Review for the Economics EJournal of the paper *Does Corruption Facilitate Trade for the New EU Members?* (MS number 585)

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The paper deals with a very interesting and policy-relevant question: Does corruption facilitate (or hinder) trade flows between countries? The authors carry out an empirical investigation on a panel of more than 70 countries (including all EU members) for several years (1996-2008). They estimate an augmented gravity equation and find that less corruption in either the exporter or the importer country implies more bilateral trade. They emphasize its importance for Bulgaria and Romania, the two EU members that entered the EU in 2007 and have the highest level of perceived corruption within the EU.

My opinion is that the paper can potentially be a significant contribution to the literature. In its current form, however, I find it a work in progress paper, which needs to be improved along several lines. My concerns are mostly related to the implementation and the presentation. In particular, I think the paper needs a better formulation of the research question, the refining of the econometric identification strategy, and in general a sound presentation. Below I list my concerns and suggestions in more detail.

Substantive comments

1. I think that the research question should be formulated and presented more clearly. The title suggests the authors are interesed in the effect of corruption on trade. Given this, it is not clear why so much attention is devoted to the trade effects of Regional Trade Agreements (RTA). It is not entirely clear either how much emphasis the authors wish to put on the examples of Romania and Bulgaria.

2. The estimation is based on an ad hoc gravity equation (equation (1)), although the literature has for some time provided a theory-consistent gravity formulation (Anderson and Van Wincoop, 2003 *American Economic Review*). Using the theory-consistent gravity (in particular, accounting for multilateral trade resistances) would, in my view, significantly alter the results. The level of corruption in a country hurts all trading partners (including the country itself – domestic trade). In other words, corruption level is a multilateral trade cost. In the theory-consistent gravity, where bilateral trade depends only on the difference between bilateral and multilateral costs, such a trade cost should have no effect. (A change in corruption changes the numerator and the denominator of the ratio of bilateral to multilateral costs to the same extent.)

(a) What can, however, have an effect on bilateral trade is the difference between the corruption levels of the exporter and the importer. The authors themselves point out that firms in less corrupt countries may be unwilling to trade with firms in more corrupt countries, or vice versa. I believe this is a very interesting research question and I encourage the authors to go into this direction. In this case, the estimating equation should include the absolute difference between the corruption indices of the exporter and the importer as a regressor.

(b) Another likely possibility for corruption to matter in bilateral trade is when the *nature* of corruption differs from country to country (how bribes are paid, to whom, etc.). Variation in informational asymmetries regarding the nature of corruption in the trading partner country might explain variation in bilateral trade. Countries of similar corruption levels may trade more with each other, if their nature of corruption is similar (e.g. due to common colonial history), and vice versa. Investigating this possibility is, in my view, another fruitful direction of research.

3. The authors use the Corruption Perception Index (CPI) as a country-specific and time-varying measure of corruption. However, they are reluctant to rely on the time dimension of the index (they do not use Fixed Effects estimation, e.g.).

(a) The reader might need some basic information on how this index is constructed and why temporal comparison is problematic (changes in survey methodology, etc.). It would be also nice to see a discussion on how one should interpret the estimated coefficients, given that the index is an ordinal (0 - 10) variable.

(b) Since the measurement of corruption is a highly debated issue, I think the authors could make their analysis sounder by cross-checking their results with alternative corruption measures (at least some proxies), even if the country or time coverage of these are worse.

4. The authors rightly point out that reverse causality (simultaneity) between trade and corruption is an issue: trade liberalization (hence more trade) can reduce corruption and less corruption facilitates trade. They implement Hausman-Taylor (HT) estimation to address this problem.

(a) The HT method was suggested in Egger (2005, *Review of International Economics*) for cross section gravity estimations. The authors may want to convince the reader that this method is preferred also in a longitudinal analysis. Also, the reader might be interested in more detail how the HT method is implemented here; in particular, which variables are taken as exogeneous.

(b) The HT method corrects for the correlatedness of one or more regressors and the time-constant individual-specific (here, countrypair-specific) effect. In contrast, panel IV estimation also allows for the correlatedness of the regressor(s) and the error term. I think the authors should give more explanation why they opt for the HT (and not the IV) method.

5. The paper also devotes some attention to the effect of RTAs on intra-RTA trade. It is not clear whether the aim is to use RTA dummies simply as control variables or the research interest also extends to the RTA effect. On page 11 the authors state they want to follow the Vinerian approach in disentangling the effects of RTAs on different trade relationships, which suggests the latter aim. This research question is however not formulated and implemented clearly. Apart from this concern, I have the following two comments.

(a) In Table 2 the authors list the RTAs for the countries in the panel. I think it would be important to also take into account the Europe Agreements, which were free trade agreements between the pre-2004 EU members and the new members (the then CEFTA and BAFTA members) before the enlargement.

(b) It is not clear how RTA dummies appear in the regression. In Table 3 the EU dummy does not appear as a regressor. Does it mean that the EU country pairs are the benchmark category? Are then country pairs that do not have free trade agreements (none of the RTA dummies take value 1 for them) excluded from the sample? If EU country pairs are the benchmark, then of course the results can only tell whether an RTA facilitates intra-RTA trade *more or less than* EU facilitates intra-EU trade. This can be an explanation for the negative coefficient on NAFTA in Table 3.

Minor comments

1. The Reference list is disconnected with the paper. Many citations in the text are not in the References and many items in the References are not cited in the paper.

2. I would reverse the title: Does corruption hinder trade...? Or shall we expect the opposite relationship?

3. The authors use the Corruption Perception Index, so it would be better to talk about *perceived* corruption in the text.

4. Equation (1) has a multiplicative error term (ε_{ij}). After taking logs we get equation (2). But the additive error term in (2) is again ε_{ij}, and not its log. Here one might want to refer to Silva and Tenreyro (2006, *Review of Economics and Statistics*) for potential problems with log-linearised estimating equations.

5. The reader might need more explanation for the regression result tables. What is the time period in the estimation? Is the panel balanced or unbalanced? Are p-values reported under the coefficient estimates? Which standard error estimator is used?

6. On page 7 (below Table 1) the text refers to Table 2 instead of Table 1.