IMPROVING COMPETITIVENESS OF THE RURAL ECONOMY CONSIDERING THE FARM STRUCTURE IN THE WESTERN BALKANS

Aleksandra Martinovska Stojcheska
University Ss Cyril and Methodius in Skopje
Faculty of Agricultural Sciences and Food
Institute of Agricultural Economics

Podgorica, October 11th, 2017

OVERVIEW

- Farm structure in the Western Balkans and Macedonia.

- Competitiveness of the rural economy. Focus on technical efficiency of Macedonian vegetable farms.

- Concluding remarks.

WESTERN BALKAN AGRICULTURE

- Western Balkan countries (WBs) on the path to the European Union (EU), at early stage of the accession process.

- Agriculture – important in all these countries (contributor to national economy and significant absorber of employment)

- Major factors hindering the development of agriculture are small-scale farms, a low share of market production, poorly-developed market structures, lack of meeting food safety standards, and limited capacity for exports (Volk *et al.*, 2010).

FARM STRUCTURE IN WESTERN BALKANS

- Small farms are dominating the sector. Often fragmented land; mainly family farms and labour.
- Smallest farms in Kosovo and Macedonia, largest in Serbia.
- More than 50% of farms up to 2 ha.
- 70-90% of farms up to 5 ha.
- High contrast compared to EU average farm structure.

Average farm size in ha
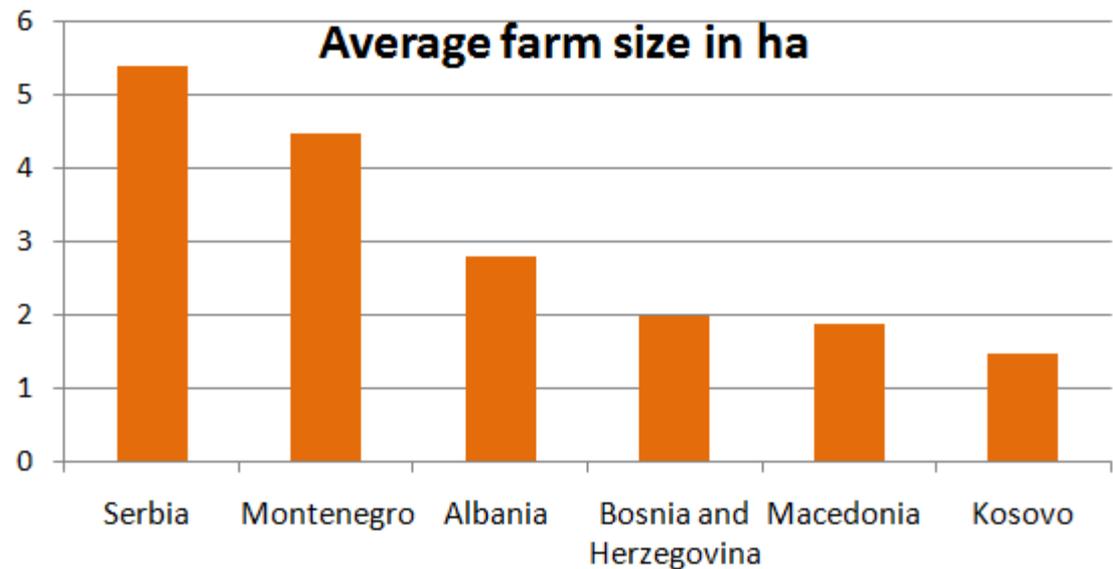
Source: Adapted from Volk et al. (2015)

INFLUENCING FACTORS

- The current structure of agricultural holdings is a result of many factors, among which:

  "…the historical heritage; the characteristics of the past and present social, political, and economic system; the position and role of agriculture in the economic structure of the country; the content of agricultural policy objectives and measures; the ownership structure of the production factors; and the geographical features of farm locations…" (FASF/SLU Sectoral Study, 2010).

FARM STRUCTURE IN MACEDONIA

- Strong dual structure: family farms versus agricultural companies.

- Family farms own or lease around 80% of agricultural land in Macedonia. Nearly 90% of the ag. production, originates from family farms.

- 50% make less than 2000 Euro annual output.

- 192 thousand family farms with cca 1.4 ha of utilized agricultural area (Ag. Census, 2007), *i.e.* 170 thousand with 1.9 ha (FSS, 2013).

- 58% of family farms with less than 1 ha of UAA; only 1.3% with more than 10 ha.

- 300 agricultural companies operate an average of 235 ha. 59% have more than 10 ha UAA.

COMPETITIVENESS, PRODUCTIVITY AND EFFICIENCY

- Competitiveness – broad concept: ability to face competition, sell successfully products that meet demand requirements and use profits to grow. Also ability to produce at a lower unit cost of production than competitors.

- Cost competitiveness – linked to productivity (relationship between outputs and inputs) and efficiency (getting the most output for the least inputs or successfully, related to some benchmark).

- Efficient in a technical sense (being on the production frontier given existing technology) and allocative sense (being on the right place on the production frontier, given prevailing prices).

FOCUS ON THE STUDY OF TECHNICAL EFFICIENCY OF MACEDONIAN FARMS

- Overall aim, to provide an analysis of the direct payments impact over the efficiency and the productivity of the Macedonian vegetable farms.

- More concrete, to estimate the technical efficiency of Macedonian vegetable growers, using income and costs data from the Farm Monitoring System (FMS). The direct payments data derived from the national programme, further enable simulating different scenarios for subsidies impact.

- Results not intended to be uncritically used for immediate policy decision-making, but show the potential value and importance of such studies. An illustration how an efficiency analysis could contribute to an informed research-based decision-making.

METHOD AND DATA

- Farm-specific relative efficiency – standard approach is to estimate a "frontier" across a sample of farms, and then to measure how far each farm in the sample lies below the frontier - Data Envelopment Analysis (DEA).

- Technical efficiency: constant returns to scale - CRS specification (CCR model, Charnes, Cooper and Rhodes, 1978) and variable returns to scale - VRS, input and output perspective (BCC model, Banker, Charnes and Cooper, 1984).

- Is the farm too big or small? Examining scale efficiency.

- FADN-type data - National Extension Agency's Farm Monitoring System (FMS) data for 2011.

- 75 vegetable farms.

EFFICIENT VERSUS INEFFICIENT FARMS

	Efficient farms	Inefficient farms	All farms
Number of farms	25	50	75
Farm output and subsidies (MKD):			
Farm output base-year 2011	487895	377383	414220
DP per area 2011	33705	32335	32792
DP per output 2011	5962	7848	7220
Additional payments 2011 (young/LFA)*	3457	741	1646
2011 total subsidies	43125	40925	41658
DP per area 2016	33522	39459	37480
DP per output 2016	7869	6969	7269
Additional payments 2016 (young/LFA)*	1660	535	910
2016 total subsidies	43051	46963	45659
Farm inputs base-year 2011 (MKD):			
Seeds	42240	50836	47971
Fertilisers	28852	32141	31045
Plant protection	11660	18475	16204
Machinery costs	16438	21346	19710
Other direct costs	36773	36893	36853
Total direct costs	135964	159692	151782
Utilized farm area (ha):			
Farm size (average)	2.27	2.22	2.23
Farm size (minimum)	0.23	0.42	0.23
Farm size (maximum)	15.60	10.00	15.60

AVERAGE TECHNICAL EFFICIENCY OF MACEDONIAN VEGETABLE FARMS
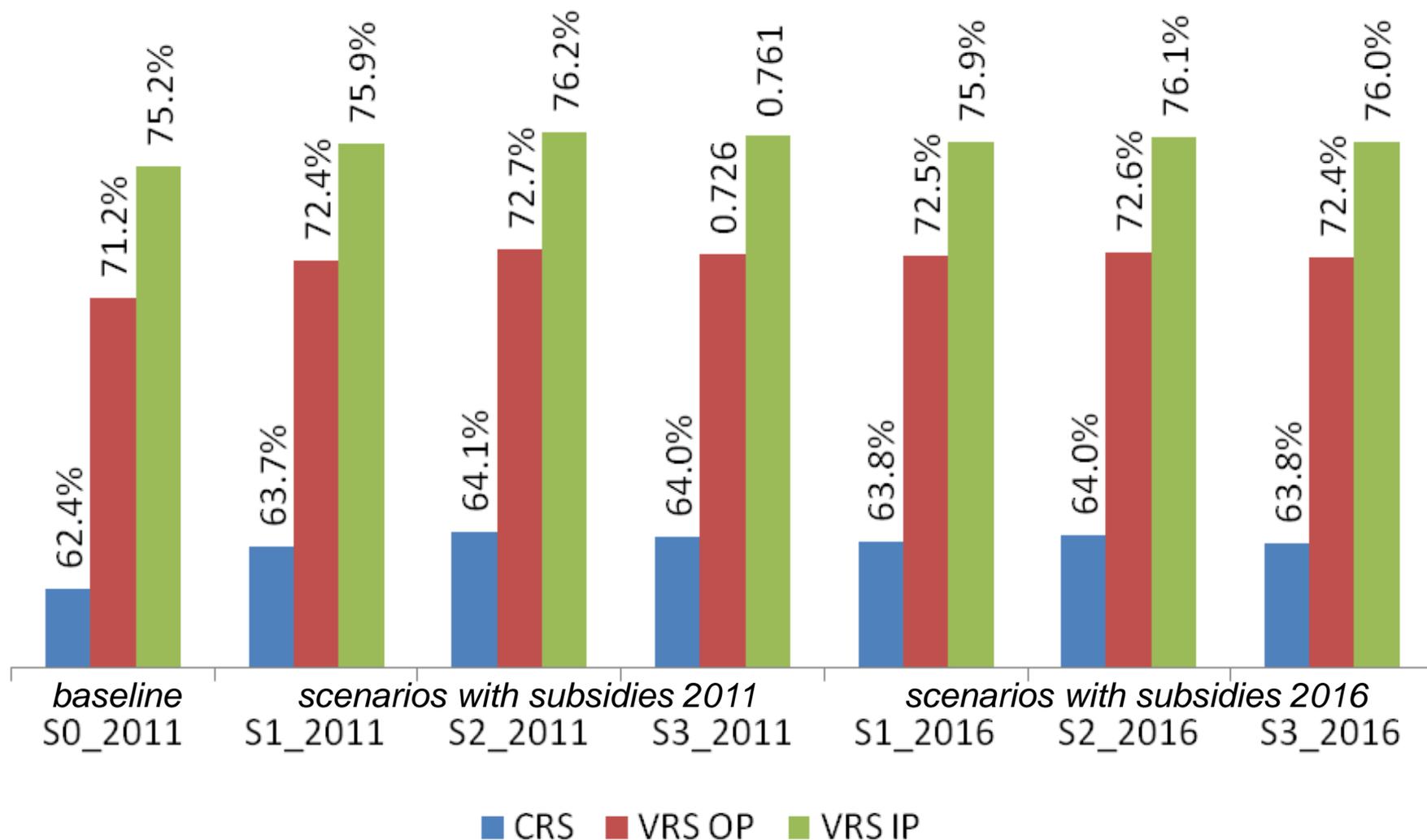
SCALE EFFICIENCY

	Base 2011	S1_2011	S2_2011	S3_2011	S1_2016	S2_2016	S3_2016
SE_O							
Average	88.43%	88.70%	88.92%	88.86%	88.76%	88.84%	88.78%
Median	93.51%	93.45%	93.52%	93.45%	93.57%	93.57%	93.54%
Minimum	46.55%	48.43%	48.02%	47.83%	48.51%	47.72%	47.49%
Operating RS							
Farms IRS	38 (51%)	38 (51%)	38 (51%)	37 (49%)	38 (51%)	39 (52%)	39 (52%)
Farms DRS	23 (31%)	23 (31%)	22 (29%)	23 (31%)	24 (32%)	23 (31%)	23 (31%)
SE_I							
Average	82.70%	83.66%	83.90%	83.82%	83.75%	83.87%	83.78%
Median	85.54%	86.67%	87.33%	87.12%	87.95%	88.07%	87.79%
Minimum	29.94%	33.30%	33.05%	33.00%	32.22%	31.74%	31.69%
Operating RS							
Farms IRS	56 (75%)	54 (72%)	53 (71%)	53 (71%)	53 (71%)	53 (71%)	53 (71%)
Farms DRS	6 (8%)	8 (11%)	9 (12%)	9 (12%)	8 (11%)	9 (12%)	9 (12%)

CONCLUDING REMARKS

- Appropriate use of pre-accession instruments and funds necessary to prepare the sector, increasing competitiveness through farm modernisation and more efficient use of resources, while still meeting quality and safety requirements.

- Relative farm efficiency - measurable index of relative competitiveness: Small farmers more likely to be able to stay in business and retain their market share if they are more efficient users of farm resources – potential market advantage over large-scale producers. Over time, the more efficient farmers are in a position to invest in the farm and to grow, regardless of their size (Delgado et al., 2003).

CONCLUDING REMARKS

- Investigating farms' technical efficiency and its links to subsidy measures is turning out to be central in applied policy analysis, and will continue to be a popular topic that needs to provide policy-makers with useful and current insights (Minviel and Latruffe, 2017).

- Such analytical tools are still missing in Macedonia, and WB, hence models for analyzing policy, such as the effect of the subsidies over the farm efficiency and farm productivity, are needed, above all to boost research-based decision making and policy creation and evaluation.

- Additional benefit - enhancing the research capabilities and capacity for conducting tailored analysis for scientifically based policy decision-making.

- Possible future research directions - estimating the productivity and efficiency in terms of different farm specialisations, regional analysis, partial productivity etc.