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The structural changes of the food industry in the European Union

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Abstract

This paper studies the structural changes of food industry in the EU-27. We first provide a detailed description of the relative importance of the various sectors in the food industry. The structure is studied by calculating Gini coefficients for the EU members with regard to food industry. We find that the food industry is one of the most important components of the manufacturing sectors in terms of turnover and employment. Enterprises in the EU are relatively large in terms of turnover but small in the number of enterprises with the dairy and meat sectors being the most important branches of the food industry regarding the share of turnover, employment and enterprises. During the eight years 2000-2007, the Gini coefficient of the food industry in the EU is very close to 1, indicating a high degree of concentration.

Keywords: Food industry, meat, dairy, concentration, EU-25

JEL codes: L66, L6

1. Introduction

Some of the most important parameters explaining the structure of the food industry as generally known are the number of enterprises, size of companies (measured by turnover, employment, etc.), concentration, specialization, vertical integration and globalization. There is recent literature about the food sector, but here we try to emphasise some issues that have not been extensively covered in the literature.

The level of concentration in the manufacturing industry in the UK has increased over the years. This is shown by Sawyer (1971) who compares different measures of concentration. Furthermore, McCorriston (2002) indicate the growing concentration of food retailers as well as the implication that this may bring to the food chain as a whole. Additionally, Sheldon and Sperling (2003) have measured the degree of concentration in food sector using structural econometric models. Collins and Preston (1961) use a Markovian model to analyse the structure of the food industry and they conclude that the size distribution and the degree concentration in relative firm sizes within food industry does not show a significant increase. Sexton and Lavioe (2001) give a broad overview of the food sector but their main focus is USA. An overview of the food industry in the EU focused on market structure is provided by Viaene and Gellynck (1995), where they provide evidence that the concentration in the food industry in the EU is increased. Strak and Morgan (1995) also show that the food and drink industry in the UK have a high level of concentration.

The focus of our paper is first to give an overview of food sector in the EU countries and put this in relation to other manufacturing sectors. Secondly, we will describe meat and dairy sectors as two of the most important sectors of the food industry and thirdly to show that the concentration of FDT in the EU is very high. The parameters by which we try to describe and analyse the food, drink and tobacco (FDT) industry in this paper are company size, number of companies and their concentration.

Food industry in this paper refers to food, drink and tobacco industry (FDT) as a whole. The turnover in the food sector and the share of employment are parameters which shed light on the importance of the food industry in the manufacturing sector. In 2007, food products and beverages generated a turnover of €995.1 billion in the EU-27 compared to €942.4 billion in 2006, reflecting an increase in the generated turnover for the EU countries. The turnover of the FDT has on average grown more than that of all manufacturing (CIAA, 2008). Furthermore, an increase in the number of persons employed, the share of enterprises and the share of value-added, is observed in both the FDT and the manufacturing industry. The FDT industry is the second most important component of manufacturing in the EU. It constitutes 14.5% of manufacturing turnover and 14% of employment. Table 1 shows the importance that the food industry has in the EU countries (shares in the EU) based on the variables turnover, employment and value added. Countries that have the main impact in the EU or bring more to the EU in terms of the turnover, employment and value added from the food sector are Germany, Spain, France and the UK. These are the countries that have the highest share of food industry in the EU zone. This does not mean the food industry is one of the most important sectors in the respective countries compared to the other sectors. Using the shares of food

industry in manufacturing sector we can find some evidence that shows the importance that the food industry has compared to some other sectors of manufacturing.

Table 1: Importance of the FDT industry by country (2008)

	Shares in the EU			Shares in manufacturing		
Countries	turnover	value added	Employment	turnover	value added	employment
EU (25)	100	100	100	14*	11.4*	13.6*
BE	3.9*	3.2*	2.1*	14	12.5	16.5
BG	0.5	0.4	2.4	19	16.8	17.2
CZ	1.4*	1.3*	2.8*	10*	8.8	9.4*
DK	2.3*	2.2*	1.5*	24	15.9	17.2
DE	19.2	16.4	18.1	10	7.3	11.6
EE	0.1	0.1	0.3	16*	12.6*	12.7*
IE	2.4*	3	0.9	19*	17*	19.4*
GR	1.3*	1.8*	1.9*	22	21.7	22.2*
ES	10.2	10.1	8.3	17	15.2	15.3*
FR	17.5	15.3	13.3	17	14	17.4
IT	12.4	9.8	10	11	8.9	10.3
LU	0.1*	0.1*	0.1*	3*	7.2*	13.9*
HU	1.2	1	2.3	12	11.2	14.6
NL	6.8*	5.5*	2.8	21	18.6	16.9
AT	1.5	2.1	1.6	10*	8.8*	12.1
PL	5.3	4.8	9.6	21	16.5	16.8
PT	1.4	1.3	2.3	17	14.4	13.5
RO	1.1*	1*	4.5*	19*	15.4*	13.9*
SL	0.2	0.2	0.3	8	7.3	7.6
SK	0.4	0.3	0.9	7	7	8.9
SE	1.7	1.7	1.4*	8	6.7	8.5
UK	11.8	14.6	9.4	16	14.6	14.4*

** indicates the share on the 2007 data*

Source: EUROSTAT SBS and own calculations

From Table 1 we can show the importance of food in the manufacturing sector in the EU members (shares in manufacturing). We can see that Denmark, Greece and the Netherlands have the highest share regarding the share of the food industry in manufacturing which is larger compared to the EU average. With regards to value added, Ireland, Netherlands, Poland and Denmark show larger values than the EU average. The countries with the higher employment in the food industry than the EU average with regard to manufacturing are Greece, Ireland, Denmark and the Netherlands. To sum up, this table describes firstly some of the most important countries in terms of food industry and secondly the importance of food industry in manufacturing sector in each member country.

1.1 Dairy and meat sector

The subsectors of the food industry are important for making inferences regarding the importance of the food industry in the manufacturing sector as well as the industry as a whole. The food industry

plays an important role in the modern economy and is characterised by a high degree of division of labour. The variables that may give a clear picture of this branch composition are the shares of production value and employment. The first two are related to output, while the last one indicates input use and (indirectly) social aspects. The variables for structural business statistics are defined in the Commission Regulation (EC) No 2700/98. Table 2 shows the average production value and the share of the employment of the subsectors of food industry.

Table 2: Subsectors of FDT in the EU-27 sub–sectors, 2007

	Share of employment (%)	FDT share of production value (%)
Meat	21.5	19.8
Fish	2.7	2.5
Fruit & veg	6.1	6.4
Oils	1.4	4.2
Dairy	8.6*	12.9*
Grain mill	2.7	4.1
Feeds	2.6	6.3
Others	44	26.2
Beverages	9.8*	15.1

** indicates 2006 data.*

Source: EUROSTAT SBS and own calculations

Subsectors with high employment shares in the food industry in EU-27 are meat processing (21.5%), the dairy sector (8.6%), ‘others’ and beverages. The average level of employment ranges from 1.4% for oils up to 44% for ‘others’. Similar results are observed when we compare subsectors regarding the production value. Therefore ‘others’ (26.2%), meat processing (19.8%), beverages (15.1%) and dairy (12.9%) are some of important sectors in the food industry regarding the share in production value.

Given that meat and dairy are shown as two of the most important subsectors in food industry (see Table 2) it may be of interest to look at the country specialization in the EU level. Figure 1 is an overview of meat and dairy sectors in the EU regarding the distribution of production value.

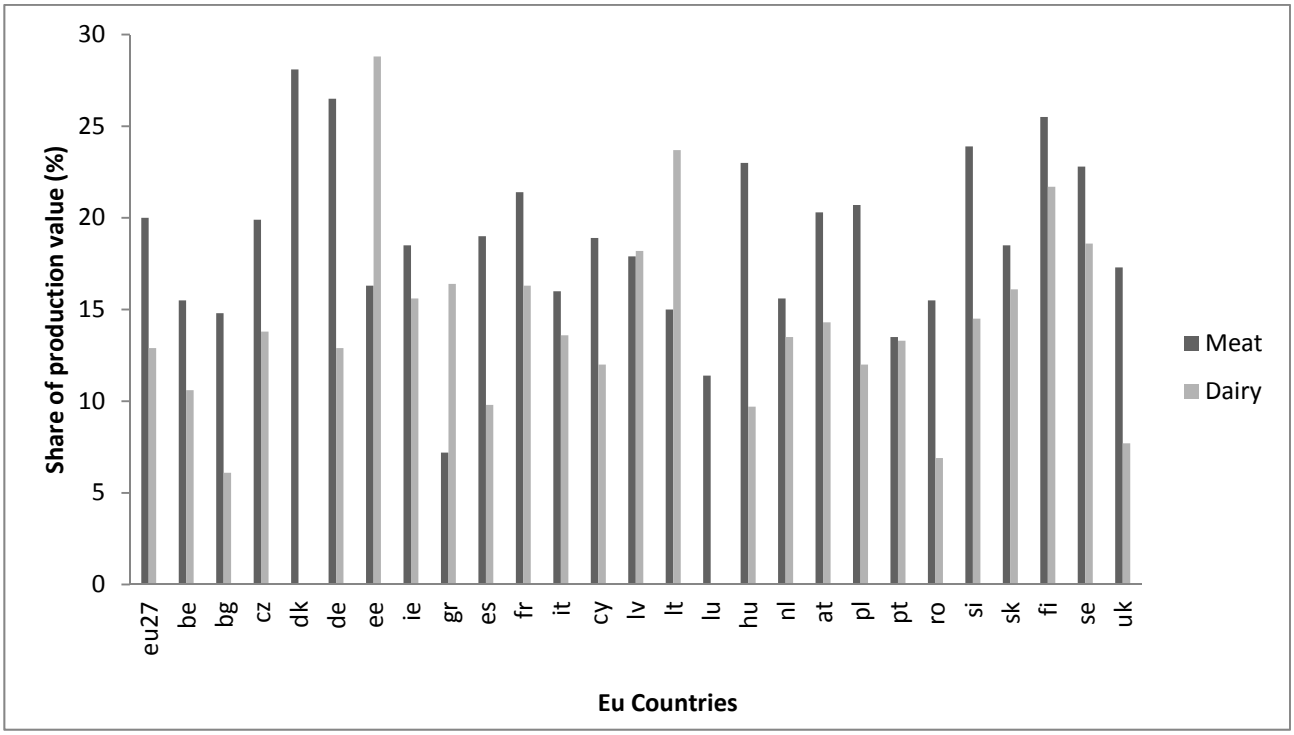

Figure 1: Distribution of production value in the meat and dairy sector in the EU-27, 2007

Considering Figure 1, a conclusion can be drawn regarding the specialisation of countries in dairy and meat sectors. For instance, Denmark, Germany, France, Hungary, Slovenia, Sweden, Austria and Poland have shares that are higher compared to the EU average for meat processing. For the dairy sector, we can see that the Eastern European countries (EEC) such as Estonia, Latvia and Lithuania have the highest shares, over the average. Also, shares significantly higher than average are reported for Finland, Sweden, France and Greece.

Additionally we can find evidence regarding the employment with regard to meat and dairy sectors for each EU member. Figure 2 gives an overview of meat and dairy industry with regard to employment in the EU countries.

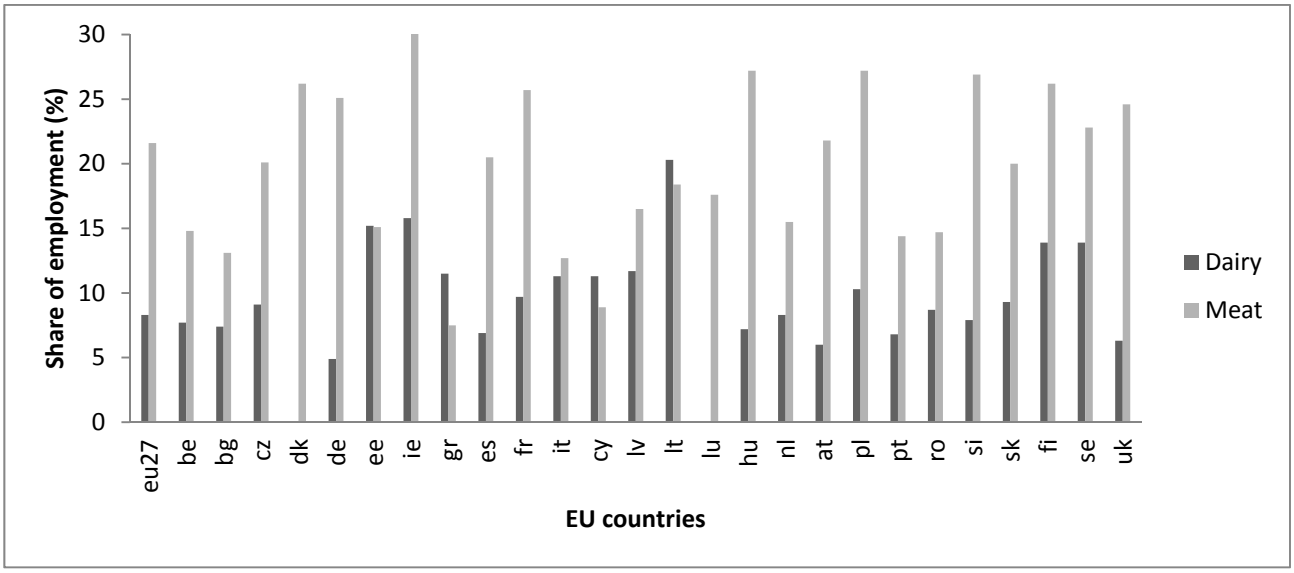

Figure 2: Distribution of employment in the meat and dairy sector, 2007

The number of persons employed in meat processing is higher for some EU-27 members than the EU-27 average as shown in Figure 2. For instance, in Ireland, an average of 30.7% persons is employed in the meat industry and the average of the enterprises is 22.1%. Furthermore, the share of employment is higher than the EU average of 21.6% (also in comparison with the other members) in the meat sector in Slovenia, Poland, Finland, Sweden, the UK, Denmark, Germany and France. Germany, Ireland, France, Austria and the other EEC such as Lithuania, Poland and Slovenia do not have a higher share of employment in meat manufacturing, but do have a high number of enterprises in this sector.

Countries that seem to have a high level of employment in the dairy industry are mostly the Eastern European countries such as (Czech Republic, Estonia, Latvia, Poland, Romania and Slovakia) and the Mediterranean countries (such as Cyprus, Greece and Italy).

2. Data and methods

The data used in this paper are from Eurostat database covering the period 2000-2007. The 2007 dataset is the most recent data that could be located. The food processing industry and its sub-sectors are defined based on the NACE1[1] classification. Furthermore, Eurostat provides sufficient and reliable statistics of the SBS (structural business statistics) structure of business regarding the short term development of important variables. As defined from Eurostat, SBS cover industry data among other things. Presented according to the NACE activity classification, the main aim of SBS is to describe the structure, conduct and performance of businesses across the EU.

[1] Nomenclature generale des Activites economiques dans les Communautes europeennes (NACE) refers to the industrial classification as defined by Eurostat

In order to find out whether the EU countries have a uniform or non-uniform distribution of turnover regarding different categories of enterprises and, subsequently, to show how the EU countries developed over the years regarding the FDT industry, we the Lorenz curve and Gini coefficient. These are well-known methods for measuring the degree of dispersion of a set of figures.

It should be mentioned that, when compiling the Gini coefficients, we faced a lack of data regarding the share of turnover in some of the EU countries, mostly in the years 2001-2003. Even with the lack of firm-level structural data we managed to calculate Gini coefficients for almost all EU-25.

3. Structure

The food and drink industry accounted for around 310,000 enterprises in the EU in 2007. Germany, France and Spain, along with Romania and Poland, had the highest number of enterprises. Overall, firms in the food industry are becoming larger in size and smaller in number. Moreover, the number of food enterprises is decreasing in almost all the EU countries by a higher percentage than that of the average manufacturing sector. In almost all the EU countries (except Hungary) a decrease in the number of food enterprises was reported in the period 2000-2007.

It is generally known that enterprises tend to be categorised in different classes ranging between 1-19 employees (considered small enterprises) 20 to 249 employees (considered medium enterprises) and more than 250 workers (considered large enterprises). In order to explain this imbalance of the classes in the FDT industry in the distribution of turnover, Lorenz curves are drawn and Gini coefficients are computed.

3.1 Lorenz curves

To draw the Lorenz curve and calculate the Gini index, the starting point is the way in which the turnover is distributed (as seen in Table 3). These data represent the period 2000 to 2001 and include the total turnover of the FDT industry, the total number of enterprises of the food industry and the share of turnover and the share of enterprises for all size classes and for all the EU countries.

Table 3: Share of turnover and enterprises broken down by size classes, 2000-2001

EU-25	1-19		10-19		20-49		50-99		100-249		250-499		500-999		>1000	
	% of turn	% of ent	% of turn	% of ent	% of turn	% of ent	% of turn	% of ent	% of turn	% of ent	% of turn	% of ent	% of turn	% of ent	% of turn	% of ent
2000	**6.7**	79.5	**5.5**	10.7	**8.7**	5.4	**8.4**	2	**15.8**	1.5	**14.2**	0.6	**14.1**	0.2	**26.6**	0.1
2001	**6,7**	78.9	**5.4**	11	**9**	5.6	**8.8**	2.1	**15.8**	1.5	**14.6**	0.6	**13.9**	0.2	**25.8**	0.1

Source: EUROSTAT (SBS) and own calculation

Looking at Table 3, it can be seen that the class of enterprises with 1 to 19 employees is high in volume but low in value, which means that there is a relatively high number of enterprises but that the turnover generated is very low. For both years, the generated turnover was the same but the share of enterprises had slightly decreased in 2001. The second class, consisting of enterprises with 10 to 19 employees, reports the same results (a high number of enterprises with a very low share in corresponding turnover). In 2001, both the share of enterprises and the share of turnover had slightly increased. The third and fourth categories, consisting of enterprises with 20-49 and 50–99 employees respectively, have a considerable number of enterprises with a considerable share of turnover. No changes were reported in 2002 for this category. In the fifth (100-249), sixth (250-499) and seventh (500-999) categories, a small number of enterprises are accompanied by a high share of turnover compared to the other categories. There was no big shift in 2001 except for a small decrease in the share of turnover of the 500-999-employee category (0.2%) and a small increase that of the 250-499-employee category (0.4%). The last category, consisting of enterprises with more than 1000 employees, accounts for a very small share of enterprises and the highest share of turnover in comparison to the other classes. There was a small decrease in the share of turnover (0.8%) for 2001 compared to the previous year.

The other investigated period of time was 2004 to 2007, as there was a lack of data regarding the total turnover and total number of enterprises of EU-25 (27) in the years between these periods. Also, the table shows fewer size classes since fewer categories of the FDT industry were reported.

Table 4: Share of turnover and enterprises broken down by size classes, 2004-2007

EU-27	**1-9**		**10-19**		**20-49**		**50-249**		**>250**	
	%of turn[i]	**%of ent**[ii]	**%of turn**	**%of ent**	**%of turn**	**%of ent**	**%of turn**	**%of ent**	**%of turn**	**%of ent**
2004	**6.1**	78.7	**6.1**	11.1	**8.7**	5.7	**24.3**	3.6	**54.8**	0.9
2005	**6.5**	78.5	**4.7**	11.3	**9.1**	5.7	**25.2**	3.6	**54.5**	0.9
2006	**6.1**	77.8	**5.1**	10.7	**9.1**	5.6	**25.4**	4.9	**54.3**	0.9
2007	**6.3**	79.5	**4.7**	10.6	**9.1**	5.6	**25.5**	3.6	**54.4**	0.7

[i] *% of turn = turnover of each class / total turnover × 100*

[ii] *% of ent = enterprises of each class / total number of enterprises × 100*

Source: EUROSTAT (SBS) and our own calculations.

Table 4 shows that, for the first category, the share of enterprises was quite high compared to the share of turnover. In 2005, a lower share of enterprises (0.2% less) and a higher share of turnover (0.4% more) were reported compared to 2001. The second category in 2004 had the same share of turnover compared to the previous category although a lower number of enterprises were found. In 2005, a 0.2% increase was reported in the share of enterprises while a 1.4% decrease was found in the share of turnover. The same turnover is reported in 2007 from the same category although a lower share of enterprises if we compare with 2005. Moving to the third category, the gap between

the share of enterprises and the share of turnover was not large in all the years. The share of turnover and the share of enterprises do not report noticeable changes over the three years. A small percentage of enterprises accompanied with a medium turnover is seen for the enterprises that have between 50 and 250 employees in all the years. As Table 4 illustrates, a small increase in turnover is reported every year and a stable share of enterprises for the fourth category. The last category of enterprises with more than 250 employees has a very small share of enterprises in all the years, but quite a high share of turnover (more than 50% of the total). From 2005 onward a slight decrease was reported in the share of turnover.

As stated above, an alternative way of presenting the substantial variability in the FDT industry data is to use the Lorenz curve. The Lorenz curve is broadly used as a graphical representation to describe and compare the inequality in income distribution (Kakwani, 1997; Beach, 1983). The Lorenz curve has also been generalised to describe the relationships among the distributions of different economic variables. In this paper we use Lorenz curves as a graphical device to represent the turnover distribution among the different categories of the EU enterprises. The Lorenz curve is a graph that connects the cumulative shares of the turnover unit to the cumulative shares of the turnover received when the units are arranged in ascending order of their turnover (Kakwani and Podder, 1976). The Lorenz curve has an X axis with coordinates 0% as the starting point and 100% as the end point, and a Y axis with the same coordinates. In our case, the X axis represents the share of enterprises while the Y axis represents the share of turnover. To demonstrate the relative proportions of the X axis and the Y axis is the main aim of such a curve. The first stage is to measure the cumulative percentages. After computing the cumulative percentages we have all the points with which to design the Lorenz curve. The coordinates of the first and last points are given by definitions. The other points are the source for summarizing our data. The points are plotted on the graph and are connected by a smooth curve. This curve is the Lorenz curve. The diagonal line on the graph shows the position in which the curve would be if there was absolute equality in the distribution of turnover. The graphs below are drawn for the years 2000-2001 (Figure 3) and 2004-2007 (Figure 4). The Lorenz curve is shown in two figures due to the missing data regarding the turnover of the EU-27 in 2002 and 2003 as well as that in the year 2000 we have more FDT enterprises broken down into more classes, while few classes of FDT enterprises were found after the year 2001. In order to minimise confusion we have chosen to represent years in two different graphs as presented below. The first Lorenz curve shows the relative proportions of share of enterprises versus share of turnover for the years 2000 and 2001. As shown in Figure 3, there is no obvious difference between these two years.

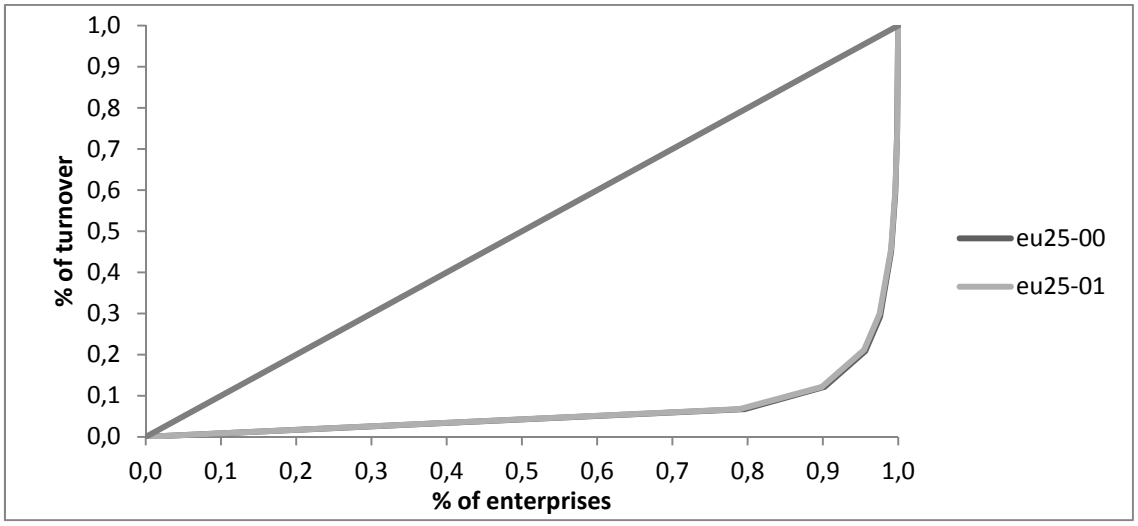

Figure 3: Lorenz curve 2000-2001

Figure 4 represents the Lorenz curves for 2004 and 2005. There is no difference shown between these two years regarding the distribution of turnover in the different classes. The category of enterprises with more than 250 employees had the highest share of turnover though a very low share of enterprises.

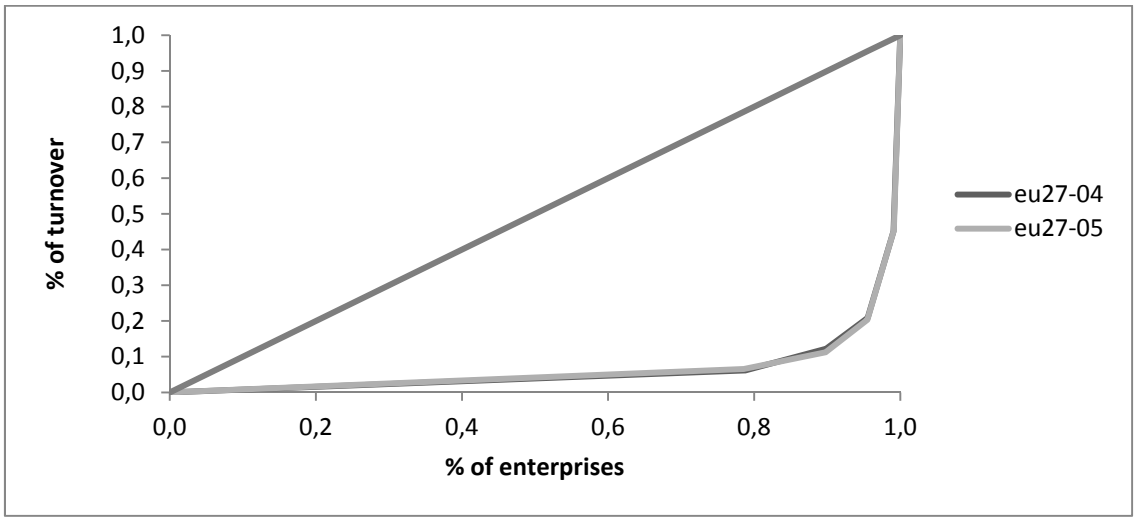

Figure 4: Lorenz curve 2004-2005

With regard to the individual countries from the Lorenz curve, Greece and Hungary seem to have the most equal distribution of turnover. Furthermore, in 2005 Greece, Italy, Ireland and Estonia seem to have had the most equal distribution of turnover. For comparing countries to each other at the same time and for different years, the Gini index was used, as described in the next section.

3.2. Gini coefficient

The concentration ratio is one of the most common measures of the oligopoly industry. However there are other several measures which are proposed aiming to avoid some of the problems of this measure. One of these measures is the Gini coefficient (Atkinson, 1970; Sawyer, 1971).

For determining Gini coefficients, the first step is to find the area between the Lorenz curve and the 45° line for X = 0 and X = 1.The Gini coefficient according to Dorfman (1997) can be calculated in two ways. First the gini coeffiecient is "*the area between a given Lorenz curve and a Lorenz curve for en economy in which everyone receives the same income, expressed as a proportion of the area under the curve for the equal distribution of income"*. Second the Gini coefficient is a calculation of any probability distribution. Both these ways lead to the same formula as proposed by Dorfman (1997) and applied in our paper:

$$G = 1 - \frac{1}{\mu}\int_{0}^{y1} (1 - F(y))^2 \, dy$$

Where F (y) is the cumulative probability of distribution of income and in our case is the percentage of turnover by unit, μ is its mean which is presumed to be finite and y1 is its upper limit which may be infinite but in our case is 1.

In other words, the Gini index is defined as the ratio of the area between the diagonal line and the Lorenze curve and the gap between the lines is a function of the degree of inequality. The higher the Gini is, the greater the distance and, therefore, the higher the level of inequality regarding the distribution of turnover in the different sizes of FDT enterprises. Table 5 shows the development of the Gini index.

Table 5: Development of the Gini Index, 2000-2007, in the EU-27

	Gini-00*	Gini-01*	Gini-02	Gini-03	Gini-04	Gini-05	Gini-06	Gini-07
EU-27	0.90357	0.902081	-	-	0.901381	0.899192	0.870854	0.880095
BE	0.900095	0.900953	-	0.895304	0.90128	0.890744	0.876023	0.875116
BG	-	-	0.891528	0.897429	0.899866	0.901083	0.874288	0.858434
CZ	0.921742	0.885785	-	0.906035	0.899986	0.894372	0.858561	-
DK	0.929524	0.929367	0.911028	0.898909	0.913302	0.912657	0.885075	-
DE	0.918254	-	0.909199	-	0.874511	0.910142	-	-
EE	-	-	0.808205	0.820678	0.815833	0.820561	0.751296	0.752525
IE	-	0.837647	0.813404	-	0.84136	0.839167	0.802038	0.801449
GR	0.82423	-	-	-	0.759784	0.758339	0.747465	0.756163
ES	0.849529	0.853153	0.853608	0.853991	0.855463	0.853491	0.821187	0.828172
FR	0.895435	0.900982	0.893329	0.896979	0.896125	0.896939	0.883797	0.880945
IT	0.82267	0.823728	0.847171	0.854964	0.853452	0.832086	0.825371	0.813898
CY		-		0.7944	0.809448	0.821214	0.768988	-
LV	-	-	-	0.838194	-	-	-	-
LT	-	-	-	0.894499	0.891067	-	-	-
HU	0.885475	-	-	-	-	0.915964	-	-
NL	0.918546	0.925543	0.91483	-	-	-	-	-
AT	-	-	0.865196	0.861632	0.932627	0.932077	0.829777	-
PL	-	-		0.860402	0.882452	0.86983	0.842964	0.851813
PT	0.889459	0.882805	0.87382	0.86603	0	0.880384	0.845471	0.855724
RO	0.870863	0.911125	0.899153	-	0.892654	0.908163	0.872069	0.879629
SI	-	-	-	-	-	-	0.874043	0.863545
SK	-	-	-		0.816368	0.812788	-	0.770385
FI	-	-	0.923236		-	-	-	-
SE	0.922787	0.927528	-	-	0.911512	0.908776	0.884549	0.888269
UK	0.923503	0.895463	0.88853	0.893606	0.896066	0.894877	0.876926	0.867647

As we see from Table 5, the Gini of 2005 for the EU countries is higher compared to that of 2004, which means more unequal turnover in the FDT industry distributed in small, medium and large enterprises. Furthermore, we can see from the graph that the gap between the years is not large. The Gini coefficient of the EU in 2005 is approximately the same as the Gini in 2000. Although the Gini coefficients do not show any large shift over the years, the degree of inequality regarding the distribution of turnover in the small, medium and large enterprises is quite high. Over all six years, the Gini index in the EU is around 0.9 (very close to 1), which indicates inequality. Regarding the individual members, we can see from the graph that in 2000, the countries that had the smallest Gini index were in Southern Europe: Greece and Italy (Gini = 0.82), Spain (Gini = 0.84), Portugal (Gini = 0.88) followed by some of the Eastern European countries, such as Romania (Gini = 0.87) and Hungary (Gini = 0.88). The Czech Republic has a higher Gini coefficient compared to the other Eastern European countries. On the other hand, the Northern European countries have a higher Gini

index. For instance, Denmark, Sweden and the UK have Gini coefficients of 0.92, while Ireland has a Gini coefficient of 0.83. Also, the Western European countries, including Germany, Belgium and the Netherlands, have a high Gini coefficient level compared to Southern Europe.

In 2001, the lowest Gini indexes were in Southern Europe, for example, Italy (0.82), Spain (0.85) and Portugal (0.88). However, there was no difference with regard to the Gini coefficients compared with the previous year (2000) in most of the EU countries, except for a slight increase of 0.1% in Portugal, France and Romania. It should be mentioned that there was a lack of data for the share of turnover regarding some of the EU countries mostly in the years 2001-2003. From 2002 to 2005, there was no big shift but some small changes did occur. We can see that the Northern European countries show a tendency of a decreasing Gini coefficient in the FDT industry, though by a very small percentage. The Southern Europe countries tend to have lower Gini coefficients. Some of the Eastern European countries, on the other hand, show a slight increase of their Gini coefficients, such as Bulgaria (0.1%) and Estonia (0.2%). However, the Czech Republic seems to have had a slightly lower Gini index compared to the previous years of 0.2%.

So far, it has been shown how the Gini coefficient has changed over the years and a comparison of the EU countries has been conducted. To sum up our analysis, a rank of the countries based on the Gini coefficient, in light of the available data. We tried to rank and group countries with the same coefficient. As shown in Figure 5, Greece is the country with the lowest coefficient compared to the rest of the countries and the EU average.

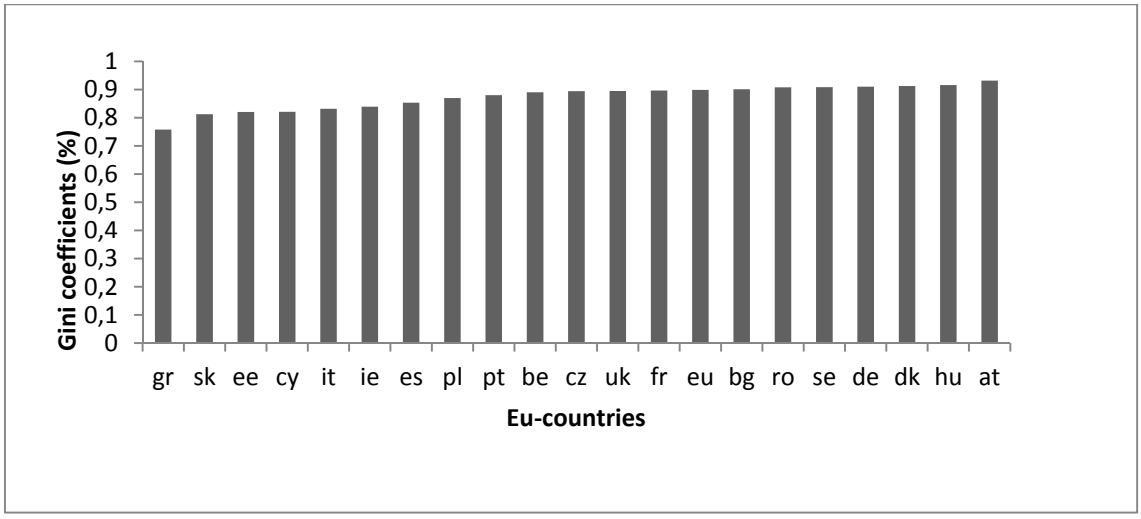

Figure 5: Ranking of the EU-27 countries according to the Gini coefficients, 2007

The countries with the second lowest coefficients were Estonia and Cyprus. The third group consists of Italy and Ireland and the fourth consists of Spain, Poland, and Portugal. The fifth (the group with a coefficient equal to the EU average) includes the UK, Czech Republic, Bulgaria, Belgium and France. This is followed by the group of countries with coefficients higher than the EU average, which are Denmark, Germany, Hungary, Romania and Sweden. Finally, the highest

coefficient was reported in Austria. In addition, we can conclude that the more developed countries are highly concentrated compared to the other EU members.

4. Summary and Conclusions

In this paper we try to give and overview and highlight the importance of the food sector in industry. The food sector appears to be very important in terms of turnover and employment when we compare with other sectors of industry. Within the food industry, dairy and meat products are two of the most important branches in the EU countries when we talk in terms of production value and employment. This paper calculated Lorenz curves and Gini coefficients to find out whether the distribution of turnover in food industry enterprises is the same across EU members. The results indicated that the EU food industry is very concentred with a Gini coefficient of 0.899. This Gini coefficient is close to 1, thereby indicating inequality. We see that most of the Scandinavian countries tend to be more concentrated than the other EU countries, which shows that the policy of these countries is having fewer enterprises.

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6. Appendix – Country Abbreviations

Abbreviation	Country
EU15	European Union (15 countries)
EU25	European Union (25 countries)
EU27	European Union (27 countries)
Be	Belgium
Bg	Bulgaria
Cz	Czech Republic
Dk	Denmark
De	Germany
Ee	Estonia
Ie	Ireland
Gr	Greece
Es	Spain
Fr	France
It	Italy
Cy	Cyprus
Lv	Latvia
Lt	Lithuania
Lu	Luxembourg
Hu	Hungary
Mt	Malta
Nl	Netherlands
At	Australia
Pl	Poland
Pt	Portugal
Ro	Romania
Si	Slovenia
Sk	Slovak Republic
Fi	Finland
Se	Sweden
Uk	United Kingdom