Drivers of Income Risk in Hungarian Agriculture

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Risk plays traditionally considerable role in agricultural production because natural forces are beyond to control of farmers (Barry et al 2001; Just and Pope 2003). Due to its relevance at the farm level, farm income risks are also of high policy relevance (El Benni et al. 2012). The existence of farm income risk is also important argument to justify several governmental interventions in agriculture. It is crucial for policy design to take the correct expected risk behaviour into account and to uncover unexpected behavioural responses (De Mey at al. 2016). There is a wealth of literature on the impacts of agricultural policy on farm income risks (De Mey et al. 2014, Uzea et al. 2014; De Mey et al. 2016, Severini et al. 2016). Previous research findings suggest that the agricultural policy measures may affects farmers' income risks via diverse pathways. Although the potential directions of various individual effects of agricultural policy tools on farmers' income risks are well known, it is difficult to predict an unambiguous assessment of the impacts on farm income variability with a solid theoretical background. While there is extensive research on farmers' income risk managing strategy in Western European countries, our knowledge on farm income risk in Central and Eastern European countries is still limited. The paper tries to fill this gap. More specifically, the aim of the paper is to analyse the drivers of the observed heterogeneity in farmers' income risk across farms and time in Hungary using Farm Accountancy Data Network (FADN) data. The Slovenian FADN database consists of an unbalanced panel for the period 2007-2015.

Based on the previous research (see survey El Benni et al. 2012) we set the following hypotheses:

H1: Farm income risk is negatively correlated with the share of subsidies in gross farm income.

H2: Farm income risk is negatively correlated with the increase in financial immobility.

H3: Off-farm income reduces farm income risk.

H4: There is non-linear relationship between farm size and farm income risk.

Our estimations can be subject to the effects of outliers. Thus, beyond to standard ordinary least square model we consider the following alternative estimators. First, we apply median quantile regression. Second, we estimate various robust regression techniques employing M-, MM- and S-estimators (Verardi and Croux 2009).

We find a slightly increasing trend in gross farm income volatility during the analysed period. The gross farm income is dominated by market income and agricultural supports, whilst the percentage of off-farm income is lower. Our estimations imply that agricultural subsidies and financial immobility reduce income risk, respectively. There is non-linear relationship between farm size and income risk.

Keywords: income risk, governmental support, financial immobility, farm size, Hungary

References:

Barry, P.J., Escalante, C.L. and Bard, S.K. (2001). Economic risk and the structural characteristics of farm businesses. Agricultural Finance Review, 61(1), 74-86.

De Mey, Y., Van Winsen, F., Wauters, E., Vancauteren, M., Lauwers, L. and Van Passel, S. (2014). Farm-level evidence on risk balancing behavior in the EU-15. Agricultural Finance Review, 74(1), 17-37.