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Major trade trends and competitiveness of the European union food industry

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Running title: **Competitiveness of the EU Food Industry**

Abstract
The main reason for th Food industry plays a major role in the total economic and social productivity in the thriving overpopulated world. This research discusses competitiveness of European food industry, competitors on the global market, current problems of agri-food business and facing challenges. Practical part of the paper includes data analyze about food industry statistics between external trade partners and member countries. First goal of the research is to determine trends in EU-rest of the world food trade markets. Second goal is to evaluate food external trade balance sustainability of the EU members by state level and to highlight nations by their contribution in establishing total trade balance of the food industry.

Key words: food industry, EU, international food trade.

Introduction

After the world economic crisis in 2008, the overall competitiveness performance of the 28 Economies of the European Union (EU 28) in the food and beverages industries remained weak: performance on the major economic indicators weakened (value added, labor productivity, value added share), whereas the trade indicators starting to improve. The industry remains stable, resilient and robust, even in times of economic downturn (Data & Trends of the European Food and Drink Industry 2013-2014). According to *"The competitive position of the European food and drink industry"* the EU28 positions in 2008-2012 was even weaker than the already relatively weak position in post financial crisis period (2003-2007). On the other side Brazil remained its strongest position in food industry and the USA also was became stronger. Through that periods for 10 major products competitiveness of only 4 product groups were increased (incl. dairy, bakery, feed and beverages) (Wijnands et al., 2007; Wijnands et al., 2008), positions of the remaining 6 product groups weakened (meat, fish, fruit/veg, oil, cereals and other food). The animal feed industry remained the strongest sector: this sector uses several byproducts from other industries like oil cakes from the oil industry and residues from the cereal industry. The dairy industry recovered from a weak to an above-average position. If we separate only 10 EU member states with the highest trade turnover, only 5 countries are above average (competitiveness index have three main position - weak, average and strong). These 5 "strong" EU countries turned out to be weak if benchmarked against the USA, Australia, Brazil and Canada. Germany, France, Poland, Denmark and Ireland are already weak if benchmarked against the 10 EU countries with the largest turnover.

Emerging economies such as Brazil, Thailand, Indonesia and India have been continuously increasing their export market share in recent years.

According to Porter, sustainable competitive advantage is the fundamental source for above-average performance in the long run (Porter, 1990). In line with Porter's viewpoints, competitiveness of the food industry is defined as the sustained ability to achieve profitable gain and market share in domestic and export markets in which the industry is active.

Majority of food production is consumed domestically. Food consumption is strongly related to the size and composition of the population. The population growth in the EU28 is low compared to the other food industry oriented countries. An increasing population results in a larger demand for food, that is lower in the EU28 than in the partner countries.

Initiated by Schmalensee (1985) and Rumelt (1991) the identification of the driving forces of variation in firm profitability has become an important and yet unresolved research question. One of the main problem concerns when reviewing European food industry is profitability of private companies across the member countries. The importance of SMEs in the EU food industry is limited. 90% of the enterprises has a share in the total turnover of just above 10% and employs around 25% of the personnel. The 10% largest enterprises take the remaining part of turnover and employment. For the food industry, the large enterprises are the backbone of Europe's food industry and not the SMES as stated by the EC (2009).

Notable findings is that competition is stronger and profitability is lower within the food sector as compared with the manufacturing sector in general. This is mainly attributable to a high market saturation and to the fierce competition between the big retail companies. (Gschwandtner & Hirsch, 2018). Therefore, one of the main drivers of profitability and profit persistence within the food sector is firm size. The numbers of enterprises within the EU seems rather large compared to the USA. (ESCIP Consortium. 2016). Larger producers seem to be in a better bargaining position against the retail sector and this seems to be both the case in the EU and in the US. A determinant where the food sector seems to differ between the two regions is firm's growth. While the impact of firm's growth on profitability is positive in the US, it is insignificant in the EU. This may be because while growing firms have to take into consideration higher costs and this may decrease profitability. And this may explain yet another difference between the determinants of

profitability in the food sector in the US and in the EU.

Starting with the contributions of Mueller (1990) many empirical studies have shown that industries are in general characterized by a large number of firms generating profits that diverge from the competitive norm in the long run -a phenomenon usually referred to as profit persistence.

While almost 80% of the firms in the EU-28 food sector have less than 10 employees in the US only around 50% of the firms are that small. Although, the majority of EU firms are micro sized with less than 10 employees those firms only account for 8.6% of total EU-28 food processing industry turnover (Eurostat 2014).

Another source of existed problems should be lower labor productivity than in most manufacturing EU sectors. Potential reasons include: reduced investment in recruitment, machinery and technologies, and the large number of companies operating with small scale operations. 30% of employees in the food and drink industry have a low level of qualifications (Data & Trends of the European Food and Drink Industry 2013-2014).

Competitiveness of the EU food industry and subindustry is the ex-post performance of a sustained ability to achieve profitable gain and market share in domestic and export markets in which the industry is active'.

While most previous studies on food industry performance, focus on more specific aspects such as the impact of retailer concentration on industry innovation (Weiss & Wittkopp 2005) only a few studies have explicitly analyzed the persistence and drivers of 'abnormal' profits in the food sector.

Hirsch and Gschwandtner (2013) implement a dynamic panel model to a large panel of EU food processors. They show that due to high market saturation and strong bargaining pressure from the retail sector the persistence of 'abnormal' firm profits in the EU food industry is significantly lower compared to other manufacturing sectors. They identify firm size as a main profit driver.

Clearly, the current debate about information from agriculture and the food industry needs the consumer behavioural perspective as one of the points of departure (Verbeke, 2005).

A number of changes have occurred the last decade in the agri-food sector. New global retailers, industry's consolidation in most of the sub-sectors, the changing consumer consumption characteristics, as well as the existence of more strict regulations and laws regarding food production and trade have changed the business environment for most of the companies operating in the sector, encouraging collaboration attitudes among companies at all levels. Increasing tensions and conflicts that are reflected in international negotiations. Some of the most significant indicators of these changes are the technological disruptions related to the development and diffusion of genetically modified organisms, the restructuring of markets characterized by rapid concentration among retailers, and the reorientation of trading activities involving the so called globalization of markets and firms (Mansard & Valceschini, 2005). In particular, global retailers are building partnerships and support close collaboration practices with many of their suppliers in an effort to achieve performance improvements across many business levels (Kaufman et al. 1999). The undisputed competitive pressures in the sector also fostered consolidation in most of the sub-sectors of the agri-food industry and thus, have increased the need for collaboration. Consumers nowadays, are more than ever interested in having healthy food and are characterized by higher levels of food safety concerns (Hughes, 1994). This reality, in combination with the recent food crises has increased public pressure for transparency, traceability and 'due diligence' throughout the agri-food supply chain (Fearne et al., 2004).

Important evolutionary changes are on the supply side. Review the case of France, the world's second largest agricultural exporter. In the 1980s, processors and retailers implemented strategies of differentiation based on quality signals. In the 1990s, these strategies diffused rapidly upwards, to production as well as primary processing, as illustrated by the success of quality certification and collective trademarks, initially with wine and cheese, followed by the poultry and the fresh vegetable industries. Nowadays even the mass production of grain aims at differentiation. This evolution

became increasingly at odds with the administered markets implemented by the Common Agricultural Policy in the 1960s.
Power dependency. There is a large degree of power imbalance among the members of the chain. Power is concentrated two places in the value chain, at the level of retailers in Europe and at the level of the industrial processing companies in Brazil. Relationships between growers and FCOJ processors are described as the worst in the chain due to both the power differential and natural conflicting interests. As for the relationships between the FCOJ industry and European bottlers, it seems that in spite of the power differential, trust and willingness to cooperation (Grunert et al., 2010).
The European beverage industry buys the FCOJ from the Brazilian processing companies to process it further and often puts a brand name on it. There are about 1,000 bottlers in Europe, making this one of the most fragmented sectors of the soft drink market, with low margins and excess capacity of around 30 per cent in Europe.
There are notable concerns about the effect of the recent enlargement of the European Union on Turkey's agricultural exports. Many new EU member countries have great similarities with Turkey in terms of both the magnitude of agricultural goods as a share of total exports, and ratios of exports from these countries to others EU countries (Serin et al., 2016).

Materials and Methods

In the practical part of the research we are using food industry external trade statistics. First part of the Statistical analyze is to find correlations between EU member countries external export/import shares in total export/import forming. Second part statistical analyze part consists evaluation of main external trade partner countries export/import shares in total export/import in European Union.
Sources of Data: Eurostat. Used indicators:

- Extra-EU28 trade of food, drinks and tobacco by Member State (2006-2017)
- Extra-EU28 trade of food, drinks and tobacco (by main partners (2006-2017)

Results and Discussion

Results

Research results are coefficients which display a share of food industry extra exports/share of food industry extra imports ratio for EU member countries. Indicator access food industry trade dependencies for each EU members. If coefficient is between 0-1, it means that country's external export food industry share is less than external import food industry share, i.e. country have positive influence in total EU food industry trade balance forming. If coefficient is less is more than 1, it means that country's external export food industry share is more than external import food industry share, therefore country is more oriented on food product import. Table 1 displays coefficients for 28 EU state between 2006-2017 years. Highest coefficient has Latvia (4.5), therefore Latvia's external food industry export share exceeded its external import share by 4.5 times. But Latvia's trade shares is very low in absolute numbers, (only 0.9% total export and 0.2% of total import) and its contribution in total trade balance forming is insignificant. For major export country – France which counts 17.2% of total EU food industry export, coefficient is 1.87.
From 28 members coefficient is positive for 16 states. Simple correlation coefficient between state's export and import shares is -0.13 (2017 year), therefore there aren't any coincidence on export and import shares.
Graph 1 discusses conflict between major EU food industry trade partners' exports and imports. In the last decade, there were only minor changes in global food industry trade balance. USA remains as main trade partner as export as import side. Emerging countries like Brazil, Argentina and Turkey are still important import partners as EU have high rates of exports in developed countries (Canada, Switzerland, Japan and etc.).

Discussion

Growing global population leads to an increasing demand for food production and the processing industry.
Post-crisis European food industry characterized by low competitiveness growth rates while trade partner countries increasing their influence as in European market, also in

global food markets. Some EU countries remain positive food trade balances while other are receipt of imported food products from outside the EU. List of leader states by food industry turnover is mostly unchanged in the last decade besides the new global challenges and active rural development policy in EU.
The overall recommendation should be to improve food industry policies and governance framework by each state level to promote domestic competition which is a key factor in the external competitiveness growth process.

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Table 1: EU Member States by External Food Industry Export/Import ratio (2012-2017)

	2012	2013	2014	2015	2016	2017
Belgium	0.66	0.68	0.63	0.68	0.68	0.73
Bulgaria	2.67	2.75	2.50	2.50	1.80	1.40
Czech Republic	0.80	1.25	1.25	1.25	1.25	1.25
Denmark	1.42	1.29	1.27	1.34	1.30	1.30
Germany	0.83	0.85	0.84	0.85	0.88	0.89
Estonia	4.00	4.00	3.00	3.00	2.00	2.00
Ireland	2.88	2.40	2.89	2.89	3.22	3.56
Greece	1.20	1.10	1.22	1.10	1.00	0.91
Spain	0.74	0.74	0.79	0.80	0.85	0.80
France	2.09	1.97	1.87	2.02	1.98	1.87
Croatia	1.17	1.20	1.50	1.50	1.50	2.00
Italy	1.07	1.07	1.07	1.10	1.15	1.21
Cyprus	0.50	0.50	0.50	0.50	0.50	0.50
Latvia	5.00	5.00	4.50	4.00	3.50	4.50
Lithuania	3.80	4.20	3.80	2.60	2.75	3.00
Luxembourg	0.00	0.00	0.00	0.00	0.00	0.00
Hungary	3.33	3.00	3.33	3.33	3.33	3.33
Malta	2.00	2.00	2.00	2.00	2.00	2.00
Netherlands	0.78	0.77	0.80	0.79	0.77	0.78
Austria	1.47	1.40	1.43	1.43	1.50	1.57
Poland	1.70	1.70	1.60	1.44	1.42	1.39
Portugal	0.82	0.82	1.15	0.93	0.93	0.81
Romania	1.22	2.25	2.00	1.78	2.25	1.78
Slovenia	0.38	0.43	0.60	0.50	0.50	0.67
Slovakia	1.00	1.00	1.00	1.00	1.00	1.00
Finland	0.88	0.88	0.86	0.57	0.57	0.50
Sweden	0.43	0.40	0.40	0.38	0.30	0.33
United Kingdom	0.62	0.60	0.62	0.63	0.63	0.62

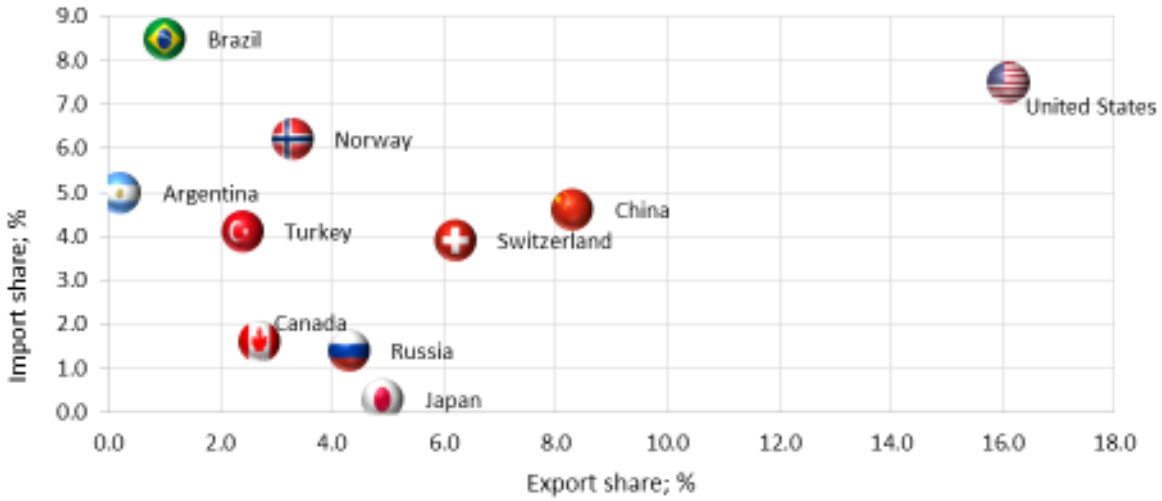

Figure 1: EU Food Industry Main Trade External Partners by their Export/Import shares (2017 Year)