

Perspectives of agricultural cooperatives re-development after Covid 19 pandemic in Slovakia

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Abstract

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The Covid 19 pandemic is a global, not only, health crisis with devastating impact on the world economy in general. These impacts are also visible more and more in food and agriculture sector as the main sector of population nourishment. In spite of adopted measures in many countries, spread of the virus is starting to disrupt the supply of agrofood products to markets and consumers, both within and across borders. Most major economies are expected to enter recession as a result of the Covid 19 pandemic, and the OECD has estimated that for each month the necessary containment measures continue the drop in output is equivalent to a decline in annual GDP growth up to 2 percentage points. How damaging these impacts turn out to be for individual agricultural production of countries and agricultural cooperatives which are considered as the more viable during crisis is the objective of this paper.

Keywords: Agricultural cooperatives; Farmers; Agricultural production

Introduction

Agriculture in general, it is a very specific activity directly connected with land and mainly influenced by the environmental conditions. Majority of authors stress importance of agricultural uniqueness, e.g. agriculture is considered as a basic factor of the countryside development. (Szabo et al., 2008), land is the most significant, basic and irreplaceable production factor (Chladkova et al., 2016). Agriculture is more and more connected with social services which are linked to social farming which has to be innovative (Kucerova, 2018). Small farmers are often driven by different objectives than the profit maximisation, as the personal satisfaction and family traditions play the important role. (Kolackova et al., 2017). The continuing process of liberalization of the world markets have a decisive impact on decline in economic activities and the employment in regions with intensive agricultural sector. (Abrahám, 2011). Agriculture in Europe could be characterised by small scale of the advancement of

contraction processes, together with relatively high share of the workload of the owner and his family, and part-time work. (Svatoš et al., 2009). General changes in the European Economy, which have begun two centuries ago, have been reflected by changes in agriculture, too. Land consolidation, agricultural reforms, as well as mechanisation and chemisation of agriculture caused a decrease in employment in agriculture and an increase in agricultural production in Western European countries. (Tluczak, 2020) while the situation in the Eastern and Central European Countries was completely different. Integration within the European area was done with the aim to increase efficiency and competitiveness of agricultural production, too. In spite of the fact that vertical integration and diversification are important factors of the development of market structure, they are not the only ones. When analysing effects of market structure on competitiveness of agriculture, respectively, agro-food complex, we must think about such factors as the number of buyers and sellers operating in this sector and their relative size (market

concentration), product differentiation, size of entry barriers and exit barriers from the industry, existence of economies of scale and, the character of market environment and position of agricultural producers within product verticals. (Grega, 2003). Nowadays, the Common Agricultural Policy of the European Union provide preconditions of which were to increase agricultural productivity, stabilisation of markets and maintaining standard of living for the population.

The Covid 19 pandemic has brought totally new situation in agricultural sector. According general expectation, it is also affecting the availability of key basic inputs for agricultural producers as they may face extra difficulties in sourcing inputs due to additional restrictions on the movement of people and goods (OECD, 2020). The significant change in the composition of commodities, the level of demand is putting whole value chains under big pressure. Manufacturers are forced adjust production and distribution, however, some many of them faces difficulties keeping their businesses viable, this is a big challenge for smaller and specialised agricultural producers who are more likely connected with open markets, restaurants and catering and who may struggle to identify new buyers.

Cooperative is a special corporation that is both owned and controlled by those who use its services (Yen et al., 2020). It is so despite the fact that the number of entrepreneurs who choose the form of cooperatives in agriculture is minimal at present. The fact is that the new set-up agricultural businesses prefer another legal form. New institutional economics defines the cooperatives in terms of their unique property right structure. (Adamisin et al., 2017). Agricultural cooperatives exist in almost every country around the world. They are very well represented in both developed and emerging economies and contribute to food security and poverty reduction in different areas of the world. They help farmers increase their returns and income by pooling their resources to support collective arrangements and economic empowerment.

Literature Overview

Slovak agrarian sector could be in general characterized, within the EU countries, as a sector with lower utilisation of production factors used, a low production intensity and losing competitiveness not only in the EU market. Output in the Slovak agricultural sector has been stagnating or falling during various years. The economic importance of agricultural sector in Slovakia declined mainly during transition period, before 1989 Slovak agriculture was done as part of the centrally planned economy. Agricultural companies (state farms and cooperatives mainly) were the part of a single and

centrally managed system of the economy without any power or independence. (Pokrivčák, 2003). The years of transition to the market economy have brought a variety of new farming types in Slovakia. Corporate farming is still representing about 80 percent of the total agricultural land area, but a gradual increase of individual farms can be observed. In spite of the fact, that in quantitative terms individual farming is quite unknown in Slovakia, in qualitative terms the emerging individual farms represent a pattern which deviates in many aspects from what has been understood yet under the concept of family farm. (Blaas, 2003).

Slovakia has no comparative advantage on the EU agricultural market or on global markets and plays only a marginal role in the overall agricultural market of the EU, now. (Szabo et al., 2018). A lot of authors see the main reason of this situation in a lower level of subsidies, gained from the EU. The outcome and performance of agriculture within the international comparison is expressed as the value of the total agricultural output, measured by the value added and the share of total output and costs. This is the method of measuring the performance of agriculture in the EU countries used also by the Eurostat.

The entry of the Slovak Republic to the European Union opened a large European agricultural market for Slovak agricultural producers, but also removed all protective barriers of the domestic market. Concerning to the EU accession, agriculture has been probably the most discussed area of national economy in each accession country. The planned management of the new Member states was connected with agricultural enterprises (cooperatives) that time. On the other hand, despite the specific features of agricultural production, the agricultural companies continue to remain one of the key elements in the national and the EU market environment. (Vároščák, 2008). The later development indicated that Slovak agriculture has succeeded in this area only to some extent due to the global business environment, the development of which is not always favourable for agribusiness, but to some extent also due to an inadequately low flexibility of the Slovak agribusiness practice. (Grzñar et al., 2012).

The current status of the agricultural production and management in Slovakia could be described by an extremely fragmented land ownership, as well as the size of the utilised agricultural land in large farms (cooperatives, business companies) and self-employed farmers. (Buday, 2014). The main land and climate conditions are major decisive natural factors, i.e. soil, topography, depth, rockiness, as well as the climate and altitude. The highest economic performance of agriculture measured in the terms of economic results was recorded in the regions in Western Slovakia, with a higher share of productive areas, i.e. better natural conditions.

(Chrastinová, 2008). One of the main legal form of the entrepreneurship in Slovak agricultural production is cooperative with its specific capital structure (Wang, 2016). Agricultural cooperatives are conditioned not only by the external environment in which they operate but also by a set of internal forces that affect the behaviour of the members and the management of the cooperative (Kontogeorgos, 2016). (Toia, 2012) claims that cooperatives have proved themselves to be even more resilient in the times of crisis than many conventional enterprises and notes that there is a considerable evidence of this resilience, particularly in relation to the worker cooperatives, social cooperatives and cooperatives formed by the SMEs (Roelants et al., 2012). Although cooperative enterprises have not been spared by the crisis, they are able to limit the enterprise closures and job losses better than the average business.

Object, Methods and Methodology

Concerning agricultural production, many authors focus on the efficiency of agriculture from various aspects, therefore the concepts of economic, allocative and scale efficiency can be found in plenty of studies. (Chrastinova et al., 2012). The competitiveness is one of the most important factor for the business sustainability the exact definition of which has still not been given as it can be viewed from several perspectives. (Michaličková et al., 2014). The basis for the creation of a cluster and cooperation in agricultural production could be cooperative relationships existing between these entities (Vošta et al., 2010) while successfully functioning clusters stem from the natural concentration of a sufficient number of firms in the given and the related industries. (Abrahám, 2014; Kranjac, 2015). Beierlein (2014) claims that „today’s agri-food system is a global, fast-paced, high-technology industry that is one of the most effective adopters of scientific innovation. Competition is a part of an active market economy and evidence of economic growth which could be characterized as the rivalry aimed to benefit from the economic activity.

The most reliable indicator of competition is productivity, in the long term expression. The importance of the state intervention in the agricultural market is connected with the specifics of agricultural production. This puts them at a disadvantage in the market which is the case especially in those countries where agriculture suffers from structural problems such as the agrarian fragmentation and overstaffing (Nowak et al., 2016). In Slovakia, more than a half of the agribusinesses operate in less favoured conditions. Their production should focus on the sustainable economy, providing job opportunities, securing rural development and performing also the non-agricultural activities. (Szabo et al., 2013).

In our methodological procedures, we used standard methods of research work, such as analysis and synthesis, descriptive statistics, regression and correlation analysis, comparison and graphs. Methods of analysis and synthesis, comparison and some statistical procedures are used in processing the background information and formulation of proposals. In some cases, statistical function in MS Excel were used to process data. Our analysis is based on the accessible secondary and primary statistics about Slovak agriculture in general. Relatively strong correlation dependences we find between the production consumption and production and between the numbers of beef cattle. The common subsidies positively influence only the production inputs.

The correlation coefficients expressing the dependency of common subsidies and production and the quality of beef cattle reach negative values. The analysis we have performed was based on available statistical data on agriculture in the Slovak Republic and the EU. We have obtained data from the publicly available databases Statistics and Eurostat for the years 2010 – 2020. As part of the findings, we have focused mainly on several indicators that allowed us to compare the performance of enterprises operating in the field of agricultural production, e.g. net income from agricultural production, total crop and livestock production as well as the number of employees in agriculture. From these data, we have determined subsequently the ratio related to the cooperative and farmer. To determine the state of agricultural production and its development, in connection with both types of producers (cooperatives and farmers), we have used the above-mentioned indicators and data on GDP and inflation, which are macroeconomic indicators proving the development of the overall economy of the country (SR). Within the data we had available, in addition to absolute indicators, we also relied on indicators of labour productivity and efficiency in terms of value for individual productions (plant and animal).

Results and Discussion

The agriculture and its production is for sure a very specific area, which activity is closely connected with the nature and it depends directly on the climatic conditions. This specific feature determine precondition for a high level of risk. It has been noticed always, however, in the past several years, this risk has had a tendency to increase slightly, specifically during previous few months which is the outcome of the Covid pandemic. The price risk in general is connected with the liberalization of trade with agricultural commodities, the production risk comes from strict rules of the use of inputs and medication for animals and it is also affected by climat-

ic conditions. One of the current trends in agriculture is the growth of specialization which leads to the increase of both the production and price risk. (Jankelova et al., 2017). Agriculture plays more and more a less important role in in the case of the new job creation, too. The agricultural sector is connected with the non-qualified labour force and employment of more seasonal workers. (Buchta, 2013). The development of cooperatives in Slovakia has always gone through turbulent periods since the beginning of its establishment. Although cooperatives are still the predominant form of agricultural entrepreneurship, their importance is decreasing. (Bielik et al., 2002). As is possible see in development of individual forms of agricultural production cooperatives development was more stable during previous years 2010-2020 in comparison with the more turbulent development of farmers (Figure 1).

Based on the ratio between the number of agricultural cooperatives and farmers, we assume that the production of cooperatives and farmers in Slovakia is 2: 1 (Table 1), going from the assumption that the average farmer manages approximately half (approximately 43 ha) in relation to the agricultural enterprise / cooperative, which manages an average of 100 ha of land. Perspective of future development is showing increasement of cooperatives in comparison with farmers (Figure 2). It follows from the above that considiri all indicators according to the size ratio agricultural coops and farmers in ha indicators which we have obtained (Table 2) are the base for mutual correlation.

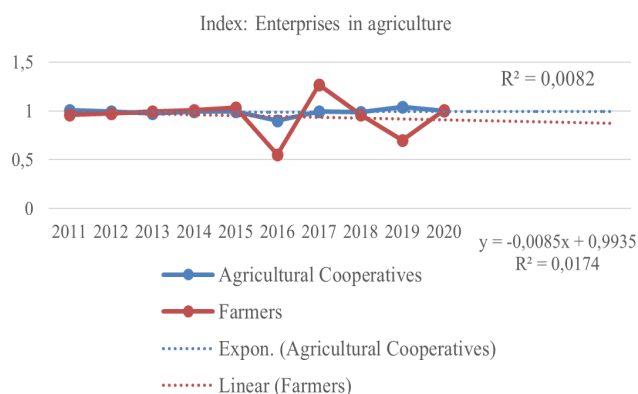


Fig. 1. Development of agricultural entities

Table 1. Share (coops/farmes), ha

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Share (coop/ farmer)	0.092	0.096	0.098	0.097	0.095	0.091	0.148	0.117	0.120	0.177	0.1763
Coops, ha	73 400	73 900	73 700	72 000	71 800	71 200	64 100	63 800	63 000	65 500	65 500
Farmers, ha	801 600	772 800	753 100	749 000	757 300	784 400	431 900	547 900	526 000	369 500	372 300

Source: Own calculations based on Eurostat (2020)

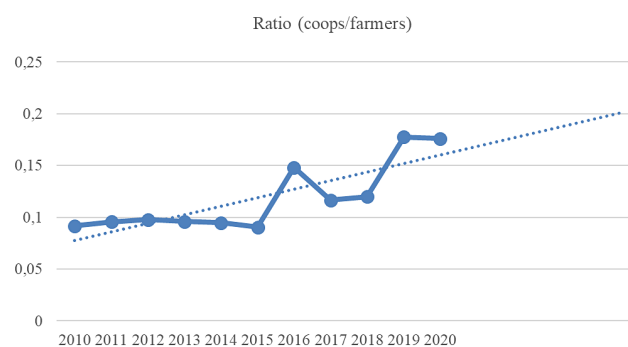


Fig. 2. Ratio (coops/farmes)

The correlation between economic indicators surveyed by the Pearson’s correlation coefficient in the groups of enterprises were analysed by the basic statistical methods. These included, above all, the Pearson’s correlation coefficient, the level of which indicates a larger, smaller, or zero correlation between the variables investigated. The correlation between the economic results and value added was only recorded in agricultural cooperatives, especially in the productive areas that achieved the highest level of the value added. Business companies (farmers) showed a minimum level of correlation between these indicators, even though they recorded higher values of production and revenues per hectare of agricultural land. On the other hand, the indirect dependency between the economic result and the value added was achieved in the profitable and loss making enterprises.

In the correlation analysis of the dependencies of the variables, we based on the mutual correlations of individual indicators, while the positive dependence was observed by a positive value of 0.95. Conversely, negative (negative) binding between variables was assessed as less than -0.95. For our purposes, we considered values in the range -0.05 to 0.05 to be an insignificant correlation.

For the cooperative, a positive dependence was assessed on the indicators number of employees, gross crop, and livestock production, which means that in the cooperative this trend is a signal that more intensive involvement in production. There is also a positive development trend between the year and gross crop production. There is also a positive correlation between labour productivity in value terms and

Table 2. Development of selected indicator in agricultural production

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net income from Agricultural production, mil. €											
Coop	0	5.80	0	14.72	3.07	18.24	3.94	54.55	12.74	12.78	13.92
Farmer	0	60.69	0	153.12	32.36	200.94	26.54	468.4	106.3	72.07	79.08
Gross crop production, mil. €											
Coop	73.2	85.81	110.38	107.92	107.46	108.10	150.02	145.25	138.4	190.08	0
Farmer	799.35	897.39	1127.89	1122.69	1133.47	1191.87	1010.79	1247.34	1155.74	1072.29	0
Gross animal production, mil. €											
Coop	64.23	73.42	76.00	86.17	84.80	72.99	101.28	82.11	92.71	118.31	0
Farmer	701.5	767.81	776.6	896.45	894.45	804.14	682.39	705.14	774.03	667.44	0
Number of employees in agricultural production, thousands											
Coop	0	189.38	196.85	193.76	189.85	185.00	292.99	242.08	253.74	364.38	366.56
Farmer	0	1980.44	2011.46	2015.67	2002.40	2038.15	1974.11	2078.966	2118.52	2055.52	2083.52

Source: Own calculations based on Eurostat (2020)

net income from agricultural production, which means that the labor potential (the effect brought by each worker in a defined working time) is positively linked to net income from agricultural production. This fact testifies to the direct involvement of employees in agricultural cooperatives. Overall, this positive correlation is all the more significant if we compare it with the negative correlation in terms of the declining number of agricultural cooperatives over the years.

Compared to farmer's production, in which their number is also slightly declining year-on-year between net income from agricultural production and labor productivity, a perfect correlation can be seen, which indicates a direct involvement of owners and employees. The intensive use of employees is also evidenced by the very large correlation between labor productivity in crop and animal production and gross plant and gross animal production. While in cooperatives one can see a high correlation especially between years and gross crop production (partly also gross animal production) in farmers, these dependencies are very low, which means that the total production of the Slovak Republic, despite the decreasing number of agricultural cooperatives, shifts to them (increases the volume of their production on a society-wide scale). On the other hand, labour intensity (labour productivity) increases with farmers. When comparing the indicators of GDP and inflation, we did not record any impact of agricultural production on these indicators, which confirms the assumption that Slovakia is more an industrial country than an agricultural one.

Conclusions

Agriculture represents a significant part of the national economy. Although agriculture is a significant field, the proportion of agricultural production in the gross domestic

product is decreasing in developed economies. (Hyblová, 2014). The most significant determinants of the rural enterprise's competitiveness are the location within a region with the competitive situation, the enterprise size, the enterprise age, and some form of innovation in the enterprise. The specifics of cooperatives in rural areas make them among the most crucial factors in the sustainable rural development they are tool for reinforcement in the traditionally agricultural regions, usually characterized by a high rate of unemployment. Cooperatives promote the creation of the vertical and horizontal integration and cooperation ties, i.e. the ties between rural producers and the processing industry, between the production and marketing groups, which all lead to the consolidation of local communities. The creation of cooperatives in rural areas increases the rural regions' potential and makes them more immune to the changes in production, market failures and economic cycles. Another important feature of rural enterprises is the smaller negative impact they have on the local environment compared to large enterprises. The legal form of the enterprise is also a factor crucial for innovation as far as the limited liability companies tend to innovate more than the other legal forms. (Abrahám et al., 2015).

The Covid-19 pandemic has had a global and multidimensional impact on all human things, both at the individual and mutual level. Although, it has been noted that the cooperative business model has been resilient to the previous global financial crisis (Birchall & Ketilson, 2009), it is also important to mention that a crisis caused by a this covid pandemic is not comparable with the past experience: such event deeply disrupted social and individual behaviour, directly affecting the main structure of cooperatives in its economic and social aspects. The adaptability and flexibility demonstrated by cooperative during the recent economic

crisis (Michie et al., 2017) are showing during the global pandemic, too. Many cooperatives from every continent, despite the economic downturn in general, contributed and adapted very well to the new situation by adopting measures to make their business more sustainable and aid society in general. Agricultural cooperatives are especially important in developing countries and for this reason. Fairtrade producer and consumer cooperatives have shortened supply chains in this new situation with the aim to establish direct purchase lines between them and reduce through this the risk of higher food prices. Except of flexibility, a fundamental characteristic of cooperatives is their public interest objective. During the pandemic, plenty of cooperatives all around the world contributed to broadening the access to Covid-19 information through various surveys, messages, online resources, risk management advices, monitoring governments' help and dedicated hotlines. Moreover, agricultural and retail cooperatives are helping vulnerable and marginalized people and providing essential goods to those more affected by lockdowns. Cooperative businesses prove once again to be resilient in times of trouble, the impact of which is being felt both at the economic and social level, but the core values of general interest and cooperation have been upheld all around the world, although with particular difficulties in some places, as the adaptation of production chains for the supply of medical equipment and interaction with the public sector has shown (Monitor Coop, 2020). Our observations have given us evidence about the potential and perspective of agricultural cooperatives development in the future, also in Slovakia. Although, this form of business is not so much popular our research has provide the evidence about almost no significant impact of any indicators that could negative impact their ability to survive and be competitive in comparison with other legal forms of doing business in this area of activity during previous and present years and after Covid 19 pandemic as well.

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