

Impact of the Standard Output Threshold on Farm Income

Andreas Roesch
Lund, Sweden, 24 Sep. 2013



Contents

- Introduction
- Data / Method
- Results
- Summary

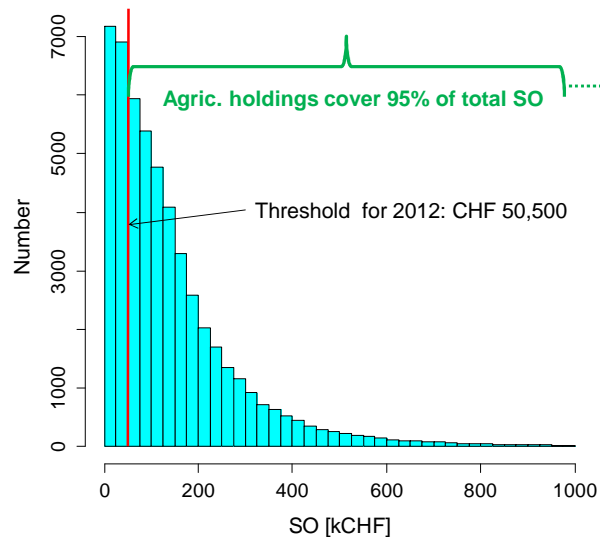


Data

- **FADN** (Farm Accountancy Data Network)
 - Annual data from 2010 to 2012
 - Unbalanced panel
 - Non-random sample
 - 2012: 2951 farms
- **FSS** (Farm Structure Survey)
 - Annual data from 2012
 - Structural, technical & socio-economic data
 - 2012: 56,575 farms



Standard Output, FSS, 2012





Method: Imputation of economic variables for FSS

$$y_i = \beta_0 + \beta_1 \cdot x_{1i} + \beta_2 \cdot x_{2i} + \dots + \beta_n \cdot x_{ni} + \varepsilon_i$$

Multiple (robust) linear regression using **FADN data**
Dependent variable y (e.g. agric. income)
Independent variable $x_k, k=1, \dots, n \rightarrow n$ structural variables
(use variable transformations if necessary)

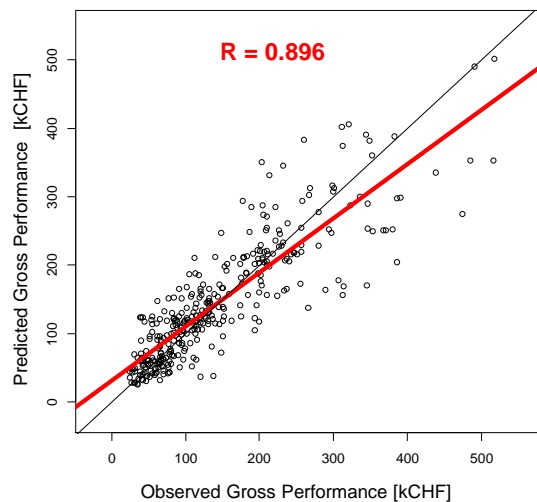
Estimate $\beta_k, k=0, 1, 2, \dots, n$
(Variable substitution via step()- function (AIC-criteria))

Predict y_i for all **FSS** holdings based on β_k
 $k=0, 1, 2, \dots, n$

Separate treatment of each farm type

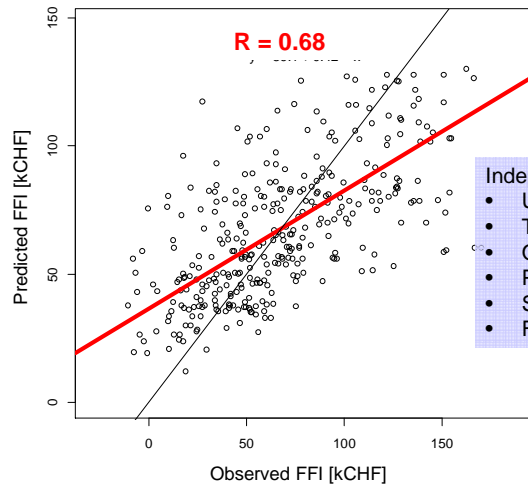


Gross Performance, FADN, Arable Crops





Family Farm Income (FFI), FADN Arable Crops

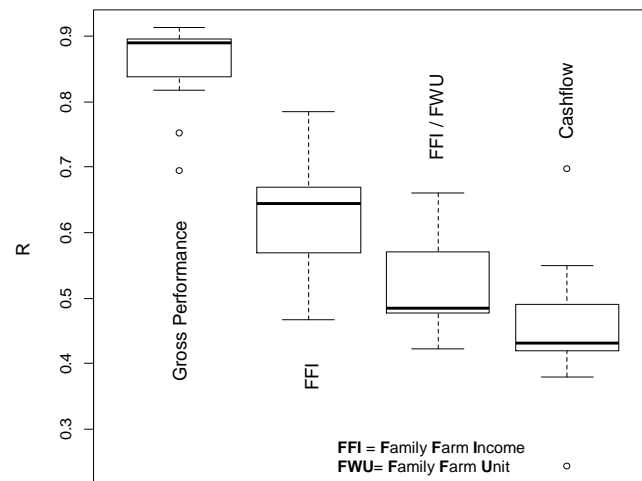


Independent variables:

- Utilised agric. area
- Total livestock
- Open arable land
- Potatoes (area)
- Sugar beet (area)
- Forest (area)



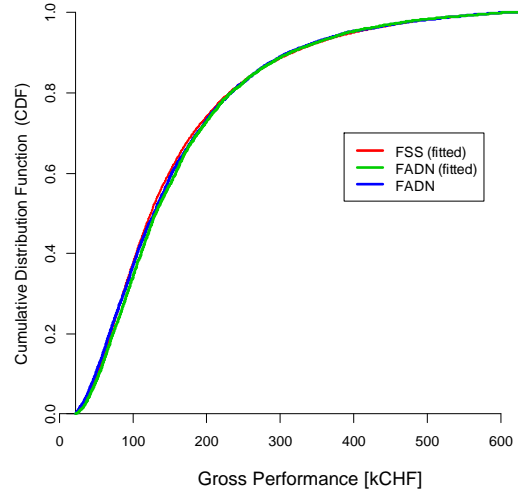
Correlation, Observation vs. Prediction (FADN)



FFI = Family Farm Income
FWU = Family Farm Unit



Gross Performance: Prediction and Observation

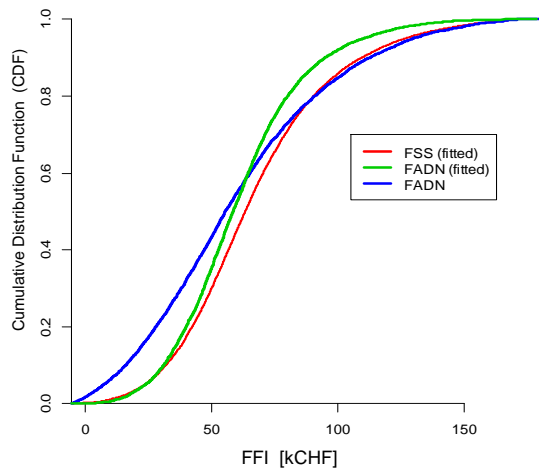


Andreas Roesch | © Agroscope Reckenholz-Tänikon Research Station ART
21st Pacioli Workshop, Lund, 22 – 25 Sep 2013

9



Family Farm Income (FFI): Prediction and Observation

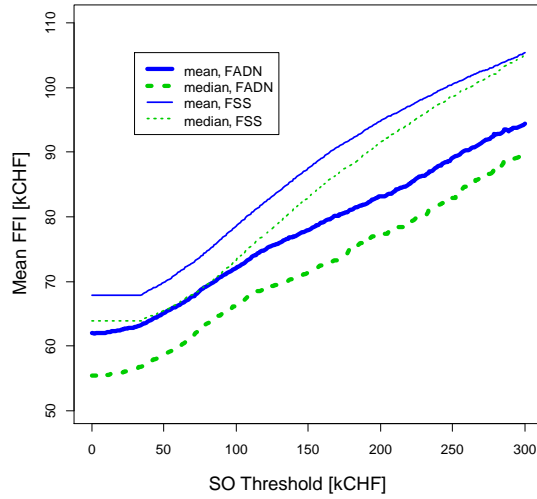


Andreas Roesch | © Agroscope Reckenholz-Tänikon Research Station ART
21st Pacioli Workshop, Lund, 22 – 25 Sep 2013

10



Impact of SO Threshold on Family Farm Income (FFI)

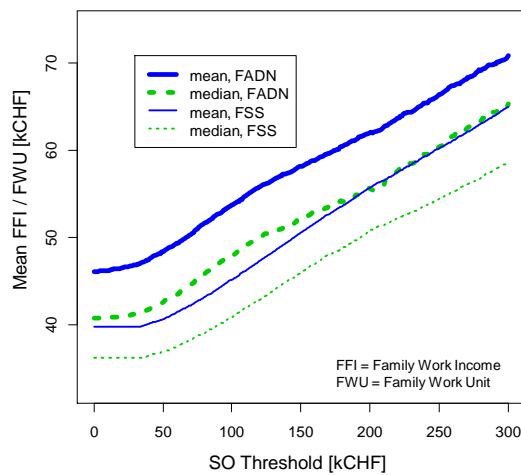


Andreas Roesch | © Agroscope Reckenholz-Tänikon Research Station ART
21st Pacioli Workshop, Lund, 22 – 25 Sep 2013

11



Impact of SO Threshold on FFI per FWU



FFI = Family Work Income
FWU = Family Work Unit

Andreas Roesch | © Agroscope Reckenholz-Tänikon Research Station ART
21st Pacioli Workshop, Lund, 22 – 25 Sep 2013

12



Summary

- Adequate method: Prediction of key economic variables by means of (robust) multiple linear regression (separate application to each farm type)
- Mean economic variables such as family farm income (FFI) or FFI per family work unit tend to increase as the SO threshold rises
- Confidence: FSS and FADN show similar sensitivities



Means of economic variables at the national level depend on the value of the SO threshold!



Thank you very much for your attention!



**ART – Research for
Agriculture and Nature**