect (Table 2.1.3).

Table 2.1.3 The "Rotterdam" effect

Japanese goods are imported into Europe; they are released for free circulation in the Netherlands, and then dispatched to France (Member State of consumption). For such an operation, the various recordings will be as follows:
For Community statistics, three operations are recorded: • import of goods originating in Japan (with the Netherlands as the declaring Member State, since the customs declaration is made there); • dispatch (intra) from the Netherlands to France; • arrival (intra) in France.
For Netherlands national statistics, no trade is recorded, as the import from Japan and dispatch to France is regarded as transit trade. For French national statistics, goods originating in Japan are entered as imports. France records Japan as the country of origin, as indicated on the Intrastat declaration. This information is considered statistically more relevant at national level.

2.1.4. Periodic trade

Another reason for intra-industry trade in homogeneous products is seasonal. The first scholars who have defined this phenomenon were Grubel and Lloyd (1975). Brazil may export seasonal items (such as agricultural products) to the United States at one time of the year and import them from the United States at another time during the same year. It is true that this abundance can affect on the occurrence more or less accentuated intra-industry trade, but this effect can be reduced with the use of three year averages.

More frequent is the seasonal trade originated from the exchange of production between countries alternately in time of excess production capacity.

Since in the concrete are possible only increases discontinuous latter (the implants are available only in blocks), while the internal consumption of the product grows in a gradual manner over time, there are periods in which 1'impresa which is located to have a production potential will strongly increased market opportunities abroad. This flow will continue as long as the export market, increasing, allows the absorption of all new production. Before a system is installed next domestic demand on the other hand can grow to exceed the maximum production achievable with the existing capacity, making it necessary for some time the use import.

2.1.5. Export diversification in intra-industry trade

Buyers of many products (industrial users and re sellers) try to diversify sources of supply and to avoid being forced to passively accept requests sudden price increase, both to avert the possibility to be in a position of not being able to remedy to unforeseen delays in delivery by a provider. As the development of the economy has considerable diversity between countries and lags, the policy of diversification of suppliers will be particularly effective if pursued at the international level.

Similar reasoning could be considering the policy of diversification of export markets being operationalized by the industries. In this case, the benefits in

terms of mitigating business risks lead to a policy of contemporary sales on domestic and foreign (Roccas, 1975).

Under the effects of these policies, there is existing of the exchanges between countries by goods belonging to the same industry.

2.2 Intra-industry trade explained by new forms of trade theory

Classical trade theories, such as Ricardian and traditional Hecksher-Ohlin (H-O) models, are based on comparative advantage in homogeneous goods that are produced in a perfect competitive setting between countries across different industries. Trade between such countries is primarily characterized by differences in factor endowments and production technologies. In the international trade literature, inadequate empirical support for the H-O hypothesis of inter-industry trade or one-way trade (OWT) in world trade led to the emergence of *new trade theories* in the 1980s (Eaton & Kiezkowski, 1984; Falvey, 1981; Falvey & Kierzkowski, 1987; Flam & Helpman, 1987; Helpman, 1981; Helpman & Krugman, 1985; Krugman, 1979; 1980; Lancaster, 1980; Shaked & Sutton, 1984). In other words, traditional H-O trade models could not satisfactorily explain trade between countries possessing similar factor endowments. In the Table 2.2 presented main theories which critiqued or complement traditional explanation of international trade.

Table 2.2 Critique and additions of traditional international trade theories

Author and theory	Explanation
Based on technological change	
Kravis, «Relative unavailability» theory, 1956	«the stimulus to exports provided by technological change is not confined to the reduction in costs, but also includes the advantages deriving from the possession

	completely new products and of the most recent improvements of existing types of good»
Posner, 1961, Hufbauer,1966, «Technology Gaps» theory	«the availability of technical know-how, rather than the cost of factors of production, determines the characteristics of products and the direction of trade»
Vernoon, 1966, Hirsch 1967, «Product cycle» theory	«the country that possesses comparative advantage in the production and export of an individual product changes over time as the technology of the product's manufacture matures»
Overlapping product ranges theory (Linder) (1961).	«The type, complexity and diversity of product demands of a country increase as the country's income increases. International trade patterns would folllow this principle, so that countries of similar income per capita levels will trade most intensively having overlapping product demands or market segments
new theory of consumer demand (Lancaster, 1966)	«the consumer actually desires the characteristics of the goods available, rather than the goods themselves»
Imperfect competition theory, Krugman, 1979	A firm possessing internal economies of scale can monopolize an industry (creating an imperfect market) - produce more products, lower and set market prices, sell more products. Other firms enter the market on the abandoned market ranges. Intra-industry trade and product

	differentiation usually occurs as a firm narrows it's product line»
Neo-Heckher-Ohlin theory, Falvey, 1981	Each industry does no longer produce a single homogeneous output, but instead can produce a range of products differentiated by quality (each quality is produced by many competing firms)

New trade theories of IIT refer to the simultaneous trading of a product within a specific industry and exist under imperfect competition, EoS (economy of scale) and product differentiation. This trade theory of IIT does not necessarily require comparative advantage since it stems from differentiated products and scale economies. As the IIT literature progressed, it became apparent that not all IIT could be adequately described by imperfect competition and EoS. For instance, Davis (1995) argues that increasing EoS may not be a necessary condition for IIT, which is capable of existing even under constant returns to scale. As a result, second generation IIT theories were initiated, namely, horizontal IIT (HIIT) and vertical IIT (VIIT) theories. Horizontal product differentiated IIT refers to two-way trade of similar quality products with different attributes (Bergstrand, 1990; Dixit & Stiglitz, 1977; Helpman, 1981; Helpman & Krugman, 1985; Krugman, 1981; Lancaster, 1979; 1980) whereas VIIT relates to the two-way trade of similar products with different varieties of quality (Falvey, 1981; Falvey & Kierzkowski, 1987; Flam & Helpman, 1987; Shaked & Sutton, 1984). Under this heading of new theories comes strategic trade policy, where there is interaction between the firms in international trade so that the actions of one firm may have significant effects on the action of another. This development marries industrial organization theory, game theory and the traditional trade theory of HO (Shaked and Sutton, 1984; Brander, 1981). All of these recent theories illustrated in Table 2.3

Table 2.3 The new theories of intra-industry trade

	Markets		
Products	Perfect competition	Monopolistic competition	Oligopoly
Homogeneous	Orthodox theory	-	Brander (1981)
Vertically differentiated	Neo Hecksher-Ohlin theories (Falvey, 1981)	-	Shaked and Sutton (1984)
Horizontally differentiated	-	Demand for variety (Krugman, 1979); Demand for characteristics (Lancaster, 1980)	Eaton and Kierzkowsky (1984)

2.2.1 Theoretical models of horizontal intra-industry trade (HIIT)

Trade of horizontally differentiated products[4] is explained by the different models for the monopolistic and oligopolistic markets. Neo-Chembarleyn model, also referred as the "love for variety approach" (Dixit & Stiglitz, 1977; Krugman 1980; 1982) and neo-Hotelling model, also known as the "ideal variety approach" (Helpman, 1981; Lancaster; 1980) are describe the monopolistic competition determinants. Trade of horizontally differentiated products are potential opportunities to reduce costs through economies of scale, using the product differentiation and the desire of consumers to get the most variety of products (model Neo-Chembarleyn), or choose an optimal set of products from the market offers diversity (neo-Hotelling model).

[4] Different varieties of a product are of similar quality.

To oppose the negative effects of intense competition, businesses expedient to carry out the production of horizontal differentiation in order to best meet the diverse desires of consumers and at the same time draw the maximum income (resources) of consumers. Expansion of assortment allows only partial use effect economies of scale in the absence of trade. Opening of borders and trade conducting promotes increase outlet and thus realization of “economy of scale”. Thus the enterprise focused on the production of products with certain characteristics, which leads to cost savings. Such specialization of production follows from desire of the enterprises to resist competition and to get additional income by offering products, which differ from competitors' products. Horizontally differentiated trade primarily be expected between economies are on the same level of development.

Neo-Hotelling model

There is assumption that the differentiated variety of a product consists of different combinations of two specific characteristics and that the consumer’s preferences defer in that each consumer considers a certain mix of the two core properties in the product as the ideal. Each consumer is assumed to be willing to pay the maximum for this ideal variety.

In Fig.2.2.1 X1 to X6 on the straight line *ab* represent a spectrum of differentiated varieties of the product X, each variety embodying a combination of the core characteristics A and B.

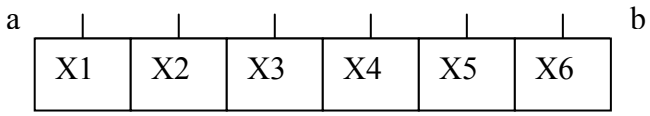


Figure 2.2.1

If X3 is the ideal variety for a consumer, he will be prepared to pay a maximum for that. The demand of the consumer for any variety depends on its

price and income. For a given income his demand for any other variety will be lower than that for the ideal variety. The farther a variety is from the ideal variety, the lower will be its demand.

Vousden shows how opening up the economy to trade can result in varietal and pro- competitive gains for both countries. In figure 2.2.2, marginal costs are constant and equal to average variable costs, and increasing returns to scale occur with reductions in average fixed costs. Under autarky, the demand for each representative variety along the spectrum is given by D and under profit maximising criteria (MC=MR) equilibrium is at output level Q_O and price P_O. Assuming freedom of entry and exit, this is the long run zero profit point.

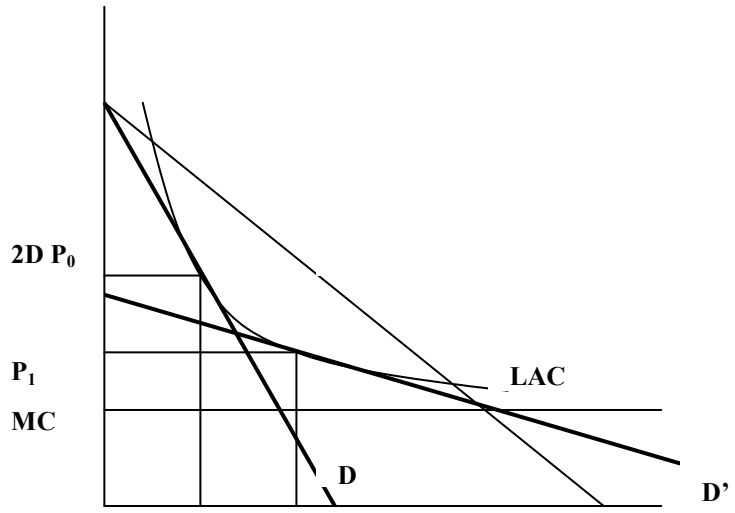


Figure 2.2.2 Varietal and Pro-competitive Effects
Source: Vousden (1990)

Given the autarkic result that the same varieties are produced in either country A or B, then opening up the domestic economy to free trade does not initially change the range of available products, although *only one firm in either country produces each variety*. This implies that each firm faces its existing domestic market and a new export market which effectively doubles the demand at

each and every price. This is given as demand curve 2D in figure 2.2.2 Firms will now make abnormal profit which in turn will attract other firms (which may be 'old' firms which have now changed the specification of their products) into the industry who will in turn produce their own product variants.

This proliferation has *two* further effects. Firstly, the gaps along the varietal spectrum between consumers' ideal varieties and available varieties narrow, allowing most consumers to attain a closer variant to their ideal. This effectively characterises the Hotelling *variety effect*. This implies that varieties become *closer substitutes* with trade, in contrast to the SDS[5] specification.

Secondly, the higher substitution elasticity implies that the producers' perceived price elasticity of demand for varieties will also rise. In figure 2.2.2, this has the effect of flattening the demand curve to D', such that the long run zero profit equilibrium becomes P_1 and Q_1. This is known as the *pro-competitive* effect whereby the distortion of the output price over the marginal cost is reduced due to increased competition in the industry.

It is obvious that according to this model the intra-industry trade based on horizontal product differentiation can have several important consequences:

- It will increase the choice available to consumers and enable them to obtain their most preferred or ideal product or one which is nearer to that. Trade will modify each country's consumption, benefiting the consumers;
- Trade will modify each country production. Some varieties and firm will exit;
- The increase in the output of each firm reduces the cost and price. This stimulates consumption and improves consumer welfare.

[5] Spense (1976), Dixit and Stiglitz (1977) specification, the underlying assumption of the SDS Chamberlinian model structure is that consumers do not have a preference for any one given variety and seek to consume as many varieties as possible.

Neo-Chamberlinian model

By contrast of Neo-Hotelling model, is that consumers do not have a preference for any one given variety and seek to consume as many varieties as possible (consumer utility increases as the number of varieties available increase)

Vousden (1990) presents a schematic interpretation of the equilibrium determination of varietal demand levels (c_i) and price vectors (P_i, w) when two countries trade. The PP curve shows profit maximising combinations of 'c_i', 'P_i' and 'w'. On the left hand side of figure 2.2.3, PP slopes upwards since the higher is 'c_i' the lower is the demand elasticity. This increases the firm's monopoly power for variety 'i' and thus enables the firm to charge a higher mark-up (P_i/w). If price elasticity of demand is (assumed) constant, as presented in the right hand side of figure 2.2.3, then changes in 'c_i' will not affect monopoly power so the PP curve is perfectly horizontal (i.e., the mark-up stays the same).

The curve ZZ shows the zero profit combinations of P_i, w and c_i and is negatively sloped since higher varietal demand (c_i) implies higher supply (xi), so lower per unit costs occur. Due to internal economies of scale, higher output translates into lower long run zero profit prices as the firm moves down the long run average cost curve.

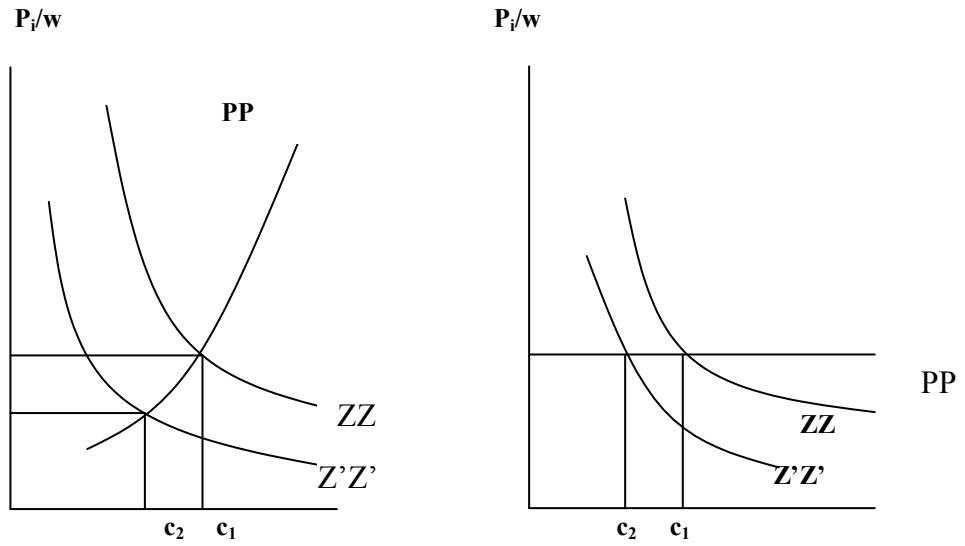


Figure .2.3

Source: Vousden (1990)

Assuming domestic and foreign regions with respective labour populations L and L* where the foreign economy has identical cost and utility functions to the domestic economy, the solutions will be identical to those equilibrium conditions derived above if the domestic economy opens up to trade. Moreover, the size of the market for each variety has increased since the number of consumers, has increased to L + L*.

The curve PP is not a function of L so is unaffected by increases in L. However, ZZ shifts to the left since output ($x_i = c_i.L$) has increased for each value of c which, under economies of scale, implies lower unit costs and prices. Thus, if demand elasticity is a decreasing function of c_i, price and quantity consumed of each variety falls whereas if price elasticity of demand is held fixed then only quantity consumed of each variety falls (see right side of 2.2.3).

The total number of varieties available to consumers in both countries is higher in both cases under free trade since n+n* > n where n+n* is given as:

$$n + n^* = L + L^*/\alpha + \beta c\,(L + L^*) \qquad (2.2.1)$$

Thus, when free trade occurs, consumers gain access to other varieties. Moreover, welfare gains will also result if increases in output result in scale economies and therefore reductions in unit costs. As already mentioned, welfare gains such as these are quite different from the typical terms of trade and specialisation effects which dominate much of the earlier CGE trade literature. However, although intra-industry trade is explained, the direction of trade is indeterminate because one may not know which varieties are produced in which country.

To conclude this section, both neo-Hotelling and neo-Chamberlinian models both exhibit a *variety effect,* albeit for different reasons. In the former, the proliferation of varieties allows the consumer to chose a variety closer to his/her ideal thereby increasing utility. In the latter, the increased consumption of *all* varieties increases utility due to the 'love of variety' effect. Both approaches also demonstrate how trade increases available product variety to consumers in both countries. Moreover, the demand price is also reduced due to the reduction in monopoly power as firms move down the average cost curve.

2.2.2 Theoretical models of vertical intra-industry trade (VIIT)

Trade in vertically differentiated products can be considered, for example, as the result of economies of scale and different levels of income per capita. Ceteris paribus the demand for high quality products in a high-income country is higher, than in poorer country. In the absence of trade differences in demand for products of certain quality leads to a corresponding specialization of production. At the opening of borders is a richer country, using economies of scale, is able to achieve comparative advantage in producing goods of "high" quality, while the poorer country will specialize in the products of "low" quality. Thus, the analysis of vertically differentiated trade flows between countries observed the relationship between the quality of goods and income. The foregoing explains in total intra-

industry trade between countries with different levels of economic development, in particular - a vertically differentiated nature of this trade.

The models of VIIT (Falvey, 1981, Falvey and Kierzowski, 1987, Shaked and Sutton, 1984, and Flam and Helpman, 1987) are explained by Neo-Hecksher-Ohlin (H-O) trade theory based on price- income and quality of products. These models consider that consumers rank alternative varieties.

In the H-O model, a perfectly competitive market is assumed and firms do not require increasing returns to scale in production to produce varieties of different qualities. The varieties of qualities are created by differences in factor intensities, human capital and physical capital. This implies that higher quality products are associated with higher prices since such products tend to have intensive capital requirements. On the demand side, higher income consumers tend to consume high quality products while low income consumers tend to consume lower quality products.

An extension of the neo-H-O model by Falvey & Kierzkowski (1987) implies that countries with abundant capital will produce a greater variety of differentiated quality products that can be distinguished by price and quality. Trade in vertically differentiated products has also been examined in the context of a natural oligopoly (see Shaked & Sutton, 1984) and using a Bertrand model (see Skeath, 1995).

VIIT can best be described by the trade models of Falvey (1981), Falvey & Kierzkowski (1987) and Flam & Helpman (1987), which do not violate the fundamental premise of H-O-S theory when incorporating product differentiation. In the case of VIIT, countries with larger differences in factor intensities, endowments, technologies and per capita income levels tend to exchange VIIT flows. Under these trade models, the North (developed countries) and South (developing and emerging economies) tend to exchange products that are vertically differentiated by quality. VIIT is located in different production stages and can be explained by specialisation along quality varieties within a specific industry (Fontagné *et al*., 2005). Falvey & Kierzkowski (1987) reveal that countries with

abundant relative capital tend to produce larger varieties of differentiated products which are distinguishable according to price and quality. In terms of the demand perspective, consumers rank alternative varieties according to the degree of quality of the products, with the demand for each quality being expressed as a function of income and price. Therefore, a typical consumer is expected to prefer high quality (HQ) products to low quality (LQ) products, but since consumer choice is constricted by income levels consumers initially consuming LQ products can substitute toward HQ products as income levels rise, *ceterus paribus*.

In addition to the case of VIIT for final goods, Feenstra & Hanson (1996; 1997) develop an outsourcing model to examine trade in intermediate goods between North and South countries. These theoretical models will be discussed next.

Final products

Falvey (1981) adopts a partial equilibrium model where trade happens in a two-country, two- good and two-factor model initially in a closed economy. This model assumes a large number of firms in each industry in a perfectly competitive setting producing varieties of different qualities in the absence of increasing returns to scale in production.

In an open economy context, Equations (2.2.2) and (2.2.3) express the respective cost functions of the domestic country (c) and the foreign country (c^f) for any given levels of quality (α) and returns to capital for each country, respectively, r and r^f.

$$c = w + \alpha_i r \tag{2.2.2}$$

$$c^f_i = w^f + \alpha\, r^f \tag{2.2.3}$$

Let w and r be the wage rate of labour (L) and the rental rate of capital of the given stock of capital supplies (K), respectively. The parameter α denotes the capital-labour ratio (K/L) and determines the degree of quality of the final product. This implies that HQ products typically require higher degrees of capital intensity which in turn commands higher prices.

This model further assumes that the home country is better endowed with *K* and the foreign country is well endowed with *L*. Further, *K* is industry-specific and perfectly mobile domestically but immobile across international borders. Thus, the *K* (*L*) is higher (lower) in the domestic (foreign) country while *L* (*K*) is larger (smaller) in the foreign (home) country, which implies that $w > w^f$ and $r^f > r$. The key theoretical idea behind this theory is that differences in relative factor endowments determine relative factor prices, which in turn determine relative comparative advantage (disadvantage).

The home country enjoys a comparative advantage in a range of HQ differentiated products whereas the foreign country benefits from comparative advantage in an assortment of LQ differentiated products and is shown in the following expression:

$$c(a_m) - c^f(a_m) = 0 \; or \; (w + a_m r) - (w^f + a_m r^f) = 0 \qquad (2.2.4)$$

In Equation (2.2.4), if *m* α is classified as the marginal quality for a range of different quality products, then:

$$a^m = \frac{w - w^f}{r^f - r} \qquad (2.2.5)$$

Comparative advantage in the home country occurs when:

$$\left[c(a_m) - c^f(a_m)\right] < 0 \qquad (2.2.6)$$

and

$$c(a_m) - c^f(a_m) = \frac{w - w^f}{a_m}(a_m - a_i) \qquad (2.2.7)$$

According to Equations (2.2.6) and (2.2.7), the home (foreign) country has a comparative advantage in producing product quality types that requires capital-intensive (labour-intensive) procedures exceeding the marginal quality (αm). On the other hand, the home (foreign) country experiences comparative disadvantage in product qualities requiring greater capital saving (labour-saving) techniques.

$$c(a_i) - c^f(a_i) = \frac{w - w^f}{a_m}(a_m - a_i) \tag{2.2.8}$$

Equation (2.2.8) shows that the domestic country (high-wage) will produce and specialise and subsequently export products with qualities above the margin (αi > αm) and import those products with qualities below the margin (αi < αm).

Next, given that

$$w^f < w, \frac{w - w^f}{a_m} < 0 \tag{2.2.9}$$

Consequently,

$$\left[c(a_m) - c^f(a_m)\right] < 0, if\ a_m < a_i \tag{2.2.10}$$

Accordingly, Equation (2.2.10) shows that the home country possesses a comparative advantage in the production of relatively HQ products that require capital-intensive procedures.

Falvey & Kierzkowski (1987) extend the model of Falvey (1981) allowing the same basic demand and supply structures, except that this latter model relates consumer demand for quality to income levels. In line with Linder's hypothesis (1961), the Falvey & Kierzkowski (1987) model explains the existence of VIIT based on disproportionate incomes such that different income levels guarantee that all available product qualities along the spectrum will be demanded by both countries. Now, even though consumers may have

similar preferences in terms of quality, every individual's income ensures that only one type (quality) of the differentiated product is demanded.

In their model, on the supply side, Falvey & Kierzkowski (1987) show that the comparative advantage in producing HQ products becomes larger as the capital-abundant country moves upward along the quality spectrum. In other words, technology differences (labour productivity) and capital intensities are linked to the production of quality products.

Moreover, monopolistic competition is no longer a necessary condition for VIIT and the model assumes large price (unit value) differences to distinguish between different quality varieties.

A modification of Falvey & Kierzkowski's (1987) model was formulated by Flam & Helpman (1987); their trade model assumes two sectors, one that is perfectly competitive and the other is monopolistically competitive. Accordingly, Flam & Helpman (1987) postulate that countries of the North produce and export high quality (HQ) products, whilst countries of the South manufacture and export inferior or low quality (LQ) products, as the former adopts production techniques that are capital-intensive while the latter employ labour-intensive techniques combined with limited technologies. This implies that the North is more likely to export products that exhibit higher relative unit values of exports to imports (RU^{XM}), where the unit values of exports (UV^{X}) are greater than the unit values of imports (UV^{M}); whereas the South tends to export products that possess lower relative unit values (RU^{XM}), where UV^{X} is less than UV^{M}. In the case of demand, consumers from the North boasting higher income levels are inclined to consume and purchase HQ products, while lower income consumers from the South tend to consume LQ products.

Intermediate products

The closest model that provides a theoretical perspective for VIIT in intermediate products is Feenstra & Hanson's (1997) outsourcing model. In this

model, each domestic and foreign country is endowed with two factors of production, namely, *K* and *L* as in previous models. However, *(L)* is now split into a skilled labour (*H*) component and an unskilled labour *(L)* component. In the final analysis, the model predicts that outsourcing by MNCs has been an important factor in rising relative demand for skilled labour in the home country and that FDI increases the share of relative wages for skilled labour in both countries.

Initially, no international factor mobility is assumed, and relative factor endowments (*H, L* and *K*) and relative factor prices (*qi*, *wi* and *ri*) between the two countries are presented in Equations (2.2.11) and (2.2.12).

$$\frac{H}{L} > \frac{H^f}{L^f}; K > K^f \tag{2.2.11}$$

$$\frac{q}{w} > \frac{q^f}{w^f}; r > r^f \tag{2.2.12}$$

Equation (2.2.13) presents the production function for intermediate inputs, which assumes a Leontief technology of the two kinds of labour:

$$x(z) = A_i \left[min \left\{ \frac{L(z)}{a_L(z)}, \frac{H(z)}{a_H(z)} \right\} \right]^{\theta} [K(z)]^{1-\theta} \tag{2.2.13}$$

Where *x(z)* denotes the quantity of the intermediate (input) good *z*, *L(z)* and *H(z)* refer to the quantities of unskilled and skilled labour respectively, and *K(z)* refers to the capital stock used in the manufacture of *z*. Also in Equation (2.2.13), the parameter *Ai* is a constant reflecting some technological difference between North and South (home and foreign country) and the parameter θ represents that proportion of total labour (*L*, *H*) costs, while (q -1) is the proportion of *K* costs in

the total production good *z*, because the relationship between *K* and *L* assumes a Cobb-Douglas technology.

The single final good (*Y*) is assembled from a range of intermediate *z* goods denoted by index *z* € [0,1]. There are *N* stages of processing and production used in the final assembly of the finished product and production stages are defined in terms of skill intensity. To produce each unit of *z* requires the use of *L, H* and *K* inputs, where *a* (*z*) *H* and *a* (*z*) *L* represent respectively the quantity of skilled and unskilled labour combined with *K*.

The minimum unit cost function of producing *x(z)* can be expressed as:

$$c_i(w_i, q_i, r_i; z_i) = B[w_i a_L(z) + q_i a_H(z)]^{\theta} r^{i-\theta} \tag{2.2.14}$$

Where $c_i(w_i, q_i, r_i; z_i)$ denotes the minimum cost function to produce one unit of *x* at home; and *wi*, *qi* and *ri* are the wages of unskilled labour (*L*), skilled labour (*H*) and the rental of capital (*K*) respectively. In addition, *B* is some constant and can be described as:

$$B_i = \theta^{\theta}(1-\theta)^{-(1-\theta)} A_i^{-1} \tag{2.2.15}$$

In Equation (2.2.16), *z** defines the equilibrium of trading intermediates between the two countries where the minimum cost loci are equated where:

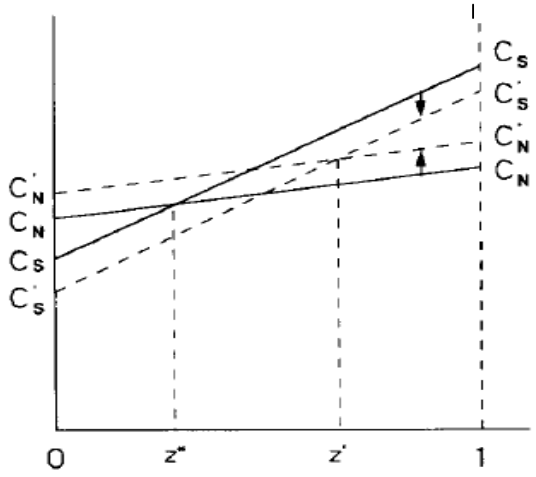
$$c_f\left(w_f, q_f, r^f; z_f^*\right) = c\left(w, q, r, z^*\right) \tag{2.2.16}$$

Equation (2.2.16) implies that the foreign country is expected to specialise in the production of relatively less or unskilled-intensive products utilising *L* intensively; *z* €[0, z*) whereas the home country is expected to specialise in the

production of relatively high-skilled intensive *z* products employing *H* intensively; *z* €(z*, 1].

The model predicts that capital flows (FDI) (or outsourcing) from the North to the South will increase the returns to capital (r^f) in the North and reduce the returns to capital (*r*) in the South. Outsourcing activities impose long-run effects on wages in both countries. From the perspective of the home country, the relative demand for skilled labour increases with outsourcing activities to the foreign country. This is expected to increase the relative wage of skilled labour (*L*) in the home country, as *z** is raised as well as the relative wage of skilled labour (*L*) in the foreign country. Outsourcing from MNCs from North to South or capital inflows to the South according to Feenstra & Hanson's (1997) model are illustrated in Figure 2.2.4. The South has a comparative advantage in the production of relatively less skill- intensive *z*, while the opposite is true for the North. C_SC_S and C_NC_N denote the minimum cost loci for the South and North respectively, according to Equation (2.2.16). Given the assumptions about relative prices, C_SC_S lies below C_NC_N for *z* products and *z** determines trading equilibrium where the minimum cost loci are equal.

Figure 2.2.4 Outsourcing and capital movements from home country to foreign



Source: Feenstra & Hanson (1997)

Suppose capital flows (such as FDI) from home to foreign or outsourcing activities are increased, C_SC_S shifts downward whereas C_NC_N shifts upward (as indicated by the direction of the arrows) causing z^* to increase to z' as shown in Figure 2.2.4. The increase in z^* implies that an increase in the relative capital accumulation in the South will in turn result in an increase in the relative demand for skilled labour (H) in both countries with a positive impact on relative wages of skilled labour in both countries. This model also implies that both nations are better off, although wage inequality may rise.

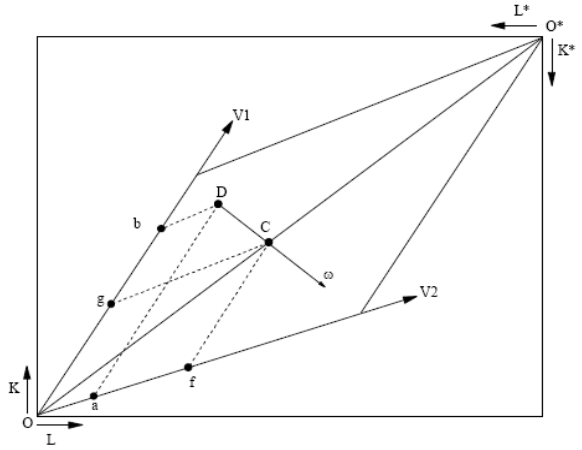
Some argue that VIIT models may involve sizeable adjustment costs and lead to displacement of resources. Since VIIT models are largely based on the idea that VIIT products are distinguishable by quality determined by large price or unit value differences, an obvious shortcoming is that large price or unit value differences may in fact reflect high unit costs instead of high quality as is assumed. Further refinement of the methodologies to determine quality differences is needed. Models of VIIT are closely connected to models of fragmentation theory developed by Deardorff (1998; 2001); Jones & Kierzkowski (1990; 2001) and adopted by Chen, Kondratowicz & Yi (2005).

2.2.3 World integrated equilibrium (IE) approach to IIT

In the world integrated equilibrium (*IE*) approach developed by Helpman & Krugman (1985) for conceptualising IIT, net factor content of balanced trade according to the Hecksher-Ohlin- Vanek (H-O-V) theorem is assumed. In addition, the existence of some combination of resource allocation (benchmark) of the world is assumed based on the notion that both goods and production factors are perfectly mobile (Davis, 1995). On the demand side, the assumption of identical homothetic preferences implies unit income elasticity and that the share of income spent on goods is the same for both domestic and foreign households and is invariant to income (Dixit & Stigler, 1977).

In Figure 2.2.5 the popular Edgeworth box is used to depict the production outcomes of two goods ($j = 1,2$) and two factors of production (L, K) for each country ($k = 1,2$). The world endowment of L and K are depicted along the width and height of the box, respectively. The slope of the ray from connecting each country's origin denotes the capital-labour (K/L) ratios. The domestic endowment of L is measured by the horizontal distance from O and the vertical distance measures the K endowment. In the same way, the foreign endowment of L^* is measured by the horizontal distance O^* and the endowment of K^* is measured by the vertical distance. In the Edgeworth box, the domestic country is capital abundant whilst the foreign country is labour abundant. The net factor content of trade is the difference between the net factor content of consumption and the net factor content of production. In Figure 2.2.5, the net factor content of trade is illustrated by subtracting the factor content of the imported good ($V2$) from that of the exported good ($V1$). Within the world IE a set of allocations (factor price equalisation) of factor endowments can be constructed that will allow countries to attain all of the benefits of the fully integrated world by trading in goods alone.

Figure 2.2.5 Economic distance and HIIT



Source: Fontagné and Freudenberg (1997)

Consider a one-period model where income (Y) is absorbed in consumption and expressed as:

$$Y_k = rK_k + wL_k \tag{2.2.17}$$

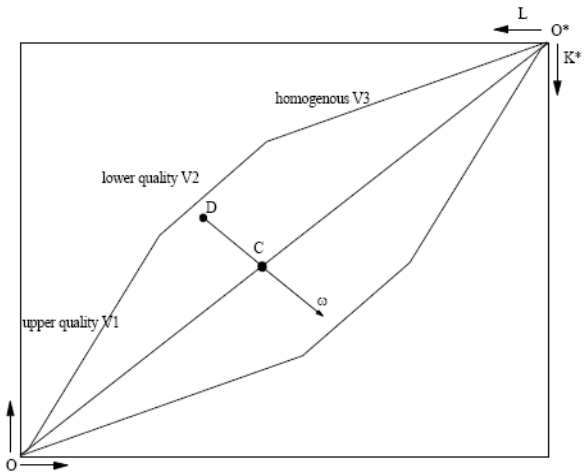
In Figures 2.2.5 and 2.2.6, the world income or consumption line OO^* is separated into shares of national (OC) and foreign (CO^*) incomes. Line DC denotes economic distance or differences in factor endowments between trading nations. The world IE relies on the idea that the endowment point D lies within the factor price equalisation (FPE) set defined by the vectors vj and expressed as:

$$v_j = \left[a_{Kj}(r), a_{Lj}(w)\right] \tag{2.2.18}$$

where goods are produced at full employment in a general equilibrium context. The basis of the world IE is that the net factor content of one-way trade (OWT) is positively associated with the difference in relative factor endowments between trading nations. In contrast, net factor content of IIT corresponds negatively to differences in relative factor endowments involving trading partners.

According to Figure 2.2.5, in the home country *oa* and *ob* show factor contents in production and *og* and *of* show factor contents relevant to consumption in homogenous and horizontally differentiated products respectively. The distance *gb* refers to the net content of exports (net exports) of *differentiated* production of good 1 by the home country and the distance fa involves net factor content of OWT of *homogenous* good 2.

Figure 2.2.6 Economic distance and VIIT



Source: Fontagné and Freudenberg (1997)

The greater the relative economic distance *DC* the larger the net factor content of balanced trade (OWT). This simply means that OWT is positively related to economic distance, whereas the share of HIIT is negatively related to it.

As proposed by Falvey (1981) and Falvey & Kierzkowski (1987), price differences are associated with different production functions leading to diverse qualities. As already mentioned, high prices (large variable costs) replicate high quality in VIIT. Higher quality is assumed to be related to larger quantities of *K* inputs per *L* input, thus each quality variety is associated with a given vector of input. Again, following Vanek's (1968) theorem, net factor content of balanced trade occurs at *DC* irrespective of the pattern of IIT.

In Figure 2.2.6, OWT is now associated with non-zero net factor content of balanced trade, whereas IIT under vertical differentiation reflects different factor contents corresponding to different qualities traded as a result of the experience of internal redistributive pressures. In Figure 2.2.6, vectors *V1*, *V2* and *V3* represent high and low qualities of differentiated goods and homogenous goods respectively. Further, Figure 2.2.6 illustrates that greater relative economic distance is now positively associated with VIIT.

This chapter summarised theoretical models of intra-industry trade in the context of vertical and horizontal intra-industry trade. In summary, HIIT trade is largely caused by monopolistic competitive practices and Economy of scale. On the other hand, VIIT is formulated on the basis of perfectly competitive markets where the presence of EoS in production is not a necessary condition. In the case of VIIT, countries with larger differences in factor intensities, endowments, technologies and per capita income levels tend to exchange VIIT flows while the opposite is true for HIIT. VIIT largely explains trade between the North (developed countries) and South (developing and emerging economies) which tend to exchange products (final products and intermediate products) that are vertically differentiated by quality.

Chapter 3

Measuring intra-industry trade in agri-food sector European Union

3.1 Introduction

The purpose of this chapter is to indentify trade patterns in the EU agri-food industry by empirically analysing bilateral IIT flows in the industry between countries of EU spanning the period 1988 to 2011. More specifically, trade patterns are identified and placed into four categories, namely: (i) total intra-industry trade (IIT) (two-way trade) comprising (ii) horizontally differentiated intra-industry trade (HIIT) and (iii) vertically differentiated intra-industry trade (VIIT); as well as (iv)inter-industry trade or one-way trade (OWT). This distinction between HIIT and VIIT patterns is important because there are different theoretical foundations and determinants that are relevant to each pattern of IIT (Greenaway *et al.* 1994; 1995). For instance, HIIT is largely driven by imperfect competition and economies of scale (EoS), whilst VIIT is more likely to occur as a result of factor endowment differences and perfect competition.

Moreover, we've shed light on product level analysis and prices at minute product level. In order we have explored the role of the quality competitiveness in European intra-industry trade, founded substantial variation in unit prices and quality of particular IIT products across countries.

This chapter is organised as follows: Section 3.2 provides the methodology used to empirically measure bilateral shares of IIT and one-way trade (OWT) in the agri-food industry in EU, including disaggregating total IIT into VIIT and HIIT patterns. Section 3.3 discusses the data used and description and Section 3.4 reports the empirical results and discusses the trade patterns of agri-food products.

3.2 Methodology to measure intra-industry trade patterns

Under the above-described models of traditional and new trade theory economists developed the concept and indicators for the empirical analysis of intra-and inter-sectoral trade flows. To assess the comparative advantages of the country (or a particular sector), Balassa (1964) developed a method of revealed comparative advantage (English, "Revealed Comparative Advantage" - RCA). This method is based on the assumption that the implicit comparative advantages are reflected directly in trade flows. According to concept of the Balassa comparative advantages manifested in relatively large proportions of a separate product (sector) in the export structure, while the comparative «disadvantages» - a relatively low proportions of the product (sector).

"Balassa index" or "index of RCA" - an indicator characterizing the ratio of the share of commodity i (or aggregate) in the total exports of the country and the share of exports of this product (aggregate) in total global exports. If the value of index exceeds unity, it is considered that the country have competitive advantages in the production of the product (or group of products). Values less than unity indicate that the country has no competitive advantages in the production of the analyzed products (in English literature say in this case, the "competitive disadvantages" of the country). It should be noted that the index identifies the competitive advantages of the country, but does not explain their determinant. PITTS and LADNEVIK (1998, pp. 4) indicate that the "Balassa index" allows to analyze both trade specialization and competitiveness of goods (sectors). However, it was not quite right to use this index for comparison of competitiveness of sectors of different countries, as the index value can be "distorted" consequently to the influence of the size of the country or sector.

Thereby, the Balassa indexes make it possible to define ex-post competitiveness of goods (industries) in the global or regional market. As for calculation of this index using dates of foreign trade, it allows to consider supply and demand reaction, and also marketing and transport costs (Vollrath, 1991). However, reflects not only efficiency of branch, but also the "efficiency" of the

state intervention in international trade. Let us suppose the state pursues a policy of import substitution, long-time limiting of income and subsidizing the production of import-substituting products. Under other equal conditions, this will be reflected in the high score of “Index RCA”, but indeed we are talking about artificially created competitive. To a considerable degree it concerns the agricultural sector in which state regulation of import (customs duties) and export flows (subsidies) in most countries is enough, that distorts the real value of the index and makes difficulties the correct interpretation of the indicator.

For estimation intra-industry trade has developed several indicators, the most widespread of which is an "index of Grubel-Lloyd" - GL (GRUBEL, LLOYD, 1975). According to Grubel and Lloyd intra-industry trade is defined as trade between the countries, at which the value of exports of a single sector corresponds to the value of imports in the same sector. GL index determines the amount of intra-industry trade in total trade of a single sector.

For calculation of this index for group of the goods, it is necessary to summarize the individual trade flows. The index value varies from 0 to 1.

$$GL_i = \frac{\Sigma_i^n (X_i + M_i) - \Sigma_i^n [X_i - M_i]}{\Sigma_i^n (X_i + M_i)} \qquad (3.2.1)$$

where GL*ij,kt* = the Grubel & Lloyd (G-L) index which measures IIT between country *i* and country *j*; X = value of country *i*’s exports of product *k* to country *j*; M = the value of country *i*’s imports of product *k* from country *j* and *t* = period.

In this case, the more value of index, the higher the level of intra-industry trade. It should be noted that the index of GL - a static indicator, which measures trade in a given year. In this thesis, the aggregation bias is significantly minimised because disaggregated (SITC 5-digit) product-level data is used to compute the share of IIT. The trade imbalance may lead to the misinterpretation of the degree of

IIT, causing the G-L index to be biased downward. The alternative methodology proposed by Fontagné & Freudenberg (FF) (1997), originally developed by Abd-el-Rahman (1991) to distinguish between OWT (one-way trade) and IIT (two-way trade) and is computed as follows:

$$FF_{ij,kt} = \frac{Min\left(X_{ij,kt}, M_{ij,kt}\right)}{Max\left(X_{ij,kt}, M_{ij,kt}\right)} \geq 10\% \qquad (3.2.2)$$

where X = exports and M = imports, *i* = home country, *j* = partner country and *k* = product in period *t*.

This alternative index considers trade as IIT when the value of the minority trade flow represents at least 10 per cent of the majority trade flow. In other words, if there is significant trade overlap as measured by Equation (5.2), IIT is identified. Otherwise, OWT occurs. This technique is not as widely used in the empirical IIT literature (Ando, 2006; Fontagné *et al*., 2005; Montout *et al.*, 2002) and is also sometimes referred to as the "trade type method". Here total trade (TT) is separated into shares of OWT and IIT.

Once, the trade flow has been identified as IIT[6], the share of IIT can be empirically separated into horizontal product differentiation (HIIT) and vertical product differentiation (VIIT), using the methodology advocated by Falvey (1981) and Falvey & Kierzkwowski (1987). These authors presume that differences in price (unit value) are reflected in differences in quality. This method of disentangling IIT is often referred to as the "threshold method" and is used in the empirical literature to separate IIT into its two trade patterns. Unit

[6] It is accepted in the literature that if the computed index is lower than 10 per cent for any given product category, then trade may be considered to be OWT, otherwise IIT exists.

values of exports (imports) are calculated by dividing export (import) values by the corresponding export (import) quantities. HIIT in industry *k* exists if the criterion below is satisfied:

$$1-\propto \leq \frac{UV_{ij,kt}^{X}}{UV_{ij,kt}^{M}} \leq 1+\propto \qquad (3.2.3)$$

where UV = unit value of exports (X) and imports (M) of the home country = *i, j* = partner country, *k* = product in period *t* and α = specified threshold (unit value) = 15 per cent. In previous studies, Abd-el-Rahman (1991), Greenaway *et al*. (1994), Aturupane *et al*. (1999) and Fontagné & Fredenberg (1997) uses unit values of 15 per cent and 25 per cent (where 0.15; 0.25). In this study 15 per cent is employed.

Now, VIIT in industry *k* exists when:

$$\frac{UV_{ij,kt}^{X}}{UV_{ij,kt}^{M}} \leq 1-\propto \; or \; \frac{UV_{ij,kt}^{X}}{UV_{ij,kt}^{M}} \geq 1+\propto \qquad (3.2.4)$$

Thus, if unit values of exports relative to imports fall inside the specified range as shown below then HIIT is present:

$$0{,}85 \leq \frac{UV_{ij,kt}^{X}}{UV_{ij,kt}^{M}} \leq 1{,}15 \qquad (3.2.5)$$

otherwise VIIT occurs.

It follows that products are considered to be vertically differentiated (differing in quality) if relative unit values of exports to imports exceed 15 per cent (where α = 0.15) or fall outside a specified range of ± α. By contrast, products are

considered horizontally differentiated (differing in variety) when relative unit values of exports to imports fall within the range of ± α.

The relative shares of HIIT, VIIT and OWT are computed at the product level and then aggregated up to the industry level to obtain the respective trade patterns or shares of HIIT, VIIT and OWT. It follows that total trade (TT) can be separated as:

$$TT = VITT + HITT + OWT \tag{3.2.6}$$

Moreover intra-industry trade analysis is then subjected to the methodology by Aiginger (1997) who further proposes differentiation of trade flows by the use of unit value indicator (UV) according to whether it is accompanied by trade surplus or deficit. This approach enables distinction between the markets where the quantity traded is determined more with price competition and those with non-price (quality) competitiveness. The results are presented in a four-quadrant scheme when:

C+	$V^{x}_{(i,j)} > V^{m}_{(i,j)}$ and $UV^{x}_{(i,j)} < UV^{m}_{(i,j)}$	The home country has a high unit value and trade deficit indicating unsuccessful price competition. Industries in such sector have lost price competitiveness in a market in which prices are important, with the trade deficit caused by high production costs and thus lack in price competitiveness
C-	$V^{x}_{(i,j)} < V^{m}_{(i,j)}$ and $UV^{x}_{(i,j)} > UV^{m}_{(i,j)}$	The home country has a low unit value and trade surplus indicating successful price competition
K +	$V^{x}_{(i,j)} > V^{m}_{(i,j)}$ and $UV^{x}_{(i,j)} > UV^{m}_{(i,j)}$	The high unit value and the exported quantity exceed imported quantity indicating successful quality competition. This consequence is attributed to the quality lead, reflected by demand or it is a sign of successful specialization in respective market segment. Such trade performance is aimed by advanced countries reflecting successful quality competition and sector‘s excellence
K -	$V^{x}_{(i,j)} < V^{m}_{(i,j)}$ and $UV^{x}_{(i,j)} < UV^{m}_{(i,j)}$	The low unit value and trade deficit despite low export prices. This points out an unattractive sector due to structural problems

where $V^{x}_{(i,j)}$ is the value of the *i*-th product exports from a home (domestic) country to the *j*-th partner country and $V^{m}_{(i,j)}$ is the value of the *i*-th product imports to the home country from the *j*-th partner country. $UV^{x}_{(i,j)}$ is the export unit value, which is calculated as $UV^{x}_{(i,j)}= V^{x}_{(i,j)}/ Q^{x}_{(i,j)}$ and $UV^{m}_{(i,j)}$ is the import unit value, which is calculated as $UV^{m}_{(i,j)}= V^{m}_{(i,j)}/ Q^{m}_{(i,j)}$. In these calculations, $Q^{x}_{(i,j)}$ and $Q^{m}_{(i,j)}$ are quantities of exports and imports, respectively, between the home country *i* and the partner country *j*.

That hypothesizes of the existence of a "quality premium" is calculated from exports less hypothetical exports (exports evaluated at the same unit value as imports). "Roughly half of this "quality premium" in European trade comes from specialisation in high unit value industries (structure), and roughly half from higher unit values within the same industries (within premium)" (Aiginger, 2000, p. 16).

Aiginger's study is useful for methodological issues involving the use of unit value: "The most comprehensive measure of quality available for empirical research is the "unit value". Its usefulness in evaluating quality comes from the fact that all of the following activities tend to increase sales relative to physical weight: (i) Increasing durability, reliability, compatibility, flexibility (ii) Using superior material inputs or higher skills (iii) Making a product more specific to demand (iv) Refining or further processing a product (v) Adding new functions, service or maintenance contracts (vi) Better design, advertising" (p. 11).

Furthermore, within the empirical measurement of VIIT, a distinction is made between high quality (HQ) and low quality (LQ) vertically differentiated products. With reference to Equation (4), HQ or superior quality products are present if relative export to import unit values exceed $(1+\alpha) = 1.15$, otherwise inferior quality product differentiation exists where relative export to import unit values are less than $(1-\alpha) = 0.85$, where $\alpha = 0.15$. This disaggregation of quality patterns within VIIT explains product specialization between countries according to production quality within a specific industry.

3.3 Data sources and description

As the main data source for the empirical analysis of Intra-industry trade, the data on exports of all EU-27 countries was gathered from Eurostat office. The dataset comprises (314) different groups of agricultural and food products by EU27 Trade Since 1988 SITC rev. 3, during the period 1988-2011. All data have been calculated at the finest 5-digit of SITC level and used are current Euro (see Appendix1).

The importance of using product-level data instead of industry level data for investigating VIIT according to the different stages of production and intermediate parts is discussed in Fontagné *et al*. (2005). We categorize SITC codes into four categories. The discriminating criteria are level of processing (raw, primary product versus processed by an (off-farm) industry) and use of product (industry or consumer).

Classification of products, by SITC code – an overview

Primary products mainly for industrial use	Primary products mainly for household consumption	Processed products mainly for industrial use	Processed products mainly for household consumption
00, 041, 043, 044, 0711, 0721, 121, 22, 248, 2925	011,012,025,042,0541, 0544,0545,057,2926,29271	02221,02222,0224, 046, 0566, 0567, 0583 061, 0722, 0723, 0724, 0813, 0819, 41, 42, 43	016, 017, 02221, 02223, 02224, 0223, 023, 024, 048, 0581, 0589, 059 062, 0712, 0713, 073, 091 098, 111, 112, 122

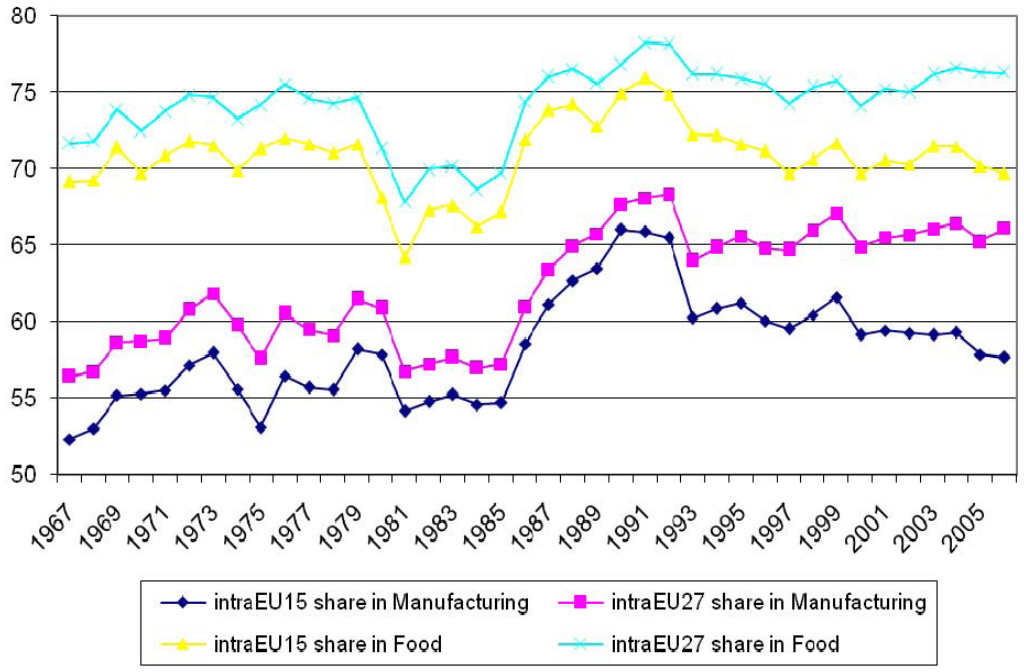
For data processing, and for the estimation of intra-industry trade indices were mainly used MS Office, StatSoft STATISTICA 8.0 and Easy Comext tools by Eurostat.

3.4. Empirical results and discussion of intra-industry trade patterns

This section of the chapter presents the empirical analysis and results of the relative importance of each trade pattern in the EU of agri-food industry. Firstly, the chapter investigates cross-countries intra-trade flows, secondly, a cross-industries comparison of streams.

Intra-EU trade is a falling share of global trade, but it remains a very important element of EU trade. The Figure 3.4.1 shows that intra-EU trade is particularly important in agri-food sectors (about 75% from the total EU trade). Particularity of the sector (high level of perishability favouring local sourcing, differing global tastes in food, high non-tariff barriers) and public policy, in particular the CAP, are the main factors for huge share in the intra-EU trade.

Figure 3.4.1 Trend in intra-zone trade's within EU27: agri-food and manufacturing (1967 - 2006)

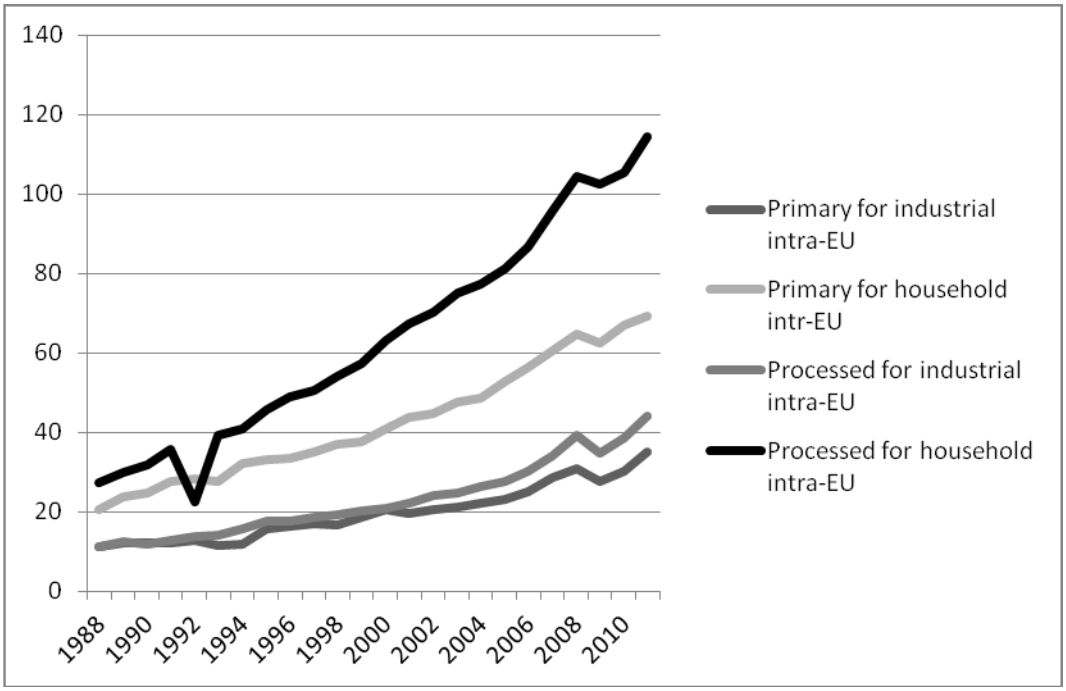


Source: CHELEM, CEPII , 2009

The graphs show the level of intra trade for both EU15 and, in this case, the new EU27. We see that enlargement seems to have stabilized the share of trade from EU sources in both food and manufacturing sectors (in both the EU27 figures are stable, compared to small, but steady falls in EU15 sourcing). This indicates that expanding the EU has enabled EU companies and retailers to extend their sourcing within the Union in such a way as to increase the variety of sources, while maintaining the importance of EU sourcing at a stable level.

Especially in the last twenty years such a high share of agri-food trade inside the EU has tended to increase in volume, as shown in Figure 3.4.2 Trade in consumer goods (primary for household and processed for household products) and trade in intermediate products (primary for industrial and processed for industrial products) between 27 countries accounted for 70 per cent and 30 per cent, respectively, of the total agri-food flows in 1988-2011.

Figure 3.4.2 Shares of intermediate and consumer products trade in the total agricultural and food trade within EU (bill. euro), 1988–2011



Source: Author's own calculations, Eurostat data

Agricultural trade has expanded substantially over the 1988-2011 period. How we can see, EU countries are traders of more specifically processed products. By 2011, the share of trade in food products had increased very dramatically, regarding the share of trade in intermediate products. When intra-EU trade is excluded the value of overall agricultural trade and the share of processed products of that trade are lowered. An obvious reason's for the rising trend in the share is the enlargement of the European Union and trade liberalization. Figure 3.4.2 displays these trends.

3.4.1 Intra-industry trade patterns by country

The development of IIT as measured by the G-L index over the period 1988 to 2011 for *all* agricultural and food products (some 314 product categories) summed up to the aggregate industry level for trade between EU countries is presented in Table 3.4.1. and Table 3.4.2.

How we can see, since of the 1999 the share of intra-industry trade in consumer-oriented products in total trade in this sector has increased in every EU country, especially growth rates of CEEC's (Central and East European Countries). Countries such Bulgaria, Romania, Hungary showed highest growth rates in comparison with other (their average share increased almost fivefold). But intra-industry trade in consumer-oriented products is highly concentrated with relatively few exporting countries capturing a dominant share of the market. Germany, France, Netherlands and Belgium are still the major players in overall intra-industry trade flows (for around 56% of total export within EU). It should be stressed the tendency of abatement the main representatives of this kind of trade. Agricultural exports from the new members of EU are increasing rapidly and gradually their share in bilateral relationships becomes more significant. The picture of intra-industry trade in intermediate agricultural products very similar, but the relative to the trade by consumer agricultural products, the share of bilateral nature are lowered. The composition of the bilateral trade between the EU

countries is increasingly of a processed nature, mainly because the EU exports (CEECs import) more processed products (Table 3.4.1 and 3.4.2).

Table 3.4.1 Intra-industry trade of consumer-oriented agricultural goods within EU-27

COUNTRIES	Share of value Intra-industry trade by countries,1999 %	Share of export flows in intra-EU,1999 %	Share of value Intra-industry trade by countries,2011 %	Share of export flows in intra-EU,2011 %	Change of the shares 1999-2011,%	Net IIT trade values 2011, mill. euro
GERMANY	60,3	20,2	68,9	20,2	115	-123,0
FRANCE	64,2	18,3	67,6	13,2	55	-1598,6
NETHERLANDS	54,0	13,2	62,1	12,8	110	7606,3
BELGIUM	74,2	12,9	77,9	10,5	76	4474,4
UNITED KINGDOM	45,1	9,2	54,6	8,3	95	-6181,4
ITALY	45,4	7,9	51,3	7,2	96	352,2
SPAIN	34,2	4,2	43,9	5,3	169	1038,2
AUSTRIA	61,9	2,8	72,3	3,6	177	-542,6
POLAND	25,0	0,4	48,4	3,0	1410	599,5
IRELAND	56,8	3,1	66,1	2,8	94	1070,3
DENMARK	40,0	2,4	54,3	2,6	132	796,5
CZECH REPUBLIC	41,1	0,5	56,4	1,7	626	-225,9
SWEDEN	37,3	1,1	46,2	1,5	178	-572,6
PORTUGAL	33,2	0,8	60,8	1,4	268	-1036,6
HUNGARY	17,6	0,2	58,4	1,1	1140	93,6
SLOVAKIA	51,1	0,3	62,3	1,0	642	-415,8
GREECE	21,0	0,6	31,8	0,7	134	-145,5
ROMANIA	5,2	0,0	42,4	0,6	8228	-137,5
LUXEMBOURG	72,9	0,9	54,6	0,5	36	-251,6
LITHUANI	18,8	0,1	35,8	0,4	1255	86,9

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FINLAND	32,3	0,4	26,8	0,4	74	-191,7
BULGARIA	8,3	0,0	44,2	0,3	3894	59,3
LATVIA	27,0	0,1	52,4	0,3	883	-152,2
ESTONIA	22,0	0,1	49,5	0,2	847	12,8
SLOVENIA	15,9	0,1	37,9	0,2	761	-162,3
CYPRUS	11,2	0,0	22,0	0,1	495	-20,5
MALTA	7,0	0,0	7,7	0,0	113	-8,3

Source: Author own calculations from Eurostat Database, Standard International Trade Classification *(SITC) Rev.3, 1999-2011.*

Table 3.4.2 Intra-industry trade of intermediate agricultural goods within countries EU-27

COUNTRY	Share of value Intra-industry trade by countries,1999 %	Share of export flows in intra-EU,1999 %	Share of value Intra-industry trade by countries,2011 %	Share of export flows in intra-EU,2011 %	Change of the shares 1999-2011,%	Net IIT trade values 2011, mill. euro
GERMANY	58,1	21,2	60,5	20,1	121	-721,7
NETHERLANDS	55,3	17,1	60,9	17,4	136	1608,8
FRANCE	43,9	16,9	51,5	13,2	82	1646,6
BELGIUM	65,7	14,8	61,2	11,7	83	-116,0
UNITED KINGDOM	41,0	7,3	44,8	4,9	55	-270,9
SPAIN	37,4	4,4	44,0	4,8	154	42,6
ITALY	22,9	5,5	26,4	4,0	72	-986,9
Austria	36,7	2,6	54,4	3,5	217	-359,6
POLAND	13,9	0,6	48,8	3,4	1282	122,1
DENMARK	39,6	2,5	46,6	2,3	117	66,3
SLOVAKIA	26,7	0,3	66,4	2,3	1509	280,6
HUNGARY	20,7	0,5	38,0	2,1	897	564,8
CZECH REPUBLIC	29,3	0,7	47,1	1,8	480	173,0
PORTUGA	35,1	1,2	48,4	1,5	195	-378,0

L						
ROMANIA	9,8	0,1	38,4	1,5	2507	157,4
IRELAND	49,2	2,3	54,6	1,3	35	-72,2
BULGARIA	18,4	0,1	38,6	1,1	2875	309,7
LATVIA	3,5	0,0	43,0	0,6	2876	72,4
GREECE	12,1	0,7	20,4	0,5	87	-9,5
LITHUANIA	6,4	0,0	33,5	0,5	2511	42,2
SWEDEN	6,3	0,3	14,3	0,4	196	10,4
ESTONIA	11,1	0,1	44,3	0,3	870	11,3
SLOVENIA	31,7	0,2	21,0	0,3	205	-6,5
LUXEMBOURG	44,4	0,3	54,3	0,2	97	-15,6
FINLAND	6,8	0,3	9,9	0,2	49	-29,5
CYPRUS	2,8	0,0	4,0	0,0	269	-3,6
MALTA	0,5	0,0	0,2	0,0	-29	0,0

Source: Author own calculations from Eurostat Database, Standard International Trade Classification *(SITC) Rev.3,1999-2011.*

Thus, the initial findings of the thesis claim the existence of significant levels of IIT by agricultural and food products, indicating relatively rapid growth and geographical expansion of bilateral relationships in European Union. The main objective for the selection of these countries is to test various hypotheses relating to IIT theories in the context of country attributes and commodity characteristics.

The main of these:

1. A large part of agricultural and food trade is between developed countries. The OECD-members – developed, industrialised countries – take a dominant share in world agricultural trade flows as they are involved in around two-thirds of all agricultural trade (imports and exports) in the world. Most importantly, a large share of trade in agricultural and food products is *between* a limited number of developed countries (see Henderson et al., 1998). Leading importing and exporting countries often trade with each other. In this respect the

EU is a special case with EU intra-trade (trade between EU countries) accounting for about half of the total value of world trade in agricultural products.

2. The importance of trade in processed agricultural products increases at the expense of trade in basic products. There is a trend by which the importance of trade in processed agricultural products increases at the expense of trade in basic products. In reporting on these developments (*Moct-Most, No. 3, 1999)* McCorriston and Sheldon (1991) find a faster annual growth rate of the value of world trade in processed products than of bulk commodities in the 1970s and 1980s. In 1988 – the last year both authors report on – processed products accounted for 60% of world agricultural trade with bulk and intermediate products accounting for equal shares of the remainder. Traill (1996) confirms these findings in his analysis of world trade flows between 1961 and 1990 and notes a striking difference between the EU and USA in this respect: the processed 'high-value' products account for 85% of EU food and agricultural exports but only 60% of American exports. Coyle et al. (1998) reported a continuation of the trends towards increased trade in processed food products through the 1990s.

3. Trade in processed food products is concentrated among a few countries. Trade in manufactured food products is concentrated in the hands of a relatively small number of countries: Dayton and Henderson (1992) state that 30 developed and newly industrialised countries (NICs) account for 90% of processed food imports, of which the NICs' share was only 6%. McCorriston and Sheldon (1998) confirmed the dominance of the EU as an exporter of processed food products in the world trade in food and agricultural products. Referring to 1990 data from ERS/USDA the author's report that the EU countries are among the leading exporters of processed food products with France and the Netherlands together accounting for around 20% of total world trade in manufactured foods.

4. Market concentration in food processing industries and retailing is increasing. There is a general tendency towards increased concentration in the US and EU food processing sectors (Oustapassides et al., 1995; Henderson et al., 1998; McCorriston and Sheldon, 1998). The tendency towards further concentration of food processing industries indicates that these industries aim to gain from economies of scale and are able to influence supply and prices on the markets. McCorriston and Sheldon (1998) observed a relatively high concentration in each of the sub-sectors of food manufacturing and retailing across the EU.

5. Trade in processed products between developed countries is increasingly of an intra-industry trade (IIT) nature. Trade in processed products between developed countries is increasingly of an intra-industry trade (IIT) nature. This is the phenomenon of trade overlap, which is that countries simultaneously export and import products, which are close substitutes for each other in terms of factor inputs and consumption. Even at high levels of disaggregation, there are both exports *and* imports in the trade data for processed products. Trail (1996) refers to a study by Gomes da Silva who found that levels of intra-industry trade in the EU food, drinks and tobacco industries increased between 1980 and 1992 from 0.38 to 0.45 on average (as this value increases towards one, this indicates more intra-industry trade). Based on 1994 four digit SIC data, Henderson et al. (1998) reports an average IIT level of 0.57 for the US processed food sector, which suggests a significantly higher level of trade overlap than McCorriston and Sheldon (1991) calculated for the US food industries for 1986.

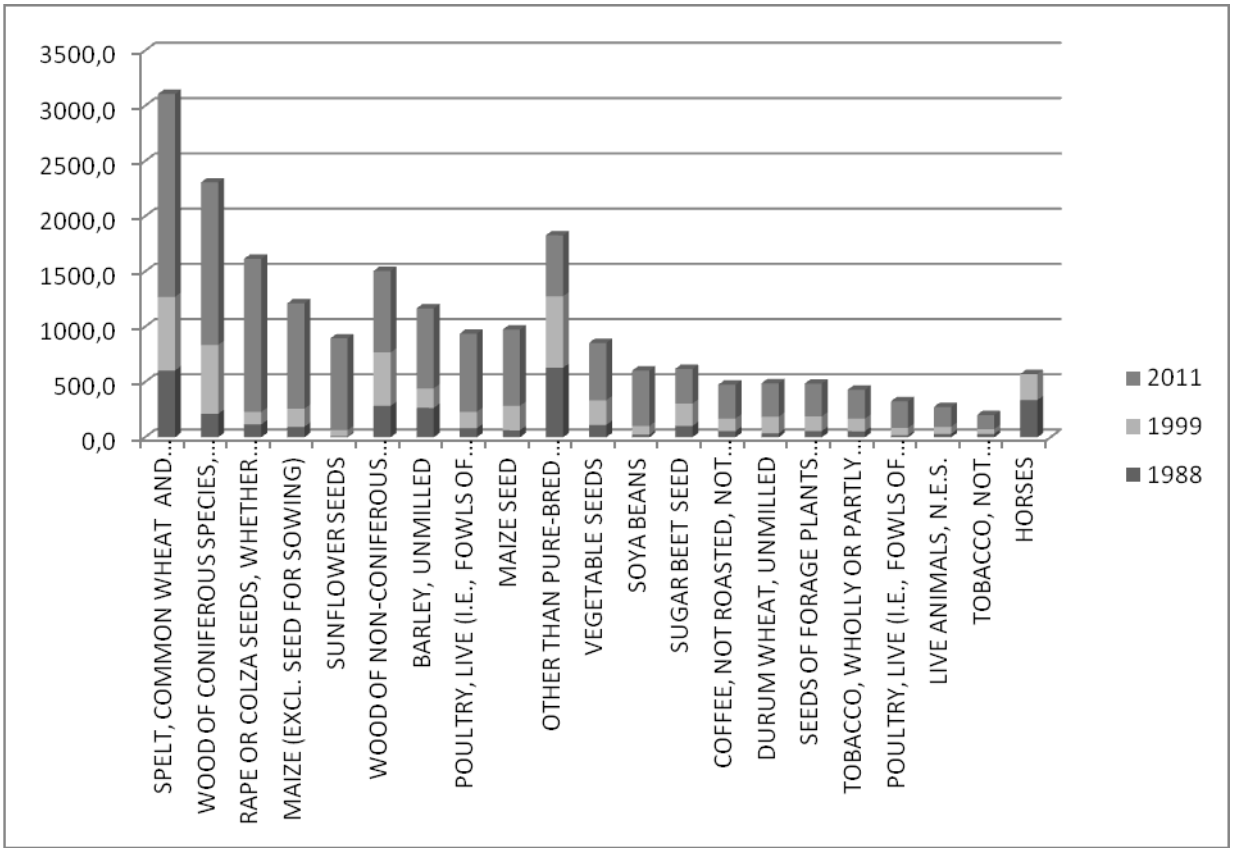
3.4.2 Intra-industry trade patterns by group of products

In this section, estimated values in volume of intra-industry exports by different group of products across 27 countries of European Union are presented. The calculation was performed for the entire population of SITC commodity groups at finest level of aggregation, for 23 years (1988-2011). However, due to

space and time constraints, estimated IIT coefficients are given here only for selected years.

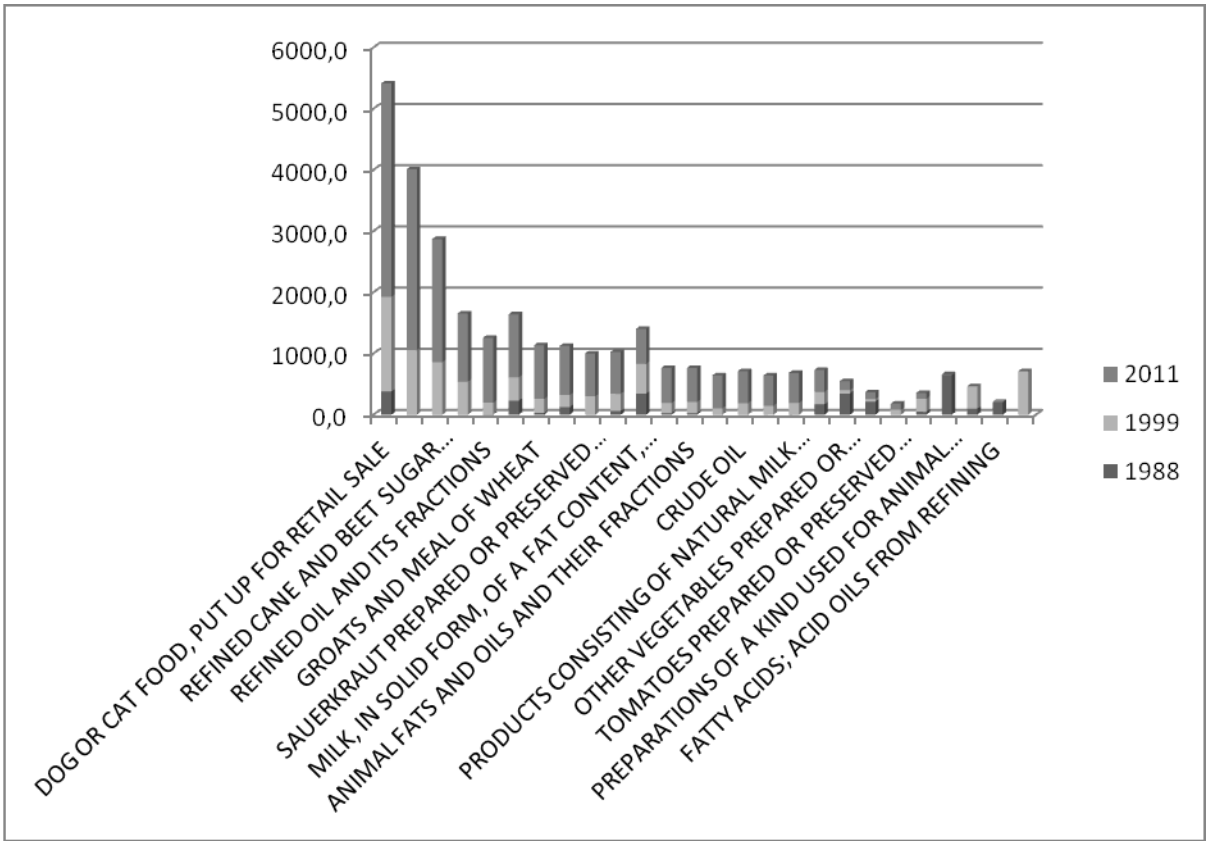
Figure 3.4.2 present the estimated 5-digit summary values of primary agricultural products for industrial use. These observations indicate that a wide variation exists in the intensity of intra-industry trade among industries. The differences in volume values are quite pronounced. These estimates range from high values of 17 percent for “Other than pure-bred breeding animals” in 1988 and 12,7 percent of total intra-EU trade “Spelt, common wheat and meslin, unmilled” in 2011, to very low for “Cotton seeds”, “Coffee husks and skins”, “Safflower seeds”. It should be stressed that from 1988 the greatest growth has come on such product categories how “Rape or colza seeds”, “Maize”, “Sunflower seeds”. All countries of EU have that group of products in here export IIT flows. On the contrary, group of products like “Horses” almost disappeared from the scene of intra-industry trade. Overall intra-industry trade volume of primary agricultural products for industrial use is 11 percent of the total IIT trade by agricultural and food products within European Union in 2011.

Figure 3.4.2 Primary agricultural products for industrial use in intra-industry trade



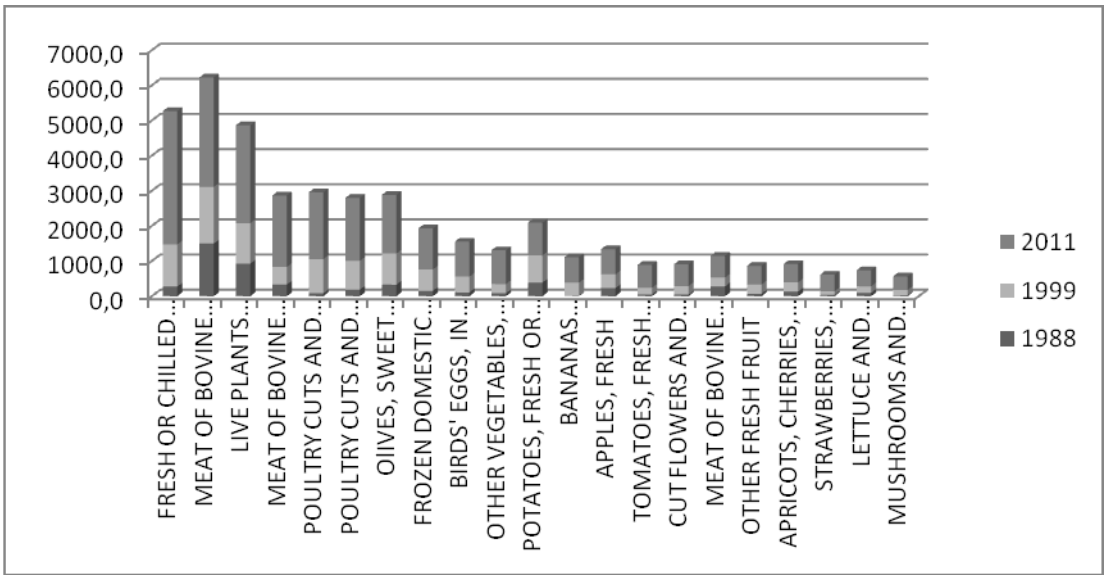
The main representatives of processed agricultural products for industrial use falling under SITC-5, indicate high volume of IIT values (as expected) particularly in “dog or cat food”, “Wine less; Argol”, “Refined cane and beet sugar”, “Sweet corn prepared or preserved”, “Refined oil”. Overall intra-industry trade volume of processed agricultural products for industrial use is 19 percent of the total IIT trade by agricultural and food products within European Union in 2011, that slightly more than primary product for industrial use.

Figure 3.4.3 Processed agricultural products for industrial use in intra-industry trade



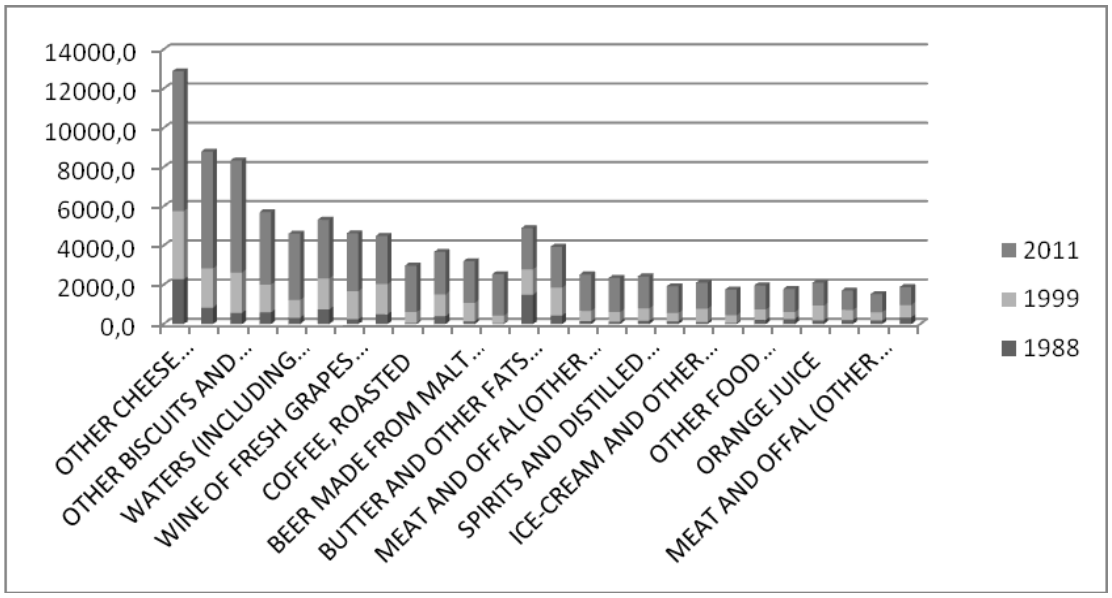
Computed IIT export shares in the primary products mainly for household consumption are shown in Figure 3.4.4. As shown in table, shares of IIT have been rising in all groups. Increasing from 4.1 per cent in1988 to 11,2 per cent in 2011 of "Fresh or chilled domestic and non domestic swine" and decreasing from 22,5 per cent in 1988 to 9,2 per cent in 2011 of "Meat of bovine animals, fresh or chilled, with bone in" in overall intra-industry trade of primary products for household consumption. The share of the total agricultural and food products is 29 percent in 2011 year.

Figure 3.4.4 Primary agricultural products for household consumption in intra-industry trade



It appears that IIT values are low for goods wich are at low level processing stage (raw materials, etc.), and high for goods of higher level of processing (Figure 3.4.5). This suggests that an increase in the level of processing of the product is followed by an increase in IIT. This in turn is explained by the prevalence of product differentiation within such groups like processed products mainly for household consumption. The main representative of the intra-industry trade here, how also was in 1988 and 1999 years, is a group of products “Other cheese”. The one of a probable explanation is that a group of classification contains a range of different types of cheese (like Emmentaler, Gruyene, Cheddar, Tilsit, Feta, Grana Padano, ricotta and others). Unfortunately chosen classification of products does not allow an objective estimation of that group. Mostly this products sui generis unique and original, and whether they are substitutes of each other – that is the question. Huge intra-industry volume of export in other categories of product can also be explained by product differentiation. In the share of the total intra-industry trade by agricultural and food products is 41 per cent in 2011 year.

Figure 3.4.5 Processed agricultural products for household consumption in intra-industry trade



In summary, then, as reported in Figures 3.4.2-5, shows that total intra-industry trade in agricultural and food products between the EU countries has increased substantially from the 1988 and is increasingly in consumer-oriented products. The patterns of Vertical and Horizontal IIT will be examined in more detail in the next chapter.

3.5 Vertical and Horizontal intra-industry trade patterns

Adapting the notation[7] of Greenaway, Hine and Milner (1995) for our study, we measure horizontal bilateral intra-industry trade (HIIT) and vertical bilateral intra-industry trade (VIIT) between EU countries with all selected agricultural and food products from SITC sub-sector as following. First, exports and imports unit values are computed for each pair of partner countries at the fifth digit level. Using the relative unit values of exports and imports, bilateral trade flows are separated into bilateral trade flows of horizontally and vertically differentiated products. In

[7] selection of a spread of 15 per cent to distinguish trade flows of horizontally and vertically differentiated products does not dramatically changing the product classification when the range is widened to 25 per cent (Abd-el-Rahman 1991; Greenaway, Milner and Hine 1994, 1995).

Figure 3.5.1 and 3.5.2, the shares of IIT patterns for final and intermediate products reveal the dominance of VITT in both cases. Interestingly, the shares of ITT (VITT) for consumer-oriented products increase from 38 (24) to 57 (40) per cent from 1988 to 2011, while the shares of IIT (and VIIT) for intermediate increased just from 16 (10) to 20 (11) per cent for the same period.

Trends in trade patterns between EU countries: intermediate and consumer-oriented agricultural and food products, 1988-2011

Figure 3.5.1 Intermediate

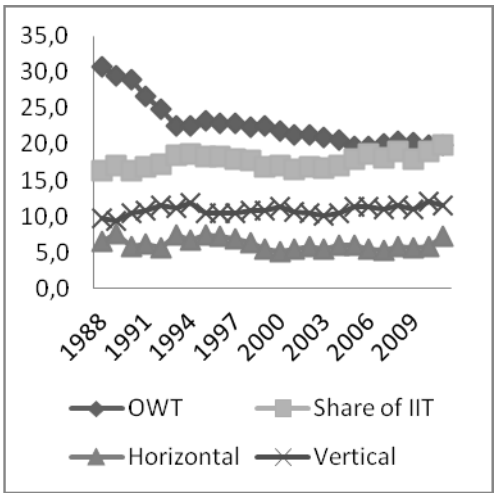
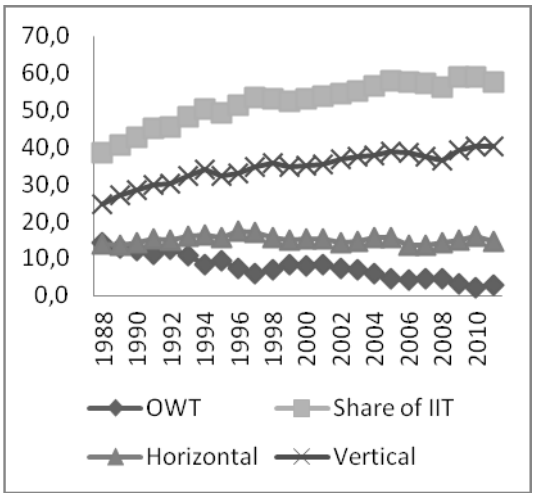


Figure 3.5.2 Consumer-oriented



Source: Author's own calculations, Eurostat data

Note: Shares of IIT, VIIT, HIIT and OWT for consumer-oriented products and intermediate products are computed as a proportion of total agricultural and food trade.

In addition, Figures 3.5.1 illustrate the shares of OWT closely follows the share of IIT, especially in last years, with the 19,9 per cent and 19,8 per cent in 2011. This confirms that the trade by intermediate agricultural products gradually assumes intra-industry nature. As expected, the share of VIIT by consumer-oriented agricultural and food products is very high, and increase all the time (Figure 3.5.2). But the main share of this trade is concentrated just among a few countries (Figure 3.5.3 and figure 3.5.4), that confirm findings of Dayton and

Henderson (1992)[8]. Also trade in processed food McCorriston and Sheldon (1998) confirmed the dominance of the EU as an exporter of processed food products in the world trade in food and agricultural products. Referring to 1990 data from ERS/USDA, the author's report that the EU countries are among the leading exporters of processed food products with France and the Netherlands together accounting for around 20% of total world trade in manufactured foods. Trade in processed products between developed countries is increasingly of an intra-industry trade (IIT) nature.

Trade in processed products between developed countries is increasingly of an intra-industry trade (IIT) nature. This is the phenomenon of trade overlap, which is that countries simultaneously export and import products, which are close substitutes for each other in terms of factor inputs and consumption. Even at high levels of disaggregation, there are both exports *and* imports in the trade data for processed products. Trail (1996) refers to a study by Gomes da Silva who found that levels of intra-industry trade in the EU food, drinks and tobacco industries increased between 1980 and 1992 from 0.38 to 0.45 on average (as this value increases towards one, this indicates more intra-industry trade). Based on 1994 four digit SIC data, Henderson et al. (1998) reports an average IIT level of 0.57 for the US processed food sector, which suggests a significantly higher level of trade overlap than McCorriston and Sheldon (1991) calculated for the US food industries for 1986.

[8] Trade in manufactured food products is concentrated in the hands of a relatively small number of countries: Dayton and Henderson (1992) state that 30 developed and newly industrialised countries (NICs) account for 90% of processed food imports, of which the NICs' share was only 6%.

Share of Vertical and Horizontal IIT of consumer-oriented food trade in total IIT by country pairs, 2011

Figure 3.5.3

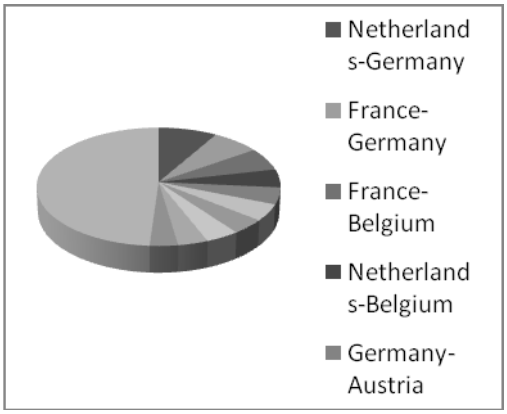
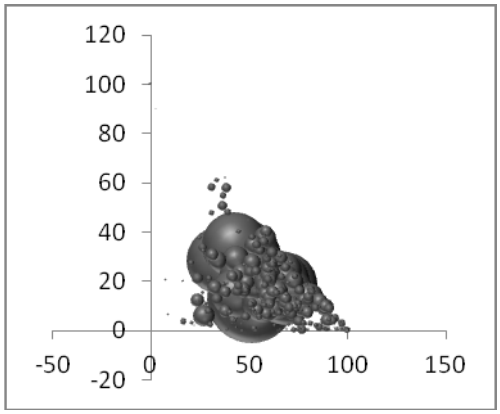


Figure 3.5.4



Source: Author's own calculations, Eurostat data

Trade in food products is concentrated in the hands of a relatively small number of countries: mainly Germany, France, Netherlands and Belgium. In Figure 3.5.3, we see top intra-industry trade pairs of countries European Union in food products, which account for 51 per cent in overall intra-industry trade in 2011. Figure 3.5.4 shows all intra-industry trade relationships in 2011, indicating that agricultural and food trade is increasingly of a highly differentiated nature. These observations have important implications for the application of trade theories in analysing international trade in agricultural and food products. All suggest that 1) the standard Heckscher-Ohlin-Samuelson model is not always suitable to explain agricultural trade and 2) the relevance of modern trade and growth theories increases relative to traditional theories. Coyle et al. (1998) underlined these two points as they found that factors stressed by the traditional trade theories such as increasing income per capita, factor endowments, transport costs and policies only partly explain the shift in the composition of food trade (i.e. increased importance of processed food products).According to the authors the large unexplained residual is due to variety effects and differential rates of technology growth among various food and agricultural sectors, thereby making a

case for the application of elements from the new trade and growth theories in agricultural trade analyses.

CHAPTER 4

Competition in agri-food trade

4.1 Intro and previous study

Food quality has become an increasingly important topic during the last decades. In developed countries, driven by aging populations and growing diet-related health concerns, consumer demand now seems to shift toward higher quality, more natural, and healthier food (Regmi, 2001). Given today's more integrated markets, it can be assumed that intra-industry trade of quality food products is increasing.

It should be noted, that the concept of food quality is rather elusive. Overall, quality may be seen as an abstract construct, multidimensional in nature (Charters & Pettigrew, 2007). Very often, in the literature more pay attention at least four different quality definitions. It is either referred to as excellence or superiority, as value, as conforming to specifications, or as meeting or exceeding customer expectations (Reeves & Bednar, 1994; Verdu´ Jover, Llore´ns Montes, & del Mar Fuentes, 2004). The first approach defines quality as best in class, judged on some to-be-specified criteria. The value approach is an economic one (higher monetary value reflects higher quality), whereas the conforming to specifications is a technological one (a quality product is a product that fulfills some predefined technical standards, however low they may be). The fourth approach defines quality from the point of view of the final consumer: as long as she or he is happy with it, it is a quality product. Either way, in order to measure quality objectively, a generally accepted reference system is necessary, otherwise ‘‘the general term quality is very subjective and means very little’’ (Satin, 2002, parag. 2). Ninni, Raimondi, and Zuppiroli (2006) state that the quality difference between competing products can be easily analyzed for measurable characteristics such as: reliability, durability, various indicators of performance, and health and safety. However, it becomes more subjective when it refers to intangible characteristics

such as design, taste, and flavor. Here the boundaries of vertical and horizontal differentiation are blurred. The intangible characteristics are of particular importance for food products. Therefore, for these goods, it may perhaps—despite Satin's assertion—be most useful to accept these having subjective qualities rather than one objective quality, meaning that different people can come to diverging quality assessments and, in the end, none of these is superior to another. Despite its increasing importance, and probably partly due to the difficulties of objectively defining quality, not much research has been done so far on the particularities of the intra-industry trade of food products. Thus, for example, it is unclear whether the nature of the bilateral trade flows is similar or potentially structurally different compared with the one of low- or average-quality food products.

The literature on the relationships between quality and trade performance is sparse. The few existing studies have in common that they investigate inter-country quality competition in the sense that they try to find out whether a country's exports of certain products have higher quality vis-a`-vis other countries producing similar goods.

Aiginger (1997) suggested a method of how to use unit values (UV) in order to discriminate between price and quality competition in international markets using the case of German exports of industrial goods. Gelhar and Pick (2002) applied Aiginger's framework to U.S. food trade flows and found that almost 40% of U.S. food exports could be characterized as dominated by quality competition. For imports, the share amounts to 60%. However, the results for bilateral trade flows are much lower, which points to problems involved when using unit values and net trade figures of economic aggregates. Ninni et al. (2006) explored the role of quality of Italian food products in international markets. They regressed relative market shares of the Italian products in the import market of several different countries on a quality indicator based on UVs and other variables. The obtained results suggest that ''the quality image of Italian goods offers protection for some traditional products, but that this protection is not strong enough to counteract price competition'' (p. 2). Schott (2008) shows that the US consumers pay less for

"Made in China", than for "Made in OECD" for similar goods. Fontagné, Gaulier, and Zignago (2008), analysing unit prices of HS 6-digit products of 200 countries, finds that the developed countries' products are not directly competing with the developing countries' products. Hummels and Klenow (2005) show, that richer countries export higher quality goods at modestly higher prices. Hummels and Skiba (2004) show that exporters charge destination-varying prices that covary positively with shipping costs and negatively with tariffs, and thus confirming the Alchian-Allen hypothesis.

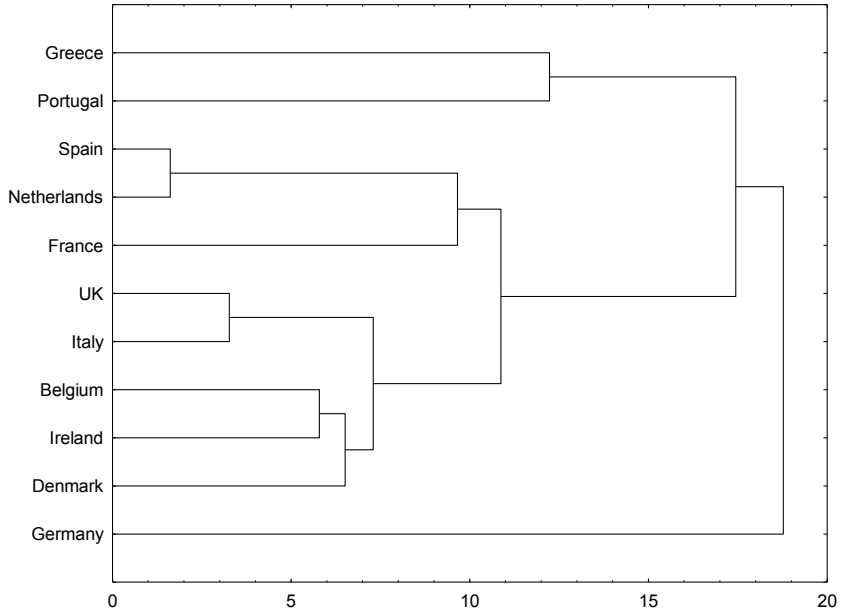
Adapting the notation all previous studies and findings, we investigate the nature of intra-industry trade by food products on the identification price and quality patterns of these bilateral flows within European Union.

4.2 Unit values correlation of vertical intra-industry trade

After establishing that bilateral shares of IIT in EU food industry are dominated by VIIT, this chapter investigates quality trade patterns of food products within VIIT. With reference to chapter 3, Equation (3) is used to compute and identify shares of high quality (HQ) differentiated VIIT and low quality (LQ) differentiated VIIT food products by comparing relative export to import unit values (RUVXM). Accordingly, within VIIT, when export unit values exceed import unit values, products can be classified as HQ vertical products; otherwise LQ vertical products (see Appendix 2-3). In addition, with reference to Section (Aiginger) is used four indicators on the qualitative competitiveness for each selected country.

Based on previous findings we selected the main representatives of intra-industry trade by food products within EU: Germany, Belgium, France, Netherlands, Austria, United Kingdom and Italy. And then in Figures 4.2.1-3 demonstrated the clusters of countries by the share of low and high quality products in total intra-industry trade within European Union for 1988,1999 and 2011 years.

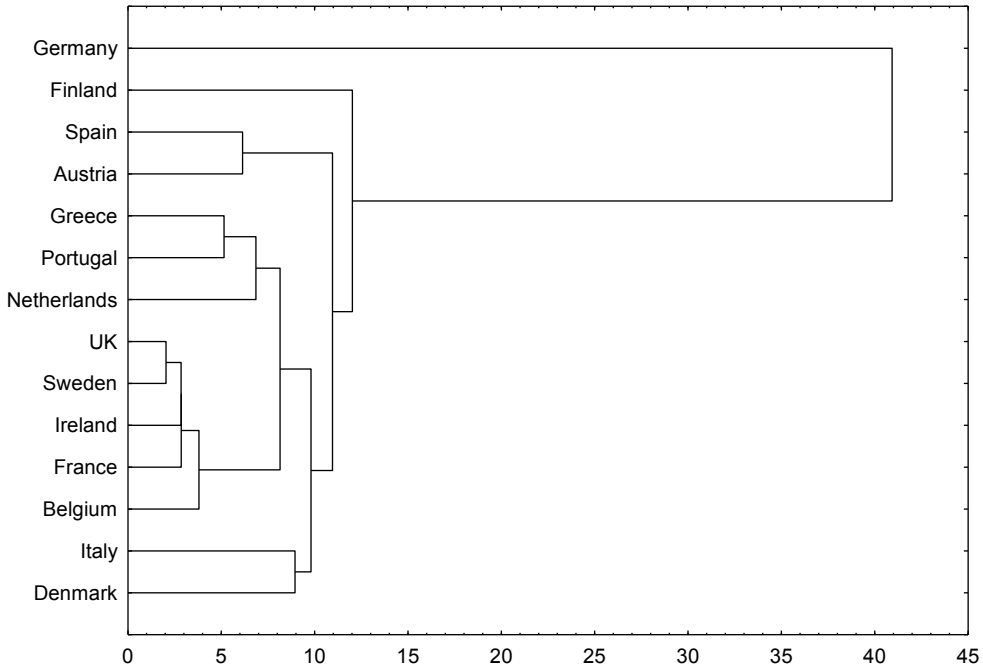
Figure 4.2.1 High-*quality and* low-quality in total *intra-industry trade, 1988*



Source: Author's own calculations, Statsoft STATISTICA 8.0

Accordingly with the Figure 4.2 we can distinguish 2 pronounced clusters. The first one includes the countries like Denmark, Ireland, Belgium, Italy and UK where high quality trade by consumer-oriented food products is dominated in total intra-industry flows. On the contrary the second cluster, which includes France, Spain and Netherlands where the share of low quality trade by food products in TIIT is greater. Germany, Portugal and Greece specialized in trade by significantly low quality nature. Moreover, in Germany prevailed horizontal intra-industry flows in 1988 year. These observations suggests that in 1988, before joining of new countries in European Union food market had already vertical nature in intra-industry trade and mostly in high quality products.

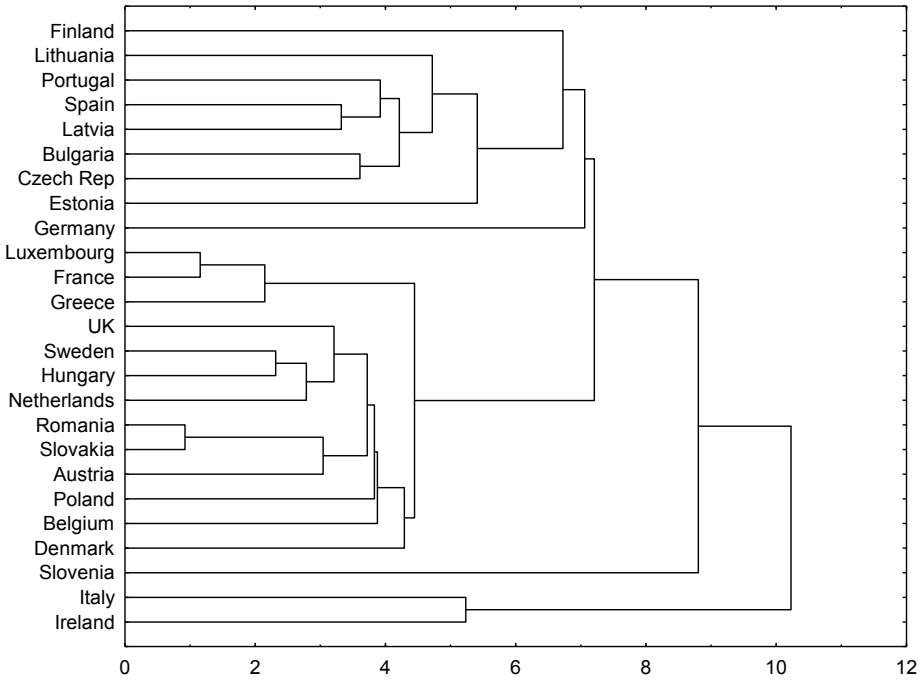
Figure 4.2.2 High-*quality and* low-quality in total *intra-industry trade, 1999*



Source: Author's own calculations, Statsoft STATISTICA 8.0

As can be seen in Figure 4.2.2 the obvious connections are United Kingdom, Sweden, Ireland, France and Belgium from the one side and Netherlands, Portugal, Greece, Austria and Spain from the other, which had high and low quality share in their intra-industry trade respectively. Italy and Denmark had a significantly lager share of high quality in TIIT. Germany is still specialized in low quality patterns of bilateral trade relationships. It should be stressed that the Scandinavian countries in IIT had more high quality nature and the Mediterranean in more in low.

Figure 4.3.3 High-*quality and* low-quality in total *intra-industry trade, 2011.*



Source: Author's own calculations, Statsoft STATISTICA 8.0

Intra-industry trade from 2002 supplemented with the new players. Nevertheless, as can be seen in Figure 4.3.3, evident clusters there are. The first one with 8 upstream countries (Finland, Lithuania, Portugal, Spain, Latvia, Bulgaria, Czech Republic, Estonia) had a low quality nature in TIIT by food products. The second is 3 middle stream countries (Luxembourg, France and Greece) had equally shares of high and low nature within intra-industry trade. The third is 12 downstream countries (UK, Sweden, Hungary, Netherlands, Romania, Austria, Poland, Belgium, Denmark, Slovenia, Slovakia, Italy and Ireland) had shares in their TIIT of high quality flows.

In summary, then, as reported in Figures 4.2.1-3, shares of intra-industry trade can be largely explained by vertical, while shares of VIIT are significantly in low and high quality nature from denoted group of countries within European Union. It should be noted that the findings confirms the view that lower income (South) countries produce and export LQ vertical products, while high income (North) countries produce and export HQ vertical products. But there are some

exceptions, for example Italy. Granted, it is not conclusive that price gaps or RUVXM differences are always associated with quality differences, as they may in fact be connected to cost differences, especially in the context of trade deficits (Aiginger, 1997). Therefore according to the concept of Aiginger we shed light on the qualitative competitiveness of the economies within intra-industry trade by food products of seven selected countries-dominants (see Appendix 4).

4.2.1 The case of cheese

Taking the case of cheese products the patterns of vertical intra-industry trade are observed with seven selected countries, whose intra-industry flows are prevalent within European cheese market.

The raw data were taken from Eurostat's COMEXT ''EU27 Trade Since 1988 By SITC database. These trade data are at the highest available level of disaggregation (five-digit level). The category was selected based on their importance to the EU food industry (meat, beverages, and dairy products are the three most important subsectors as measured by their shares in total sector value added; see Lienhardt, 2004). The years 1988 to 2011 were included in the analysis. Because the used trade data are volatile, the 11 years were averaged over two periods (1988–1998 and 1999–2011).

Data preparation involved the removal of re-export data and of outliers. Unfortunately, the data from SITC does not allow distinguish export flows of products that could not have been produced in a certain country (e.g., Riccota in German exports or Gorgonzola cheese in French exports). However, the main part of the intra-industry trade between selected countries within European Union we can analyze from qualitative aspects in the trade and examine trends over time.

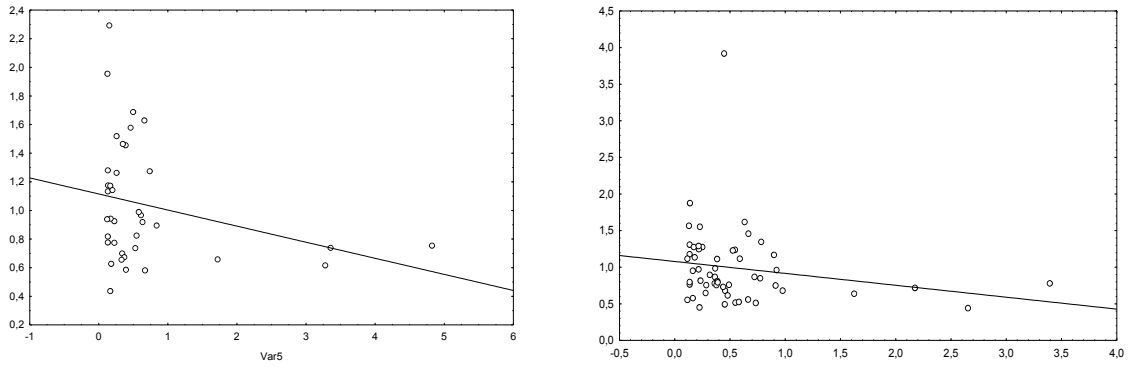
In addition, this analysis could provide some new hypothesis of the intra-industry trade, which suppose that countries that have more particular and original products (protected designation of origin (PDO), protected geographical indication (PGI), traditional specialty guaranteed (TSG) will be traded between each other much more and often (see Table 4.2.3).

Table 4.2.3 List of protected cheeses in European Union

Country	PDO/PGI numbers of cheese sorts
France	45
Italy	34
Germany	4
Austria	6
Netherlands	4
United Kingdom	12
Belgium	1

The estimation results are displayed in Figures 4.2.3 to 4.2.8 (OLS). Overall, it emerges that the direction (and the significance) of the relationship between food product quality and share its in total intra-industry trade is not systematic but depends on the country, and the export destination. However, the direction (i.e., the sign of the slope coefficient) is in most cases independent of the used estimation method, yet the significance levels are not.

1988-1998 1999-2011

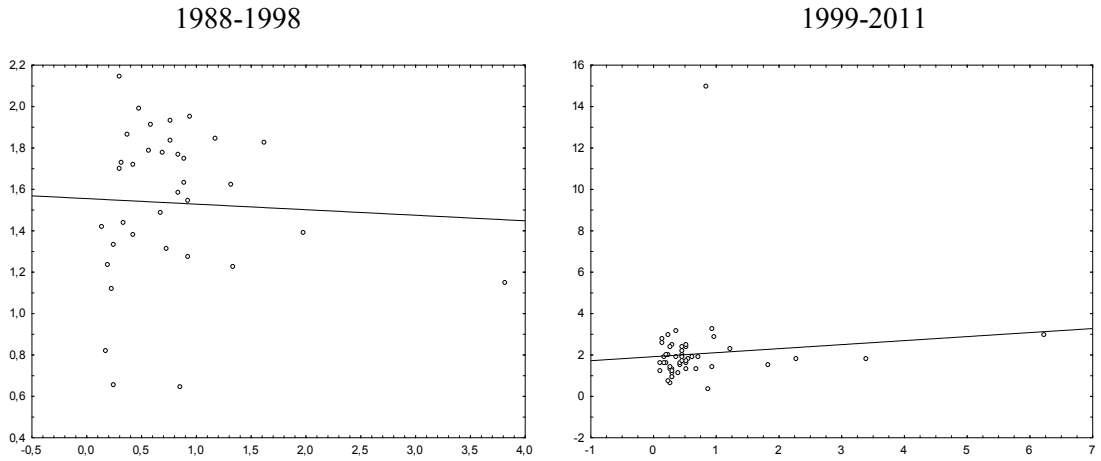


Source: Author's own calculations, Statsoft STATISTICA 8.0

Figure 4.2.3 Germany 1988-2011: OLS (ordinary least squares) slope estimates of Unit value differences ratio of export and import (y) on the share IIT of product in TIIT (x). *Note.* Bold regression lines indicate that the slope coefficient is statistically significant at the 95% confidence level. 1988-1998

Germany

In the OLS estimations (Figure 4.2.3), for investigated product category and all export destinations, the relationship between product quality and VIIT performance is negative. The slope coefficient is statistically significant (at least at the 95% confidence level). As for product category-specific differences, the IIT performance situation does not generally differ significantly across the two included time period. But most important, that food quality, as indicated by the relative unit value export and import, is significantly negatively related to relative VIIT performance of cheese product in the total intra-industry trade. Overall, then, it appears that Germany exports relatively more lower and medium-quality cheese products than high-quality ones and import more high-quality considered product categories.



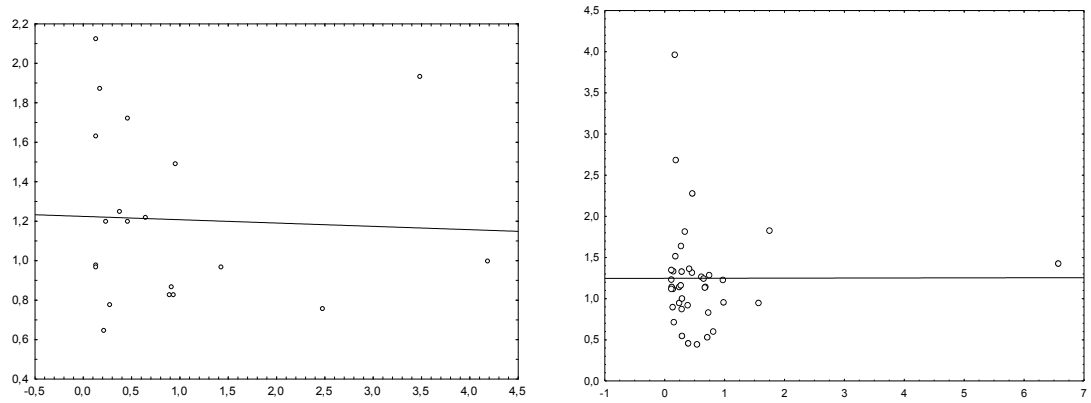
Source: Author's own calculations, Statsoft STATISTICA 8.0

Figure 4.2.4 Italy 1988-2011: OLS (ordinary least squares) slope estimates of Unit value differences ratio of export and import (y) on the share IIT of product in TIIT (x). *Note.* Bold regression lines indicate that the slope coefficient is statistically significant at the 95% confidence level. 1988-1998

Italy

Looking at the scatter plots (Figure 4.2.4), the Italian situation is almost completely different compared with the one of Germany. The estimated slope coefficients are positive for cheese in the period 1999-2011, and negative in 1988-1998 to all export destinations. Even if the relative unit value differences of export and import within intra-industry trade of Italy very high in 1988-1998 that mean high quality products in the trade, whereas the curve means the gradual decrease of quality patterns of selected product in the intra-industry trade. They are statistically significant (at least at the 95% confidence level).

1988-1998 1999-2011



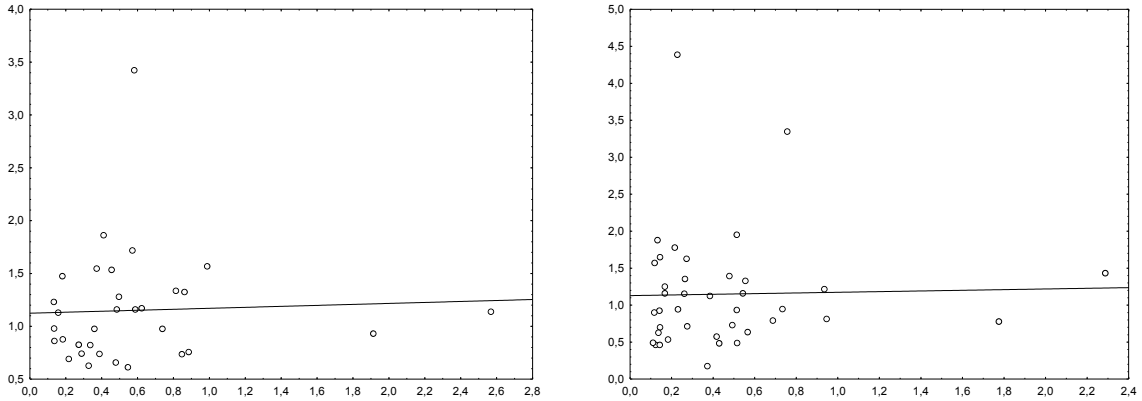
Source: Author's own calculations, Statsoft STATISTICA 8.0

Figure 4.2.5 Netherlands 1988-2011: OLS (ordinary least squares) slope estimates of Unit value differences ratio of export and import (y) on the share IIT of product in TIIT (x). *Note.* Bold regression lines indicate that the slope coefficient is statistically significant at the 95% confidence level. 1988-1998

Netherlands

Figure 4.2.5 shows that the situation in Netherlands is the almost exact mirror image to the one in Italy: a negative trend change of quality in 1988-1998 and un-change in 1999-2011. Compared with Italy, intra-industry performance in Netherlands inferior in quality patterns of cheese export and import.

1988-1998 1999-2011



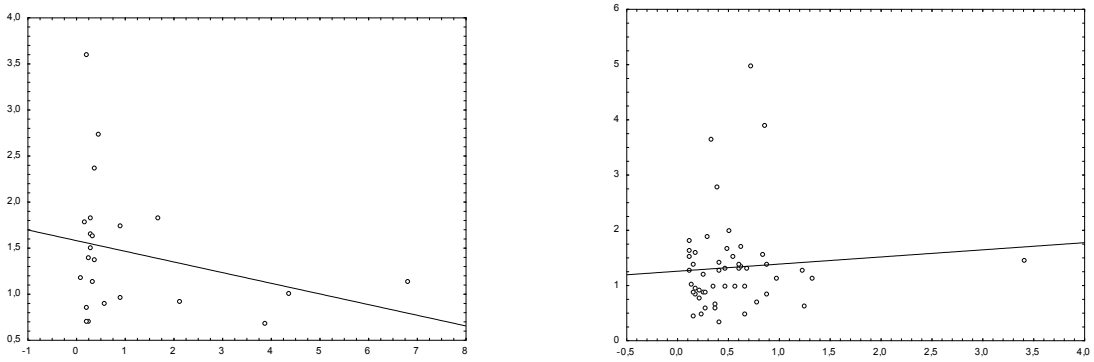
Source: Author's own calculations, Statsoft STATISTICA 8.0

Figure 4.2.6 Belgium 1988-2011: OLS (ordinary least squares) slope estimates of Unit value differences ratio of export and import (y) on the share IIT of product in TIIT (x). *Note.* Bold regression lines indicate that the slope coefficient is statistically significant at the 95% confidence level. 1988-1998

Belgium

The Belgium situation (Figure 4.2.6) shows similar situation as the Netherlands, but trend change more positive than negative in both of cases and unchanged in the time period from 1988-2011. The average relatives unite value more then 1, that mean higher quality nature in intra-industry trade within European Union.

1988-1998 1999-2011



Source: Author's own calculations, Statsoft STATISTICA 8.0

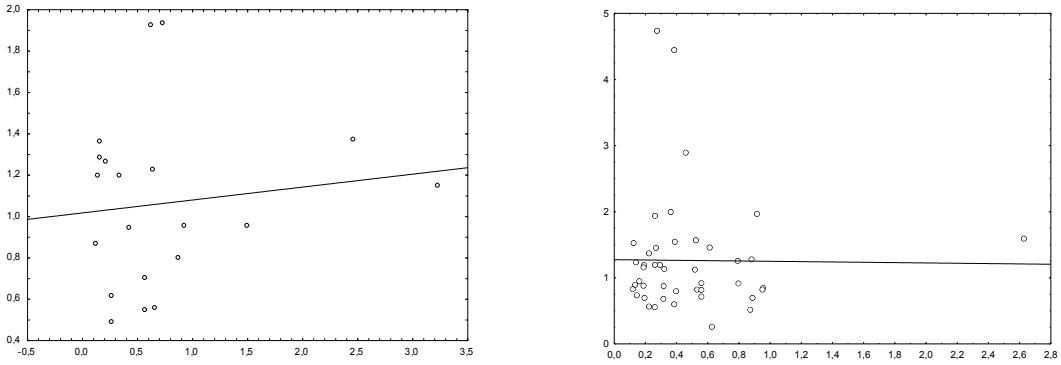
Figure 4.2.7 France 1988-2011: OLS (ordinary least squares) slope estimates of Unit value differences ratio of export and import (y) on the share IIT of product in TIIT (x). *Note.* Bold regression lines indicate that the slope coefficient is statistically significant at the 95% confidence level. 1988-1998

France

Looking at the scatter plots (Figure 4.2.7), the France situation is very different compared with the all other. The estimated slope coefficients are positive for cheese in the period 1999-2011, and negative in 1988-1998 to all export destinations. Even if the relative unit value differences of export and import within

intra-industry trade of France high in 1988-1998, the large share of some cheese products with low unit value differences influence on all intra-industry trade. They are statistically significant (at least at the 95% confidence level).

1988-1998 1999-2011



Source: Author's own calculations, Statsoft STATISTICA 8.0

Figure 4.2.8 United Kingdom 1988-2011: OLS (ordinary least squares) slope estimates of Unit value differences ratio of export and import (y) on the share IIT of product in TIIT (x). *Note.* Bold regression lines indicate that the slope coefficient is statistically significant at the 95% confidence level. 1988-1998

United Kingdom

The UK situation (Figure 4.2.7) shows positive trend in 1988-1998 and medium-quality in 199-2011. The average relative unite value more then 1, that mean higher quality nature in intra-industry trade within European Union, but some products have a large share of lower coefficients, so situation obviously depends on a few particular products.

In summary, this section of my doctoral thesis has investigated the relationship between product quality (as indicated by relative UV of export and import within intra-industry trade) and impact of volume of intra-industry trade certain products, both measured empirically. The estimation results show that the connection between product quality and shares of intra-industry trade depends on the product category (but not on the period) and differs (but not in all cases)

according to the export destination. Although the signs of the estimated slope coefficients are stable.

The estimation results reveal that Italy displays strong intra-industry performance in high-quality cheese. In Germany, the situation is exactly vice versa: higher relative intra-industry performance for lower and medium-quality cheeses. In both, Netherlands, Belgium and United Kingdom relative intra-industry performance appears to be equally distributed across the entire quality spectrum. In France, the situation is ambiguous: low quality patterns in 1988-1998 and more high quality in 1999-2011. The findings from this analysis suggest that although there does not seem to be a systematic relationship between cheese quality involved in intra-industry trade high-quality products clearly play a considerable role in the cheese exports of at least some countries (in this study, Italy, France).

4.3. Determinants of Vertical patterns of Intra-industry trade

As shown above findings, a significant share of differentiated products with a different gap of quality and price in vertical intra-industry trade in food industry, as well as a substantial amount of theoretical work on the subject of the determinants which predicts existence of intra-industry trade between countries led to investigate more in detail level the determinants of vertical intra-industry trade, in particular the issues associated with competition in this trade.

The primary goal of this chapter is to develop a model of VIIT patterns in order to test the empirical hypotheses of the determinants of competition in consumer-oriented food industry between selected EU countries within EU-27 during the period of 1988-2011 and to present the estimation results of the econometric analysis. In particular, the thesis estimates the statistical significance of the determinants of unit value difference of intra-industry trade using fixed effects model.

4.3.1 Summary of the Model

In research work was employed econometric analysis to investigate patterns of vertical intra-industry trade by consumer-oriented food products within

European Union. According to Bojnec, Ferto, 2007 we employ insights from international trade theory to identify the economic factors to explain the different paths in agro-food intra-industry flows. We estimate the following model of the four competition categories (see section 3.2):

$$Categoryit=\alpha 0++\alpha 1GDPCAPit +\alpha 2GDPit+\alpha 3RDit+ \alpha 4FDIit + \alpha 5CB + \varepsilon it,$$
$$i=1,\ldots,4,\ t=1988,\ldots,2011, \quad (7)$$

where Gross domestic product (GDP) is a proxy for the market size. GDPCAP is the per capita GDP which is also a general proxy for the factor endowment. But it is also possible to use as a proxy for economic development. RD is the total intramural research and development (R&D) expenditure in agricultural sciences. FDI is foreign direct investment and multinational involvement and CB is common border of trade partners (binary variable, which is unity if bilateral trade partners have a common border and zero otherwise).

Economic size

According to the empirical literature, the larger the size of the market as proxies by the bilateral average of GDP of the two partners *i* and *j*, the greater the benefits that can be derived from potential EoS (supply) and the greater the demand for differentiated products thereby contributing to higher levels of IIT. Almost all empirical IIT studies examine the impact of this variable on IIT and its patterns have found that it positively influenced IIT (Bergtrand, 1990, Al-Mawali, 2005; Byun & Lee, 2005; Chemsripong, Lee and Agbola, 2005).

We expect that the variable GDP coefficients are negatively associated with successful price competition (category 1) and successful quality competition (category 4), whereas positively associated with unsuccessful price competition (category 2) and successful quality competition (category 3).

Standard of living

Several empirical studies measure average standard of living by using GDP per capita expressed as an average of the bilateral trading partners *i* and *j*. Countries with high levels of per capita incomes are associated with high levels of economic development, and thus are expected to increase the share of IIT. The level of per capita income (GDPC) is also sometimes used as a proxy for the level of capital-labour ratio (supply perspective) (Helpman & Krugman, 1985), as well as a proxy for the ability to purchase better varieties and sophistication of differentiated products (demand perspective) (Lancaster, 1980).

We expect that the variable of factor endowments (GDPCAP) are negatively associated with successful price competition (category 1) and unsuccessful quality competition (category 4), whereas positively associated with unsuccessful price competition (category 2) and successful quality competition (category 3).

Foreign direct investment and multinational involvement

Rising IIT and increasing FDI are associated with increasing multinational activity, as firms locate parts of their production operations across countries (OECD, 2002). The empirical literature suggests a positive relationship between IIT and multinational firm activity but an ambiguous relationship between IIT patterns and FDI (Aturupane *et al*., 1999). Multinational firms and their FDI strategies play a pivotal role in fragmentation theory of international production and VIIT (Feenstra & Hanson, 1997; Fukao *et al*., 2003; Kimura, 2006). Several studies have empirically examined the effects of FDI on IIT and presuppose that it is strongly associated with the activity levels of multinational firms (Lee, 1992; Hu & Ma, 1999).

We expect that the variable of FDI are positively associated with successful price competition (category 1) and successful quality competition (category 3), whereas negatively associated with unsuccessful price competition (category 2) and unsuccessful quality competition (category 4).

Common border

The empirical estimates suggest that common border and preferential trade agreements (PTA) are positive and statistically significant for intra-industry trade

(Hirschberg *et al*., 1994). All of the estimates for distance are negative and for a common border and a PTA positive and statistically significant in agri-food sector (Meilke and Cranfield 2011).

Our prediction that common border are positively associated with successful price competition (category 1) and successful quality competition (category 3), whereas negatively associated with unsuccessful price competition (category 2) and unsuccessful quality competition (category 4).

R&D

Similarly as in the case of the economic size, we expect that the increase of expenditures for R&D leads to technological advancement (e.g. Dulleck et al., 2005) and thus has negative impacts on successful price competition (category 1) and unsuccessful quality competition (category 4), but has positive impacts on unsuccessful price competition (category 2) and particularly on successful quality competition (category 3).

4.3.2 Data source

Using a panel data analysis of fixed effects (FE) regressions employing generalized least squares, maximum-likelihood and generalized estimating equation approaches all selected determinants were computed. The intra-industry food trade competition categories are analyzed using detailed trade data from Eurostat for the years 1988-2011.This trade data sample consists of 100 items at five-digit level in the Standard International Trade Classification (SITC) system. Seven countries of EU were selected for analysis (Germany, France, Italy, Austria, UK, Belgium, Netherlands). From this dataset are calculated trade competition categories as the dependent variable Categoryit, which measures the share of a category i in total matched two-way agro-food trade. The data for the explanatory variables specified in equation (3) are collected from various data sources.

The main data source is Eurostat, OECD StatExtracts and ITC (International Trade Center). The gross domestic product (GDP) measure's the size of the economy and is defined as total GDP in billions of 1990 US$. The GDP per capita

(GDPCAP) is also a general proxy for the factor endowment. But it is also possible to use as a proxy for economic development. The GDPCAP is expressed in 1990 thousands US$ (converted at Geary Khamis PPPs). The total intramural R&D expenditure in agricultural sciences (RD) variable is expressed in millions of Euro, which is deflated by consumer price index. Foreign direct investment in agri-food sector is computed in millions of US dollar.

4.3.3 Econometric estimation results

We focus on economic drivers of trade competition catching up processes to explain the different paths of price and quality trade competition catching up processes. We estimate the model as specified in equation (7) using variables of natural, human and other factor endowments, economic development, labor productivity in agriculture, quality differentiated trade, and country specific effects. The Hausman test is used to check the general specification of the model, which again rejects the fixed effects (FE) model specification. Thus we employ random effects (RE) panel models that have been estimated employing generalized least squares, maximum-likelihood and generalized estimating equation approaches. We found the more robust results with the last generalized estimating equation approaches method, which results are reported in Table 4.4.3.

Table 4.4.3 Drivers of trade competition catching-up process in Central European agriculture (dependent variable $Category_{it}$, tested equation 7)

	Category 1 C+	Category 2C-	Category3 K+	Category4 K-
GDP per capita	-0.446***	0.042	-0.176***	-0.029***
Size of GDP (GDP)	-0.924***	-0.029	-0.797***	-0.054

FDI	0.256***	-0.104	0.446***	-0.020***
R&D expenditure (RD)	0.035	-0.009	0.130***	-0.006
Common border (CB)	0.778***	-0.030***	0.685***	0.087***
Number of observations	161	161	161	161

Note: * stands for significance at the 10% level (p-value < 0.1); ** significance at the 5% level (p-value ≤ 0.05); *** significance at the 1% level (p-value ≤ 0.01).

The empirical results of the econometric analysis are largely in line with theoretical models of VIIT and HIIT. As expected, the difference in economic size (GDP) coefficient is positive and statistically significant at the 1 per cent level for successful price competition and negative and statistically significant at the 1 per cent level for unsuccessful quality competition *a priori*. This result implies that, as countries differ in relative economic size and in relative factor endowments, the share of successful quality competition will be larger as the potential gains from trade in quality products are greater. This result confirms H-O trade type theories for VIIT, including the explanation of the fragmentation theory of international production for processed products (Feenstra & Hanson, 1997). As economic size, the results reveal that the FDI coefficient is positive and statistically significant at the 1 per cent level for successful price competition and negative and statistically significant at the 1 per cent level for unsuccessful quality competition. Thus, greater inward FDI for selected countries, *ceterus paribus,* tends to complement trade and consequently encourage VIIT with price and quality successful

competition. Next, the sign for the R&D increase successful price competition and quality. Common border positive related with successful price and quality competition, but also with unsuccessful quality competition.

Conclusions

The thesis has highlighted the main features and the empirical significance of intra-industry trade in agri-food sector within European Union. Starting from principal hypothesis of international trade theories was developed a model of intra-industry trade to empirically identify and investigate potential country- and industry- specific determinants of bilateral IIT patterns in European Union food industry.

On the ground of empirical and econometrical findings it is able to reach the following summary results:

a) the presence and intensity of intra-industry trade within European Union in food industry has been empirically measured and can largely be explained by founding members trade. Intra-industry food trade between these countries accounts for over 50 per cent of total intra-industry flows in EU-27. The dominance of VIIT over HIIT in the EU food industry can largely be explained by Neo-Hecksher-Ohlin type trade theories whereby countries of difference in economic and market size (price-income differences) reflecting factor endowment and technology differences tend to trade products that are differentiated by quality. By contrast, HIIT is relatively low in EU food industry and is largely supported by the theoretical models of Helpman & Krugman (1985) and Markusen & Venables (2000). These models predict that countries that are similar in terms of economic size tend to trade in goods that are differentiated by variety. It should be noted that significantly presence of intra-industry trade was demonstrated by calculation of coefficients at finest level of disaggregation food products in Standard International Trade Classification.

b) shares of intra-industry trade can be largely explained by vertical, while shares of VIIT are significantly in low and high quality nature from denoted

group of countries within European Union. Moreover, was determined that the main representative countries of intra-industry trade in their trade balance of food products have essentially successful price competition nature.

c) the unit values and trade balances have been used to differentiate between price and quality trade competition and the determinants of trade competition have been tested. We have found mixed results by selected countries, which indicate differences in agro-food trade competitiveness.

In conclusion, the essential presence of vertical intra-industry trade in agri-food sector of European Union significantly have a nature of successful price and quality competition, due to a large shares of representative countries in this trade. The quality competition improvements, where trade surplus have been achieved at high prices, indicates an improvements in quality advantages arising from investments in R&D, new technology improvements and food industry restructuring. The importance of successful price and quality competition is also increased by the level of economic development measured by GDP per capita indicating agri-food supply side adjustments from exports towards increasing domestic consumers' demands for higher-quality products caused by increasing domestic incomes. It has been expected that foreign direct investments (FDIs) play a significant role on price and quality advantages and thus to agri-food trade surplus at high price (successful quality competition). In general all findings predicts the Neo-H-O model, a perfectly competitive market is assumed and firms do not require increasing returns to scale in production to produce varieties of different qualities. The varieties of qualities are created by differences in factor intensities, human capital and physical capital. This implies that higher quality products are associated with higher prices since such products tend to have intensive capital requirements. On the demand side, higher income consumers tend to consume high quality products while low income consumers tend to consume lower quality products.

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Appendix1

Table 3.3.1 Aggregated data of agricultural primary products mainly for industrial use considered in analysis

00 LIVE ANIMALS OTHER THAN ANIMALS OF DIVISION 03
041 WHEAT (INCLUDING SPELT) AND MESLIN, UNMILLED
043 BARLEY, UNMILLED
044 MAIZE (NOT INCLUDING SWEET CORN), UNMILLED
07111 COFFEE, NOT ROASTED, NOT DECAFFEINATED
07210 COCOA BEANS, WHOLE OR BROKEN, RAW OR ROASTED
121 TOBACCO, UNMANUFACTURED; TOBACCO REFUSE
122 TOBACCO, MANUFACTURED (WHETHER OR NOT CONTAINING TOBACCO SUBSTITUTES)
248 WOOD, SIMPLY WORKED, AND RAILWAY SLEEPERS OF WOOD
29251 SUGAR BEET SEED
29252 SEEDS OF FORAGE PLANTS (OTHER THAN BEET SEED)
29253 SEEDS OF HERBACEOUS PLANTS CULTIVATED PRINCIPALLY FOR THEIR FLOWERS
29254 OTHER VEGETABLE SEEDS
29259 SEEDS, FRUIT AND SPORES, N.E.S.

SITC ver.3, eurostat database

Table 3.3.2 Aggregated data of agricultural primary products mainly for household consumption considered in analysis

011 MEAT OF BOVINE ANIMALS, FRESH, CHILLED OR FROZEN
012 OTHER MEAT AND EDIBLE MEAT OFFAL, FRESH, CHILLED OR FROZEN (EXCEPT MEAT AND MEAT OFFAL UNFIT OR UNSUITABLE FOR HUMAN CONSUMPTION)
025 EGGS, BIRDS', AND EGG YOLKS, FRESH, DRIED OR OTHERWISE PRESERVED, SWEETENED OR NOT; EGG ALBUMIN
042 RICE
05410 POTATOES, FRESH OR CHILLED (NOT INCLUDING SWEET POTATOES)
05440 TOMATOES, FRESH OR CHILLED
05451 ONIONS AND SHALLOTS, FRESH OR CHILLED
05452 GARLIC, LEEKS AND OTHER ALLIACEOUS VEGETABLES, FRESH OR CHILLED
05453 CABBAGE AND SIMILAR EDIBLE BRASSICAS, FRESH OR CHILLED
05454 LETTUCE AND CHICORY (INCLUDING ENDIVE), FRESH OR CHILLED
05455 CARROTS, TURNIPS, SALAD BEETROOT, SALSIFY, CELERIAC, RADISHES AND SIMILAR EDIBLE ROOTS, FRESH OR CHILLED
05456 CUCUMBERS AND GHERKINS, FRESH OR CHILLED
05457 LEGUMINOUS VEGETABLES, FRESH OR CHILLED
05458 MUSHROOMS AND TRUFFLES, FRESH OR CHILLED
05459 OTHER VEGETABLES, FRESH OR CHILLED
057 FRUIT AND NUTS (NOT INCLUDING OIL NUTS), FRESH OR DRIED
29261 BULBS, TUBERS, TUBEROUS ROOTS, CORMS, CROWNS AND RHIZOMES, DORMANT, IN GROWTH OR IN FLOWER; CHICORY PLANTS AND ROOTS (OTHER THAN ROOTS OF SUBGROUP 054.8)
29269 OTHER LIVE PLANTS (INCLUDING THEIR ROOTS), CUTTINGS AND SLIPS; MUSHROOM SPAWN
29271 CUT FLOWERS AND FLOWER BUDS OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES, FRESH, DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED

Table 3.3.3 Aggregated data of agricultural processed products mainly for industrial use considered in analysis

02221 MILK, IN SOLID FORM, OF A FAT CONTENT, BY WEIGHT, NOT EXCEEDING 1.5%
02222 MILK AND CREAM, IN SOLID FORM, OF A FAT CONTENT, BY WEIGHT, EXCEEDING 1.5%
02241 WHEY AND MODIFIED WHEY, WHETHER OR NOT CONCENTRATED OR CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER
02249 PRODUCTS CONSISTING OF NATURAL MILK CONSTITUENTS, N.E.S.
046 MEAL AND FLOUR OF WHEAT AND FLOUR OF MESLIN
05661 POTATOES PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID, FROZEN
05669 OTHER VEGETABLES AND MIXTURES OF VEGETABLES PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID, FROZEN
05671 VEGETABLES, FRUIT, NUTS AND OTHER EDIBLE PARTS OF PLANTS, PREPARED OR PRESERVED BY VINEGAR OR ACETIC ACID
05672 TOMATOES PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID, WHOLE OR IN PIECES.
05673 TOMATOES, PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID, N.E.S.
05674 MUSHROOMS AND TRUFFLES PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID
05675 SAUERKRAUT PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID, NOT FROZEN
05676 POTATOES PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID, NOT FROZEN
05677 SWEET CORN PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID
05679 OTHER VEGETABLES PREPARED OR PRESERVED OTHERWISE THAN BY VINEGAR OR ACETIC ACID, NOT FROZEN
05831 STRAWBERRIES
05832 RASPBERRIES, BLACKBERRIES, MULBERRIES, LOGANBERRIES, BLACK, WHITE OR RED CURRANTS AND GOOSEBERRIES
05839 OTHER
061 SUGARS, MOLASSES AND HONEY
07220 COCOA POWDER NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER
07231 ....NOT DEFATTED (LIQUOR)
07232 ....WHOLLY OR PARTLY DEFATTED (COCOA CAKE)
07240 COCOA BUTTER, FAT AND OIL
08119 VEGETABLE RESIDUES AND BY-PRODUCTS, VEGETABLE MATERIALS AND VEGETABLE WASTE, WHETHER OR NOT IN THE FORM OF PELLETS, OF A KIND USED FOR ANIMAL FOOD, N.E.S.
08194 WINE LEES; ARGOL
08195 DOG OR CAT FOOD, PUT UP FOR RETAIL SALE
08199 PREPARATIONS OF A KIND USED FOR ANIMAL FOOD, N.E.S.
41 ANIMAL OILS AND FATS
42 FIXED VEGETABLE FATS AND OILS, CRUDE, REFINED OR FRACTIONATED
43 ANIMAL OR VEGETABLE FATS AND OILS, PROCESSED; WAXES OF ANIMAL OR VEGETABLE ORIGIN; INEDIBLE MIXTURES OR PREPARATIONS OF ANIMAL OR VEGETABLE FATS OR OILS, N.E.S.

Table 3.3.4 Aggregated data of agricultural processed products mainly for household consumption considered in analysis

016 MEAT AND EDIBLE MEAT OFFAL, SALTED, IN BRINE, DRIED OR SMOKED; EDIBLE FLOURS AND MEALS OF MEAT OR MEAT OFFAL
017 MEAT AND EDIBLE MEAT OFFAL, PREPARED OR PRESERVED, N.E.S.
02221 MILK, IN SOLID FORM, OF A FAT CONTENT, BY WEIGHT, NOT EXCEEDING 1.5%
02223 MILK AND CREAM, NOT IN SOLID FORM, NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER
02224 MILK AND CREAM, NOT IN SOLID FORM, CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER
02231 YOGURT, WHETHER OR NOT CONCENTRATED OR CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER OR FLAVOURED OR CONTAINING ADDED FRUIT, NUTS OR COCOA
02232 BUTTERMILK, CURDLED MILK AND CREAM, KEPHIR AND OTHER FERMENTED OR ACIDIFIED MILK OR CREAM, WHETHER OR NOT CONCENTRATED OR CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER OR FLAVOURED OR CONTAINING ADDED FRUIT, NUTS OR COCOA
02233 ICE-CREAM AND OTHER EDIBLE ICE, WHETHER OR NOT CONTAINING COCOA
023 BUTTER AND OTHER FATS AND OILS DERIVED FROM MILK
024 CHEESE AND CURD
048 CEREAL PREPARATIONS AND PREPARATIONS OF FLOUR OR STARCH OF FRUITS OR VEGETABLES
05810 JAMS, FRUIT JELLIES, MARMALADES, FRUIT OR NUT PUR+E AND FRUIT OR NUT PASTES, BEING COOKED PREPARATIONS, WHETHER OR NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER, NOT INCLUDING HOMOGENIZED PREPARATIONS
05893 PINEAPPLES
05894 CITRUS FRUIT
05895 APRICOTS, CHERRIES AND PEACHES
05896 FRUITS OR EDIBLE PARTS OF PLANTS, N.E.S.
05897 MIXTURES OF FRUITS OR OTHER EDIBLE PARTS OF PLANTS, N.E.S.
059 FRUIT JUICES (INCLUDING GRAPE MUST) AND VEGETABLE JUICES, UNFERMENTED AND NOT CONTAINING ADDED SPIRIT, WHETHER OR NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER
062 SUGAR CONFECTIONERY
07120 COFFEE, ROASTED
07131 EXTRACTS, ESSENCES AND CONCENTRATES OF COFFEE, AND PREPARATIONS WITH A BASIS OF THESE EXTRACTS, ESSENCES OR CONCENTRATES OR WITH A BASIS OF COFFEE
07132 COFFEE HUSKS AND SKINS; COFFEE SUBSTITUTES CONTAINING COFFEE IN ANY PROPORTION
07133 ROASTED CHICORY AND OTHER ROASTED COFFEE SUBSTITUTES (NOT CONTAINING COFFEE) AND EXTRACTS, ESSENCES AND CONCENTRATES THEREOF
073 CHOCOLATE AND OTHER FOOD PREPARATIONS CONTAINING COCOA, N.E.S.
091 MARGARINE AND SHORTENING
098 EDIBLE PRODUCTS AND PREPARATIONS, N.E.S.
111 NON-ALCOHOLIC BEVERAGES, N.E.S.
112 ALCOHOLIC BEVERAGES
122 TOBACCO, MANUFACTURED (WHETHER OR NOT CONTAINING TOBACCO SUBSTITUTES)

Table 4.2.1 Share of vertical high quality intra-industry trade in total IIT, calculation of exports **Appendix 2**

Country\period	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Austria	0,0	0,0	0,0	0,0	0,0	0,0	0,0	8,6	11,2	15,5	21,1	20,6	53,3
BELGIUM	35,9	28,4	25,7	28,5	27,9	27,7	27,4	30,7	29,2	36,1	35,9	41,1	36,0
BULGARIA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	44,0	39,9
CYPRUS	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	12,5	14,5
CZECH REPUBLIC	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	50,1	35,7
GERMANY	20,9	20,0	22,5	19,3	19,9	19,1	19,5	29,3	23,7	20,9	19,5	23,9	20,0
DENMARK	31,6	33,7	56,8	56,9	35,7	48,5	52,2	43,7	49,5	51,5	48,6	53,5	56,6
ESTONIA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	28,4	41,4
SPAIN	28,6	14,7	26,1	17,6	16,7	20,1	26,0	28,9	25,2	21,5	24,5	26,7	39,4
FINLAND	0,0	0,0	0,0	0,0	0,0	0,0	0,0	24,3	14,1	11,6	15,0	15,0	14,2
FRANCE	23,3	45,7	50,7	50,7	53,8	57,5	52,3	48,9	39,2	44,3	39,7	39,1	37,4
UNITED KINGDOM	41,0	39,5	45,1	47,4	47,2	38,5	37,9	31,3	36,6	37,9	42,7	35,4	37,6
GREECE	4,7	5,9	8,3	9,6	8,0	38,1	40,5	46,4	17,6	15,6	39,5	22,5	24,3
HUNGARY	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	53,8	29,4
IRELAND	39,0	46,7	40,1	46,1	44,9	50,9	56,1	48,8	48,9	46,4	42,4	45,8	44,8
LITHUANIA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	56,0	63,5
LUXEMBOURG	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	36,8	20,9
LATVIA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	25,1	21,7
MALTA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	32,2	25,7
NETHERLANDS	28,5	37,0	28,3	19,6	19,4	32,6	28,0	24,4	24,9	30,4	31,4	50,3	45,6
POLAND	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	45,8	48,4
PORTUGAL	11,7	71,1	37,2	31,9	17,1	38,1	47,7	51,1	34,7	41,3	37,5	26,7	23,1
ROMANIA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	33,9	27,5
SWEDEN	0,0	0,0	0,0	0,0	0,0	0,0	0,0	30,5	40,9	36,3	43,3	32,0	36,2
SLOVENIA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	18,8	36,9
SLOVAKIA	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	41,1	45,4
ITALY	39,2	41,9	44,7	46,4	44,8	46,5	47,6	49,8	51,6	54,7	52,6	43,8	48,9

Table 4.2.1 Share of vertical high quality intra-industry trade in total IIT, calculation of exports (continue)

Country\Period	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Austria	56,6	23,1	19,2	26,8	27,0	28,5	22,1	20,0	28,2	21,2	37,3
BELGIUM	36,1	33,3	38,4	39,7	40,1	35,3	31,4	34,6	38,5	38,1	38,1
BULGARIA	34,6	30,5	31,7	45,4	55,7	32,0	38,8	34,8	38,0	40,9	34,7
CYPRUS	9,8	13,7	21,9	63,3	71,7	81,2	76,8	77,0	85,6	87,9	83,7
CZECH REPUBLIC	36,8	37,3	40,9	37,9	32,8	37,8	30,5	32,2	28,1	33,0	34,7
GERMANY	18,6	24,5	22,6	20,4	20,9	23,0	21,6	23,8	25,1	24,2	25,1
DENMARK	56,7	59,0	61,2	55,4	51,9	42,5	53,2	50,9	41,6	44,9	51,3
ESTONIA	23,3	22,4	22,5	34,8	37,5	31,0	39,6	28,9	27,3	33,3	22,7
SPAIN	27,5	22,3	33,3	25,1	30,6	28,6	33,3	31,8	28,0	27,8	31,3
FINLAND	16,3	15,7	21,9	25,8	18,3	27,5	17,1	24,1	29,5	22,1	23,3
FRANCE	36,9	39,5	44,1	39,4	41,0	45,8	52,8	50,4	49,7	47,0	41,8
UNITED KINGDOM	38,9	50,7	49,9	52,5	42,3	47,3	43,5	45,6	43,9	52,0	46,8
GREECE	12,3	23,6	17,3	33,7	39,6	34,9	40,8	35,6	36,4	44,1	41,3
HUNGARY	40,0	46,2	45,3	52,9	56,3	57,4	62,4	56,6	48,7	49,0	47,0
IRELAND	49,0	36,3	37,8	36,7	45,9	29,0	45,6	43,7	32,7	52,3	58,6
LITHUANIA	50,4	43,7	35,8	24,4	23,5	28,5	32,5	36,0	26,7	29,6	27,3
LUXEMBOURG	20,2	10,7	21,7	8,8	12,7	12,7	37,6	38,7	33,4	52,1	42,5
LATVIA	16,4	13,8	24,1	23,2	22,1	28,0	23,6	22,3	38,4	25,4	28,1
MALTA	4,4	52,8	48,9	6,6	31,5	11,4	4,0	19,7	34,9	8,1	32,0
NETHERLANDS	38,7	46,2	42,6	44,2	41,2	35,9	37,6	32,1	49,8	47,7	47,3
POLAND	42,6	45,6	38,6	34,0	41,7	41,8	37,7	30,7	31,2	35,7	39,8
PORTUGAL	27,0	47,5	32,7	39,0	50,9	37,7	25,1	33,1	43,6	33,9	33,7
ROMANIA	35,3	33,8	25,7	26,2	20,4	29,5	45,6	27,7	38,3	50,3	42,4
SWEDEN	36,5	36,9	47,5	49,4	50,5	47,3	46,2	42,3	42,8	41,9	46,4
SLOVENIA	34,3	37,4	21,1	20,6	35,7	37,0	30,7	32,3	39,9	49,8	42,8
SLOVAKIA	29,5	31,8	38,0	62,3	49,2	47,7	46,4	52,4	48,4	42,1	43,3
ITALY	52,5	57,9	53,7	56,3	61,2	63,0	58,7	61,5	62,4	57,8	60,6

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption), 201 **Appendix 3**

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
HAMS, SHOULDERS AND CUTS THEREOF, WITH BONE IN	0,00	0,02	0,00	0,00	0,00	0,00	0,00	0,00	0,17	0,00	0,05	0,02	0,00
BELLIES (STREAKY) AND CUTS THEREOF	0,04	0,05	0,00	0,00	0,01	0,05	0,00	0,00	0,01	0,00	0,00	0,02	0,00
OTHER	0,98	0,04	0,00	0,00	0,00	0,06	0,03	0,00	0,22	0,00	0,06	0,03	0,00
MEAT OF BOVINE ANIMALS	0,00	0,00	0,00	0,00	0,01	0,01	0,00	0,00	0,00	0,00	0,02	0,01	0,00
OTHER, INCLUDING EDIBLE FLOURS AND MEALS OF MEAT OR MEAT OFFAL	0,01	0,02	0,00	0,00	1,30	0,02	0,00	0,00	0,13	0,00	0,04	0,18	0,00
EXTRACTS AND JUICES OF MEAT, FISH OR CRUSTACEANS, MOLLUSCS OR OTHER AQUATIC INVERTEBRATES	0,00	0,05	0,00	0,00	0,00	0,01	0,05	0,09	0,01	0,00	0,01	0,02	0,00
SAUSAGES AND SIMILAR PRODUCTS, OF MEAT, MEAT OFFAL OR BLOOD; FOOD PREPARATIONS BASED ON THESE PRODUCTS	0,44	0,01	0,04	0,00	0,28	0,44	0,21	0,00	4,48	0,01	0,87	0,16	0,01
LIVER OF ANY ANIMAL, PREPARED OR PRESERVED, N.E.S.	0,00	0,31	0,77	0,00	0,00	0,01	0,00	0,02	0,00	0,00	0,37	0,02	0,00
MEAT AND OFFAL (OTHER THAN LIVER) OF POULTRY OF SUBGROUP 001.4, PREPARED OR PRESERVED, N.E.S.	0,11	1,31	0,18	0,00	0,02	0,87	0,02	0,02	0,00	0,00	0,11	2,34	0,19
MEAT AND OFFAL (OTHER THAN LIVER),	1,37	0,14	0,36	0,01	1,07	0,64	0,18	0,83	0,71	0,00	0,53	0,04	0,04

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
MEAT AND OFFAL (OTHER THAN LIVER), OF BOVINE ANIMALS, PREPARED OR PRESERVED, N.E.S.	0,07	0,12	0,00	0,00	0,00	0,11	0,01	0,97	0,05	0,00	0,11	0,59	0,02
OTHER PREPARED OR PRESERVED MEAT OR MEAT OFFAL (INCLUDING PREPARATIONS OF BLOOD OF ANY ANIMAL)	0,01	0,08	0,01	0,00	0,03	0,02	0,00	0,02	0,04	0,00	0,03	0,01	0,03
MILK, IN SOLID FORM, OF A FAT CONTENT, BY WEIGHT, NOT EXCEEDING 1.5%	0,04	0,35	0,10	0,00	0,00	0,15	0,52	0,00	0,13	0,00	0,31	0,27	0,00
MILK AND CREAM, NOT IN SOLID FORM, NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,32	0,08	0,00	0,40	0,14	0,00	0,00	0,55	0,00	0,01	0,00	0,00
MILK AND CREAM, NOT IN SOLID FORM, CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,01	0,11	0,00	0,00	0,17	0,04	0,00	0,00	0,03	0,00	0,00	0,10	0,00
YOGURT, WHETHER OR NOT CONCENTRATED OR CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER OR FLAVOURED OR CONTAINING ADDED FRUIT, NUTS OR COCOA	0,19	0,04	1,95	0,00	0,00	0,17	0,04	0,00	0,00	0,00	0,00	0,74	1,01

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
BUTTERMILK, CURDLED MILK AND CREAM, KEPHIR AND OTHER FERMENTED OR ACIDIFIED MILK OR CREAM, WHETHER OR NOT CONCENTRATED OR CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER OR FLAVOURED OR CONTAINING ADDED FRUIT, NUTS OR COCOA	0,01	0,09	0,00	0,00	0,78	0,47	0,07	0,06	0,00	0,02	0,48	0,01	0,10
ICE-CREAM AND OTHER EDIBLE ICE, WHETHER OR NOT CONTAINING COCOA	0,02	0,09	0,08	0,00	0,84	0,31	0,54	0,00	2,10	0,93	1,16	1,02	0,22
BUTTER AND OTHER FATS AND OILS DERIVED FROM MILK; DAIRY SPREADS	0,01	0,10	0,02	0,00	0,29	0,13	0,53	0,02	0,49	0,00	0,53	0,29	0,06
GRATED OR POWDERED CHEESE, OF ALL KINDS	0,17	0,00	0,01	0,00	0,00	0,04	1,33	0,00	0,28	0,00	0,36	0,02	0,08
PROCESSED CHEESE, NOT GRATED OR POWDERED	0,08	0,21	0,00	0,00	0,00	0,00	0,21	0,10	0,00	0,03	0,62	0,06	0,00
BLUE-VEINED CHEESE AND OTHER CHEESE CONTAINING VEINS PRODUCED BY PENICILLIUM ROQUEFORTI	0,00	0,01	0,00	0,00	0,09	0,00	1,13	0,01	0,00	0,00	0,27	0,01	0,00
FRESH (UNRIPENED OR UNCURED) CHEESE, INCLUDING WHEY CHEESE, AND CURD	1,41	0,30	0,15	0,00	0,45	0,00	7,89	0,00	0,02	0,06	0,46	1,08	0,03
OTHER CHEESE	6,22	0,58	0,13	69,94	1,37	0,04	13,25	0,97	1,69	0,01	10,08	1,44	21,82
PREPARED FOODS OBTAINED BY THE SWELLING OR ROASTING OF CEREALS OR CEREAL PRODUCTS AND FROM UNROASTED CEREAL FLAKES OR FROM MIXTURES OF UNROASTED AND ROASTED CEREAL FLAKES OR SWELLED CEREALS	0,79	1,10	0,10	0,00	0,47	0,08	0,27	0,00	1,48	0,40	1,23	1,86	0,01

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
CEREALS OTHER THAN MAIZE (CORN), IN GRAIN FORM, PRECOOKED OR OTHERWISE PREPARED	0,02	0,01	0,00	0,00	0,01	0,07	0,00	0,00	0,02	0,01	0,03	0,07	0,04
OTHER ROLLED OR FLAKED CEREAL GRAINS, EXCEPT RICE OF SUBGROUP 042.3	0,05	0,00	0,00	0,00	0,03	0,10	0,05	0,00	0,06	0,01	0,00	0,07	0,00
OTHER WORKED CEREAL GRAINS (E.G., HULLED, PEARLED, CLIPPED, SLICED OR KIBBLED), EXCEPT RICE OF SUBGROUP 042.3	0,03	0,03	0,00	0,00	0,02	0,03	0,00	0,00	0,04	0,00	0,00	0,01	0,00
GERM OF CEREALS, WHOLE, ROLLED, FLAKED OR GROUND	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,04	0,00	0,00	0,02	0,00
MALT, WHETHER OR NOT ROASTED (INCLUDING MALT FLOUR)	0,02	0,01	0,00	0,00	0,09	0,07	0,00	0,15	0,06	0,00	0,00	0,04	0,00
MACARONI, SPAGHETTI AND SIMILAR PRODUCTS (PASTA), UNCOOKED, NOT STUFFED OR OTHERWISE PREPARED	1,64	0,00	0,00	0,00	0,72	0,04	0,05	0,01	0,15	0,01	0,06	0,02	0,04
CRISPBREAD, RUSKS, TOASTED BREAD AND SIMILAR PRODUCTS	0,01	0,08	0,00	0,88	0,08	0,10	0,01	0,02	0,07	0,30	0,09	0,12	1,62
SWEET BISCUITS, WAFFLES AND WAFERS, GINGERBREAD AND THE LIKE	0,94	0,60	3,73	0,00	2,24	1,08	1,03	0,10	1,03	0,18	1,85	0,51	0,25
OTHER	0,70	6,23	1,30	0,00	1,81	2,97	2,08	0,04	0,46	0,67	0,16	4,16	0,56

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
JAMS, FRUIT JELLIES, MARMALADES, FRUIT OR NUT PUR+E AND FRUIT OR NUT PASTES, BEING COOKED PREPARATIONS, WHETHER OR NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER, NOT INCLUDING HOMOGENIZED PREPARATIONS	1,00	0,04	0,08	0,13	0,36	0,39	0,05	0,12	0,01	0,22	0,84	0,40	0,00
NUTS, GROUNDNUTS AND OTHER SEEDS, N.E.S.	0,11	0,04	0,05	0,08	0,35	0,75	0,00	0,00	0,14	0,10	0,08	0,01	0,29
PINEAPPLES	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,04	0,05	0,01	0,02	0,02
CITRUS FRUIT	0,03	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,04	0,00	0,04	0,00	0,00
APRICOTS, CHERRIES AND PEACHES	0,38	0,01	9,04	0,00	0,00	0,02	0,02	0,00	0,00	0,00	0,05	0,00	0,00
FRUITS OR EDIBLE PARTS OF PLANTS, N.E.S.	0,37	0,23	0,68	0,00	0,32	0,18	0,03	0,00	0,06	0,06	0,44	0,14	0,03
MIXTURES OF FRUITS OR OTHER EDIBLE PARTS OF PLANTS, N.E.S.	0,17	0,13	0,00	0,00	0,00	0,10	0,07	0,00	0,00	0,00	0,09	0,13	0,00
ORANGE JUICE	0,27	3,22	0,00	0,00	0,04	0,02	0,00	0,03	0,00	0,00	0,22	0,28	0,29
GRAPEFRUIT JUICE	0,00	0,00	0,00	0,09	0,00	0,00	0,00	0,00	0,02	0,00	0,00	0,00	0,01

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
JUICE OF ANY OTHER SINGLE CITRUS FRUIT	0,00	0,00	0,00	0,00	0,01	0,01	0,00	0,00	0,00	0,00	0,01	0,00	0,06
PINEAPPLE JUICE	0,13	0,02	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,00
TOMATO JUICE	0,01	0,01	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00
GRAPE JUICE (INCLUDING GRAPE MUST)	0,00	0,01	0,00	0,00	0,02	0,04	0,00	0,00	0,00	0,00	0,00	0,00	0,01
APPLE JUICE	2,25	0,00	1,21	0,00	0,35	0,00	0,00	0,02	0,21	0,00	0,02	0,03	0,00
JUICE OF ANY OTHER SINGLE FRUIT OR VEGETABLE	1,49	0,06	0,00	1,20	0,05	0,13	0,28	0,01	0,04	0,22	0,11	0,14	0,04
MIXTURES OF FRUIT OR VEGETABLE JUICES	0,22	0,00	0,00	0,00	0,09	0,04	0,04	0,03	0,00	0,00	0,00	0,10	0,00
VEGETABLES, FRUIT, NUTS, FRUIT-PEEL AND OTHER PARTS OF PLANTS, PRESERVED BY SUGAR (DRAINED, GLACE OR CRYSTALLISED)	0,03	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02	0,01	0,01
CHEWING-GUM, WHETHER OR NOT SUGAR-COATED	0,00	0,00	0,00	0,00	0,03	0,00	0,13	0,01	0,00	0,00	0,01	0,08	0,05

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
OTHER	0,05	0,07	0,48	0,00	1,00	0,42	0,04	1,17	2,20	2,81	0,51	0,91	2,21
COFFEE, ROASTED	0,23	0,62	7,84	0,00	4,27	0,02	0,66	0,32	1,96	0,94	2,03	1,56	0,19
EXTRACTS, ESSENCES AND CONCENTRATES OF COFFEE, AND PREPARATIONS WITH A BASIS OF THESE EXTRACTS, ESSENCES OR CONCENTRATES OR WITH A BASIS OF COFFEE	0,05	0,07	0,48	0,00	0,65	1,49	0,02	0,00	1,38	0,00	0,76	0,97	0,00
COFFEE HUSKS AND SKINS; COFFEE SUBSTITUTES CONTAINING COFFEE IN ANY PROPORTION	0,00	0,00	0,73	0,00	0,00	0,00	0,00	0,08	0,00	0,00	0,00	0,00	0,00
ROASTED CHICORY AND OTHER ROASTED COFFEE SUBSTITUTES (NOT CONTAINING COFFEE) AND EXTRACTS, ESSENCES AND CONCENTRATES THEREOF	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,13	0,00	0,00	0,00	0,00
COCOA POWDER CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,01	0,00	0,00	0,00	0,03	0,02	0,00	0,06	0,00	0,01	0,00	0,01
OTHER FOOD PREPARATIONS CONTAINING COCOA, IN BLOCKS, SLABS OR BARS WEIGHING MORE THAN 2 KG OR IN LIQUID, PASTE, POWDER, GRANULAR OR OTHER BULK FORM IN CONTAINERS OR IMMEDIATE PACKINGS OF A CONTENT EXCEEDING 2 KG.	0,00	1,29	0,00	0,00	0,00	0,13	0,07	0,05	0,03	0,02	0,56	0,08	0,01

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
OTHER FOOD PREPARATIONS CONTAINING COCOA, IN BLOCKS, SLABS OR BARS, WHETHER OR NOT FILLED	0,00	0,12	0,75	0,00	0,56	2,04	0,62	1,02	0,04	0,00	0,59	0,34	0,19
OTHER CHOCOLATE AND FOOD PREPARATIONS CONTAINING COCOA N.E.S.	0,07	6,41	1,81	0,00	2,74	0,86	1,66	0,03	1,21	3,40	1,47	0,74	0,47
MARGARINE (EXCLUDING LIQUID MARGARINE)	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,02	2,09	0,10	0,07	0,00
OTHER	0,44	0,00	0,02	0,00	0,19	0,01	0,74	0,00	0,05	0,26	0,09	0,41	0,00
HOMOGENIZED PREPARATIONS FROM MEAT AND EDIBLE MEAT OFFAL	0,00	0,01	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,02	0,00	0,00	0,00
HOMOGENIZED VEGETABLES	0,00	0,00	0,03	0,00	0,01	0,00	0,00	0,00	0,02	0,55	0,01	0,01	0,01
COOKED FRUIT PREPARATIONS, HOMOGENIZED	0,00	0,01	0,00	0,04	0,01	0,04	0,00	0,00	0,00	0,00	0,07	0,03	0,00
HOMOGENIZED COMPOSITE FOOD PREPARATIONS	0,00	0,10	0,02	0,00	0,01	0,01	0,00	0,00	0,17	0,00	0,05	0,00	0,15
SOYA SAUCE	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,03	0,00

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
TOMATO KETCHUP AND OTHER TOMATO SAUCES	0,01	0,16	0,00	0,00	0,06	0,11	0,01	0,04	0,00	0,00	0,00	0,20	0,03
MUSTARD FLOUR AND MEAL AND PREPARED MUSTARD	0,07	0,03	0,00	0,00	0,02	0,00	0,06	0,03	0,00	0,00	0,09	0,01	0,00
VINEGAR AND SUBSTITUTES FOR VINEGAR OBTAINED FROM ACETIC ACID	0,07	0,02	0,00	0,00	0,08	0,01	0,01	0,01	0,01	0,00	0,05	0,03	0,01
OTHER SAUCES AND PREPARATIONS THEREFOR; MIXED CONDIMENTS AND MIXED SEASONINGS	1,11	0,50	0,01	0,00	0,18	0,90	0,06	1,11	1,47	2,04	0,28	2,26	0,05
SOUPS AND BROTHS AND PREPARATIONS THEREFOR	0,15	0,05	0,01	0,00	0,21	0,36	0,17	0,00	0,46	0,04	0,13	0,36	0,00
YEASTS (ACTIVE OR INACTIVE); OTHER SINGLE-CELL MICRO-ORGANISMS, DEAD (BUT NOT INCLUDING VACCINES OF HEADING 541.63); PREPARED BAKING-POWDERS	0,09	0,29	0,02	0,02	0,06	0,05	1,20	1,56	0,01	0,03	0,12	0,31	0,06
PASTA, COOKED OR STUFFED; COUSCOUS, WHETHER OR NOT PREPARED	0,31	0,56	0,00	0,50	0,05	0,06	0,07	0,20	0,10	0,00	0,00	0,09	0,01
EDIBLE PRODUCTS OF ANIMAL ORIGIN, N.E.S.	0,00	0,00	0,09	0,00	0,02	0,00	0,00	0,00	0,02	0,00	0,02	0,00	0,00

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
FOOD PREPARATIONS FOR INFANT USE, PUT UP FOR RETAIL SALE OF FLOUR, MEAL, STARCH OR MALT EXTRACT	0,06	0,01	0,00	0,00	0,22	0,31	0,00	0,00	0,00	0,00	0,38	0,03	0,00
MALT EXTRACT; FOOD PREPARATIONS OF FLOUR, MEAL, STARCH OR MALT EXTRACT	0,46	1,59	0,06	0,00	0,00	0,32	1,04	0,02	0,65	0,00	0,68	0,03	0,23
OTHER FOOD PREPARATIONS	0,54	1,88	1,34	5,91	4,46	1,06	5,14	1,82	2,76	0,19	4,22	7,03	3,35
WATERS, INCLUDING NATURAL OR ARTIFICIAL MINERAL WATERS AND AERATED WATERS, NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER NOR FLAVOURED; ICE AND SNOW.	0,00	0,24	0,01	0,00	0,70	0,07	0,27	0,04	0,00	0,01	0,10	0,06	0,00
WATERS (INCLUDING MINERAL WATERS AND AERATED WATERS) CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER OR FLAVOURED, AND OTHER NON-ALCOHOLIC BEVERAGES, N.E.S.	15,03	1,96	0,17	3,70	0,04	0,65	3,09	0,47	0,04	0,53	1,16	1,78	0,00
GRAPE MUST IN FERMENTATION OR WITH FERMENTATION ARRESTED OTHERWISE THAN BY THE ADDITION OF ALCOHOL.	0,00	0,00	0,02	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
VERMOUTH AND OTHER WINES OF FRESH GRAPES FLAVOURED WITH PLANTS OR AROMATIC SUBSTANCES.	0,01	0,00	0,09	0,00	0,00	0,00	0,03	0,00	0,00	0,01	0,05	0,00	0,00
SPARKLING WINE	0,09	0,00	0,00	0,00	0,04	0,03	0,10	0,46	0,00	0,28	1,91	0,05	0,01
WINE OF FRESH GRAPES (OTHER THAN SPARKLING WINE); GRAPE MUST WITH FERMENTATION PREVENTED OR ARRESTED BY THE ADDITION OF ALCOHOL	0,14	0,00	0,00	0,00	1,54	0,39	1,51	0,00	0,00	0,00	0,38	1,86	0,07
FERMENTED BEVERAGES, N.E.S. (E.G., CIDER, PERRY, MEAD); MIXTURES OF FERMENTED	0,00	0,01	0,00	0,00	0,01	0,12	0,20	0,00	0,00	3,36	0,10	0,16	0,00
BEER MADE FROM MALT (INCLUDING ALE, STOUT AND PORTER)	0,22	3,67	0,42	1,01	0,61	0,29	0,07	3,05	0,46	1,92	0,26	8,00	0,00
WHISKIES	0,04	0,02	0,12	0,17	0,03	0,26	0,32	1,06	0,02	0,27	0,20	0,00	0,02
SPIRITS OBTAINED BY DISTILLING GRAPE WINE OR GRAPE MARC	0,01	0,01	0,02	0,00	0,14	0,07	0,13	1,35	0,40	1,05	0,22	0,07	0,00
COMPOUND ALCOHOLIC PREPARATIONS OF A KIND USED FOR THE MANUFACTURE OF BEVERAGES	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
RUM AND OTHER SPIRITS OBTAINED BY DISTILLING FERMENTED SUGAR CANE	0,02	0,00	0,00	0,00	0,03	0,46	0,07	0,29	0,01	0,11	0,02	0,04	0,01

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
GIN AND GENEVA	0,00	0,00	0,00	0,00	0,03	0,05	0,03	0,05	0,01	0,00	0,00	0,44	0,00
SPIRITS AND DISTILLED ALCOHOLIC BEVERAGES, N.E.S.	0,80	0,00	0,05	0,00	1,57	0,84	1,83	3,20	1,85	0,02	1,00	1,25	0,32
CIGARS, CHEROOTS AND CIGARILLOS, CONTAINING TOBACCO	0,00	0,00	0,00	0,00	0,00	0,03	0,84	0,03	0,15	0,00	0,00	0,01	0,00
CIGARETTES CONTAINING TOBACCO	0,03	0,05	0,00	0,00	0,52	2,61	0,00	1,53	0,00	0,00	0,00	0,03	3,33
CIGARS, CHEROOTS, CIGARILLOS AND CIGARETTES, OF TOBACCO SUBSTITUTES	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
SMOKING TOBACCO, WHETHER OR NOT CONTAINING TOBACCO SUBSTITUTES IN ANY PROPORTION.	0,00	0,55	0,01	0,00	0,00	0,36	0,10	0,00	0,00	0,00	0,00	0,35	0,00
MANUFACTURED TOBACCO, EXTRACTS AND ESSENCES, N.E.S.	0,00	0,20	0,00	0,00	0,00	0,21	0,01	0,00	0,46	0,00	0,04	0,26	0,00

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
HAMS, SHOULDERS AND CUTS THEREOF, WITH BONE IN	0,00	0,00	0,00	0,01	0,01	0,00	0,00	0,66	0,00	0,00	0,04	0,01	0,06
BELLIES (STREAKY) AND CUTS THEREOF	0,00	0,02	0,00	0,06	0,00	0,00	0,00	0,02	0,00	0,00	0,04	0,02	0,17
OTHER	0,00	0,00	0,00	0,00	0,03	0,00	0,00	0,18	0,00	0,00	0,37	0,27	2,77
MEAT OF BOVINE ANIMALS	0,00	0,03	0,00	0,01	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,10
OTHER, INCLUDING EDIBLE FLOURS AND MEALS OF MEAT OR MEAT OFFAL	0,00	0,00	0,13	0,00	0,00	0,71	0,00	0,00	0,00	0,00	0,00	0,00	0,00
EXTRACTS AND JUICES OF MEAT, FISH OR CRUSTACEANS, MOLLUSCS OR OTHER AQUATIC INVERTEBRATES	0,00	0,01	0,00	0,01	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00
SAUSAGES AND SIMILAR PRODUCTS, OF MEAT, MEAT OFFAL OR BLOOD; FOOD PREPARATIONS BASED ON THESE PRODUCTS	5,39	0,00	0,52	0,40	0,93	0,00	0,03	0,28	0,26	0,51	0,00	1,28	2,58

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
LIVER OF ANY ANIMAL, PREPARED OR PRESERVED, N.E.S.	0,02	0,03	0,00	0,02	0,02	0,00	0,00	0,00	0,10	0,01	0,21	0,00	0,00
MEAT AND OFFAL (OTHER THAN LIVER) OF POULTRY OF SUBGROUP 001.4, PREPARED OR PRESERVED, N.E.S.	4,84	0,13	0,62	0,00	0,74	0,71	0,00	0,00	0,36	0,36	15,70	0,95	0,04
MEAT AND OFFAL (OTHER THAN LIVER), OF SWINE, PREPARED OR PRESERVED, N.E.S.	0,22	5,72	0,29	0,02	0,00	0,22	0,00	0,02	0,12	0,61	0,08	0,28	0,96
MEAT AND OFFAL (OTHER THAN LIVER), OF BOVINE ANIMALS, PREPARED OR PRESERVED, N.E.S.	0,00	0,05	0,02	0,02	0,00	0,21	0,00	0,04	0,01	0,53	2,09	0,05	0,04
OTHER PREPARED OR PRESERVED MEAT OR MEAT OFFAL (INCLUDING PREPARATIONS OF BLOOD OF ANY ANIMAL)	0,01	0,13	0,02	0,01	0,00	0,05	0,07	0,01	0,01	0,00	0,00	0,02	0,01
MILK, IN SOLID FORM, OF A FAT CONTENT, BY WEIGHT, NOT EXCEEDING 1.5%	0,01	1,31	0,85	0,00	0,11	0,02	0,04	0,69	0,02	0,00	0,00	0,17	0,09
MILK AND CREAM, NOT IN SOLID FORM, NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,01	0,03	0,00	0,00	0,16	0,02	0,25	0,01	0,00	0,00	0,00	0,00
MILK AND CREAM, NOT IN SOLID FORM, CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,01	0,05	0,00	0,23	0,08	0,00	0,00	0,00	0,00	0,00	0,00	0,01

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
YOGURT, WHETHER OR NOT CONCENTRATED OR CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER OR FLAVOURED OR CONTAINING ADDED FRUIT, NUTS OR COCOA	0,03	0,64	0,00	0,00	0,34	0,08	0,00	0,65	0,02	0,16	0,00	0,01	0,03
BUTTERMILK, CURDLED MILK AND CREAM, KEPHIR AND OTHER FERMENTED OR ACIDIFIED MILK OR CREAM, WHETHER OR NOT CONCENTRATED OR CONTAINING	0,01	0,30	0,11	0,00	0,54	0,03	0,58	0,00	0,01	0,04	0,00	0,03	0,03
ICE-CREAM AND OTHER EDIBLE ICE, WHETHER OR NOT CONTAINING COCOA	7,40	0,42	1,22	0,03	0,31	1,00	0,32	2,38	0,01	0,44	6,04	0,05	2,68
BUTTER AND OTHER FATS AND OILS DERIVED FROM MILK; DAIRY SPREADS	0,08	8,60	0,00	0,00	0,12	2,03	0,00	0,00	0,23	0,00	0,02	0,00	0,01
GRATED OR POWDERED CHEESE, OF ALL KINDS	0,00	0,01	0,01	0,28	0,03	0,55	0,00	0,00	0,00	0,00	0,00	0,00	0,75
PROCESSED CHEESE, NOT GRATED OR POWDERED	0,40	0,29	0,08	0,00	0,00	0,02	0,39	0,01	0,00	0,36	0,00	0,00	0,00
BLUE-VEINED CHEESE AND OTHER CHEESE CONTAINING VEINS PRODUCED BY PENICILLIUM ROQUEFORTI	0,00	0,02	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,02	0,00	0,00	0,06

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
FRESH (UNRIPENED OR UNCURED) CHEESE, INCLUDING WHEY CHEESE, AND CURD	0,21	0,01	0,60	0,00	2,12	0,24	1,00	0,00	0,06	0,60	0,00	1,81	5,19
OTHER CHEESE	0,13	14,32	0,69	0,49	2,39	9,70	0,64	0,31	0,94	1,04	0,00	2,68	10,85
PREPARED FOODS OBTAINED BY THE SWELLING OR ROASTING OF CEREALS OR CEREAL PRODUCTS AND FROM UNROASTED CEREAL FLAKES OR FROM MIXTURES OF UNROASTED AND ROASTED CEREAL FLAKES OR SWELLED CEREALS	0,08	0,00	0,14	0,01	0,57	0,22	1,52	0,00	0,59	0,00	0,08	0,23	0,01
CEREALS OTHER THAN MAIZE (CORN), IN GRAIN FORM, PRECOOKED OR OTHERWISE PREPARED	0,00	0,00	0,10	0,00	0,01	0,07	0,04	0,00	0,35	0,05	0,00	0,02	0,02
OTHER ROLLED OR FLAKED CEREAL GRAINS, EXCEPT RICE OF SUBGROUP 042.3	0,00	0,00	0,02	0,00	0,52	0,02	0,00	0,00	0,00	0,03	0,00	0,04	0,01
OTHER WORKED CEREAL GRAINS (E.G., HULLED, PEARLED, CLIPPED, SLICED OR KIBBLED), EXCEPT RICE OF SUBGROUP 042.3	0,00	0,01	0,27	0,05	0,13	0,15	0,00	0,00	0,00	0,01	0,00	0,03	0,12
GERM OF CEREALS, WHOLE, ROLLED, FLAKED OR GROUND	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
MALT, WHETHER OR NOT ROASTED (INCLUDING MALT FLOUR)	0,05	0,08	0,79	0,00	0,00	0,05	0,00	0,00	0,00	0,04	0,00	0,00	0,00
MACARONI, SPAGHETTI AND SIMILAR PRODUCTS (PASTA), UNCOOKED, NOT STUFFED OR OTHERWISE PREPARED	0,00	0,04	0,00	0,34	0,25	0,14	0,02	0,00	0,05	0,06	1,93	0,04	0,14
CRISPBREAD, RUSKS, TOASTED BREAD AND SIMILAR PRODUCTS	0,01	0,00	0,05	0,05	0,15	0,07	0,01	1,40	0,01	0,27	0,00	0,01	0,49
SWEET BISCUITS, WAFFLES AND WAFERS, GINGERBREAD AND THE LIKE	0,53	0,00	1,91	0,10	2,34	0,08	0,25	1,61	0,29	2,34	1,31	5,01	0,72
OTHER	2,85	0,13	1,90	0,00	0,00	3,02	3,14	0,00	2,35	8,69	0,06	2,10	9,24
MIXES AND DOUGHS FOR THE PREPARATION OF BAKERS' WARES OF SUBGROUP 048.4	0,07	0,00	0,11	0,11	0,19	0,00	0,05	0,05	0,00	0,32	0,94	0,16	0,19
JAMS, FRUIT JELLIES, MARMALADES, FRUIT OR NUT PUR+E AND FRUIT OR NUT PASTES, BEING COOKED PREPARATIONS, WHETHER OR NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER, NOT INCLUDING HOMOGENIZED PREPARATIONS	0,00	0,03	0,01	0,01	2,18	0,07	0,15	0,21	0,01	0,53	0,03	0,00	0,06

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
NUTS, GROUNDNUTS AND OTHER SEEDS, N.E.S.	0,00	0,02	0,06	10,97	0,27	0,01	0,19	0,00	0,90	0,43	0,24	0,23	0,81
PINEAPPLES	0,01	0,00	0,09	0,00	0,02	0,04	0,00	0,22	0,00	0,03	0,00	0,03	0,00
CITRUS FRUIT	0,00	0,00	0,00	0,00	0,00	0,10	0,00	0,00	0,00	0,00	0,00	0,00	0,01
APRICOTS, CHERRIES AND PEACHES	0,02	0,00	0,00	0,00	0,02	0,09	0,11	0,17	0,17	0,00	0,00	0,16	0,13
FRUITS OR EDIBLE PARTS OF PLANTS, N.E.S.	0,00	0,05	0,03	0,00	0,00	0,23	0,31	1,20	0,00	0,00	0,39	1,59	0,07
MIXTURES OF FRUITS OR OTHER EDIBLE PARTS OF PLANTS, N.E.S.	0,16	0,03	0,02	0,00	0,00	0,00	0,01	0,71	0,00	0,00	0,00	0,01	0,00
ORANGE JUICE	0,17	0,26	0,02	0,00	0,00	1,67	0,00	0,07	0,00	0,23	0,04	0,34	0,39

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
GRAPEFRUIT JUICE	0,00	0,00	0,00	0,00	0,09	0,00	0,01	0,00	0,00	0,00	0,00	0,01	0,00
JUICE OF ANY OTHER SINGLE CITRUS FRUIT	0,00	0,04	0,00	0,00	0,00	0,48	0,03	0,00	0,00	0,00	0,00	0,01	0,05
PINEAPPLE JUICE	0,00	0,00	0,00	0,01	0,00	0,09	0,00	0,00	0,00	0,00	0,11	0,03	0,05
TOMATO JUICE	0,00	0,00	0,04	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
GRAPE JUICE (INCLUDING GRAPE MUST)	0,00	0,00	0,02	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,03	0,07
APPLE JUICE	0,09	0,26	0,88	0,00	0,00	0,27	1,55	0,36	1,99	0,00	2,30	0,36	0,64
JUICE OF ANY OTHER SINGLE FRUIT OR VEGETABLE	0,18	0,04	0,03	0,01	0,02	0,90	1,82	0,22	0,11	0,01	0,00	0,00	0,10

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
MIXTURES OF FRUIT OR VEGETABLE JUICES	0,04	0,04	0,01	0,00	0,00	0,58	0,00	0,19	0,02	0,27	0,06	0,00	0,01
VEGETABLES, FRUIT, NUTS, FRUIT-PEEL AND OTHER PARTS OF PLANTS, PRESERVED BY SUGAR (DRAINED, GLACE OR CRYSTALLISED)	0,01	0,00	0,00	0,00	0,00	0,01	0,00	0,01	0,01	0,00	0,00	0,03	0,11
CHEWING-GUM, WHETHER OR NOT SUGAR-COATED	0,00	0,00	0,13	0,00	0,03	0,18	0,00	0,14	0,02	0,00	0,00	0,06	0,01
OTHER	4,64	1,99	1,54	0,32	0,20	1,98	1,05	0,30	1,32	1,52	0,01	1,35	0,29
COFFEE, ROASTED	4,96	0,00	3,06	0,19	0,09	0,65	3,04	1,15	0,34	0,19	0,00	1,07	4,94
EXTRACTS, ESSENCES AND CONCENTRATES OF COFFEE, AND PREPARATIONS WITH A BASIS OF THESE EXTRACTS, ESSENCES OR CONCENTRATES OR	1,50	0,00	0,14	0,26	0,00	0,00	0,16	0,00	0,65	0,20	0,00	0,73	0,02
COFFEE HUSKS AND SKINS; COFFEE SUBSTITUTES CONTAINING COFFEE IN ANY PROPORTION	0,00	0,00	0,00	0,13	0,00	0,00	0,00	0,00	0,18	0,00	0,00	0,12	0,00
ROASTED CHICORY AND OTHER ROASTED COFFEE SUBSTITUTES (NOT CONTAINING COFFEE) AND EXTRACTS, ESSENCES AND	0,00	0,00	0,03	0,00	0,02	0,00	0,02	0,69	0,00	0,00	0,03	0,00	0,01
COCOA POWDER CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,69	0,00	0,00	0,00	0,08	0,00	0,30	0,02	0,00	0,00	0,00	0,02

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
OTHER FOOD PREPARATIONS CONTAINING COCOA, IN BLOCKS, SLABS OR BARS WEIGHING MORE THAN 2 KG OR IN LIQUID, PASTE, POWDER, GRANULAR OR OTHER BULK FORM IN CONTAINERS OR IMMEDIATE PACKINGS OF A CONTENT EXCEEDING 2 KG.	0,00	0,00	0,00	0,03	0,00	0,02	0,04	0,00	0,79	0,04	0,21	0,10	0,30
OTHER FOOD PREPARATIONS CONTAINING COCOA, IN BLOCKS, SLABS OR BARS, WHETHER OR NOT FILLED	1,27	2,85	0,89	0,01	0,00	0,02	1,03	0,00	0,44	1,11	0,12	4,93	0,22
OTHER CHOCOLATE AND FOOD PREPARATIONS CONTAINING COCOA N.E.S.	1,66	1,12	0,15	0,04	1,91	0,93	4,55	0,13	2,68	0,91	0,00	5,98	4,61
MARGARINE (EXCLUDING LIQUID MARGARINE)	0,00	0,32	0,00	0,00	0,49	0,41	0,88	0,00	6,19	0,54	0,00	0,04	0,00
OTHER	0,04	0,00	0,16	0,00	0,07	0,35	0,64	0,00	0,00	0,80	0,00	0,39	0,01
HOMOGENIZED PREPARATIONS FROM MEAT AND EDIBLE MEAT OFFAL	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,55	0,00	0,01
HOMOGENIZED VEGETABLES	0,04	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,03	0,00	0,00	0,00
COOKED FRUIT PREPARATIONS, HOMOGENIZED	0,03	0,00	0,01	0,00	0,05	0,01	0,06	0,03	0,00	0,03	0,00	0,12	0,01
HOMOGENIZED COMPOSITE FOOD PREPARATIONS	0,36	0,00	0,00	0,08	0,00	0,02	0,08	0,00	0,00	0,29	0,00	0,37	0,02

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
MIXTURES OF FRUIT OR VEGETABLE JUICES	0,04	0,04	0,01	0,00	0,00	0,58	0,00	0,19	0,02	0,27	0,06	0,00	0,01
VEGETABLES, FRUIT, NUTS, FRUIT-PEEL AND OTHER PARTS OF PLANTS, PRESERVED BY SUGAR (DRAINED, GLACE OR CRYSTALLISED)	0,01	0,00	0,00	0,00	0,00	0,01	0,00	0,01	0,01	0,00	0,00	0,03	0,11
CHEWING-GUM, WHETHER OR NOT SUGAR-COATED	0,00	0,00	0,13	0,00	0,03	0,18	0,00	0,14	0,02	0,00	0,00	0,06	0,01
OTHER	4,64	1,99	1,54	0,32	0,20	1,98	1,05	0,30	1,32	1,52	0,01	1,35	0,29
COFFEE, ROASTED	4,96	0,00	3,06	0,19	0,09	0,65	3,04	1,15	0,34	0,19	0,00	1,07	4,94
EXTRACTS, ESSENCES AND CONCENTRATES OF COFFEE, AND PREPARATIONS WITH A BASIS OF THESE EXTRACTS, ESSENCES OR CONCENTRATES OR	1,50	0,00	0,14	0,26	0,00	0,00	0,16	0,00	0,65	0,20	0,00	0,73	0,02
COFFEE HUSKS AND SKINS; COFFEE SUBSTITUTES CONTAINING COFFEE IN ANY PROPORTION	0,00	0,00	0,00	0,13	0,00	0,00	0,00	0,00	0,18	0,00	0,00	0,12	0,00
ROASTED CHICORY AND OTHER ROASTED COFFEE SUBSTITUTES (NOT CONTAINING COFFEE) AND EXTRACTS, ESSENCES AND	0,00	0,00	0,03	0,00	0,02	0,00	0,02	0,69	0,00	0,00	0,03	0,00	0,01
COCOA POWDER CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,69	0,00	0,00	0,00	0,08	0,00	0,30	0,02	0,00	0,00	0,00	0,02

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
SOYA SAUCE	0,00	0,02	0,00	0,00	0,04	0,31	0,01	0,00	0,00	0,00	0,00	0,00	0,00
TOMATO KETCHUP AND OTHER TOMATO SAUCES	0,04	0,07	0,28	0,01	0,07	0,00	0,06	0,00	0,01	0,06	0,00	0,01	1,11
MUSTARD FLOUR AND MEAL AND PREPARED MUSTARD	0,01	0,00	0,00	0,00	0,00	0,01	0,03	0,01	0,00	0,03	0,00	0,07	0,00
VINEGAR AND SUBSTITUTES FOR VINEGAR OBTAINED FROM ACETIC ACID	0,03	0,00	0,00	0,00	0,02	0,01	0,01	0,00	0,00	0,00	0,00	0,12	0,98
OTHER SAUCES AND PREPARATIONS THEREFOR; MIXED CONDIMENTS AND MIXED SEASONINGS	1,73	0,00	0,49	0,11	0,06	0,12	0,66	0,69	0,73	4,32	0,68	2,20	2,57
SOUPS AND BROTHS AND PREPARATIONS THEREFOR	0,07	0,12	0,51	0,14	0,38	0,01	0,09	0,08	0,05	0,48	0,00	0,08	0,10
YEASTS (ACTIVE OR INACTIVE); OTHER SINGLE-CELL MICRO-ORGANISMS, DEAD (BUT NOT INCLUDING VACCINES OF HEADING 541.63); PREPARED BAKING-POWDERS	0,21	0,12	0,30	0,09	0,34	0,00	0,05	0,00	0,15	0,19	0,17	0,04	0,14
PASTA, COOKED OR STUFFED; COUSCOUS, WHETHER OR NOT PREPARED	1,20	0,01	0,56	0,41	0,93	0,17	0,03	0,32	0,07	0,17	0,61	0,32	0,03
EDIBLE PRODUCTS OF ANIMAL ORIGIN, N.E.S.	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,02	0,00	0,00	0,00	0,00	0,01

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
MIXTURES OF FRUIT OR VEGETABLE JUICES	0,04	0,04	0,01	0,00	0,00	0,58	0,00	0,19	0,02	0,27	0,06	0,00	0,01
VEGETABLES, FRUIT, NUTS, FRUIT-PEEL AND OTHER PARTS OF PLANTS, PRESERVED BY SUGAR (DRAINED, GLACE OR CRYSTALLISED)	0,01	0,00	0,00	0,00	0,00	0,01	0,00	0,01	0,01	0,00	0,00	0,03	0,11
CHEWING-GUM, WHETHER OR NOT SUGAR-COATED	0,00	0,00	0,13	0,00	0,03	0,18	0,00	0,14	0,02	0,00	0,00	0,06	0,01
OTHER	4,64	1,99	1,54	0,32	0,20	1,98	1,05	0,30	1,32	1,52	0,01	1,35	0,29
COFFEE, ROASTED	4,96	0,00	3,06	0,19	0,09	0,65	3,04	1,15	0,34	0,19	0,00	1,07	4,94
EXTRACTS, ESSENCES AND CONCENTRATES OF COFFEE, AND PREPARATIONS WITH A BASIS OF THESE EXTRACTS, ESSENCES OR CONCENTRATES OR	1,50	0,00	0,14	0,26	0,00	0,00	0,16	0,00	0,65	0,20	0,00	0,73	0,02
COFFEE HUSKS AND SKINS; COFFEE SUBSTITUTES CONTAINING COFFEE IN ANY PROPORTION	0,00	0,00	0,00	0,13	0,00	0,00	0,00	0,00	0,18	0,00	0,00	0,12	0,00
ROASTED CHICORY AND OTHER ROASTED COFFEE SUBSTITUTES (NOT CONTAINING COFFEE) AND EXTRACTS, ESSENCES AND	0,00	0,00	0,03	0,00	0,02	0,00	0,02	0,69	0,00	0,00	0,03	0,00	0,01
COCOA POWDER CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,69	0,00	0,00	0,00	0,08	0,00	0,30	0,02	0,00	0,00	0,00	0,02

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
OTHER FOOD PREPARATIONS CONTAINING COCOA, IN BLOCKS, SLABS OR BARS WEIGHING MORE THAN 2 KG OR IN LIQUID, PASTE, POWDER, GRANULAR OR OTHER BULK FORM IN CONTAINERS OR IMMEDIATE PACKINGS OF A CONTENT EXCEEDING 2 KG.	0,00	0,00	0,00	0,03	0,00	0,02	0,04	0,00	0,79	0,04	0,21	0,10	0,30
OTHER FOOD PREPARATIONS CONTAINING COCOA, IN BLOCKS, SLABS OR BARS, WHETHER OR NOT FILLED	1,27	2,85	0,89	0,01	0,00	0,02	1,03	0,00	0,44	1,11	0,12	4,93	0,22
OTHER CHOCOLATE AND FOOD PREPARATIONS CONTAINING COCOA N.E.S.	1,66	1,12	0,15	0,04	1,91	0,93	4,55	0,13	2,68	0,91	0,00	5,98	4,61
MARGARINE (EXCLUDING LIQUID MARGARINE)	0,00	0,32	0,00	0,00	0,49	0,41	0,88	0,00	6,19	0,54	0,00	0,04	0,00
OTHER	0,04	0,00	0,16	0,00	0,07	0,35	0,64	0,00	0,00	0,80	0,00	0,39	0,01
HOMOGENIZED PREPARATIONS FROM MEAT AND EDIBLE MEAT OFFAL	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,55	0,00	0,01
HOMOGENIZED VEGETABLES	0,04	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,03	0,00	0,00	0,00
COOKED FRUIT PREPARATIONS, HOMOGENIZED	0,03	0,00	0,01	0,00	0,05	0,01	0,06	0,03	0,00	0,03	0,00	0,12	0,01
HOMOGENIZED COMPOSITE FOOD PREPARATIONS	0,36	0,00	0,00	0,08	0,00	0,02	0,08	0,00	0,00	0,29	0,00	0,37	0,02

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
MIXTURES OF FRUIT OR VEGETABLE JUICES	0,04	0,04	0,01	0,00	0,00	0,58	0,00	0,19	0,02	0,27	0,06	0,00	0,01
VEGETABLES, FRUIT, NUTS, FRUIT-PEEL AND OTHER PARTS OF PLANTS, PRESERVED BY SUGAR (DRAINED, GLACE OR CRYSTALLISED)	0,01	0,00	0,00	0,00	0,00	0,01	0,00	0,01	0,01	0,00	0,00	0,03	0,11
CHEWING-GUM, WHETHER OR NOT SUGAR-COATED	0,00	0,00	0,13	0,00	0,03	0,18	0,00	0,14	0,02	0,00	0,00	0,06	0,01
OTHER	4,64	1,99	1,54	0,32	0,20	1,98	1,05	0,30	1,32	1,52	0,01	1,35	0,29
COFFEE, ROASTED	4,96	0,00	3,06	0,19	0,09	0,65	3,04	1,15	0,34	0,19	0,00	1,07	4,94
EXTRACTS, ESSENCES AND CONCENTRATES OF COFFEE, AND PREPARATIONS WITH A BASIS OF THESE EXTRACTS, ESSENCES OR CONCENTRATES OR	1,50	0,00	0,14	0,26	0,00	0,00	0,16	0,00	0,65	0,20	0,00	0,73	0,02
COFFEE HUSKS AND SKINS; COFFEE SUBSTITUTES CONTAINING COFFEE IN ANY PROPORTION	0,00	0,00	0,00	0,13	0,00	0,00	0,00	0,00	0,18	0,00	0,00	0,12	0,00
ROASTED CHICORY AND OTHER ROASTED COFFEE SUBSTITUTES (NOT CONTAINING COFFEE) AND EXTRACTS, ESSENCES AND	0,00	0,00	0,03	0,00	0,02	0,00	0,02	0,69	0,00	0,00	0,03	0,00	0,01
COCOA POWDER CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER	0,00	0,69	0,00	0,00	0,00	0,08	0,00	0,30	0,02	0,00	0,00	0,00	0,02

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
FOOD PREPARATIONS FOR INFANT USE, PUT UP FOR RETAIL SALE OF FLOUR, MEAL, STARCH OR MALT EXTRACT (NOT CONTAINING COCOA OR CONTAINING COCOA IN A PROPORTION BY WEIGHT OF LESS THAN 40% CALCULATED ON TOTALLY DEFATTED BASIS, N.E.S., OR OF GOODS OF HEADINGS	0,00	0,00	0,16	0,00	0,00	0,12	0,09	1,87	0,00	0,25	0,32	0,00	0,00
MALT EXTRACT; FOOD PREPARATIONS OF FLOUR, MEAL, STARCH OR MALT EXTRACT (NOT CONTAINING COCOA OR CONTAINING COCOA IN A PROPORTION BY WEIGHT OF LESS THAN 40% CALCULATED ON TOTALLY DEFATTED BASIS, N.E.S., OR OF GOODS OF HEADINGS	0,31	1,13	0,04	0,00	0,37	0,51	0,32	0,30	0,05	1,66	0,00	1,87	0,24
OTHER FOOD PREPARATIONS	3,66	9,73	1,16	1,08	0,14	7,24	6,72	1,69	13,57	9,09	1,81	1,11	2,26
WATERS, INCLUDING NATURAL OR ARTIFICIAL MINERAL WATERS AND AERATED WATERS, NOT CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER NOR FLAVOURED; ICE AND SNOW.	0,00	0,31	1,05	4,36	0,00	0,09	0,05	0,54	0,05	0,16	1,65	0,04	0,00

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
WATERS (INCLUDING MINERAL WATERS AND AERATED WATERS) CONTAINING ADDED SUGAR OR OTHER SWEETENING MATTER OR FLAVOURED, AND OTHER NON-ALCOHOLIC BEVERAGES, N.E.S.	0,22	0,00	0,46	2,67	5,62	2,13	0,00	4,49	3,59	1,67	3,21	3,01	0,23
GRAPE MUST IN FERMENTATION OR WITH FERMENTATION ARRESTED OTHERWISE THAN BY THE ADDITION OF ALCOHOL.	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02
VERMOUTH AND OTHER WINES OF FRESH GRAPES FLAVOURED WITH PLANTS	0,00	0,00	0,00	0,00	0,01	0,01	0,00	0,02	0,00	0,03	0,00	0,00	0,07
SPARKLING WINE	0,00	0,01	0,00	0,17	0,21	0,03	0,00	0,00	0,00	0,01	0,00	0,00	0,01
WINE OF FRESH GRAPES (OTHER THAN SPARKLING WINE); GRAPE MUST WITH FERMENTATION PREVENTED OR ARRESTED BY THE ADDITION OF ALCOHOL	0,23	0,00	0,04	3,83	0,12	0,13	0,00	2,57	0,29	0,29	1,28	0,00	0,66
FERMENTED BEVERAGES, N.E.S. (E.G., CIDER, PERRY, MEAD); MIXTURES OF FERMENTED BEVERAGES AND MIXTURES OF FERMENTED BEVERAGES AND NON-ALCOHOLIC BEVERAGES,	0,00	2,68	1,38	0,01	1,83	0,01	0,11	0,04	0,07	0,68	0,00	0,06	0,08
BEER MADE FROM MALT (INCLUDING ALE, STOUT AND PORTER)	0,58	0,00	2,63	1,93	0,04	1,05	0,00	2,43	0,48	2,56	0,00	0,82	0,06

Table 4.2.2 Share of Vertical high quality intra-industry trade by products in total IIT (processed products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
COMPOUND ALCOHOLIC PREPARATIONS OF A KIND USED FOR THE MANUFACTURE OF BEVERAGES	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
RUM AND OTHER SPIRITS OBTAINED BY DISTILLING FERMENTED SUGAR CANE PRODUCTS	0,00	0,00	0,04	0,05	0,01	0,07	0,00	0,00	0,00	0,00	0,00	0,00	0,00
GIN AND GENEVA	0,00	0,00	0,00	0,00	0,01	0,04	0,00	0,24	0,00	0,03	0,00	0,00	0,01
SPIRITS AND DISTILLED ALCOHOLIC BEVERAGES, N.E.S.	0,55	4,28	0,00	0,37	0,00	0,25	0,04	0,72	0,00	0,13	0,01	0,16	1,18
CIGARS, CHEROOTS AND CIGARILLOS, CONTAINING TOBACCO	0,00	0,00	0,00	0,00	0,00	0,34	0,00	0,03	0,00	0,00	0,00	0,00	0,01
CIGARETTES CONTAINING TOBACCO	0,61	0,00	0,06	13,16	0,00	4,90	6,57	0,53	1,42	0,27	0,00	0,00	0,00
CIGARS, CHEROOTS, CIGARILLOS AND CIGARETTES, OF TOBACCO SUBSTITUTES	0,00	0,00	0,00	0,00	0,29	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption), 2011

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
MEAT OF BOVINE ANIMALS, FRESH OR CHILLED, WITH BONE IN	2,10	5,95	0,07	0,00	1,14	6,61	0,01	0,00	4,56	0,00	12,55	0,00	0,55
MEAT OF BOVINE ANIMALS, FRESH OR CHILLED, BONELESS	0,89	0,40	0,08	0,00	0,47	1,19	0,00	1,89	0,00	0,00	0,59	3,49	1,12
MEAT OF BOVINE ANIMALS, FROZEN, WITH BONE IN	0,08	0,01	0,03	0,00	0,00	0,00	0,01	0,00	0,01	0,01	0,05	0,07	0,00
MEAT OF BOVINE ANIMALS, FROZEN, BONELESS	0,09	0,22	0,00	0,00	0,03	0,83	0,06	0,73	0,98	0,00	0,27	1,08	0,00
MEAT OF SHEEP, FRESH OR CHILLED	0,00	0,10	0,02	0,00	0,00	0,02	0,00	0,00	0,02	0,29	0,44	0,17	1,43
MEAT OF SHEEP, FROZEN	0,01	0,21	0,22	0,00	0,00	0,01	0,01	0,02	0,18	0,26	0,15	0,81	0,00
MEAT OF GOATS, FRESH, CHILLED OR FROZEN	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,04	0,13	0,00
....FRESH OR CHILLED	0,00	2,01	0,00	0,00	20,97	7,04	0,72	26,61	0,00	0,00	0,08	0,00	0,76
....FROZEN	0,19	1,29	0,30	13,10	0,00	0,00	3,17	12,32	7,79	0,83	0,26	0,06	0,20

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
POULTRY NOT CUT IN PIECES, FRESH OR CHILLED	0,01	0,00	2,36	0,00	0,05	0,04	0,01	0,00	0,03	0,02	1,58	0,00	0,00
POULTRY NOT CUT IN PIECES, FROZEN	0,08	0,01	1,52	0,00	0,00	0,18	0,39	0,47	0,01	0,00	1,21	0,36	0,00
FATTY LIVERS OF GEESE OR DUCKS, FRESH OR CHILLED	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,11	0,00	0,00
POULTRY CUTS AND OTHER OFFAL, FRESH OR CHILLED	0,41	4,91	11,40	0,00	1,50	0,94	0,49	4,54	0,00	0,88	3,76	0,00	0,77
POULTRY CUTS AND OFFAL, FROZEN	0,08	0,45	27,36	0,00	0,09	0,10	4,13	5,01	0,01	0,00	3,30	0,04	0,67
POULTRY LIVERS, FROZEN	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
MEAT OF HORSES, ASSES, MULES OR HINNIES, FRESH, CHILLED OR FROZEN	0,00	0,58	0,00	0,00	0,00	0,00	0,00	0,16	0,00	0,00	0,00	0,00	0,00
....OF BOVINE ANIMALS, FRESH OR CHILLED	0,00	0,00	0,00	0,00	0,00	0,52	0,00	0,00	0,09	0,00	0,00	0,38	0,00
....OF BOVINE ANIMALS, FROZEN	0,20	0,00	0,01	0,00	0,00	0,08	0,06	0,09	0,00	0,06	0,13	0,01	0,02

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
....OF SWINE, FRESH OR CHILLED	0,00	0,08	0,00	0,00	0,08	0,92	0,00	0,00	0,07	0,00	0,01	0,02	0,00
....OF SWINE, FROZEN	0,28	0,21	0,02	0,30	0,09	0,03	0,45	0,12	0,11	0,00	0,15	0,12	0,00
....OF SHEEP, GOATS, HORSES, ASSES, MULES OR HINNIES, FRESH OR CHILLED	0,00	0,00	0,11	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00
....OF SHEEP, GOATS, HORSES, ASSES, MULES OR HINNIES, FROZEN	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01	0,00
MEAT AND EDIBLE MEAT OFFAL OF RABBITS OR HARES	0,00	0,03	0,00	0,00	0,18	0,05	0,00	0,00	0,00	0,00	0,25	0,11	0,00
FROGS' LEGS	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
SNAILS (OTHER THAN SEA SNAILS)	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,06
OTHER MEAT AND EDIBLE MEAT OFFAL, FRESH, CHILLED OR FROZEN	0,12	0,04	0,00	0,00	0,30	0,15	0,07	0,42	0,30	9,05	0,67	0,29	0,01
BIRDS' EGGS, IN SHELL, FRESH, PRESERVED OR COOKED	0,26	0,00	1,92	0,00	1,87	0,62	0,92	0,00	0,00	1,54	2,15	2,45	0,00

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
....DRIED	0,00	0,00	0,28	0,00	0,11	0,04	0,00	0,21	0,00	0,00	0,23	0,01	0,01
....OTHER THAN DRIED	0,00	0,00	0,57	0,00	0,00	0,16	0,41	0,80	0,00	0,00	0,25	0,01	0,31
EGG ALBUMIN	0,08	0,03	0,00	0,00	0,00	0,02	0,00	0,17	0,00	0,00	0,10	0,00	0,00
RICE IN THE HUSK (PADDY OR ROUGH RICE)	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,02	0,00
RICE, HUSKED BUT NOT FURTHER PREPARED (CARGO RICE OR BROWN RICE)	0,01	0,01	0,00	0,00	0,01	0,04	0,00	0,02	0,00	0,00	0,02	0,10	0,00
RICE, SEMI-MILLED OR WHOLLY MILLED, WHETHER OR NOT POLISHED, GLAZED, PARBOILED OR CONVERTED (EXCLUDING BROKEN RICE)	0,02	0,52	0,00	0,00	0,33	0,03	0,00	0,00	0,00	0,00	0,09	1,49	0,00
BROKEN RICE	0,00	0,19	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,04	0,00
POTATOES, FRESH OR CHILLED (NOT INCLUDING SWEET POTATOES)	1,09	0,27	0,08	0,00	4,56	0,13	0,26	0,13	0,21	0,15	3,39	2,17	0,98
TOMATOES, FRESH OR CHILLED	0,37	0,00	0,24	0,00	4,08	0,12	0,00	0,06	5,40	0,39	1,68	0,00	0,32

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
ONIONS AND SHALLOTS, FRESH OR CHILLED	0,02	0,16	0,00	0,00	1,25	0,17	0,00	0,08	0,30	0,00	0,72	0,10	0,00
GARLIC, LEEKS AND OTHER ALLIACEOUS VEGETABLES, FRESH OR CHILLED	0,00	0,00	0,09	0,00	0,00	0,10	0,09	0,00	1,93	0,43	0,66	0,24	0,60
CABBAGE AND SIMILAR EDIBLE BRASSICAS, FRESH OR CHILLED	0,14	0,00	0,07	0,00	2,10	0,08	0,06	0,03	0,00	0,00	0,25	0,13	0,14
LETTUCE AND CHICORY (INCLUDING ENDIVE), FRESH OR CHILLED	0,00	0,00	0,00	0,00	0,10	0,27	0,52	0,00	0,23	0,00	1,01	0,61	0,00
CARROTS, TURNIPS, SALAD BEETROOT, SALSIFY, CELERIAC, RADISHES AND SIMILAR EDIBLE ROOTS, FRESH OR CHILLED	0,22	0,74	0,01	0,00	0,07	0,05	0,06	0,00	0,51	0,00	0,29	0,00	0,00
CUCUMBERS AND GHERKINS, FRESH OR CHILLED	0,08	0,00	0,36	0,00	1,08	0,04	0,01	0,89	0,00	0,00	0,01	0,03	0,00
LEGUMINOUS VEGETABLES, FRESH OR CHILLED	0,02	0,64	0,01	0,00	0,08	0,12	0,02	0,00	0,49	0,00	0,55	0,00	0,01
MUSHROOMS AND TRUFFLES, FRESH OR CHILLED	0,66	0,43	1,44	0,00	0,54	0,00	0,00	0,59	0,24	0,98	0,10	0,00	0,00
OTHER VEGETABLES, FRESH OR CHILLED	0,42	0,06	0,07	0,70	4,11	0,51	0,63	0,01	0,81	0,02	1,74	0,78	25,33

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
SWEET CORN	0,01	0,10	0,00	0,00	0,06	0,01	0,00	0,00	0,06	0,00	0,03	0,04	0,09
OTHER VEGETABLES AND MIXTURES OF VEGETABLES	0,01	0,55	5,94	0,00	1,84	0,84	0,20	0,44	3,90	0,00	1,05	0,16	7,33
ORANGES, FRESH OR DRIED	0,01	0,00	0,13	0,00	0,00	0,05	0,01	0,01	0,02	0,00	0,02	0,00	0,00
MANDARINS (INCLUDING TANGERINES AND SATSUMAS); CLEMENTINES, WILKINGS AND SIMILAR CITRUS HYBRIDS, FRESH OR DRIED	0,00	0,00	0,00	0,00	0,04	0,07	0,01	0,00	0,18	0,04	0,14	0,57	0,63
LEMONS AND LIMES FRESH OR DRIED	0,06	0,02	0,00	0,00	0,00	0,14	0,00	0,00	0,00	0,00	0,01	0,01	0,23
GRAPEFRUIT, FRESH OR DRIED	0,00	0,00	0,07	0,00	0,00	0,03	0,00	0,00	0,04	0,00	0,03	0,03	0,00
CITRUS FRUIT, N.E.S., FRESH OR DRIED	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,01
BANANAS (INCLUDING PLANTAINS), FRESH OR DRIED	0,44	0,00	0,72	0,00	0,00	0,27	0,46	0,40	0,76	0,00	1,55	0,38	0,00
APPLES, FRESH	5,02	0,17	0,06	0,00	2,16	0,16	0,00	0,00	0,31	0,00	4,45	0,00	0,49

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
....FRESH	0,19	0,01	0,00	1,19	0,00	0,45	0,00	0,07	0,36	0,00	0,22	0,42	1,17
....DRIED (E.G., RAISINS)	0,32	0,00	0,00	0,00	0,01	0,12	0,01	0,00	0,01	0,00	0,12	0,05	0,00
FIGS, FRESH OR DRIED	0,00	0,03	0,00	0,00	0,05	0,08	0,04	0,00	0,01	0,00	0,11	0,02	0,47
COCONUTS	0,04	0,00	0,00	0,00	0,00	0,03	0,00	0,00	0,03	0,02	0,02	0,30	0,01
BRAZIL NUTS	0,00	0,00	0,00	0,00	0,00	0,02	0,00	0,00	0,00	0,00	0,00	0,25	0,01
CASHEW NUTS	0,22	0,00	0,00	0,00	0,10	0,30	0,00	0,00	0,09	0,00	0,00	0,00	0,90
ALMONDS	0,22	0,00	0,00	0,00	0,00	0,08	0,08	0,08	0,46	0,06	0,04	0,11	3,80
HAZELNUTS OR FILBERTS	0,00	0,00	0,00	0,00	0,04	0,18	0,02	0,00	0,08	0,00	0,02	0,06	0,04
WALNUTS	0,42	0,00	0,00	0,00	0,14	0,28	0,04	0,00	0,06	0,00	0,00	0,01	0,01

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
CHESTNUTS	0,00	0,00	0,00	0,00	0,06	0,01	0,00	0,00	0,00	0,00	0,07	0,00	0,11
PISTACHIOS	0,00	0,07	0,00	0,00	0,00	0,10	0,00	0,00	0,01	0,01	0,08	0,00	4,42
EDIBLE NUTS (EXCLUDING MIXTURES), FRESH OR DRIED, N.E.S.	0,18	0,00	0,00	0,00	0,01	0,64	0,00	0,00	0,60	0,06	0,02	0,14	0,05
MELONS (INCLUDING WATER MELONS) AND PAPAWS (PAPAYAS), FRESH	0,00	0,00	0,06	0,00	0,01	0,05	0,00	0,00	1,21	0,00	1,06	0,14	0,00
PEARS AND QUINCES, FRESH	0,02	0,37	0,01	0,00	0,00	0,05	0,00	0,00	0,00	0,02	0,26	0,06	0,00
APRICOTS, CHERRIES, PEACHES (INCLUDING NECTARINES), PLUMS AND SLOES, FRESH.	6,75	0,35	0,56	0,00	1,32	0,11	0,00	0,77	0,05	0,00	2,90	0,35	0,27
STRAWBERRIES, RASPBERRIES, BLACKBERRIES, MULBERRIES, LOGANBERRIES, CRANBERRIES, BILBERRIES, AND OTHER FRUITS OF THE GENUS VACCINIUM, FRESH	0,33	0,75	0,02	0,00	0,27	0,55	0,01	0,00	0,00	0,00	0,55	0,35	0,08
PINEAPPLES, FRESH OR DRIED	0,03	0,00	0,00	0,00	0,01	0,09	0,00	0,01	0,06	0,00	0,08	0,00	0,00

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	Austria	BELGIUM	BULGARIA	CYPRUS	CZECH REPUBLIC	GERMANY	DENMARK	ESTONIA	SPAIN	FINLAND	FRANCE	UNITED KINGDOM	GREECE
DATES, FRESH OR DRIED	0,03	0,02	0,00	0,06	0,00	0,01	0,00	0,00	0,01	0,01	0,10	0,01	0,00
AVOCADOS, GUAVAS, MANGOES AND MANGOSTEENS, FRESH OR DRIED	0,13	0,00	0,00	0,00	0,00	0,17	0,01	0,00	0,50	0,00	0,53	0,15	0,10
OTHER FRESH FRUIT	0,10	0,46	0,01	0,00	0,00	0,18	0,00	0,00	0,32	0,00	0,25	0,00	0,00
FRUIT, DRIED, N.E.S., AND MIXTURES, N.E.S., OF NUTS OR DRIED FRUITS OF GROUP 057	0,89	0,07	0,91	0,00	0,45	0,98	0,21	2,87	0,73	0,10	0,13	0,16	0,01
BULBS, TUBERS, TUBEROUS ROOTS, CORMS, CROWNS AND RHIZOMES, DORMANT, IN GROWTH OR IN FLOWER; CHICORY PLANTS AND ROOTS (OTHER THAN ROOTS OF SUBGROUP 054.8)	0,03	0,03	0,02	0,00	0,05	0,73	0,85	0,91	0,00	0,00	0,03	0,12	0,00
OTHER LIVE PLANTS (INCLUDING THEIR ROOTS), CUTTINGS AND SLIPS; MUSHROOM SPAWN	1,29	0,05	0,23	0,00	2,24	0,56	14,12	1,18	0,02	0,26	0,81	0,24	0,68
CUT FLOWERS AND FLOWER BUDS OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES, FRESH, DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED	0,02	3,33	0,00	0,00	0,68	0,16	0,02	0,13	0,07	0,00	0,02	0,01	0,02

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
MEAT OF BOVINE ANIMALS, FRESH OR CHILLED, WITH BONE IN	0,01	0,14	0,00	0,00	4,74	7,87	1,11	0,00	2,44	0,22	11,66	0,34	0,01
MEAT OF BOVINE ANIMALS, FRESH OR CHILLED, BONELESS	0,33	46,45	1,04	5,42	0,10	2,40	3,33	0,00	0,87	5,06	2,49	0,00	3,70
MEAT OF BOVINE ANIMALS, FROZEN, WITH BONE IN	0,00	0,00	0,01	0,12	0,00	0,07	0,01	0,00	0,30	0,00	0,05	0,02	0,00
MEAT OF BOVINE ANIMALS, FROZEN, BONELESS	0,56	0,00	1,91	0,29	1,63	1,12	0,88	0,00	0,47	1,32	0,38	0,60	0,21
MEAT OF SHEEP, FRESH OR CHILLED	0,00	0,04	0,00	0,53	0,00	0,88	0,00	0,00	0,00	0,00	0,00	0,03	0,42
MEAT OF SHEEP, FROZEN	0,02	0,00	0,00	0,54	0,28	0,23	0,00	0,06	0,07	0,00	0,00	0,00	0,03
MEAT OF GOATS, FRESH, CHILLED OR FROZEN	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,00	0,00	0,00
....FRESH OR CHILLED	5,12	0,56	0,25	2,42	0,00	2,24	2,64	3,52	1,30	0,00	0,13	11,42	0,38
....FROZEN	6,76	0,00	0,69	0,11	1,17	0,35	0,61	0,00	0,35	0,11	2,09	1,45	0,96

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
POULTRY NOT CUT IN PIECES, FRESH OR CHILLED	0,98	0,00	0,96	0,22	0,00	0,00	0,43	0,00	0,78	0,00	0,00	0,00	0,37
POULTRY NOT CUT IN PIECES, FROZEN	0,00	0,00	0,00	0,03	0,00	0,65	0,33	0,10	0,00	0,00	1,97	1,02	0,00
FATTY LIVERS OF GEESE OR DUCKS, FRESH OR CHILLED	0,00	0,00	0,00	0,21	0,00	0,00	0,00	0,00	0,00	0,01	0,00	0,00	0,00
POULTRY CUTS AND OTHER OFFAL, FRESH OR CHILLED	14,40	0,00	1,73	2,54	3,86	0,02	1,02	0,00	9,34	0,00	9,78	1,94	3,18
POULTRY CUTS AND OFFAL, FROZEN	16,49	0,00	23,08	0,25	9,58	7,32	4,10	0,41	13,89	0,22	0,40	1,05	1,62
POULTRY LIVERS, FROZEN	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
MEAT OF HORSES, ASSES, MULES OR HINNIES, FRESH, CHILLED OR FROZEN	0,03	0,00	0,00	0,00	0,00	0,15	0,00	0,00	0,00	0,00	0,04	0,00	0,00
....OF BOVINE ANIMALS, FRESH OR CHILLED	0,05	0,00	0,23	0,32	0,00	0,05	0,00	0,00	0,00	0,00	0,00	0,00	0,17
....OF BOVINE ANIMALS, FROZEN	0,04	0,07	0,33	0,00	0,00	0,10	0,13	0,00	0,01	0,22	0,01	0,01	0,19

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
....OF SWINE, FRESH OR CHILLED	0,00	0,00	0,04	0,02	0,00	0,01	0,03	0,00	0,00	0,00	0,00	0,02	0,02
....OF SWINE, FROZEN	0,27	0,00	0,00	0,00	0,03	0,31	0,25	0,00	0,00	0,00	0,00	0,11	0,11
....OF SHEEP, GOATS, HORSES, ASSES, MULES OR HINNIES, FRESH OR CHILLED	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
....OF SHEEP, GOATS, HORSES, ASSES, MULES OR HINNIES, FROZEN	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
MEAT AND EDIBLE MEAT OFFAL OF RABBITS OR HARES	0,01	0,00	0,00	0,18	0,01	0,00	0,03	0,00	0,00	0,00	0,02	0,00	0,17
FROGS' LEGS	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
SNAILS (OTHER THAN SEA SNAILS)	1,30	0,00	0,00	0,02	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER MEAT AND EDIBLE MEAT OFFAL, FRESH, CHILLED OR FROZEN	0,00	0,00	0,17	0,72	0,00	0,34	0,80	0,00	0,47	0,27	1,00	0,00	0,10
BIRDS' EGGS, IN SHELL, FRESH, PRESERVED OR COOKED	1,27	0,00	0,00	0,00	0,00	4,68	0,28	2,45	0,00	9,46	2,17	0,96	0,21

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
....DRIED	0,00	0,00	0,00	0,00	0,13	0,04	0,16	0,00	0,07	3,07	0,00	0,10	0,06
....OTHER THAN DRIED	0,00	0,00	0,00	0,08	0,00	0,25	0,22	0,00	0,00	0,18	0,00	0,02	0,18
EGG ALBUMIN	0,00	0,00	0,07	0,00	0,00	0,00	0,17	0,00	0,00	1,86	0,00	0,00	0,52
RICE IN THE HUSK (PADDY OR ROUGH RICE)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,32
RICE, HUSKED BUT NOT FURTHER PREPARED (CARGO RICE OR BROWN RICE)	0,00	0,00	0,02	0,00	0,02	0,02	0,00	0,00	0,00	0,03	0,00	0,05	0,18
RICE, SEMI-MILLED OR WHOLLY MILLED, WHETHER OR NOT POLISHED, GLAZED, PARBOILED OR CONVERTED (EXCLUDING BROKEN RICE)	0,01	0,05	0,00	0,11	0,00	0,04	0,16	0,13	0,36	0,68	0,00	7,81	0,03
BROKEN RICE	0,00	0,00	0,00	0,00	0,00	0,03	0,00	0,40	0,00	0,00	0,00	0,00	0,10
POTATOES, FRESH OR CHILLED (NOT INCLUDING SWEET POTATOES)	0,01	0,00	0,01	4,64	0,31	2,34	0,00	1,38	0,41	1,81	0,15	0,81	1,82
TOMATOES, FRESH OR CHILLED	0,07	0,13	0,02	0,22	0,04	0,45	0,00	0,14	0,07	0,94	3,89	0,40	3,81

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
ONIONS AND SHALLOTS, FRESH OR CHILLED	0,07	0,05	0,00	0,02	0,00	0,56	1,90	0,00	0,17	0,29	0,04	0,00	1,17
GARLIC, LEEKS AND OTHER ALLIACEOUS VEGETABLES, FRESH OR CHILLED	0,06	0,00	0,00	0,00	0,58	0,11	0,00	0,16	0,24	0,03	0,12	0,00	0,99
CABBAGE AND SIMILAR EDIBLE BRASSICAS, FRESH OR CHILLED	0,00	0,09	0,00	0,00	0,00	0,22	0,25	0,01	0,06	0,19	0,05	0,29	0,38
LETTUCE AND CHICORY (INCLUDING ENDIVE), FRESH OR CHILLED	1,24	0,11	1,13	0,00	0,00	0,16	0,05	1,87	0,00	0,25	0,01	0,00	3,27
CARROTS, TURNIPS, SALAD BEETROOT, SALSIFY, CELERIAC, RADISHES AND SIMILAR EDIBLE ROOTS, FRESH OR CHILLED	1,54	0,07	0,00	0,00	0,55	0,24	0,28	0,00	0,13	0,30	0,34	0,14	0,38
CUCUMBERS AND GHERKINS, FRESH OR CHILLED	0,64	0,01	0,00	0,00	0,96	0,13	0,02	0,00	0,01	0,05	0,00	0,26	0,16
LEGUMINOUS VEGETABLES, FRESH OR CHILLED	0,00	0,00	0,01	0,16	0,12	0,71	0,01	0,00	0,00	0,00	0,00	0,08	0,21
MUSHROOMS AND TRUFFLES, FRESH OR CHILLED	0,04	8,48	0,01	0,43	0,89	0,92	0,00	3,07	0,28	0,48	2,15	0,12	0,93
OTHER VEGETABLES, FRESH OR CHILLED	0,12	0,23	0,00	0,89	0,00	0,02	1,14	1,89	0,78	0,00	1,51	2,98	1,70

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
SWEET CORN	0,00	0,00	0,00	0,00	0,00	0,02	0,00	0,00	0,00	0,02	0,00	0,00	0,01
OTHER VEGETABLES AND MIXTURES OF VEGETABLES	0,51	0,00	0,72	0,89	0,70	0,17	0,64	1,25	3,48	2,27	0,54	2,60	1,61
ORANGES, FRESH OR DRIED	0,00	0,02	0,00	0,16	0,00	1,08	0,01	7,54	0,11	0,00	0,00	0,00	0,44
MANDARINS (INCLUDING TANGERINES AND SATSUMAS); CLEMENTINES, WILKINGS AND SIMILAR CITRUS HYBRIDS, FRESH OR DRIED	0,00	0,00	0,21	0,06	2,46	0,07	0,05	0,36	0,22	0,00	0,45	0,02	0,00
LEMONS AND LIMES FRESH OR DRIED	0,03	0,00	0,04	0,13	0,00	0,15	0,00	0,67	0,07	0,00	0,19	0,00	0,23
GRAPEFRUIT, FRESH OR DRIED	0,00	0,00	0,00	0,07	0,00	0,06	0,00	0,45	0,00	0,00	0,01	0,00	0,02
CITRUS FRUIT, N.E.S., FRESH OR DRIED	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,35	0,00	0,00
BANANAS (INCLUDING PLANTAINS), FRESH OR DRIED	0,50	0,41	5,00	0,00	0,03	0,60	0,58	0,00	0,75	1,88	0,00	1,14	0,21
APPLES, FRESH	0,87	0,45	0,71	0,00	0,00	0,28	1,18	0,00	0,00	0,00	0,00	4,93	1,10

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
....FRESH	0,00	0,00	0,11	0,21	0,16	1,31	0,00	1,08	0,02	0,00	0,44	0,64	0,00
....DRIED (E.G., RAISINS)	0,00	0,00	0,08	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03	0,02
FIGS, FRESH OR DRIED	0,00	0,00	0,00	0,07	0,00	0,07	0,00	0,00	0,01	0,03	0,00	0,22	0,02
COCONUTS	0,00	0,00	0,10	0,05	0,03	0,01	0,03	0,00	0,00	0,65	0,00	0,00	0,01
BRAZIL NUTS	0,00	0,00	0,03	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,05	0,12
CASHEW NUTS	0,00	0,00	0,00	5,38	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,03	0,20
ALMONDS	0,00	0,00	0,26	0,00	0,00	0,01	0,00	0,07	0,00	0,00	0,00	0,02	0,62
HAZELNUTS OR FILBERTS	0,00	0,00	0,00	0,01	0,00	0,00	0,00	0,00	0,06	0,00	0,00	1,17	0,67
WALNUTS	0,00	0,16	0,33	0,00	0,00	0,00	0,01	0,00	3,12	0,00	0,00	1,13	0,00

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
CHESTNUTS	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,03
PISTACHIOS	0,00	0,00	0,00	33,12	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,28
EDIBLE NUTS (EXCLUDING MIXTURES), FRESH OR DRIED, N.E.S.	0,00	0,00	0,02	1,34	0,09	0,00	0,03	4,18	0,00	0,00	0,00	0,05	0,07
MELONS (INCLUDING WATER MELONS) AND PAPAWS (PAPAYAS), FRESH	0,00	0,00	0,02	0,00	1,20	0,19	0,00	0,67	0,00	0,09	0,00	0,05	0,02
PEARS AND QUINCES, FRESH	0,00	0,00	0,44	0,03	1,86	0,40	0,01	0,00	0,07	0,10	0,00	0,06	1,15
APRICOTS, CHERRIES, PEACHES (INCLUDING NECTARINES), PLUMS AND SLOES, FRESH.	0,12	0,00	0,01	0,11	0,00	0,70	0,39	0,00	0,00	2,00	0,69	0,53	0,26
STRAWBERRIES, RASPBERRIES, BLACKBERRIES, MULBERRIES, LOGANBERRIES, CRANBERRIES, BILBERRIES, AND OTHER FRUITS OF THE GENUS VACCINIUM, FRESH	0,19	0,21	0,44	0,91	0,24	1,49	0,40	1,99	0,49	0,08	0,00	0,00	0,55
PINEAPPLES, FRESH OR DRIED	0,00	0,00	0,00	0,00	0,00	0,07	0,01	4,64	0,00	0,00	0,01	0,00	0,00
DATES, FRESH OR DRIED	0,00	0,00	0,00	0,01	0,14	0,06	0,01	0,00	0,00	0,00	0,51	0,10	0,02

Table 4.2.3 Share of Vertical high quality intra-industry trade by products in total IIT (primary products mainly for household consumption),2011 (continue)

Products\Countries	HUNGARY	IRELAND	LITHUANIA	LUXEMBOURG	LATVIA	NETHERLANDS	POLAND	PORTUGAL	ROMANIA	SWEDEN	SLOVENIA	SLOVAKIA	ITALY
AVOCADOS, GUAVAS, MANGOES AND MANGOSTEENS, FRESH OR DRIED	0,02	0,00	0,00	0,00	0,00	0,00	0,00	0,46	0,00	0,18	0,00	0,00	0,03
OTHER FRESH FRUIT	1,01	0,00	0,00	1,12	0,44	1,28	0,12	2,47	0,00	0,00	0,77	0,00	0,17
FRUIT, DRIED, N.E.S., AND MIXTURES, N.E.S., OF NUTS OR DRIED FRUITS OF GROUP 057	0,02	0,01	0,00	0,00	0,00	0,00	0,60	0,05	0,09	0,33	0,45	3,29	0,10
BULBS, TUBERS, TUBEROUS ROOTS, CORMS, CROWNS AND RHIZOMES, DORMANT, IN GROWTH OR IN FLOWER; CHICORY PLANTS AND ROOTS (OTHER THAN ROOTS OF SUBGROUP 054.8)	0,11	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,05	0,17	0,00	0,00	0,03
OTHER LIVE PLANTS (INCLUDING THEIR ROOTS), CUTTINGS AND SLIPS; MUSHROOM SPAWN	0,39	0,03	0,00	1,35	2,56	4,93	3,89	3,63	0,17	0,02	1,56	2,38	1,21
CUT FLOWERS AND FLOWER BUDS OF A KIND SUITABLE FOR BOUQUETS OR FOR ORNAMENTAL PURPOSES, FRESH, DRIED, DYED, BLEACHED, IMPREGNATED OR OTHERWISE PREPARED	0,00	0,00	0,20	0,00	0,39	1,80	0,04	0,05	0,16	0,55	0,00	0,38	0,18

Appendix 4

Figure 4.3.4 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Austria 1998 (net trade in euro)

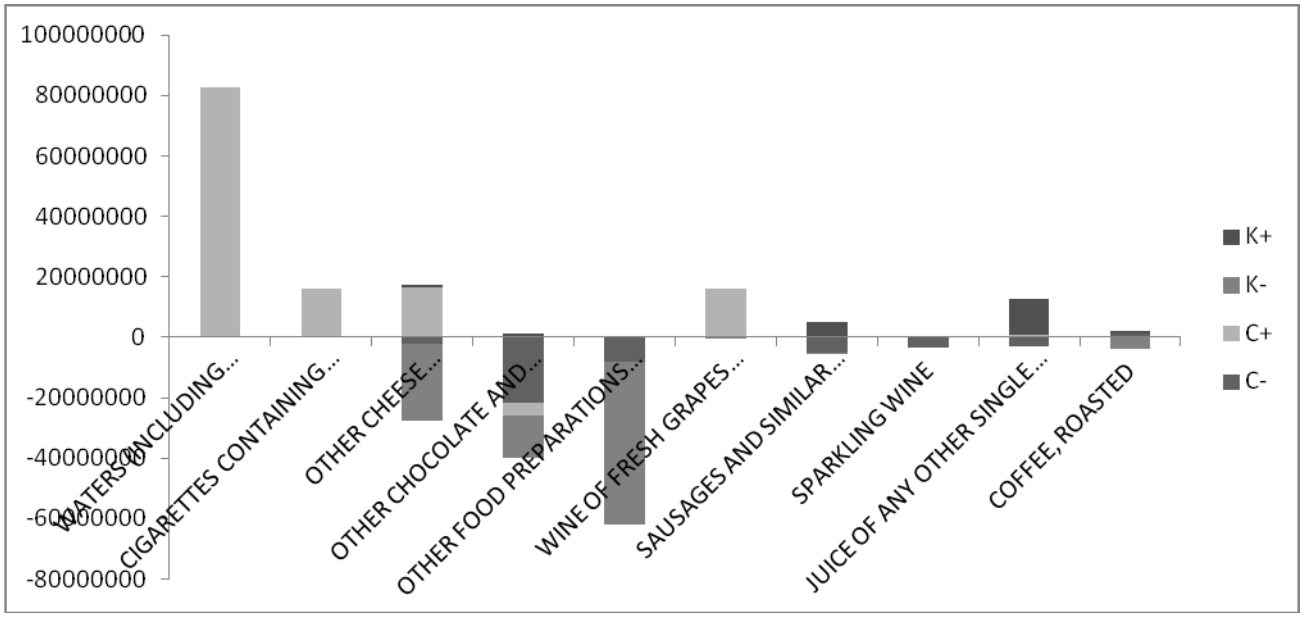

Figure 4.3.5 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Austria 2011 (net trade in euro)

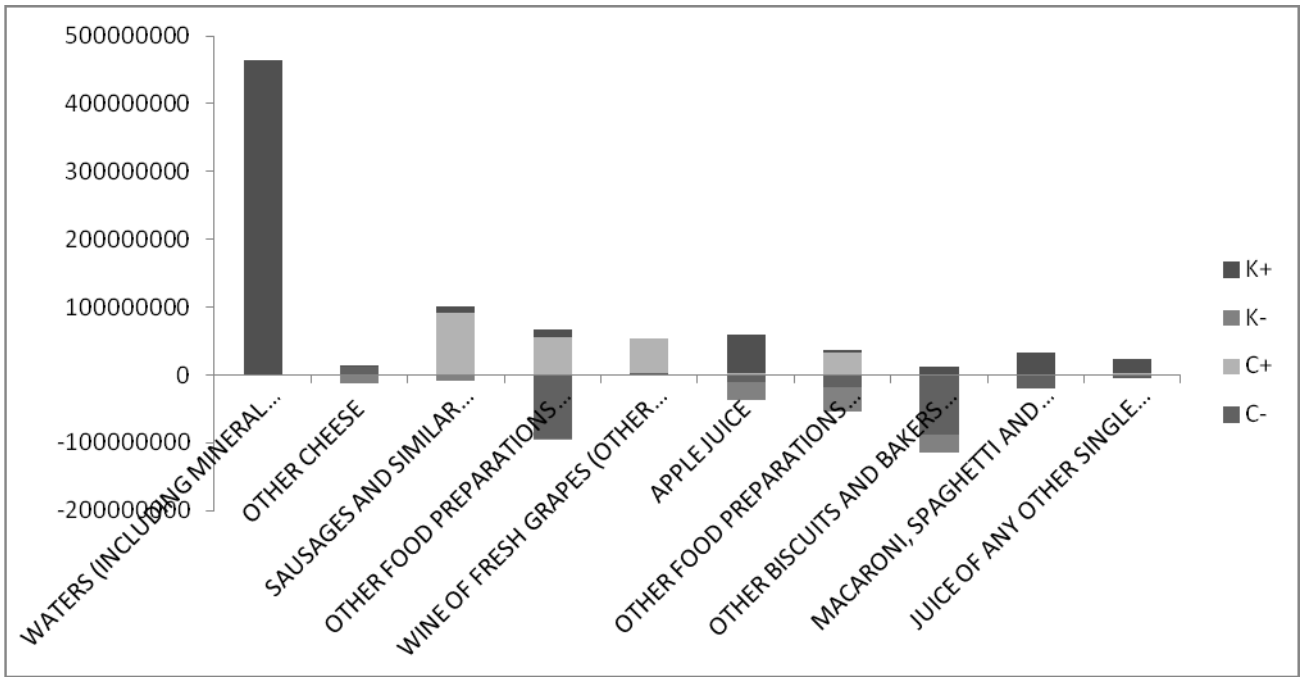

Figure 4.3.6 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Belgium 1988 (net trade in euro)

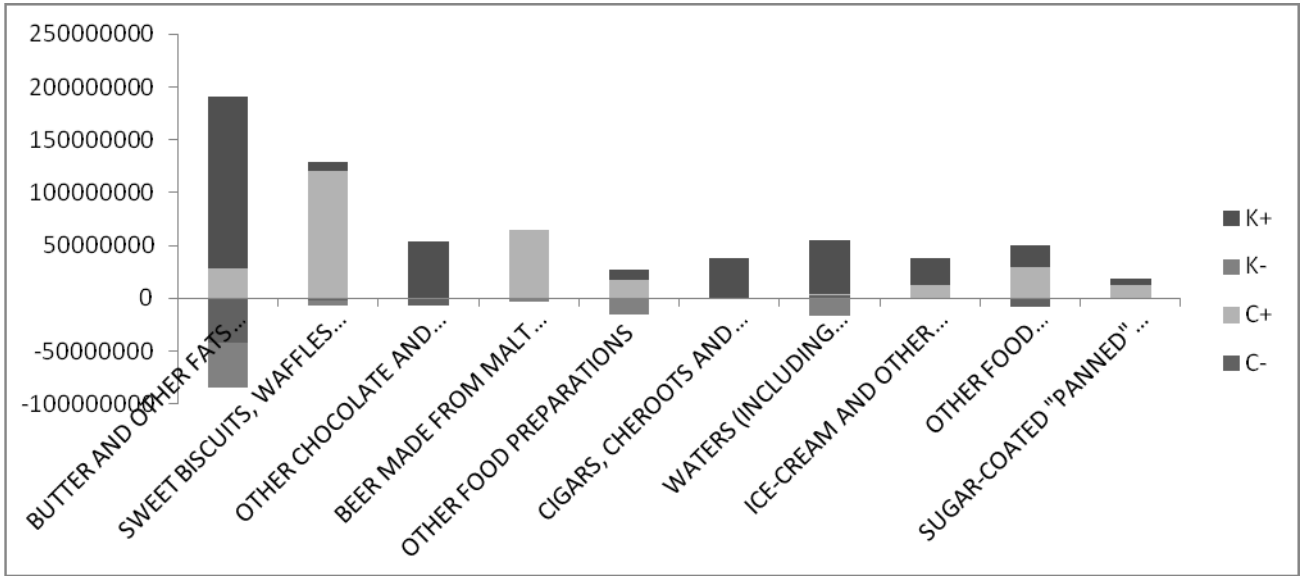

Figure 4.3.7 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Belgium 1998 (net trade in euro)

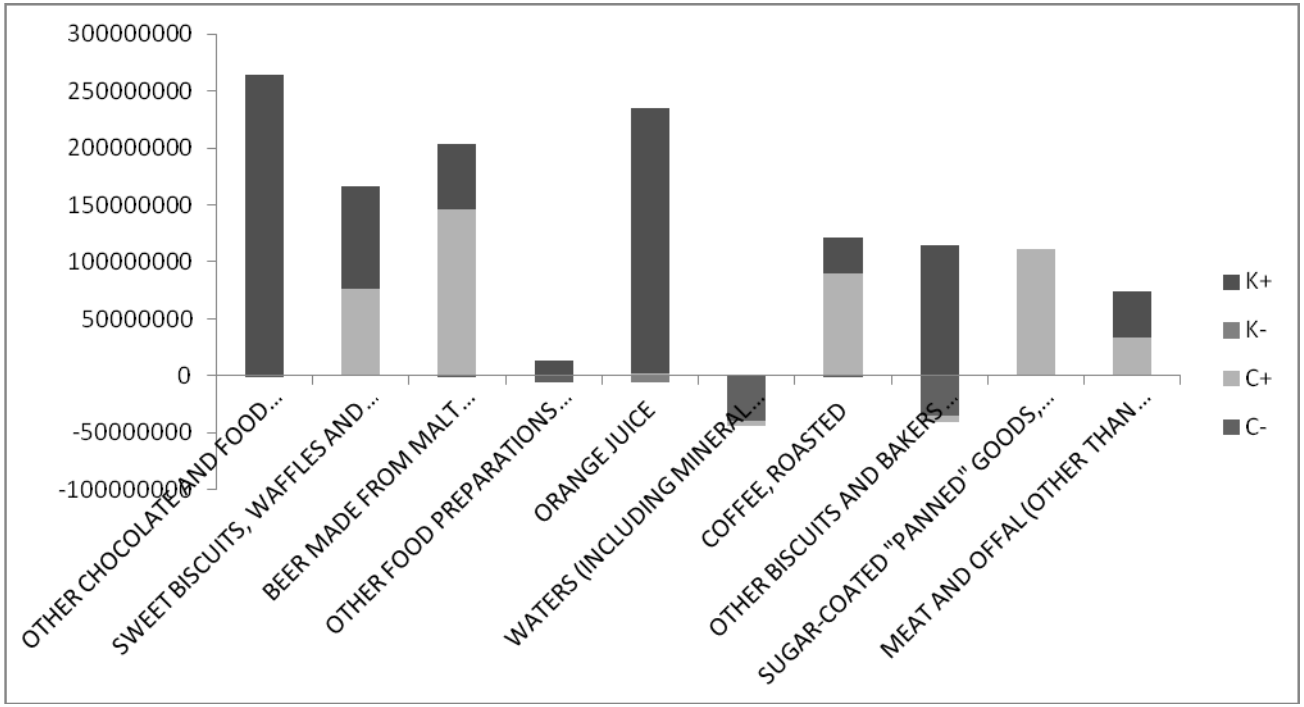

Figure 4.3.8 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Belgium 2011 (net trade in euro)

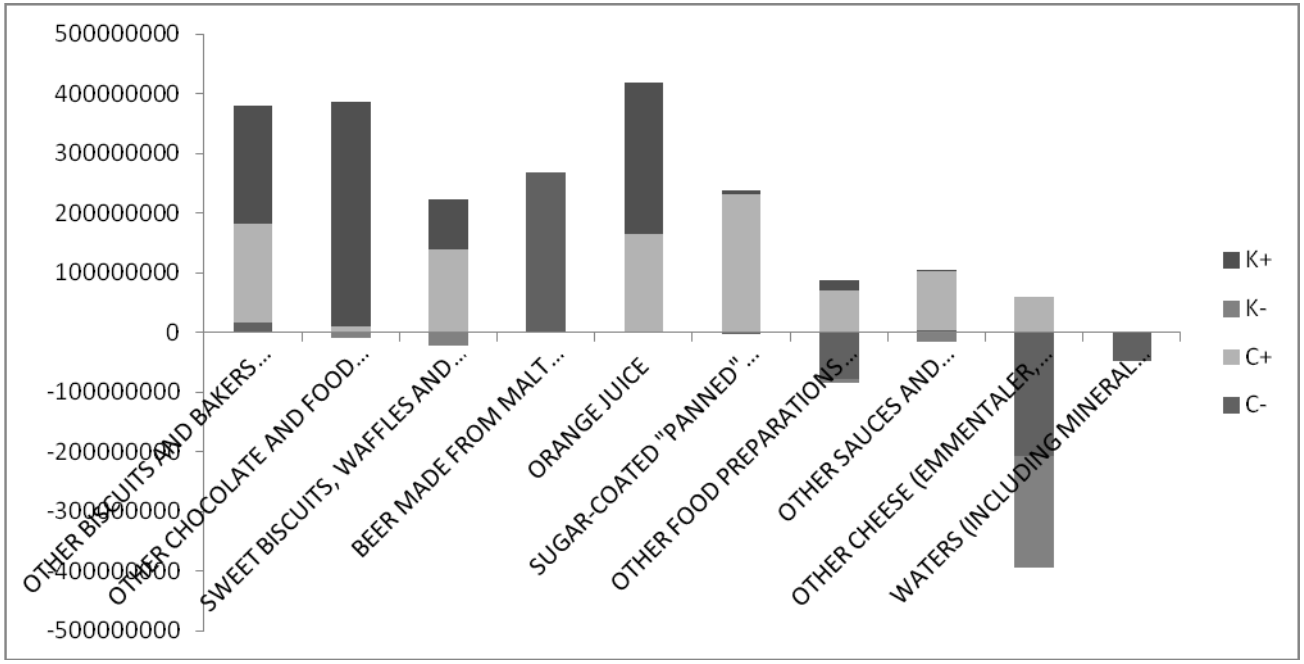

Figure 4.3.9 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Germany 1988 (net trade in euro)

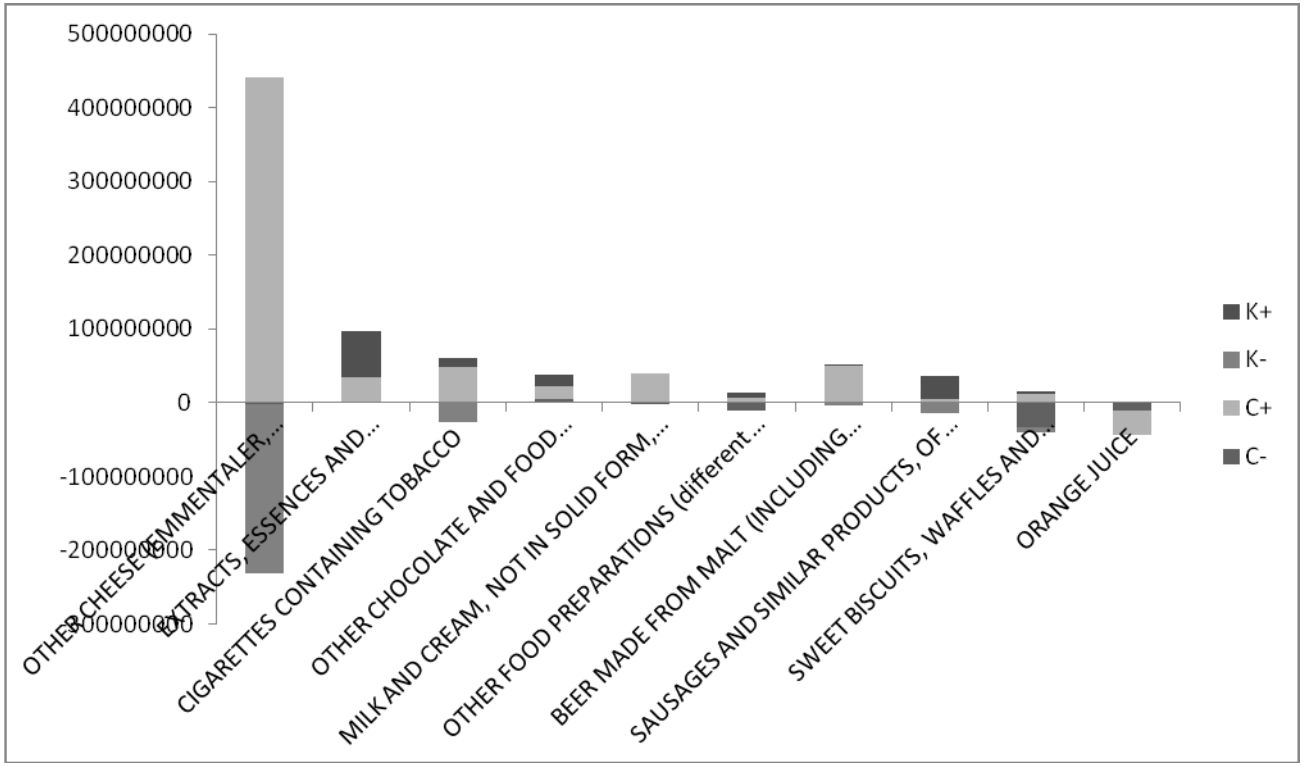

Figure 4.3.10 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Germany 1998 (net trade in euro)

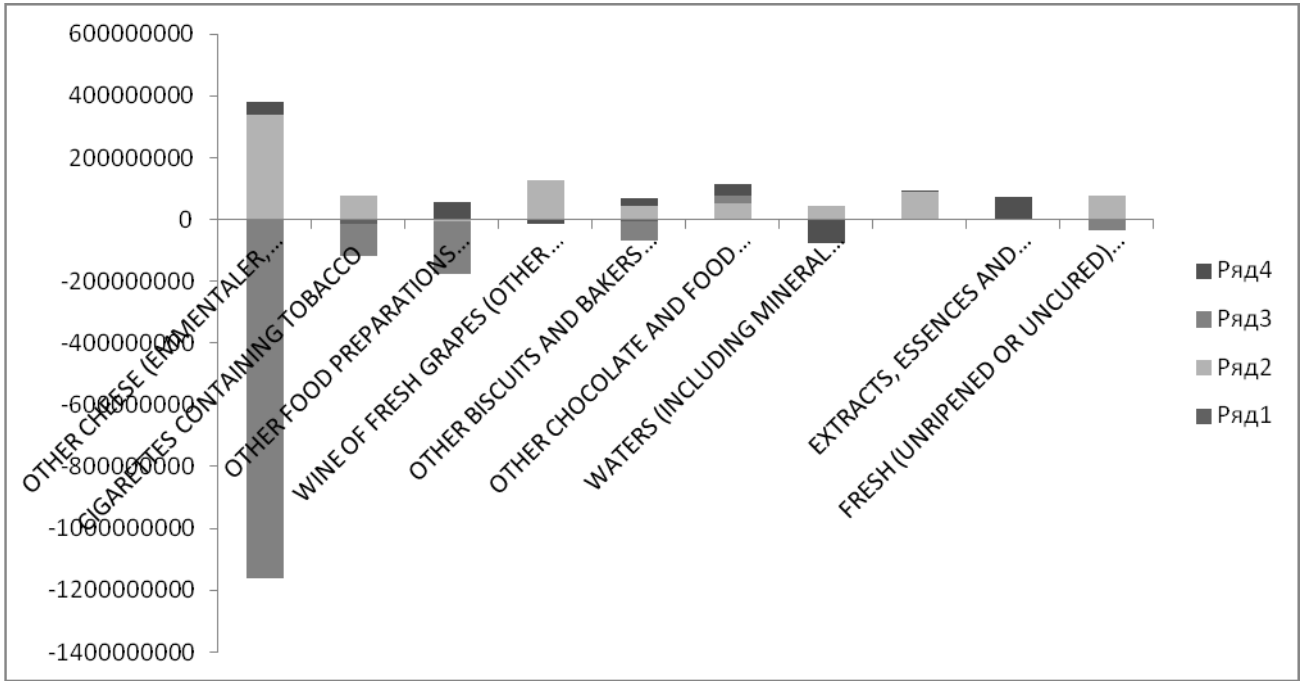

Figure 4.3.11 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Germany 2011 (net trade in euro)

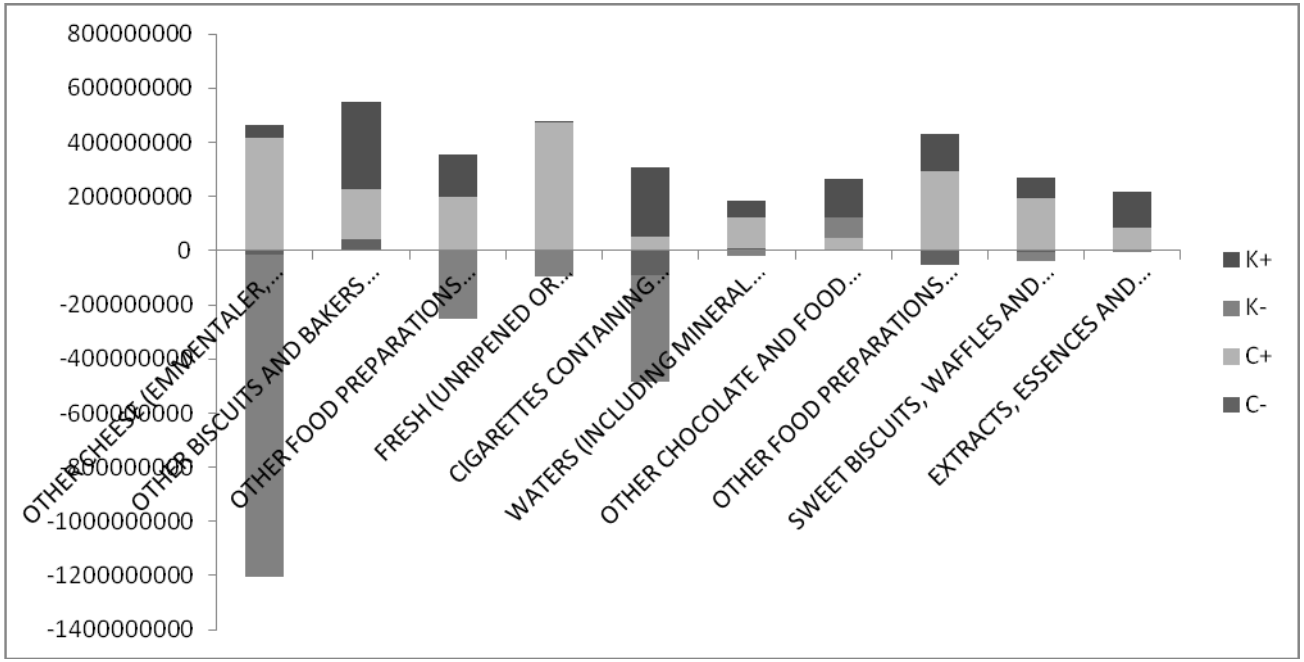

Figure 4.3.12 Intra-industry trade competition by price and quality of processed products mainly for household consumption, France 1988 (net trade in euro)

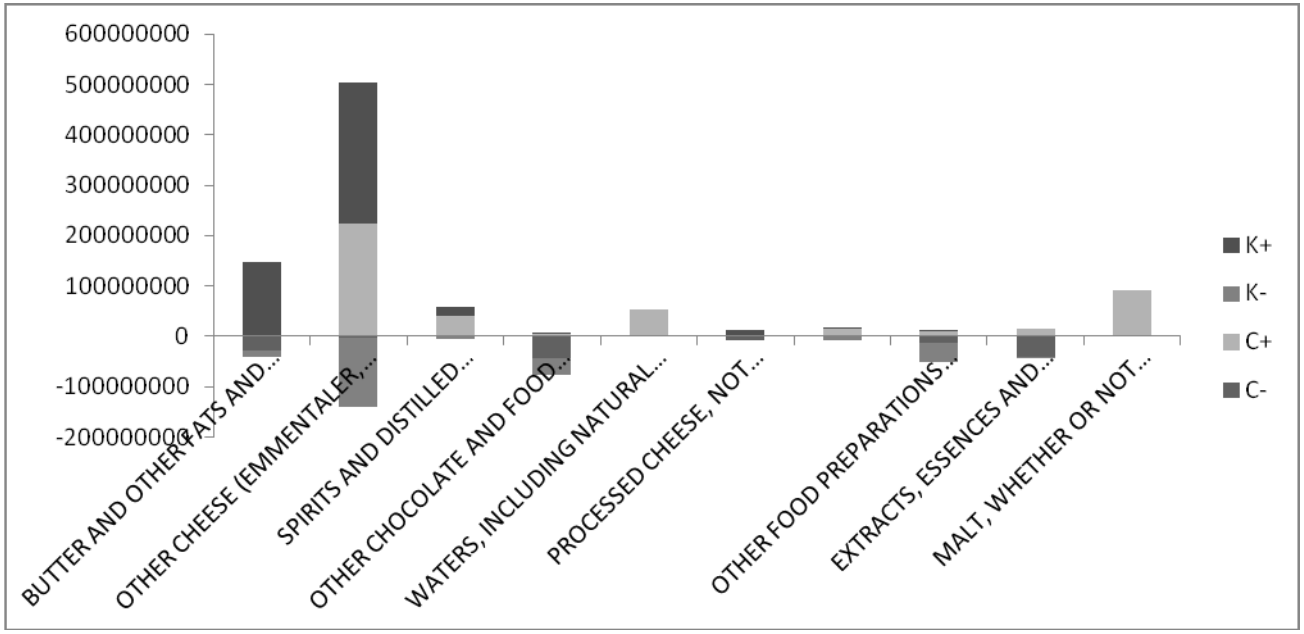

Figure 4.3.13 Intra-industry trade competition by price and quality of processed products mainly for household consumption, France 1998 (net trade in euro)

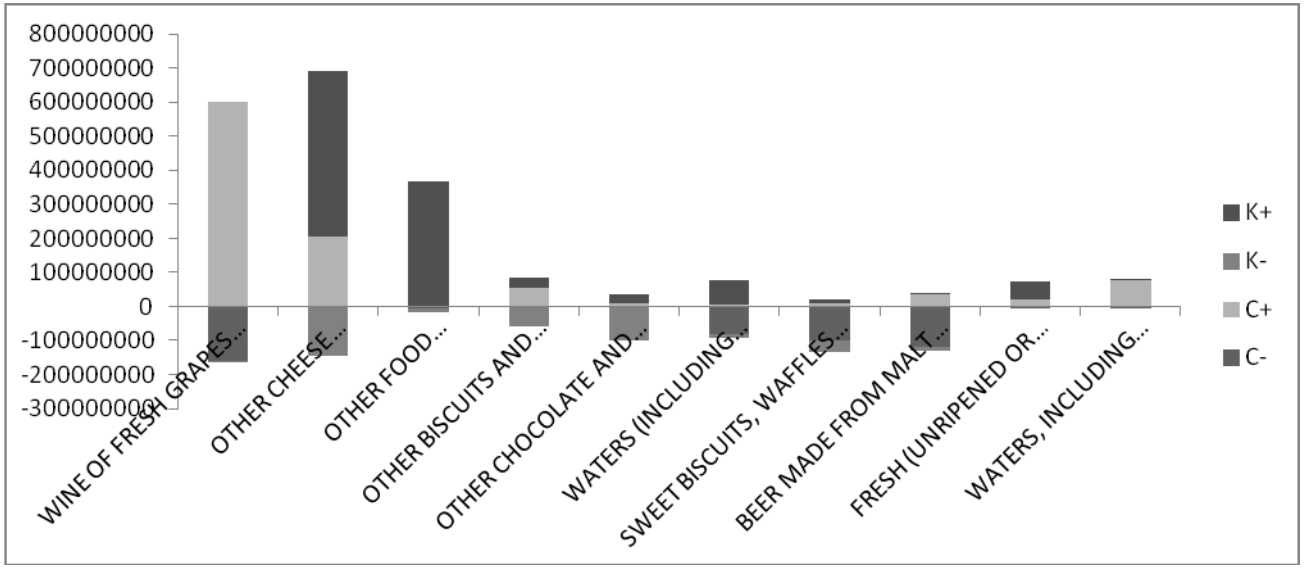

Figure 4.3.14 Intra-industry trade competition by price and quality of processed products mainly for household consumption, France 2011 (net trade in euro)

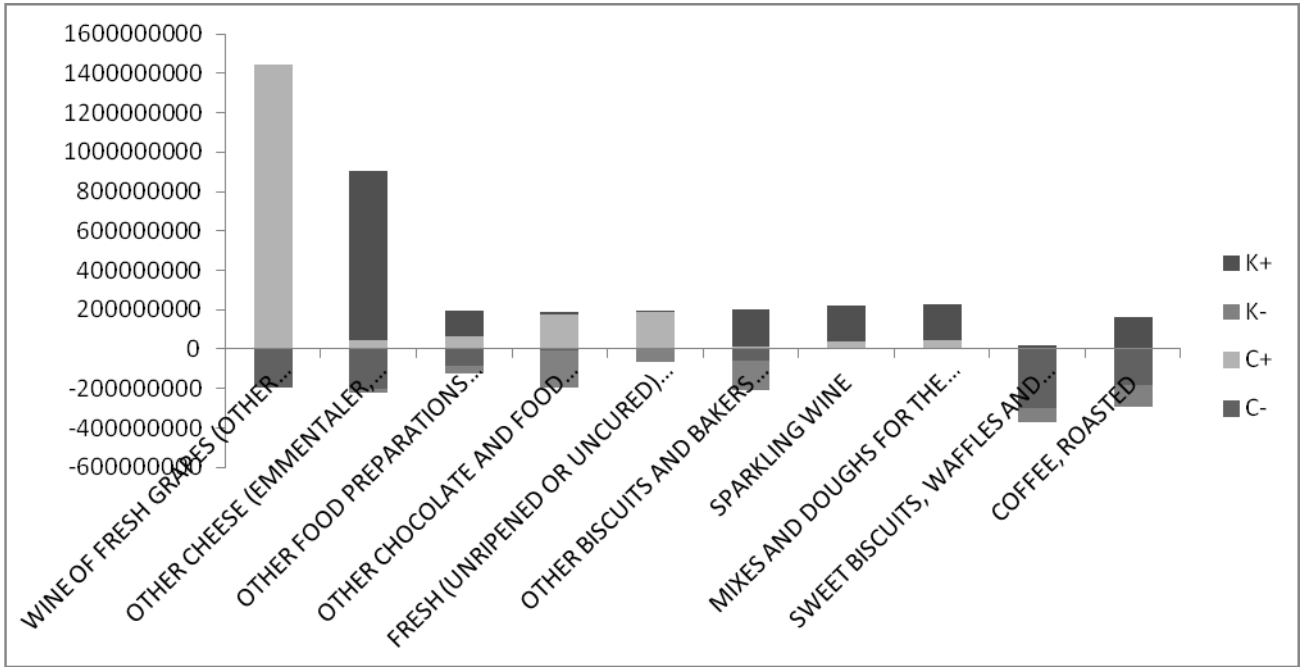

Figure 4.3.15 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Italy 1988 (net trade in euro)

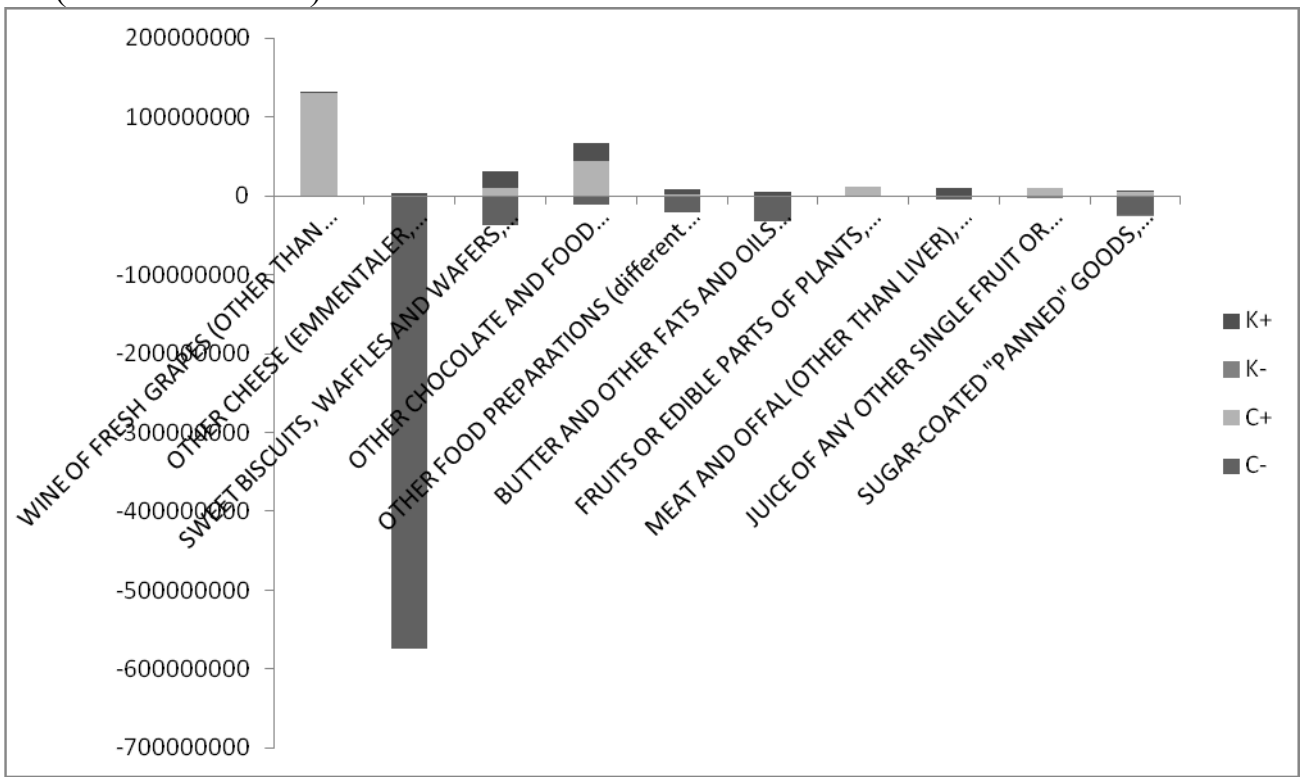

Figure 4.3.16 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Italy 1998 (net trade in euro)

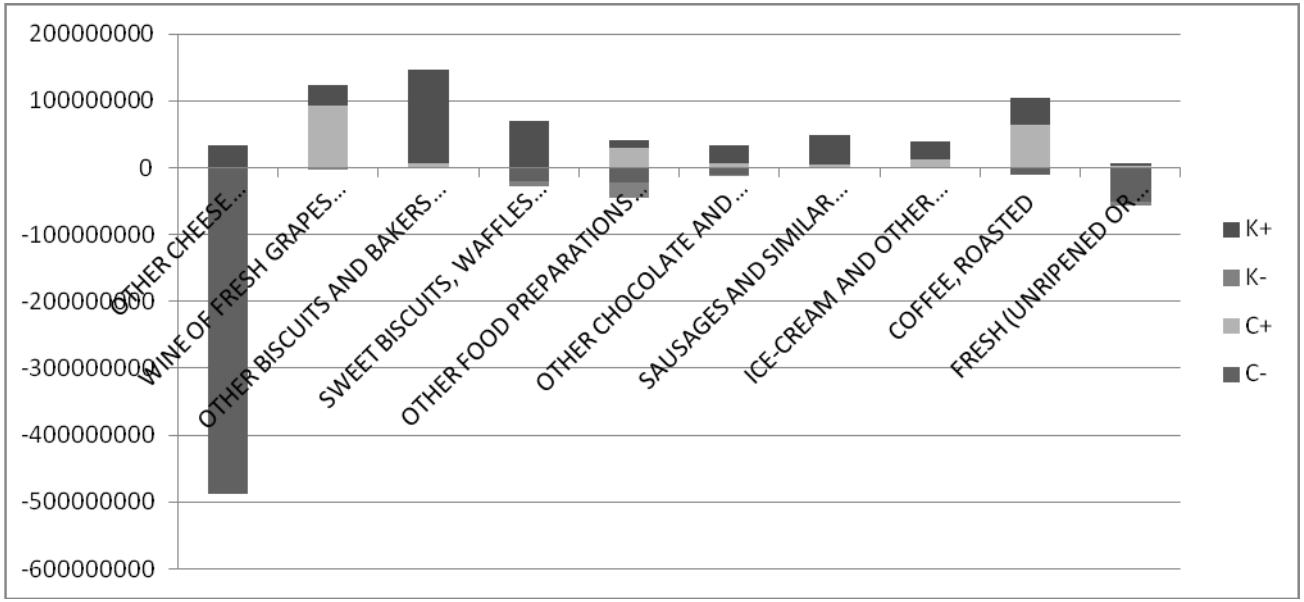

Figure 4.3.17 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Italy 2011 (net trade in euro)

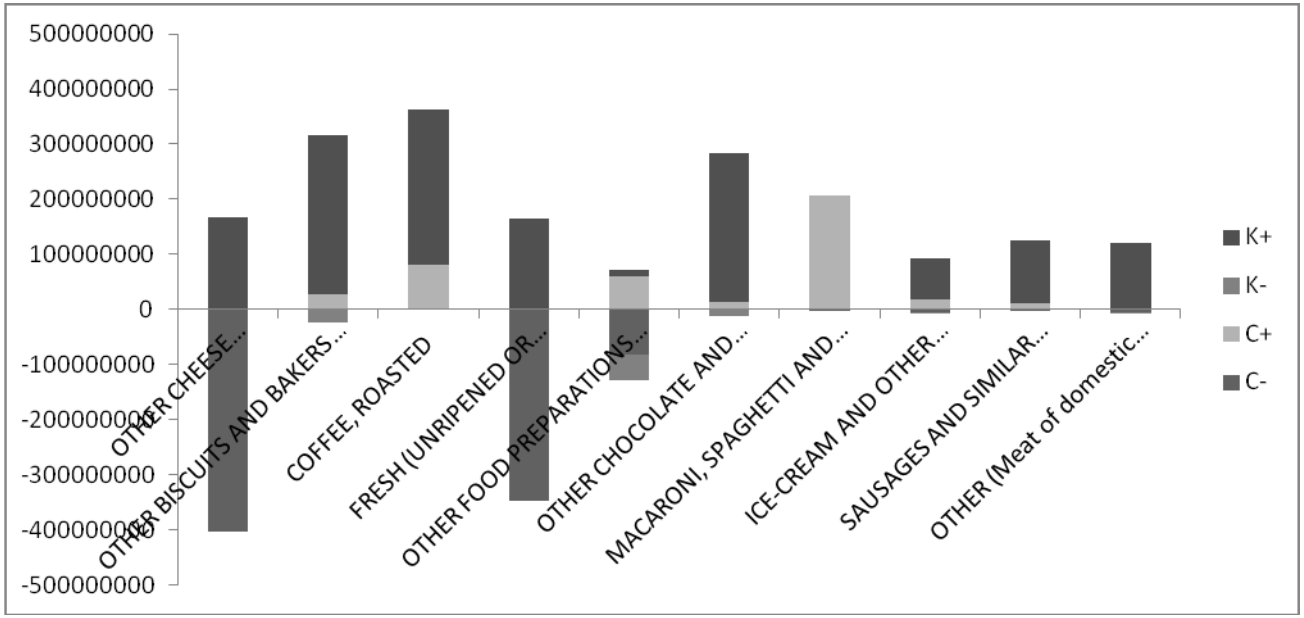

Figure 4.3.18 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Netherlands 1988 (net trade in euro)

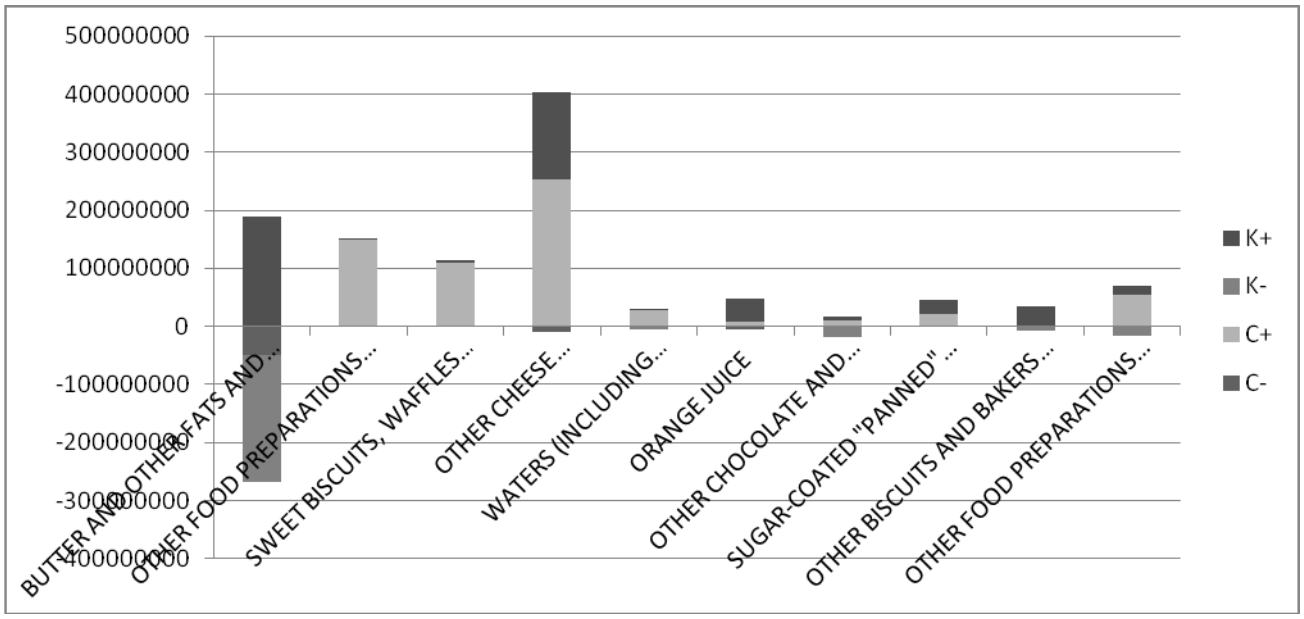

Figure 4.3.19 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Netherlands 1998 (net trade in euro)

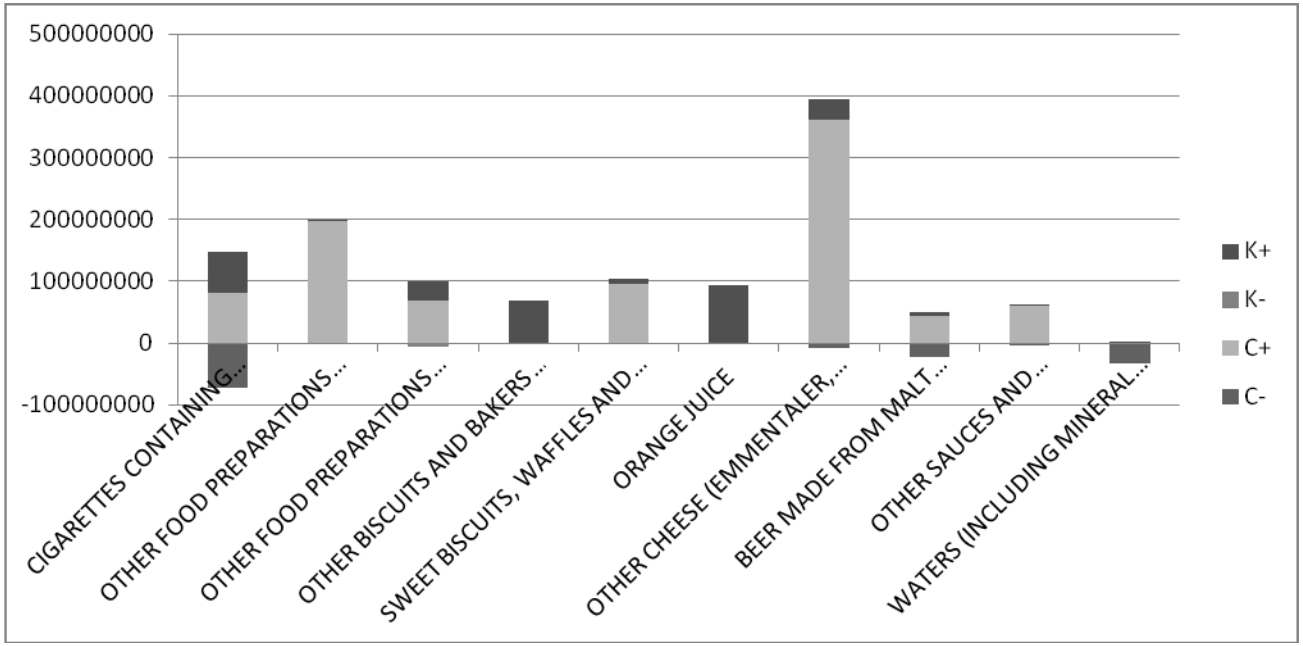

Figure 4.3.20 Intra-industry trade competition by price and quality of processed products mainly for household consumption, Netherlands 2011 (net trade in euro)

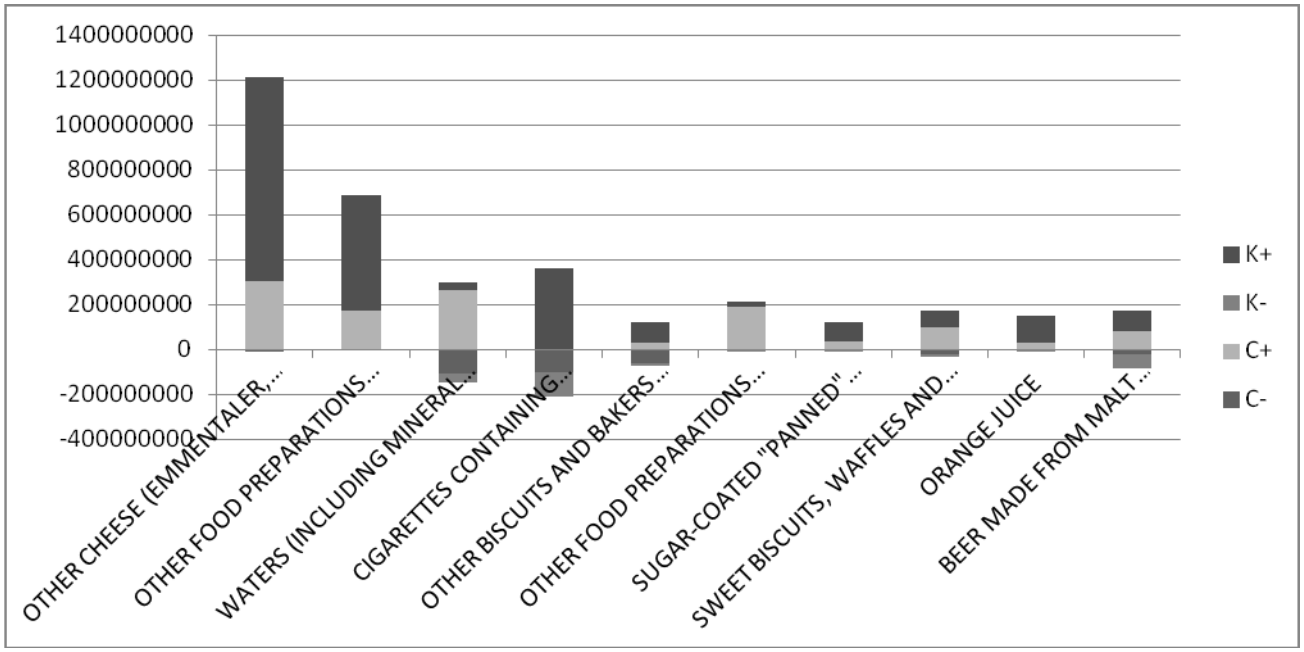

Figure 4.3.21 Intra-industry trade competition by price and quality of processed products mainly for household consumption, United Kingdom 1988 (net trade in euro)

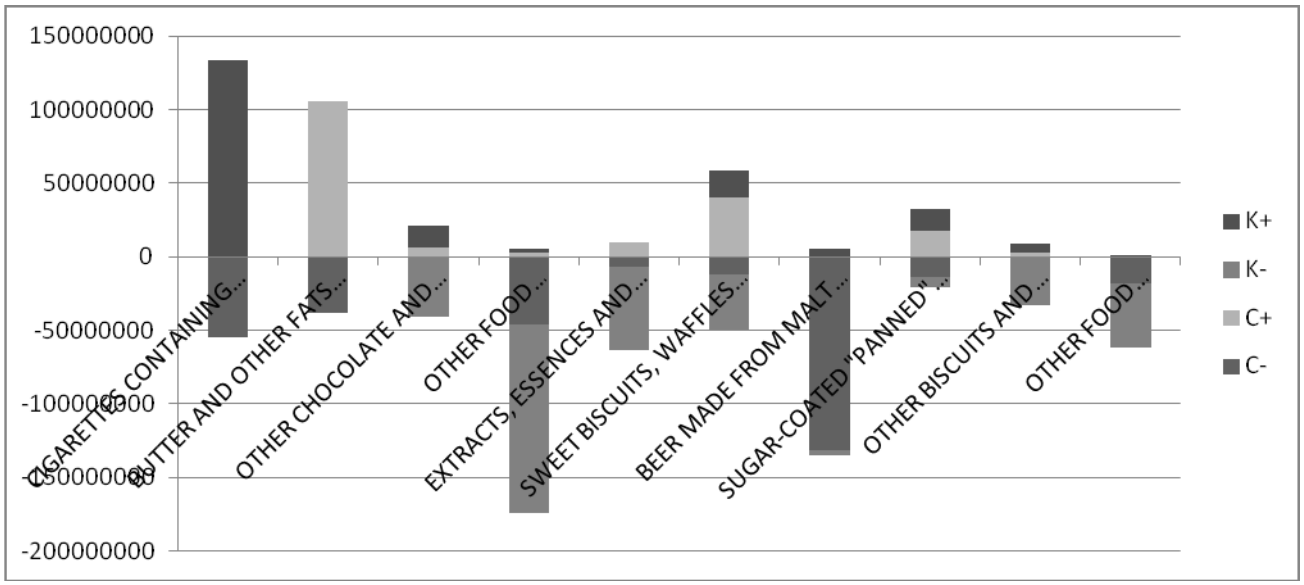

Figure 4.3.22 Intra-industry trade competition by price and quality of processed products mainly for household consumption, United Kingdom 1998 (net trade in euro)

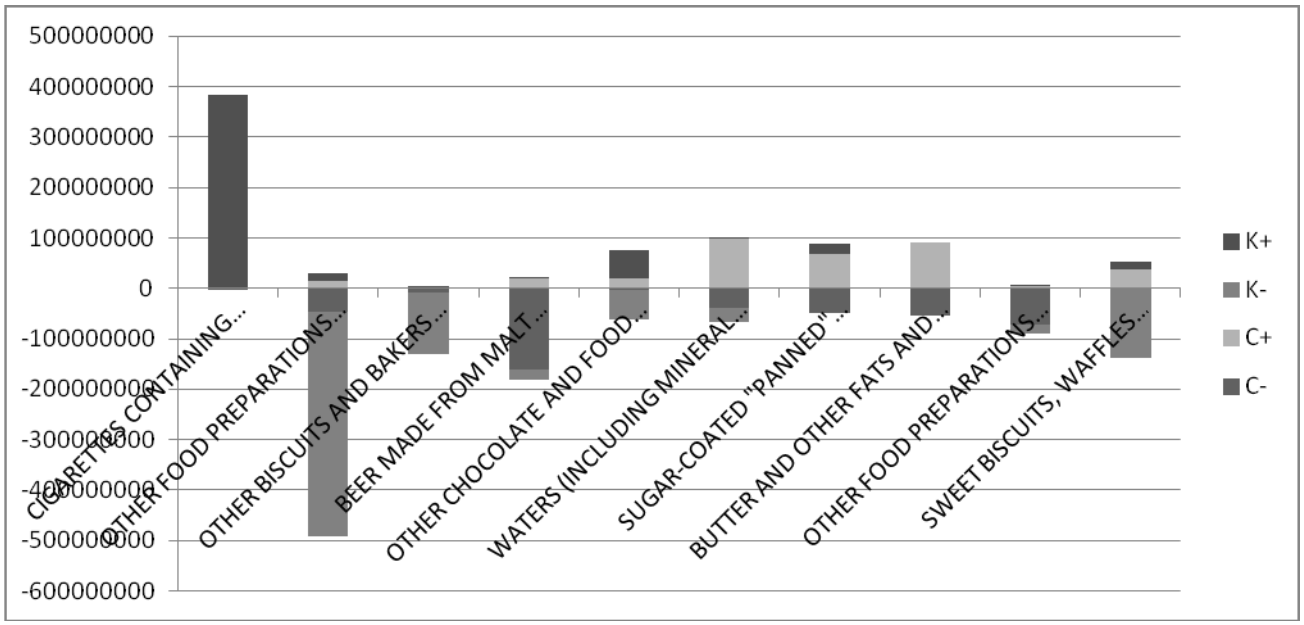

Figure 4.3.23 Intra-industry trade competition by price and quality of processed products mainly for household consumption, United Kingdom 2011 (net trade in euro)