

RESPONSES TO REFEREE 2

We would like to thank you for the thoughtful and detailed report on our paper. For your convenience, we repeat your comments (emphasized) and summarize how we plan to deal with them in a revision.

Main comments

- *It is not really clear what the main objective of the paper is. In particular, do the authors aim to estimate the impact of immigration on unemployment just controlling for trade flows or do they want to explicitly consider the substitutability of worker and goods flows when estimating the effects of immigration and trade on unemployment? The authors need to do a better job in specifying what exactly they mean by taking “an international trade perspective” to analyze the unemployment effects of immigration and develop a coherent theoretical and empirical framework.*

The aim of the paper is to include into existing empirical research of trade on unemployment immigration flows. As immigration and trade are statistically not independent, we argue that these studies could suffer from a omitted variable bias. We motivate our empirical specification by referring to standard trade theory models and their predictions concerning trade and migration flows. However, estimating a full-fledged structural model of trade, migration and unemployment is far beyond the scope of the present manuscript.

With “an international trade perspective” we mean that we tackle the question of immigration on unemployment with the methodologies well established in the trade and unemployment literature. This is to make clear that we do offer a complementary methodology to existing micro-level studies. We are happy to clarify this point in the revised version of the manuscript.

- *More could be done to take into account the interrelationship between immigration and trade. Both the theoretical framework and the empirical strategy tend to treat immigration and trade as separate flows. The unemployment effects of immigration and trade are theoretically predicted with separate hypotheses and empirically tested without allowing for interacting effects. This approach can be justified (compare previous comment), but it ignores the potential interdependencies between immigration and trade. For instance, while standard neoclassical trade theory predicts that immigration and trade are substitutes, recent evidence has suggested that immigration may actually spur trade (e.g. Kugler and Rapoport, 2011; Felbermayr*

and Jung, 2009; Gould, 1994). The degree to which immigration affects unemployment may hence depend on the size of trade flows, calling for an interaction term in the econometric framework.

For deriving our hypotheses we relied on standard trade theory models extended to allow for imperfect labor markets. Those models do not explicitly introduce interdependencies of trade and migration. However, due to the general equilibrium nature of all these trade models, there are interlinkages working through changes in prices and income. Take for example the new economic geography class of models. When immigration increases, the direct effect is a fall in wages. However, if not all immigrants are unemployed, overall income in the receiving country will increase. These changes in wages and income will also effect the prices of the goods for exports and the demand for imported goods. Hence, there is a relationship between trade and immigration.

Concerning the empirical implementation, we are happy to include in a robustness check an interaction term between immigration inflows and openness.

- *“Why then should goods trade have a statistically significant effect on unemployment and (im)migration not matter at all? And when trade decreases unemployment, should not (im)migration, too? If the answer to this question is yes, one has to conclude that previous studies may suffer from a potential omitted variable bias.” (Introduction, p. 3) This conclusion is not necessarily true and illustrates that the paper could benefit from embedding it more rigorously in the recent literature. First, observed labor market effects of immigration are likely to be weaker than predicted by theory. Standard economic theory assumes that immigrants and natives are perfect substitutes. This assumption, however, is unlikely to hold in reality as recent evidence documents an only imperfect degree of substitutability (Manacorda, Manning and Wadsworth, forthcoming; Ottaviano and Peri, forthcoming). Second, neoclassical trade theory predicts that migration and trade are substitutes for a given pair of two countries. Yet, at the level of the destination country aggregating all trade and migration flows from various countries, it does not have to be the case anymore that the effects of immigration and trade go into the same direction. Third, this statement does not do justice to the many micro-level studies that have carefully analyzed the causal labor market effects of immigration. These studies have used instrumental variable estimation and natural experiments to deal with endogeneity including omitted variable bias.*

We fully agree with all your concerns raised. However, keep in mind that this

is exactly our research question. And all your objections are not qualitative in nature but depend on the relative size of different interacting effects. Exactly therefore it is our aim to investigate whether immigration inflows really matter for unemployment.

Note that we do not want to argue that the many micro-level studies on the impact of immigration suffer from methodological shortcomings. We just want to offer a *complementary* methodology which is linked to the trade and unemployment literature.

And, as we found out and emphasize in the conclusion, the link is weak, and negative at best. The political fear, however, is a positive effect of immigration on unemployment. And according to our findings, this hypothesis is not supported from the data.

- *As the authors themselves acknowledge, cross-country regressions are plagued by endogeneity. In addition to immigration flows, trade flows are likely to be endogenous, too. This view is also taken by Felbermayr, Prat and Schmerer (2011) on which the empirical specification of the paper is based. It is therefore not clear why the authors decide to present results from regressions, in which immigration is the only endogenous variable. Unless the authors can make a compelling case that endogeneity is limited to immigration flows, they may want to drop the instrumental variable specification and resort to GMM estimation only.*

As instrumental variable specifications were used heavily in the literature, we wanted to offer for the interested reader also those results. However, we do not have strong stakes in keeping them in the revised version. If space is scarce, we are happy to drop them.

- *In addition to net immigration flows, the authors include the population size of the receiving country as control variable. Given that $population(t) = population(t-1) + [births(t)-deaths(t)] + [immigration(t)-emigration(t)]$, is there not a problem of double-counting net immigration?*

We add population in order to account for size differences of countries. We provide new figures that show that the relationships also hold for immigration flows normalized by population. This is a reaction to a comment of another referee. As we do not add lagged population nor data on births and deaths, we do not encounter a double-counting problem.

- *The labor market effects of immigration and trade include effects on both unemployment and wages. The analysis, however, is strictly limited to the effects on unemployment. To assess the overall impact on welfare and understand the restrictions on immigration, would it not be worthwhile to investigate wage effects as well?*

We fully agree that for a full-fledged welfare analysis we also would have to account for the wage effects of immigration. This would be an interesting extension for future research. However, as there are already plenty of papers studying the wage effects of immigration, see for example the literature review in Gaston and Nelson (2007), we restricted our attention to the unemployment effects of immigration.

Minor comments

- *The period under consideration (1997-2007) includes 2004, the year in which the first Eastern enlargement of the EU took place and many old member states did not impose restrictions on immigration from the new member states. Is there a structural break in the relationship of migration, trade and unemployment, i.e. do coefficients differ for the periods 1997-2003 and 2004-2007?*

In order to take into account this structural break, we are happy to present results for the period 1997-2003 only in the revised version of the manuscript.

- *How are observations weighted in the regressions, in particular do all countries have the same weight regardless of their size?*

We do not weight observations according to size or some other characteristics in our objective function. However, not that we control for size and that we include robust standard errors, which also can account for size differences. Weighting observations according to country size akin to survey weights would potentially lead to endogeneity problems as country size, unemployment rates, immigration and trade are related.

- *The author's estimation framework is based on panel regressions which identify the impact of immigration through changes over time. For this reason, it is not clear why the authors check the robustness of their estimates using immigrant stocks instead of flows. Will any impact of existing immigrant stocks not already be reflected in previous unemployment rates and hence reduce the variation left for identification?*

In our dynamic specification, taking stocks or flows means to take either differences of stocks or differences of flows. This makes a difference in the dynamic system-GMM estimates.

- For the uninformed reader who does not know the details of the literature, hypotheses 5 could be derived in more detail.

We are happy to provide more references and more details for hypothesis 5 in the revised version of the text.

- The regression lines in Figures 2 and 3 suggest a negative relationship between unemployment and immigration. How much of this relationship, however, is driven by the potential outliers Poland and the Slovak Republic?

We reworked the Figures in order to control for size. In the following we fit the regression lines excluding Poland and the Slovak Republic.

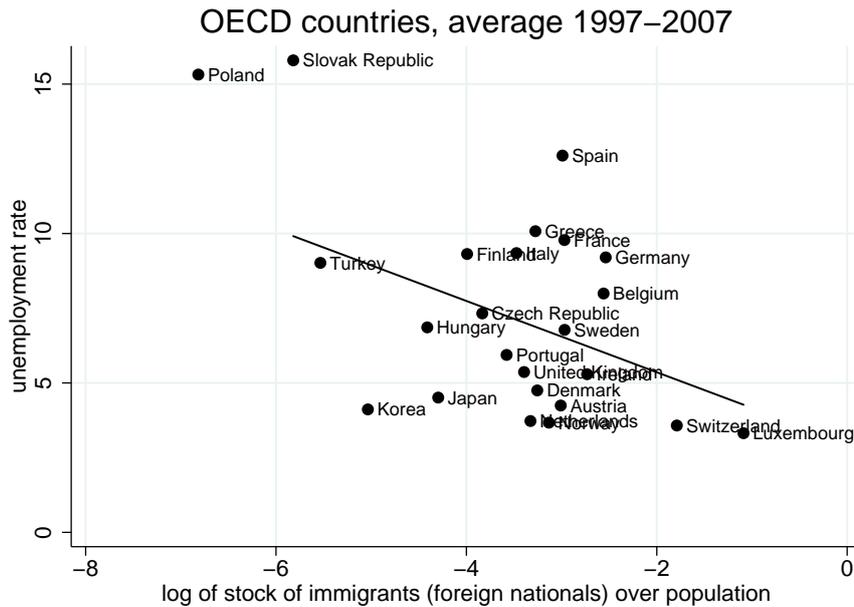


Figure 5: Average unemployment and log of stock of immigrants (foreign nationals) over population excluding Poland and the Slovak Republic

- What does w stand for in Y_{wt} in Equation 2 (p. 12)?

The “w” stand for “world” and Y_{wt} is the world income. We are happy to add this explanation in the revised version of the manuscript. Thank you very much for pointing out this shortcoming.

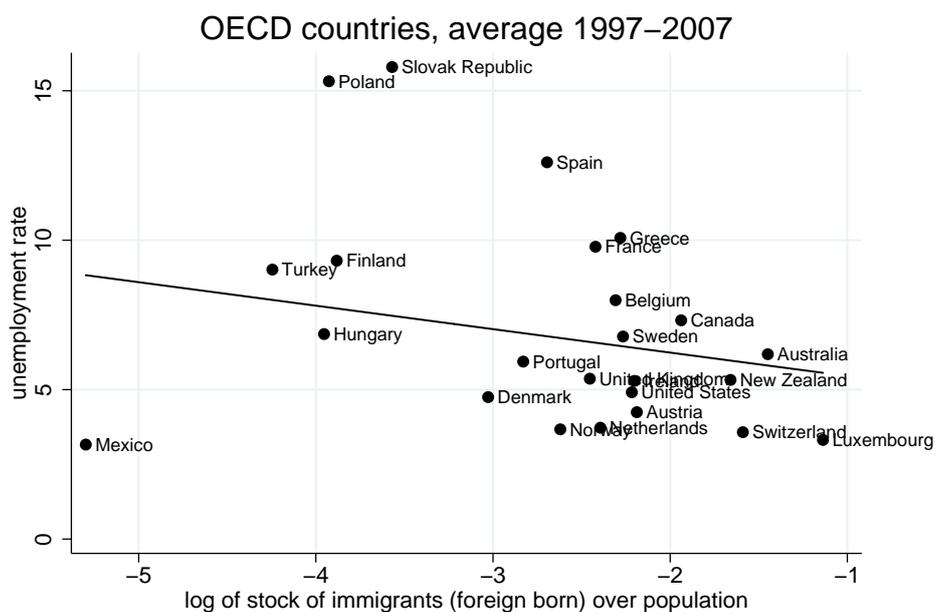


Figure 6: Average unemployment and log of stock of immigrants (foreign born) over population excluding Poland and the Slovak Republic

References

GASTON, N., AND D. NELSON (2007): “The employment and wage effects of immigration,” GDC Working Paper.