

Import Risks for the Country: A Case Study in Lithuania

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Abstract. Each country faces both export and import risks in its trade. The analysis of this research seeks to answer the question about what kind of risks are posed by imports. The purpose of the document is to analyze the purpose of the import and most common risks posed by imports and to assess the trends in imports of Lithuanian agricultural and food products. A distinction between the main risks posed by imports is made. The importance of imports for foreign trade is discussed. The study is based on an analysis of the scientific literature and analysis of statistical data for an assessment of Lithuania's import trends. Empirical research covers the period of 2015-2019. Data from Statistics Lithuania and Customs Department are used. Analysis of total imports of agricultural and food products, distinguishing imports from EU and other countries was made. Also, trends of re-export and import to produce was made. The export of agricultural and food products of Lithuania has been positively affected by import. The directions for future investigations are completed.

Keywords: Import risks, agricultural and food imports, re-export, Lithuania.

1. Introduction

Each country aims to increase its GDP, and its growth is mainly export-driven, and it does not pay much attention to imports. It is often viewed as a loss to the state. However, imports can be made for a variety of purposes. Usually, three main import purposes are distinguished: import for processing, for re-export and domestic use. The agricultural sector is not an exception. For example, the re-export of agricultural products in Lithuania accounts for about thirty per cent of the total export of farm products (The Lithuanian Department of Statistics, 2020). In contrast, the promotion of re-export is often treated as lower economic value than exports of local production (Berg et al. 2016). However, this does not mean that re-export is not useful for the country, and import is the source for re-export.

It should be noted that international trade, like every business, is always at risk. It must be taken into account that this is an agricultural sector, which in itself is regarded as a risky sector (Adnan et al. 2020). There is no exception to the import of agricultural products. Imports are often seen as a source of risk, and the import of farm products is riskier due to the specificities of the sector.

It has been observed that foreign trade research attracts the attention of many scientists. Meanwhile, most of the researchers evaluate only one risk component. With this in mind, this paper aims to reveal the factors that influence the import risk of agri-trade and to assess the trends in imports and re-export of Lithuanian agricultural products.

The paper is structured as follows: the second section deals with an analysis of the theoretical background. There import risks analysis and import purposes are given. In section three, the framework for empirical research is provided, with a focus on practical issues such as data and methodology. A closer look at Lithuanian import is taken in section four, focusing on trade structure, countries groups of origin (EC, TC) and re-export destination countries groups. Section 5 reports the empirical results of the research and propose further research areas.

2. Literature review

International trade is important for all countries, especially small ones, as their economic development is based on international trade. The agri-food sector provides goods of first necessity, and it affects the quality of life. Whereas the agricultural sector is analyzed as a risky (Adnan et al. 2020) and sensitive sector (Novickyte, L. 2019; Stasityte & Dužinskytė, 2016), international trade in agricultural products can also be classified as risky and sensitive. This concerns the production, the different qualitative requirements for other countries, the risk of extraction, the time and conditions of transport and marketing. The response to threats remains quite important and responsible, ensuring stability and trade. While international trade is widely explored around the world, it does not address the risks (Goods, 2018). Competitiveness studies (Drozd, 2018; Vitunskiene & Serva, 2015;

Gapcheys, 2013), but this only reflects the assessment of exports without further detailing what was needed for these exports to take place.

Most policy measures promote exports (EC 2015, LT 2013), while imports are not encouraged (Berg et al., 2018; Wymenga, 2013). Wymenga (2013) studies have shown that the promotion of imports has a positive impact on exports. Berg et al. (2018) studies look at the link between imports and firms' productivity, where productivity is an intermediate factor in import-export relations. Scientists note that the connection between the company's import behaviour and export performance has not yet been fully explored (Berg et al. 2018). The link between importing and productivity is manifold (Berg and Marrewijk, 2018). At this point of view, the Wagner (2012) studies show that importing firms are more productive than non-importing firms, as importers themselves enter international supply markets. Imports allow companies to buy intermediate products at lower costs or higher quality due to increased access to raw materials through participation in global raw material markets. Participation in the international network also enables companies to acquire more innovative technological products and to obtain tactics from foreign suppliers (Berg and Marrewijk, 2017).

Trade liberalization by lowering trade tariffs and improving trade conditions also affects international trade. Complementarity between imports and exports is confirmed by many scientists (Feng and Swenson, 2016; Bas, 2014; Kassahara and Laphamas, 2013; Bas, 2012). Feng and Swenson (2016) noticed that the companies that expanded their imports of intermediate raw materials increased their export volumes due to the usefulness of the imported raw materials. The benefits of imported raw materials vary among countries and depends on the country of import, to which exports will be made, the ownership of the enterprises and the level of the industry. Although the increase in imports of intermediate products has increased exports from all companies, the main impact was on private companies. Also, imports from G7 countries have been particularly beneficial in facilitating exports to the richer and demanding G7 export markets. Thus, product modernization through more advanced technologies and product development related to imported raw materials has helped Chinese companies to increase their exports. Bas (2012) points out that the decrease in import tariffs has led to an increase in imports, which has led to an increase in exports through an increase in production productivity.

The impact of the country's openness on international trade is welcomed, noting that small states are more inclined to economic openness than large ones. It is noted that although there is no consensus on how to measure economic transparency, it is measured in different ways: Openness index, Kaopen index, tariff rate summaries. The Openness Index (AI) is calculated as the ratio of the sum of imports to exports to GDP (WB, 2017). The outlines of tariff rates make it possible to compare the duties applied by the parties, which shows their openness to each other (WB, 2017). The AA indicator shows how the country is actively engaged in global trade and

associated with lower restrictions on external trade (WB, 2017). The Kaopen index is constructed for 182 countries with a maximum score of 2.39 (maximum financial openness) and the lowest score of minus 1.89 (minimum economic openness). North America and Western Europe are the world's most open regions (Chinn and Ito, 2016).

While international trade is widely explored around the world, it does not address the risks (Goods, 2018). The Global Risks Report 2019, published by the World Economic Forum, provides a detailed description of the risks that have and will have a significant impact on global development. These risks are grouped into economic, environmental, geopolitical, social and technological categories. It should be noted that all of them will have an impact on international trade, given that the first three risks are linked to climate change, which is of great importance to the risk of agricultural production. The risk of production is identified as one of the highest in the farming sector (Aleknevičienė, 2019; Jakelova, 2017; Hardaker, 2015). International trade of risky farm products is already risky. Production risks are important for both the export and import of agricultural products. And it is not the only source of risk in international trade.

Regardless of the purpose for which imports are made, there are also risks in addition to the benefits. The main ones are shown in the trends in studies on import risks (Table1).

Food security risks are analyzed by economists in most countries, in particular those whose food security depends on imports (Yu, et. al., 2019; Huang, 2017; Caccavale, 2020; Hyuha, 2017). Caccavale (2020) proposes a new composite food security index, which makes it possible to measure the country's food security from a sustainability perspective. Hyuha (2017) reveals the factors determining the demand for imports in the context of food security.

The country's food security is particularly relevant for countries which, for various reasons, do not produce sufficient quantities of products. The reasons may range from insufficient natural resources for agricultural production to mountain areas (Norway), soil, water pollution and an increase in the number and needs of the population (China, Korea, Japan), etc. According to Huang (2017), China will not be at risk of the growing community and increasing demand for food in the world in the future. China is striving for the sustainable development of the agricultural sector, which will enable demand to be managed. Yu and Others (2019) deal with the 'triple high phenomenon' in the cereals sector, where the situation is as follows: the high level of domestic production at that time did not lead to a decrease in imports, even when stocks were high. According to the authors, domestic production and demand (including imports) depend on both domestic and world market prices. The author proposes an analytical framework to identify such price differences in a limited trade relationship in the overall balance. This method simulates three price scenarios for the period 2011-2020, the results of which

indicate that China's agricultural policy is subject to substantial adjustments.

In the area of food safety, scientists research health safety by considering the countries of origin, qualitative parameters, and trend minor irregularities. Where import irregularities can be used to quantify the risks by state and product, and how import risks depend on the economic factors of the country of origin. Welburn et al. (2016) studies the normalization of import and shows that irregularities in terms of import volumes is a meaningful risk indicator. The analysis of import risk by product type, type of infringement, economic factors in the country of origin has shown that the data proposed by the author is useful in quantifying food import risks. Some economic factors were also found to be significant indicators of food import risk in terms of imports by country of origin.

Zhang (2019) studies food safety in China. Fuentes-Gandara et al. (2018) investigate methylmercury in fish import from the Caribbean. Herrera-Herrera et al. (2019) revise the content of heavy metals in fish which country of origin is Colombia. Pedersen et al. (2018) research consumers' attitudes towards imported organic food and the influence of distance.

Table 1: Trends in studies on import risks

Type of risk	Characteristic(s)	Authors
Food safety risk	Health risks for food safety	Erokhin, 2020; Zhang, 2019; Fieler and Harrison, 2018; Caccavale and Giuffrida, 2020; Ji et. al., 2019; Chernova and Noha, 2019; Kareem et. al., 2018; Cirovic et. al., 2015; Cirovic, 2018; Ruhm, 2003, Ruhm, 2016
Food security risk	Quality support, the use of sanitary and phytosanitary measures, including for protectionist purposes, trade restrictions to control safeguards	Welburn et al., 2016; Attrey, 2017; Valantiejus, 2019; Valantiejus, 2016; Bukauskaite, 2019
Competition risk	Impact of competition on food security	Bogoviz et al. 2017
Illegal imports risk	Illegal imports, including the quality risk of parallel imports	Tedemann, 1977; Woodiwiss, 2003; Week, 2010
Supply risk	Supply chain interruptions	Anwer, 2020

Attrey (2017) studies have shown that food quality control measures during inspections are effective and create confidence in the safety and quality of food supply. However, this may sometimes constitute an obstacle to international trade in food products, with increasing attention being paid to the implementation of rules and regulations, which hampers trade. Importing and exporting countries often have different systems and procedures for food inspection and certification. Cooperation

between exporting and importing countries is necessary to ensure smooth and secure trade, as regulated by the WTO, and the control systems in place should be established following the Codex guidelines.

While the WTO promotes free trade, protectionist countries use different ways to protect their market. Most of the problems in international trade are encountered in food trade with China. The China-Lithuanian legal regulations on trade conditions are being examined by Valantiejus (2019).

Hamada and Ishikawa (2016) are investigating a dispute over Korean import bans and additional testing and certification requirements for food products in Japan. The conclusions of the WTO Dispute Settlement Mechanism and Appellate Body reports are analyzed. Although the WTO found that the Korean measures were not in line with the SPS Agreement, the Appellate Body annulled most of these findings. Korea reported that it had completed the implementation of the panel and Appellate Body reports. However, the Digital Single Market has not led to a constructive and meaningful settlement of this dispute, as it is still unclear whether the Korean import bans are based on scientific principles.

Kelly et al. (2018) investigate the risk of imports of livestock and zoonotic pathogens. According to the authors, it is difficult to refer to a general approach to the analysis of such risks, since it should be based on the establishment of quantitative limits for probability categories for different import samples and additional products and a case-by-case basis. As an alternative, it was proposed to use a simple visual reference tool that would remove some subjectivity, often associated with the identification of qualitative risks. Taking into account the various qualitative categories of individual probability, the ratio between the number of imports of this probability and the total probability of entry into the market shall be established. The conclusions state that more subjective approaches may underestimate the likelihood and hence the risk.

The risk of resource use (uneven distribution of natural resources) focuses on the sustainable use of the main natural resources needed for agricultural production (water, soil), emissions, the impact of international trade on the use of scarce natural resources (Moreno and García-Álvarez, 2018; Mancini, 2018; Back et al., 2017; Sfez, 2017; Zhu, 2019). Moreno and García-Álvarez (2018) are studying progress in resource efficiency in the EU. Mancini (2018) focus on the impact of trade on renewable resources and sustainable development. Back et al. (2017) by testing; Zhu, 2019 assesses the potential of China's water resources for agricultural production by establishing a water stress index and evaluating climate change signals. As regards the efficient management of renewables, Sfez (2017) found that the processing industry can be involved in the development of innovative technologies in addressing the declining availability of resources and this should be monitored at the national and regional level. Renewable energy assessment methods can be quite diverse. One of the most important recommendations is to take a life-

cycle perspective into account in the LCA study. The potential of an innovative product or technology to contribute to the production of renewable energy in the whole country and/or region should be assessed.

Gemechu et al. (2016) analyze the risks of the supply and sustainable supply of raw materials and provides a systematic analysis of the risks associated with the use of raw materials. The authors focus on the geopolitical supply risk assessment of imports of 14 resources into the seven most developed countries and the five most important emerging economies. In contrast to previous studies, a new method for calculating geopolitical supply risk has been proposed, differentiated by state according to import patterns and not according to the overall distribution of production. The results of the study show that rare earth elements tungsten, antimony and beryllium generally pose a high risk of geopolitical supply. Authors' research extends the scope of LCA from environmental performance to resource supply risk assessment.

Bach et al. (2016) deal with pollution problems. The growing demand for abiotic resources has led to increased pollution of natural resources, such as water, soil, as a result of global industrial and technological developments. The authors assess all impacts of resource extraction in all three sustainability dimensions: economic, environmental and social. A method has been developed to measure resource efficiency of products, processes and services in the context of sustainable development. To assess the physical, social and economic impacts on the environment, assessment category 21 has been established for a portfolio of 36 metals and four fossil raw materials.

Supply chain risks are analyzed by the most scientists (Khanal, 2018; Cimprich et al., 2017; Kolotzek et al., 2018; TRAN, 2018; Septiani, 2017; Hyuha et al., 2017; Bakumenko, 2019; Bogoviz et al., 2017). The structure of agri-food supply chains is becoming increasingly complex, making them more sensitive to different levels of society and risks. Therefore, to improve performance, there is a need to manage supply chain risks effectively and efficiently (Zha et al., 2020).

The analysis of supply chains assesses output risk, market risks (supply, demand risks), supply risk, substitutability of output as a factor in reducing output risk. According to the Agriculture Organisation of the United Nations (FAO), agricultural production will have to increase by 2050 by 70 % to meet the demand at that time. This reflects an upward trend in demand for farm products, while production risks are one of the main threats in the agricultural sector.

Bakumenk (2019) revealed the need for an export-oriented import policy and recommended measures to achieve this objective. Khanal (2018), looking at trends in import and local production demand, found that the local population favours local products (milk, tomatoes and oranges) over imported products. Olper (2014; 2017) argues that import competition is linked to an increase in production productivity in all nine major food sectors investigated by the author. Wei (2016) examines the

relationship between domestic prices and import prices in the Chinese case. In the view of the author, by accelerating the reform of the cotton market in China, a mechanism for passing on market prices would help to balance prices and imports and would benefit the development of the Chinese cotton market. Some researchers look at insurance options for risk management (Vitunskienė, 2017).

In addition to the main trends in the analysis of import risks, risks are identified and less frequently analyzed. For example, Adda and Fawaz (2020) assess the impact of import competition on the labour market and health of US workers found that import shocks harm human employment, income and human health. Health and mortality studies in 40 million cases have shown that imports have had harmful effects on human physical and mental health, especially in areas where there is strong survivability competition. As a result, access to healthcare has reduced, and hospitalization has increased due to many more difficult treatments. There has also been an increase in the mortality rates among workers in the manufacturing sector. Lang (2019) also identified a negative impact on the employment, income and health of the US people by studying the growth of imports from China. It also found that the competitive measures of imports did not accurately reflect market shocks.

Anwer (2020) deals with the possibility of sharing the risk of trade in goods between importers and banks. The researcher presents the idea of using classic Islamic finance instrument Salam to conduct import transactions (risk-sharing instrument). Under the proposed model, the Islamic Bank takes over the activities of the trader and not the lender, which will allow the actual ownership of the imported goods to be taken over before they are sold to customers. The pricing structure will also be unique, as margins will be determined based on market-driven return on underlying assets. Indeed, by entering into such a contract, Islamic banks will be exposed to market risks, which will have to develop risk management systems. The problem is why banks are reluctant to use the proposed method.

Kolotzek et al. (2018) explore sustainable development-based choices of partner producers in the management of supply chains. While the emphasis is placed on raw materials and their supply chains, producers are sometimes forced to diversify their products. Although enterprises have recently been more likely to benefit from Raw Material Assessment and Raw Material Oriented Decision-making support schemes, several aspects are rarely taken into account at once (by the selection of indicators, weighting, social assessment). The authors suggested using a model covering all three dimensions of sustainability for the supply chain management.

The main risks associated with the import of agricultural products can be divided into five groups (Figure 1): food security risks, food quality risks, risk of natural resources (risk of uneven distribution of natural resources), supply chain risks (production management, markets (supply, demand) and other risks (emerging market risks (trade blocks), etc.). It should be noted that they are linked to each other, which makes such a distinction conditional.

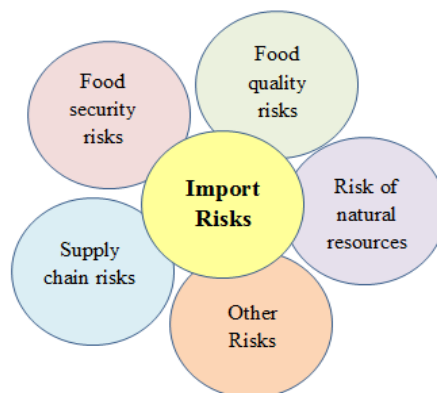


Fig 1: Main areas of import risks

The study showed that imports take an important role in international trade, and there are many risks associated with imports. Import risks can be examined in a number of respects. Five main import risks attract the most attention: food security risks, food quality risks, risk of natural resources, supply chain risks and other risks. Each country should manage its import risks to achieve sustainable agricultural development.

3. Data and Methodology

Analysis of trends in imports of Lithuanian agricultural and food products is based on database Statistics Lithuania and Customs Department. Empirical research provides the five-year period variations covering the period of 2015-2019. Special attention is given to the 2019 year. The study focuses on detailed foreign trade indicators by Combined Nomenclature (CN). Total imports are analyzed. Then imports are divided into the European Union (EU) and the rest of the world (third countries (TC)). A re-export analysis is made, also divided into the EU and TC. Import to produce (inward processing) is analyzed only from TC part as such data are not collected within the EU.

4. Results and Discussion

In 2019, Lithuania imported goods for EUR 31949.1 million, agricultural and food products were imported from 119 countries for EUR 4172.4 million, by EUR 275.3 million (7.1%) more than in 2018 and by EUR 569.5 million (15.9%) more than in 2015 (Figure 2). In 2019, agricultural and food products constituted 13.1% of the total import of Lithuania. Re-exports accounted for between 25.8 % and 32.0 % of total exports.

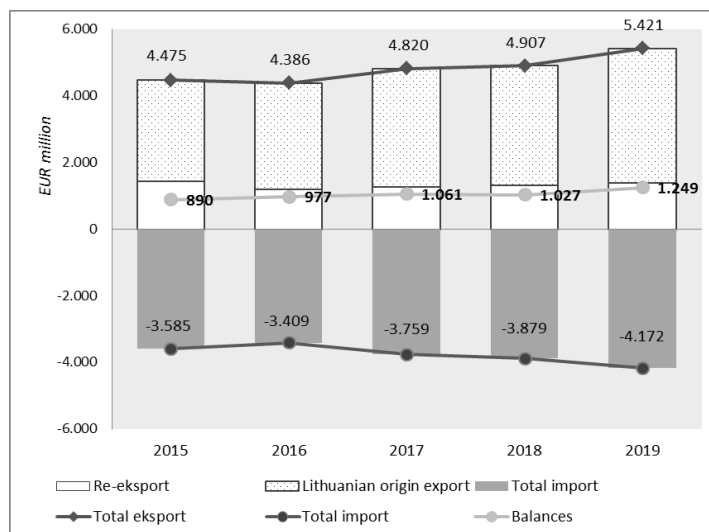


Fig 2: Import, export and balance of agricultural and food products in 2015–2019 (Source: Statistics Lithuania)

In 2019, imports of agricultural and food products from the EU increased by 5.9 % compared to 2018 (EUR 191.5 million more) (Figure 3). In 2015–2019, the share of import of agricultural and food products from the EU countries comprised 82.9–84.3%, in 2016 and 2019 it was the lowest 82.9% and in 2017 highest, making 84.3%. Re-exports accounted for between 18.5 % and 21.0 % of total exports.

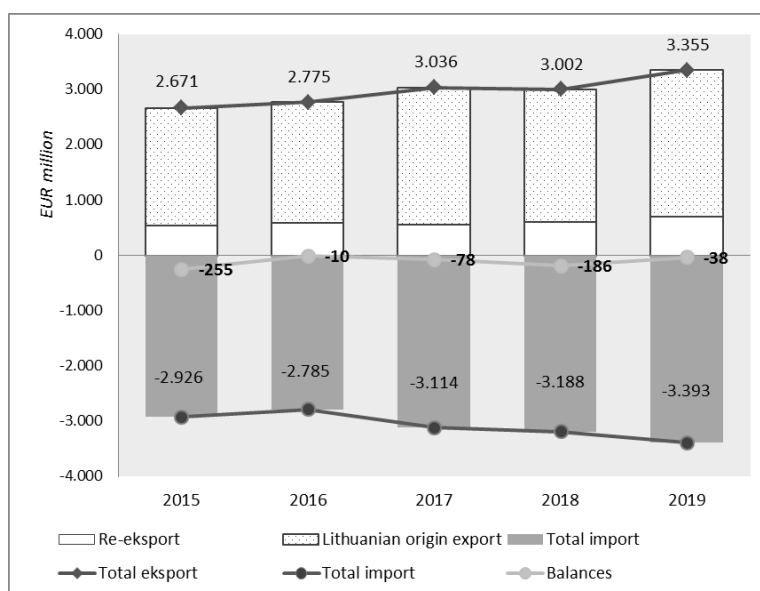


Fig 3: Import, export and balance of agricultural and food products from the EU in 2015–2019 (Source: Statistics Lithuania)

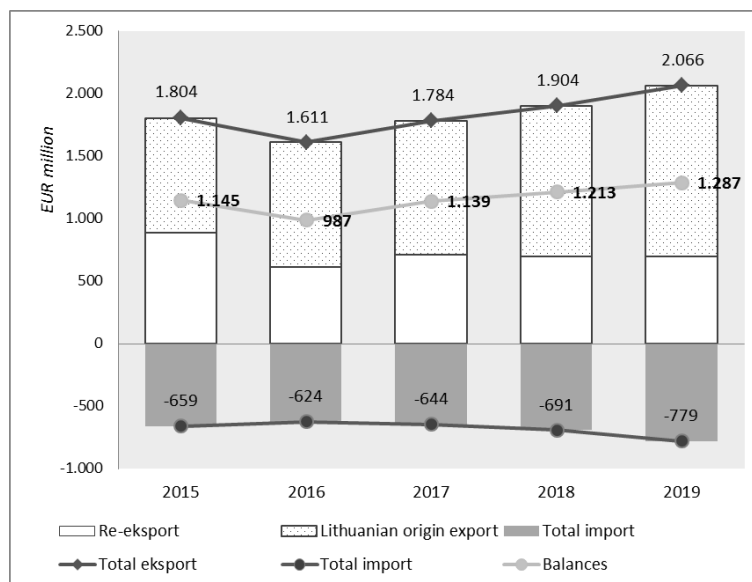


Fig 4: Import, export and balance of agricultural and food products from TC in 2015–2019 (source: Statistics Lithuania)

The share of import from third countries (countries other than the EU) fluctuated from 15.7 to 17.1. In 2016 and 2019, the percentage of import from third countries (TC) accounted for 17.1%, and it was the lowest, in 2017 the highest, making 15.7%. In 2019, imports of agricultural and food products from the TC increased by 13.4 % compared to 2018 (EUR 83.8 million more) (Figure 4). Re-exports accounted for between 33.6 % and 49.0 % of total exports.

Imports in only three product groups decreased in 2019 compared to 2015, while imports from the rest were higher than in 2015 (Figure 5).

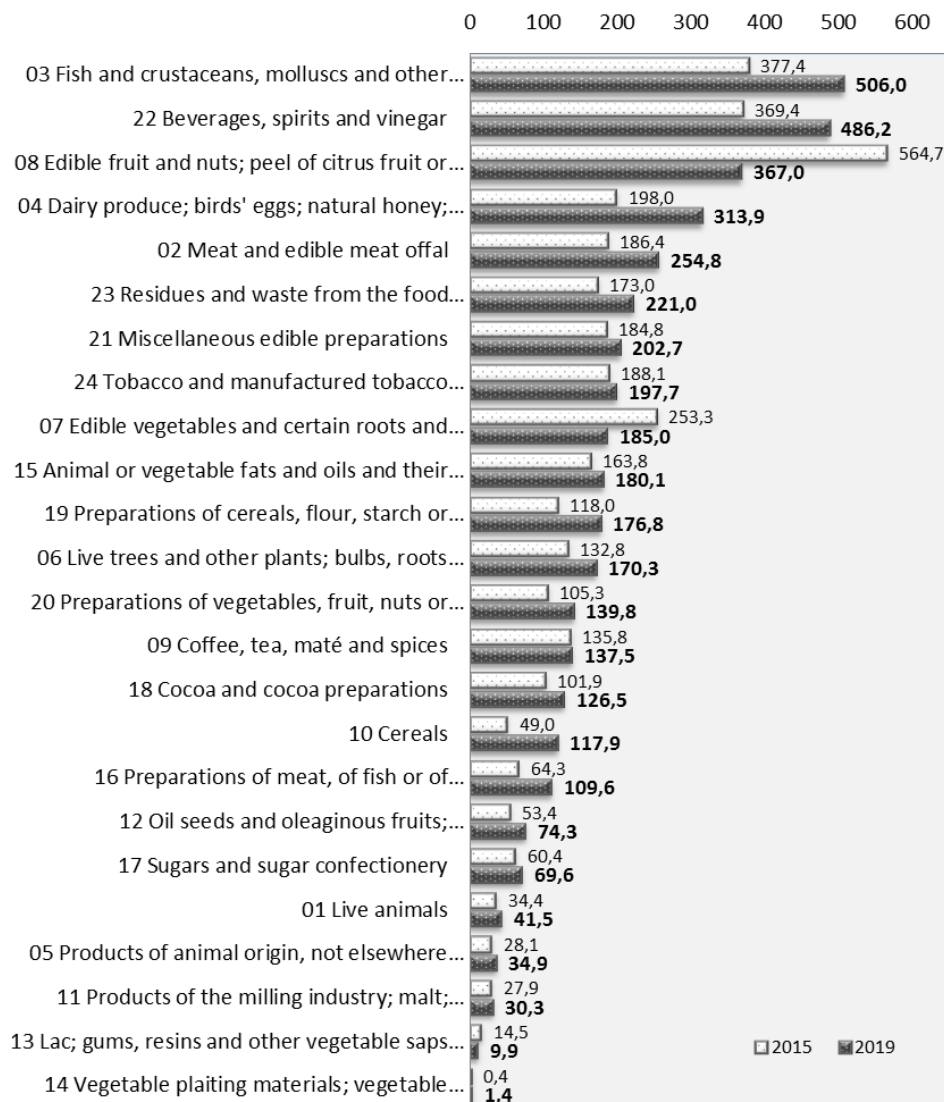


Fig 5: Imports of agricultural and food products in 2015 and 2019, EUR mill. (source: Statistics Lithuania)

Imported to produce (temporary admission for processing shall mean products coming from third countries, processed in Lithuania and dispatched to third countries for consumption. The majority of products imported to produce from TC were tobacco and manufactured tobacco substitutes (59.5 % of total imports), fish and crustaceans, molluscs and other aquatic invertebrates (24,3 %), beverages, spirits and vinegar (7,7 %), miscellaneous edible preparations (5,4 %).

5. Conclusion

The study showed that imports take an important role in Lithuanian trade. Five main import risks need to be managed: food security risks, food quality risks, risk of natural resources, supply chain risks and import risks effects on the sector.

There is an upward trend in imports which also has the potential to grow in the future. Imports are mainly from the EU and only a small part from TS. However, re-exports are mainly to TS. Thus, Lithuania can be considered a transit country. Since re-exports represent a significant proportion of exports, it can be concluded that imports have a positive effect on exports.

Each country should manage its import risks to achieve sustainable agricultural development. The research could be expanded to other directions, like it is proposed to carry out a more detailed import risk assessment in the future, in particular for supply chain risks. This would indicate the extent to which imports lead to exports increases. This purpose requires more precise data: what is the movement of goods between EU countries and how this affects exports.

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