The effect of technological innovation on international trade: A non-linear approach
By Laura Márquez-Ramos and Inmaculada Martínez-Zarzoso

This empirical paper covers an interesting and important topic i.e. the effects of technological innovation on trade. The results show a positive relation going from technological innovation to exports. Unfortunately, I found the paper too descriptive, somewhat confusing and to some extent unconvincing. The paper should greatly benefit from more economic intuition about the empirical exercise performed and the importance and limitations of the results. In revising the paper, the following points might be of help to the authors:

1. The contribution of the paper to the existing literature needs to be spelled out clearly. Is it the first paper that takes into account sector and country heterogeneity? In particular, a) the regression is a cross section (p.7), to what extent can DP (=1 when trading partners are richer than the sample average and 0 otherwise) account for country-heterogeneity (p.13) b) how does DP relate to Y_i and Y_j? c) There is no discussion of problems with unobserved country heterogeneity.

2. I find the main results very descriptive and it would help if the estimated results are interpreted in the light of economic theory and also (6) below.

3. One of the problems in the specification of the gravity model is how to account for economic distance (often approximated by geographical distance) between trading countries. How does this relate to the discussion regarding information and technological innovation (p.3), and also with the equation to be estimated?

4. Sections 2 and 3 both deal with sample selection and should be merged or linked. It is not clear what criteria (if any) have been used to choose the representative country (p.6). For example, among the homogenous medium income country group, why choose Brazil and not Argentina?

5. The TAI measure plays a crucial role and it needs to be assessed critically and not only described. In particular, if the TAI measure can be substituted by its four dimensions (p.12), why has it been included in the regression estimation in addition to its dimensions? (p.18)

6. The authors should explain why they estimated the regression using four different techniques (p.13) and which is under their view, the most appropriate given their data (e.g. possibility of zero bilateral trade flows) and model specification. By the way, Harvey (1976) does not appear in the reference list, Harvey assumes multiplicative heteroscedasticity and the Notes in table 2 and 3 say that the estimations use White's heteroscedasticity-consistent error.

7. Endogeneity bias is a potential problem not only because of the presence of TAI but also the income variable. The latter is not discussed (or dealt with) in the paper. In addition, it would be desirable to test for endogeneity and "inverse causality" before applying IV. The Hausman test is used to test for validity of instruments. The authors should explain why it is better to examine the R squared than rely on the Hausman test.

8. There are some typos in p.16 (columns 1,2…?). In p.15, "Table 2 shows the main results for the technological variables considered. Results concerning the other explanatory variables in the model indicate …" why explain the "other explanatory variables" here? This is very distracting.