UNVEILING THE DRIVERS OF FARM STRUCTURE CHANGES IN SERBIA

Rade Popović[1], Mirjana Bojčevski [2], Slavica Čolić [3], Nataša Tolimir [3]
[1]University of Novi Sad; [2]Ministry of agriculture, forestry and water management;
[3]Institute of applied sciences in agriculture

Background

The farm structure changes are an ongoing process in all agricultural regions. It includes farms exit, entrance and change of type of farming. Direction is mostly same, total number of farms is decreasing, while an average farm size measured in utilized agricultural area (UAA) or livestock units (LU) is increasing. The speed of changes depends on endogen and exogen drivers. In the group of endogen drivers, the most important are aging of farmer population, existence of successor, and profitability of the farm type. Drivers from outside of farm are availability of alternative jobs, accessibility of new farm production technologies, agricultural policy measures, consumer preferences, etc. Farms are one of most vulnerable link in food value chains. In countries, like it is case with Serbia, with absence of cooperatives farm economic position is even more sensitive causing changes in farm structure. Two main precondition to measure and understand dynamics as well as economic position of farms are Agricultural census conducted in regular period and developed Farm accounting date network (FADN). After half century, Serbia carry out first Census of agriculture in 2012, updated in 2018 with Farm structure survey. Since 2011 Ministry of agriculture, forestry and water management Republic of Serbia starts with developing of FADN. Nowadays it is well established source of farm production and economic data.

Methodology

Data used in research comes from two sources: Statistic office of the Republic of Serbia (RZS) and FADN. The methodology applied during Census of agriculture and methodology of FADN, both are based on EU standards, and consist 8 general, and 61 specific types of farming. FADN define representative sample, based on data from Census of agriculture and Farm structure survey. Such approach allows analysis of farm structure, it's dynamics, and profitability by types of farming. Farm data here are structured on TF 10, which is more suitable for Serbian agriculture and allows separation of horticulture farms on indoor and outdoor, as well as granivores on pigs and poultry. Economic position of farms structured on TF 10 is measured by Farm net income. It represent remuneration for all fixed factors of production owned by farmer (work, land and capital) and remuneration to the entrepreneur's risk in the accounting year.

Key findings

Data from Agricultural Census 2012 and Farm structure survey 2018 revealed direction and speed of changes in farm structure in Serbia. Just in 6-year period, total number of farms decreased for 9% to 564,561. But changes are significantly different on regional level and between types of farming. Agriculture production is divided on two regions with almost equal share in total 3.5 million hectares of utilised agricultural area (UAA). Serbia – North is plain production region, while Serbia – South is hilly and mountain agriculture region. Farms in North region are less numerous accounting 27.8% of all farms, significantly bigger in average UAA (11 ha/farm). In Serbia – South region farms are smaller (4.3 ha/farm), but in livestock production accounting almost 60% of total livestock units (LU), and 75% in total annual working units (AWU). Structural changes on regional level show that farms in North decreasing in all parameters, while farms in South region, beside decrease in number and LU, increased in total UAA and AWU, mostly because of fruit production development. On TF 10 level, in both regions, all farms with dominant livestock enterprises decreased significantly above average in number of farms and used resources. Exceptions are only farms specialist pig production that increased number of total LU. All crop producing farms, except horticulture indoor farms, increased in number, UAA, LU and AWU. The strongest increase showed by specialist fruit farms, while specialist and general field cropping farms increased only thanks to farms that decreased or ceased livestock production, and dominantly migrated to crop type of farming. Farm net income (FNI) by type of farms, calculated from FADN database revealed differences in dynamics of economic results by TF 10. Among 5 Crop specialized TF only specialist in fruit and vineyards realised positive trend in FNI dynamics. In the group of 5 Livestock TF only specialist in pigs achieved stronger increase of FNI.

Figure 1. Changes in farm types in Serbia - North in period 2012-2018

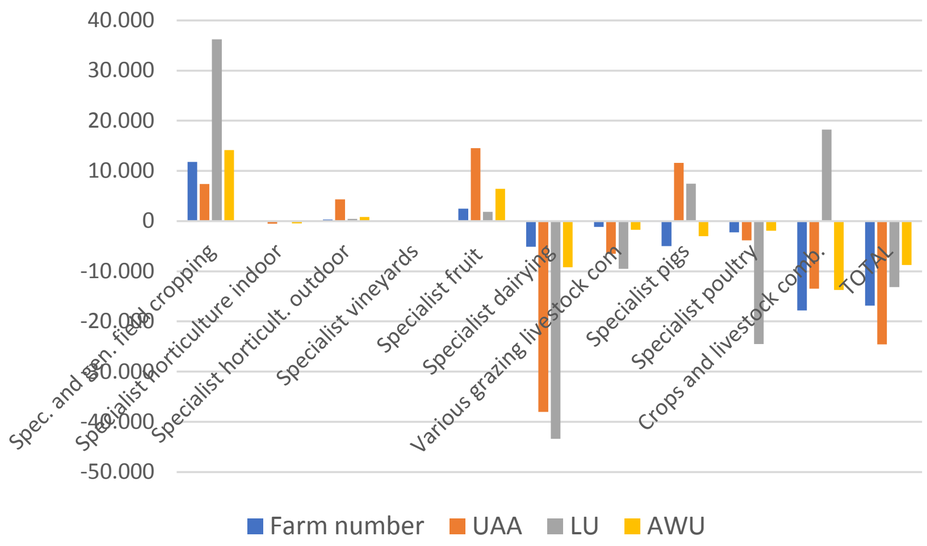


Figure 2. Changes in farm types in Serbia – South in period 2012-2018

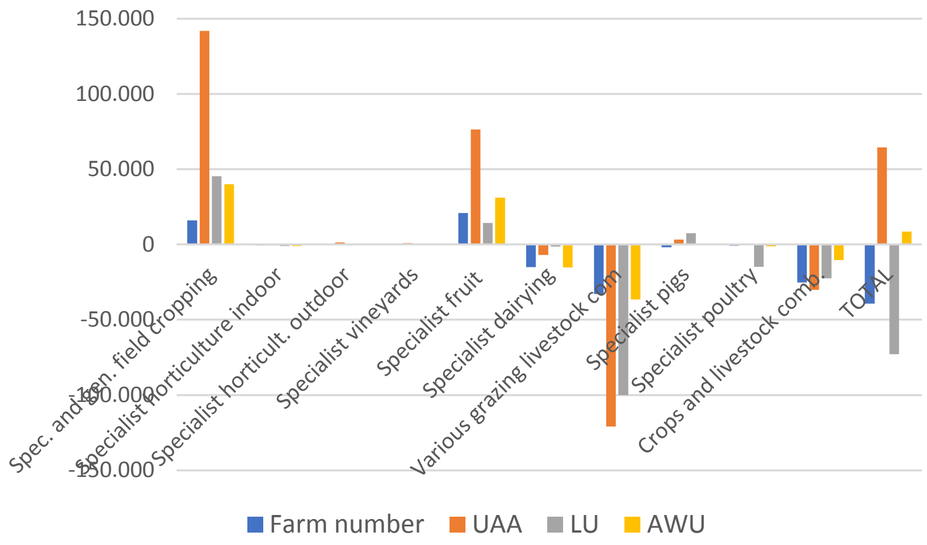
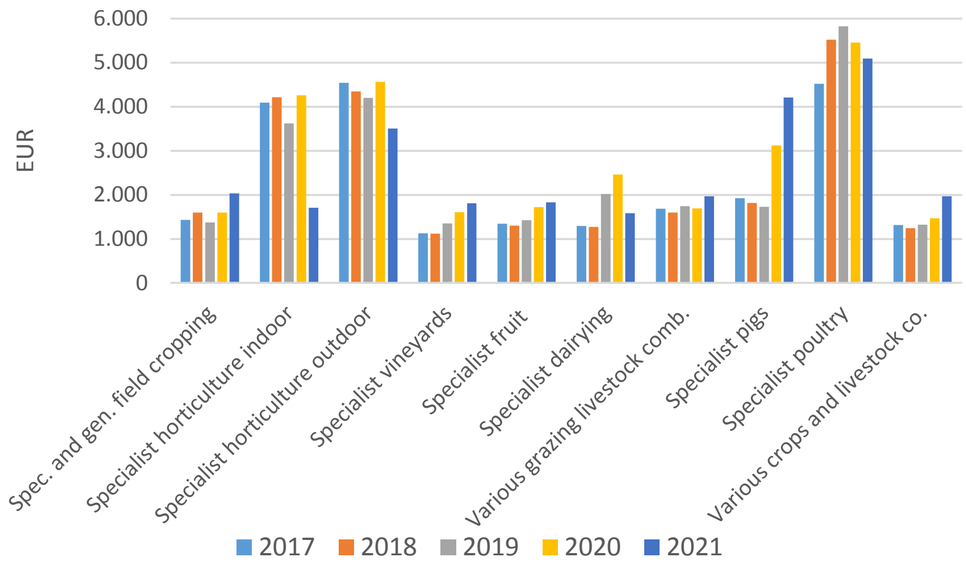


Figure 3. Farm net income EUR/type of farm/year



Conclusions

In traditional agriculture the unbeatable driver of farm structure changes is availability of possible successors. But on mid-term period economic drivers affect farmers decision to change type of farming or even to stop farming. Presented analysis of farm statistic and FADN data revealed connection of NFI and farm structure changes in Serbian North and South regions. Almost all drop in total farm number come from livestock TF. The most extreme change happens in specialist dairying in Serbia – North region, where under average and unstable NFI combined with aging of farmer population, absence of successors halved farm number. Opposite case is in specialist pigs TF, where strong increase in NFI motivated farmers to invest and increase size in LU. In crops TF, only fruit farms, motivated with positive trend in FNI invested strongly and increased in number and resource used. Ongoing Agriculture Census 2023 will reveal plausibility of unveiled trends in farm structure changes and effect of economic driver.