EU Food Safety Assurance in Active Use: Empirical Evidence on Alert Notifications Regarding the Financial Background of the Affected Producers

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Abstract: The presence of various market failures in placing foodstuff on market is a phenomenon that can also be identified across European countries. From an economic point of view, it is possible to discuss food safety in the context of the development and financial stability of the agro-food industry value chains. The given sector in some EU member states has faced and is still facing pressure to reduce food producers´ prices often below the level of production costs, which can negatively affect food safety standards. This relationship consequently touches the issue of wasting natural resources and related processed foods, which do not meet the minimum legal requirements for their safety. EU member countries use for these purposes a type of "safety net" via an information exchange instrument named Rapid Alert System for Food and Feed (RASSF). This instrument is sharing information both with public authorities and also consumers. This article aims at identification of RASSF notifications provided by the Czech Republic during years 2023 and 2024 from the point of view of financial situation of respective food producers involved in this notification alerts. Based on the partial results of this article, it was concluded that the indicators of financial stability and revenue areas can be indirectly considered as proxy variables affecting the complex quality of food production. The comprehensive provision of information on the quality management of food production by individual producers can therefore be considered a fundamental aspect influencing consumer behaviour, which is related to the possibility of continuous improvement of the concepts of sustainable food quality assurance.

Keywords: food safety, Rapid Alert System for Food and Feed, financial position
JEL Classification: M29, Q18

1 Introduction

Food quality is a complex problem area of multidisciplinary type. It could be per se interrelated with both nutrition of population, a general awareness of the composition of food, a developing standards and amending legislation. Furthermore it could be considered also food nutritional composition, behaviour and preferences of customers and other related aspects. In the context of a business performance and competitiveness it is also necessary to perceive the performance issues of businesses operating in the food manufacturing industry, which are adopting managerial approaches of cost controlling, while facing global competition and law and order regulations. From an economic perspective, it is possible to relate the food safety problem area with the development and financial stability of the whole agro-food value chains.

Food production quality management in EU member countries is an important part of EU policies and it is interconnected with a food security area. The food quality can be at an individual enterprise level joint with introduced goals of business activities, i.e. after all with the system of planning of financial and non-financial indicators (Michalski, 2016). Gschwandtner and Hirsch (2018) focused directly on the company's profitability. They describe a comparison of the US and EU food processing industry in their article. They found that the profit in the food industry is lower compared to other sectors. They attribute this fact to a high degree of competitive pressure. However, low profitability of the sector is relatively stable in the context of crises. They have identified as the main drivers of profitability a firm's size and a

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https://doi.org/10.32725/978-80-7694-102-1.50

financial risk in this sector. The reason is the ability of large companies to perform more advertising, have higher consumer reputation and to manage the administrative burdens and competition pressures. Among the shortcomings of their paper they report the omission of important intangible firm-specific resources such as R&D activity, patents and reputation, to quantify the impact of family / insider ownership for the EU due to data unavailability. Zielinska-Chmielewska and Smutka (2018) consider the question of profitability of the food industry as very important due to factors such as deploying of innovative technologies, compliance of food manufacturing procedures with law and order requirements, continuous process of improving quality standards of production inputs consistently with a need for following a changing conditions for meeting sustainability and also market competitiveness goals. It could be emphasized also problem area of effectiveness and efficiency of production. Gschwandtner and Hirsch (2018) provide findings on food contamination cases in the US and EU. These food safety incidents have been identified both locally and also as affecting cases for specific food industry subsectors. Inevitably they conclude on economic negative effects of involved companies. Dudek (2019) provided findings on food insecurity in the EU, when he focused on businesses settled in Visegrad 4 member countries. This author defines food insecurity as a situation when people affected by this problem cannot afford enough food of sufficient quality and quantity that would allow them to stay healthy and participate in the society. This researches´ results show that households are facing food insecurity typically regarding income, level of urbanization, household type, disabilities of household members, and attributes of household head like educational attainment, gender, age, health and status of economic activity.

Nowadays discussions regarding the change of climate and the needed adoption across wider scope of mankind activities are also related to the area of food safety. It could be declared the necessity to adopt for changing conditions respective business activities in the agro-food industry. It is also accompanied with a growing trend in the global food demand because of growing population. Therefore, it is inevitable to consider as essential to reduce energy consumption and usage of other scarce inputs or reduce food waste and its management. These aspects in fact directly influence quantity, quality and safety of the food production (e.g. Malliaroudaki et al., 2022).

Aim of this article is to explore RASSF notifications provided by the Czech Republic during years 2023 and 2024 from the point of view of financial situation of respective food producers involved in this notification alerts.

2 Methods

It was explored information behind the identified businesses within breaking the food safety as reported in the Rapid Alert System for Food and Feed (RASFF) regarding the announcing country and the country of food´s origin. This type of relationship was depicted using the chord chart. The available financial data for those companies were gathered from the corporate database Orbis.

The sample of business entities is covering identified companies regarding the announced breaking of the food safety in European Economic Area member countries. Specifically identified businesses were based regarding their headquarters in Brazil, Czechia, Deutschland, France, Hungary, Italy, Lithuania, Slovakia, Sweden and United Kindgdom . The sample of identified businesses for further analysis covers 17 entities at total.

The key financial performance indicators employed in this paper are based on so called Kralicek Quick Test of credit worthiness (e.g. Růčková, 2021), covering both financial stability and revenue areas that was modified for purposes of this paper in partial indicators as following:

$$Financial\ Lever\ Inversed = Shareholder\ Funds / Total\ Liabilities \quad (1)$$

$$Debt\ Repayment\ Potential = (Non\text{-}current + Current\ Liabilities - Cash\ and\ Cash\ Equivalents) / Cash\ Flow \quad (2)$$

,where:

$$Cash\ Flow = Operating\ profit/loss - Interest\ Expenses - Tax\ Duty - (Investment\ in\ Working\ Capital + Investment\ in\ Tangible\ Fixed\ Assets) \quad (3)$$

$$Cash\ Flow\ to\ Sales = Cash\ Flow / Sales \quad (4)$$

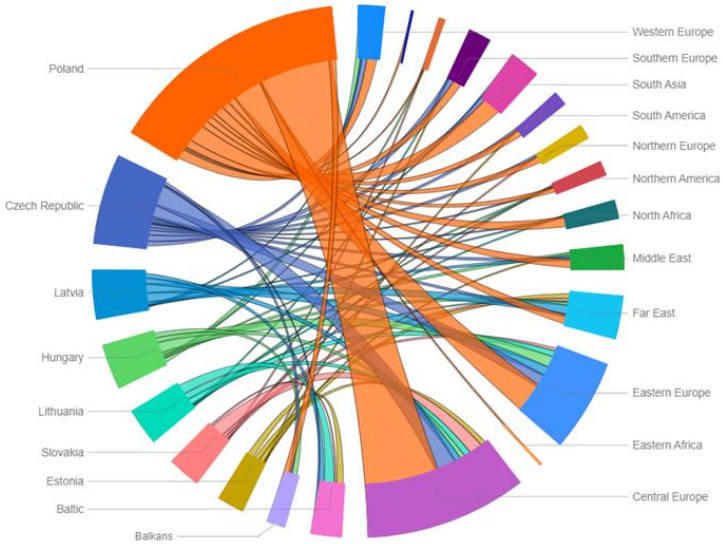
$$Return\ on\ Assets = Earnings\ before\ Interest\ and\ Taxes / Total\ Assets. \quad (5)$$

3 Research results

Fig. 1 provides a graphical design of relationships among announcements of breaking the food safety in identified Central and Eastern European countries (CEEC) regarding the announcing country and aggregated world-wide regions according declared country of its origin. The highest proportion of announcements regarding breaking foody safety around CEEC countries was identified in Poland, followed by Czechia, Latvia, Hungary, Lithuania, Slovakia and Estonia. Out of total 255 notifications from Janury 2023 to July 2024 regarding CEEC countries, the highest proportion of nearly 31 % notifications were towards producers based in Central European Countries, more than 17 % notifications were towards producers based in Eastern European countries and third most frequented aggregated region of these notification alerts was Far East region with slightly over 6 % of food safety alert notifications.

Fig. 2 provides a graphical design of relationships among announcements of breaking the food safety in identified Wester European countries regarding the announcing country and aggregated world-wide regions according declared country of its origin.

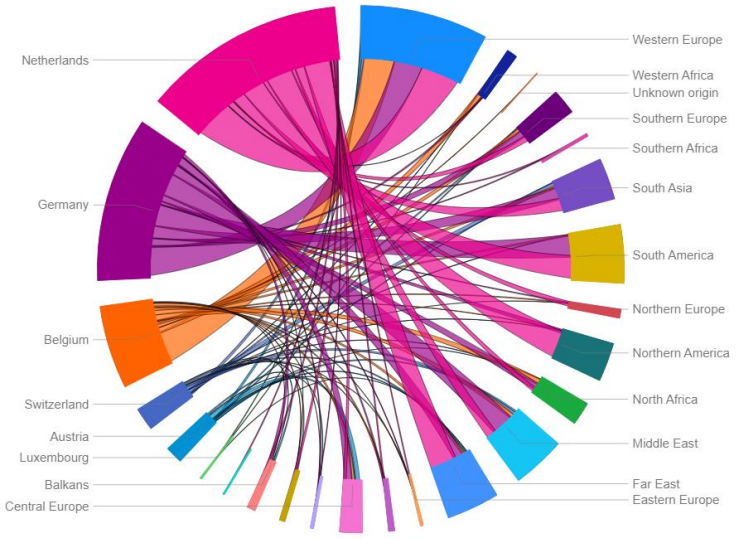
Figure 1 Chord chart for relationship between food safety break notification countries and country of food origin regarding CEEC countries



Source: Own processing using data of European Commission (©2024)

The highest proportion of announcements regarding breaking the foody safety standards in Western European countries was identified in Netherlands, followed by Germany, Belgium, Switzerland, Austria and Luxembourg. From total of 1258 food safety break notifications more than 27 % come from Western Europe, nearly 12 % from South America, around 10 % from Middle East followed by Far East countries of origin with about 9 %.

Figure 2 Chord chart for relationship between food safety break notification countries and country of food origin regarding Western regions of European countries

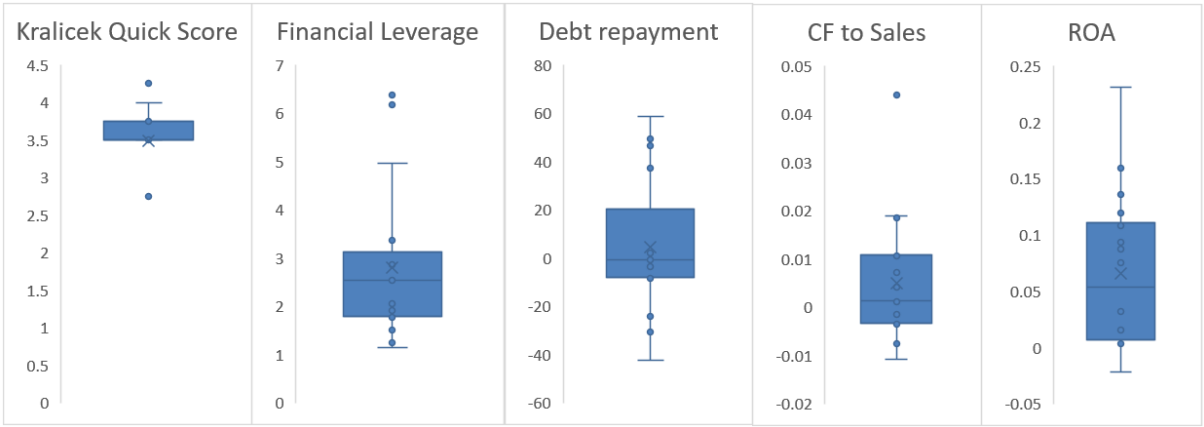


Source: Own processing using data of European Commission (©2024)

Note: Not depicted labels of the minor occurrence from the left hand side order: Australia and Oceania (0.2 %), Central Africa (1.1 %), Central America and the Caribbean (0.6 %), Eastern Africa (1.2 %)

The breakdown of the partial financial indicators constituting the Kralicek Quick Score index is provided in Fig. 3. It covers 17 specifically identified businesses involved into Food Safety Alert notifications. The overall score box-plot depicts one outlier with the best score index regarding its financial stability and revenue areas. It is namely business entity based in France, representing middle-sized traditional producer of cheese. Conversely, the outlier with the worst Quick Score index result is represented by a middle sized business entity based in Czechia, specializing on fresh fish meat.

Figure 3 Kralicek Quick Score breakdown



Source: own elaboration using data of Bureau van Dijk (©2020)

Further insight into the breakdown of partial financial indicators involved in the enumeration of the Kralicek Quick Test score reveals higher indebtedness of affected businesses with food safety breakdown accompanied with alarming debt repayment periods extents, involving also negative values (lacking ability to payback of debts). Similar negative results are identified for the proportion of cash flow to sales. On the other hand, the production power of the sample business entities is rather at normal level for food processing industry.

Jeddi et al. (2022) discuss food safety within the framework of possible impacts on their nutritional value due to the necessarily changing consumption of fertilizers and other hazardous chemicals due to climate change. Specifically, e.g. Duchenne-Moutien and Neetoo, H. (2021) draw attention to the fact that the changes in climate conditions, together with the simultaneous increase in the Earth's temperature, will have a significant impact on ensuring the nutritionally necessary

amount of food and its safety, especially in view of alimentary risks, i.e. the related effect on the persistence, virulence and, in some cases, toxicity of certain groups of disease-causing microorganisms. Food safety in a given context can then be secondarily threatened by chemical residues in food, such as pesticides, mycotoxins and heavy metals.

4 Conclusions

Current trends in the area of food quality and safety are based on the fact that the quality control of food production in EU member countries is actually part of European policies and these are further directly linked to the area of food safety control. The quality of food production from the point of view of producers can be viewed in relation to business goals, or to the systematic planning of determined financial and non-financial indicators of the performance of individual business entities. The mentioned indicators of financial stability and revenue areas can then be indirectly considered as proxy variables influencing the quality of food production with respect to the individual interest groups of the relevant food producers. The wider availability of information on the quality management of food production by individual producers can then be considered as essential aspects influencing consumer behaviour, which subsequently also contributes to shaping the supply side of high-quality and safe food. Rapid Allert System for Food and Feed is contributing also in forming consumer behaviour and indirectly also in the area of the area of wider awareness of qualitative requirements for the production of food industry enterprises.

Acknowledgement

Authors are thankful to the Internal Grant Agency of Mendel University in Brno, Faculty of Business and Economics for financial support to carry out this contribution as the partial output of project No. IGA24-PEF-TP-008 “Bezpečnost potravin vzhledem k aktuálním globálním výzvám v oblasti udržitelnosti produkce tuzemského agro-potravinářského komplexu”.

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