

Review of:
MS # 2008152

**Studying Abroad and the Effect on International Labor Market Mobility –
Evidence from the Introduction of ERASMUS**

by Fabian Waldinger and Matthias Parey

In the paper under review the authors use the introduction of the Erasmus study abroad program to estimate the impact of studying abroad on the probability of working abroad for recent graduates from German Universities. Using a measure of exposure to the Erasmus program to form instruments, the authors estimate that, for students from German Universities, study abroad for a short period of time during their university training increases the probability the student works overseas after graduation by 15 to 20 percentage points. Simple comparisons (i.e. OLS estimates) between students that do and do not study abroad show substantially smaller sized effects. The authors interpret the differences between their OLS and IV estimates in terms of heterogeneous treatment effects. In particular, they argue that those affected by the Erasmus program are more likely to be credit constrained than those who would have studied abroad regardless and that study abroad for these students has a particularly large effect on the probability that a student takes a job abroad after graduation.

This reviewer questions the validity of the authors' interpretation of the difference between the IV and OLS estimates. While the authors present evidence that those that received financial aid are more likely to be affected by the Erasmus program than those that did not, those that did not still receive substantial weight in estimation. The implication of the authors' argument is that the effect of the Erasmus program on the probability of working abroad for those that received financial aid is enormous. It would be worth seeing if this is, indeed, true. For this purpose, the authors could split the sample between those that did and those that did not receive financial aid, and estimate the effect of studying abroad for the two populations separately.

I can think of two other possible explanations for why the IV estimates are so much larger than the OLS estimates. The difference could just be due to sampling error. Alternatively, it is possible to question the validity of the instrument. The authors put a substantial effort into trying to convince the reader of the validity of the instrument they construct based on their estimates of student exposure to the Erasmus program. They have produced reasonably convincing evidence that there was a good deal of randomness in terms of which departments within a university introduced the program. However, when discussing this issue the authors mention that programs were "typically initiated through an active professor who happens to have contacts with professors at foreign universities." Might such a professor not only have contacts at foreign universities but also contacts in foreign countries that could facilitate job finding? If this were the case, exposure to the Erasmus program would have potential direct effect on overseas employment.

Taking the authors estimates at face value, I had trouble interpreting them. The authors seem to interpret their estimates as suggesting that the Erasmus program increased the out-migration from Germany of University graduates. However, an alternative interpretation is simply that the program effected who migrated, but not how many migrated. Even if the program does increase the out-migration of German University graduates, does this represent a brain drain or a brain circulation (i.e. does the program induce students from other European countries to immigrate to Germany)? The authors need to provide the reader with a conceptual model and more descriptive data to allow us to interpret their results.

Suggestions

1. The authors should provide some kind of conceptual model to aid in the interpretation of their results. Within the context of the model, the authors should discuss some of the issues raised in the preceding paragraph.
2. The authors should test to see if their IV estimates are statistically significantly different from their OLS estimates. My guess is that, if they are not statistically significantly different at conventional levels, they are close to so. Thus, regardless, the difference between the OLS and IV estimates should be discussed. However, the discussion should be in light of the reliability of the contrast being discussed.
3. The authors should discuss the possibility that exposure to the Erasmus program might have direct effects on job placement abroad.
4. The interpretation the authors make of the difference between their IV and OLS estimates implies that IV estimates for the population that had received financial aid should be substantially larger than similar estimates for the population that had not done so. The authors should test to see if this is true.
5. There is a good deal of descriptive information the authors should provide the reader to aid in the interpretation of the authors' results. Thus, it would be nice to know what fraction of students that study abroad and then work abroad work in the very same country they studied in. It would also be nice to know industry and occupational distributions for those that work abroad relative to those who work in Germany. Lastly it would be nice to know something about the gross and net flows of college educated workers into and out of Germany.

Minor

1. I was glad the authors did as many robustness checks as they did. These checks went some way towards convincing me that the author's strategy was valid. That said, I think many of these results could be presented in an appendix,
2. It was not clear to this reader whether the data the authors were using included only German nationals or might also include immigrants. The authors should clarify this issue.
3. Is the data restricted to those who graduate from undergraduate institutions? This is my understanding. Still, the authors should clarify this issue for readers that are not familiar with the German University system.

4. The Malamud and Wozniak paper the authors cite is not really relevant to the effect of studying abroad on working abroad. Rather, the paper tries to credibly estimate the impact of college going, per se, on inter regional migration. At that same time, there is a paper by Jeff Groen in the 2004 *Journal of Econometrics* which is relevant. It is also possible that the authors would find it useful to look at the paper by Bound, Groen, Kezdi and Turner in the same issue of the *Journal of Econometrics*.