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Farm household risk balancing: Empirical evidence from Switzerland

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Context/Theoretical background/Research question

Gabriel and Baker (1980) postulate a risk balancing framework, which describes the trade-off between business risk and farm financial risk in the risk behaviour of farmers. Expected business risk related to the farm operation (e.g. weather risk or price risk) is balanced with the way the farm is financed. Given that for the typical Swiss family farm the farm business is embedded in the household, we extend their risk balancing framework to the household level. For example, to earn off-farm income or lower the consumption levels can serve as farm business risk buffering strategies. Based on data from the Swiss farm accountancy data network (FADN) our paper is the first to analyse whether there is empirical evidence of risk balancing behaviour at the household level.

Methodology

Besides information of farm operations, the Swiss FADN includes also farm household data such as off-farm income or consumption. We focus on three dependent variables: the interest percentage of farm debt, the proportion of off-farm income earned and the relative consumption level and explain them by means of fixed effects regression models. Because contemporaneous correlation between the three error terms can be expected, we apply a seemingly unrelated regression (SUR) model, which is estimated using feasible generalised least squares (FGLS) and a heteroscedasticity-robust generalized method of moments three-stage least squares (GMM-3SLS) estimator that further controls for endogenous variables.

Results

We find that in response to changes in expected business risks, Swiss farm households not only make strategic farm financial risk decisions (original risk balancing as described by Gabriel and Baker [1980]), but also make strategic off-farm decisions (household risk balancing) by altering their share of off-farm income and relative consumption. A sub-sample analysis further reveals that small farms make more use of household risk balancing strategies, whereas large farms conversely are more in favour of the original risk balancing strategy.

Conclusion

This paper presents the first empirical evidence on household risk balancing behaviour. The results of our study demonstrate that when focusing solely on farm-level analyses, an interesting part of the behavioural risk response of farm households is largely ignored. Incorporating the household level policy makers have an extended set of policy instruments at their disposal to ensure the well-being of farm households. Our results indicate that these measures could be especially relevant for small farms.

Reference

Gabriel, S.C. & Baker, C.B. (1980): Concepts of business and financial risk. American Journal of Agricultural Economics 62: 560-564.