

Summary: This paper examines the determinants of export using individual data for four countries in Southern Europe. Using ordered logit and binary logit data based on pooled data, the authors show that there is a significant and positive correlation between export and both technical innovations and the educational level of the founder. This is an issue that is often explored. I wonder what the contribution of this work is. The data are interesting and rich, but have a serious disadvantage that they cannot be linked over time. So, panel data models cannot be used. Below there a number of comments that must be addressed:

#### Main points

The article's contribution is somewhat weak. There are countless studies investigating the relationship between technological innovations and both export participation and export intensity. Community Innovation Survey is often used (sometimes combined with structural business statistics) but also the World Bank Enterprise Survey, EFIGE and ESEE (Encuesta Sobre Estrategias Empresariales) (look for reference listed below). Authors must quote these studies, particularly those who employ data for Spain. The methods (ordered logit model and logit) are also standard. The data set only allows to estimate correlations based on pooled data as individuals cannot be tracked over time. The main finding that there is a link between export and technological innovation and the training of the founder is well known. Why do we need another study here?

To make the paper interesting, I suggest that separate estimates be made for micro (0 -1 employees) and small enterprises (10 to 49 employees). The distinction between manufacturing and services would also be interesting, as export participation is low here, although the tradability of services has increased.

Conceptual part: The link between exports and technological innovation is not very well motivated. Please derive the research questions or hypotheses. Motivate whether and why the relationships differ in terms of the level of innovation activities (new versus very latest and some versus all). It seems that the definition differs from that of other surveys.

The results are based on the ordered logit and binary logit models. The Heckman selection model is mainly mentioned in the footnote. I believe that the Heckman selection model is not suitable. The right variable is the export intensity measured on an ordinal scale. A zero in this case it is a true zero, it is an observed value; this means that the individual (establishment) is not exporting. The Heckman model is suitable when there are not observable values because of truncation, e.g. when the wage is not reported because the person is not working. You need exclusion restrictions to identify the Heckman selection model.

I'm not impressed by the data used. Is it the first analysis using GEM data? It seems that the data cannot be linked over time. Individual effects cannot be considered, only pooled regressions can be performed.

I don't understand why you're using data until 2010. I have checked the GEM website. The data is available until 2015 (GEM 2015 APS Global National Level Data; GEM 2015 NES Global National Level Data). These full datasets are only made available to the public 3 years after data collection. I suggest to update the analysis.

Specific comments

The introduction must be rewritten. It is too much about the macroeconomic environment. But the regressions are at the micro level.

Section 3 p7

Definition of exports: Are service exports included?

“the non-linearity existent in the data”

Please re-write

P 7

The sample is not representative for Italy and Portugal. Re-run the analysis using data for ES and GR only

P.8 Heckman selection model not appropriate here.

The zero-inflated ordered probit model would be appropriate:

Harris, M. N., & Zhao, X. (2007). A zero-inflated ordered probit model, with an application to modelling tobacco consumption. *Journal of Econometrics*, 141(2), 1073-1099.

p. 27

I find it difficult to include expected job growth and motives on the right hand side of the equation. Better to include lagged variables.

p. 21

Figure 1: Should be deleted. No link to the empirical part of the work

Reference list: Please update the references

Please update the reference list. There is no reference after 2017.

References

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