Organic controls in Germany – is there a need to harmonize?

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1 Introduction

In Germany, organic farming is monitored by 20 approved private control bodies (CBs). Pooling data from five important German CBs, we complement earlier studies by Gambelli et al. (2014), Zorn et al. (2013) and Lippert et al. (2014). These studies have shown for single CBs in different European countries that non-compliance can partly be explained by farm characteristics. Here, we extend the analysis to the influence of CBs and national or regional competent authorities on control results.

2 Hypotheses

We assume that opportunistic farmers, making a decision on whether to comply with an organic standard or not, implicitly balance the expected net benefits of non-compliance. B depends on (i) compliance costs, (ii) probabilities of detection and (iii) farmers’ future sanction related income losses in case of detected non-compliance. Factors (i) through (iii) are likely to be influenced by farm characteristics; factors (ii) and (iii) are also affected by the behaviour of the control body and the regional authority.

3 Method and data

A latent, unobservable variable y* (e.g., the expected net benefit of not complying with the organic standard) is considered to depend on some observed variables x like farm size or control body (CB) (see first column of the Table):

\[ y^* = \beta_0 + \beta_1 x_1 + ... + \beta_n x_n + \epsilon \]

The larger \( y^* \), the higher is the probability \( P(y = 1) \) of non-compliance. The occurrence of a severe sanction issued by the CB is our proxy variable for \( y \). Binary logit models are used to test the effects of \( x \) on the probability \( P(y = 1) \):

\[ P(y = 1) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x_1 + ... + \beta_n x_n)}} \]

The data originates from five important German organic CBs that provided their complete 2009 and 2010 control data base on organic farms. The sample represents more than two-thirds of the German organic farms. On average, a farm in the dataset is controlled 1.22 times a year. The mean control frequency however differs between the CBs in a range from 1.14 up to 1.29. These differences could result from different control implementations but also from different risk classifications of the farmers by the CB.

For a pooled dataset covering both years and for each year separately we estimate models, firstly, as unrestricted models with all potential explanatory variables and, secondly, as restricted models by stepwise excluding non-significant variables.

Starting point of the analysis is a model based on farm characteristics only. This model then is extended by adding dummy variables for former sanctions, for the CB, and, for large federal states. Finally, models for combinations of these extensions are estimated.

4 Results and discussion

Among the significant effects the sanction probability reduction due to contract processing and grape production and the increasing effect of an adherence to a stricter private standard are surprising; the positive effect of the agricultural area may be explained by higher farm complexity. The low Pseudo-R² values suggest to consider further variables that better represent farmers’ personal characteristics, all the more as we partly attribute the high relevance of former sanctions to such characteristics.

As we tried to control for regionally different natural conditions by including farm characteristics into our analysis, the significant federal state effects (see dummies BW and NI) and the CB effects hint at differences in the control implementation. Hence, our results support the need for a more harmonized implementation of organic control systems.

References:

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