

A Reply to Referee 1 on “Inequality in Latina America: The Role of the Nature of Trade and Partners”

We would like to thank you for your comments and suggestions. In light of your comments, we propose several changes, which in our opinion will hopefully greatly improve our research.

In what follows, we address your specific comments, so that we hope to allay any doubts you may have concerning our research.

The article is well written and has some merits, but can also be improved in some respects. In my opinion, its main problem is related to how the two main variables under analysis, namely, openness and inequality, are being measured. It is irrelevant to try to disentangle the links between two variables if we do not really know how they are measured, or what is being measured.

Thank you very much for your general appraisal of our analysis. We do believe that the paper tackles an interesting topic and could offer a contribution to the literature.

I In the case of inequality, some authors have recently discussed in a series of studies how inequality has evolved in the World, and how disregarding the existence of tax havens jeopardizes any available measure of inequality. Some of the most prominent authors that have contributed to this area over the last few years are Thomas Piketty, Emmanuel Saez, or Gabriel Zucman but, surprisingly, there are no references to their work in the list of citations. Specifically, their view that inequality is ill-measured because it uses official statistics, which miss the financial flows circulating via tax havens, should be acknowledged.

Thank you for pointing out this important reference. It is true that the authors you mentioned (Thomas Piketty, Emmanuel Saez, or Gabriel Zucman) have contributed and tracked more precisely the evolution of global wealth inequality. Consequently, this has led to a flourishing literature and opens the possibility to overcome the limitations of what is so-called the “ill-inequality” measures. In particular, Zucman and his collaborators seek to answer how much wealth is held in tax havens and who owns the wealth in tax havens to construct top income and wealth shares for different countries. Moreover, rich people often do not report their correct income or do not respond at all, and income inequality is measured with error (cf., Anand and Segal 2015, pp. 945-948). Then, Gini coefficients based on household surveys suffer from some drawbacks. Unfortunately, the main limitation of adopting inequality measures, such as the ones provided by the World Inequality Database (WID) (see Alvaredo et al., 2016), is the lack of data, especially for developing countries. More precisely, WID covers few countries, namely Argentina, Brazil, Chile, Colombia and Uruguay at different time spans, which does not allow us to perform panel estimations. This is the main reason why we do not rely on these indicators. Notwithstanding, we discuss this choice in the Methodology section of the revised version.

2 In this regard, the distinguishing between income inequality and wage inequality is essential, but this distinction is not totally clear in the paper. Therefore, given the essential role of inequality in this paper, it is important that state-of-the-art contributions are, at least, cited.

Thank you for this comment. There are at least two main reasons why we focus on income inequality instead of wage inequality. First, it is important to note that wage inequality data available for Latin America come from national household surveys, which are not uniform across, and even within countries, in terms of geographical coverage and questionnaires over time. Thus, studying wage inequalities in a panel of countries, leads to comparability problems and loss of accuracy. That is why most previous studies on wage inequality in Latin America have only dealt with country case studies (e.g. Attanasio et al, 2004 for Colombia; Galiani and Porto, 2010 for Argentina; Gonzaga et al., 2006 for Brazil). Moreover, the distinction between wage inequality and income inequality is not a critical matter for Latin America since there is a close relationship between the two terms (labour income accounts for around 73% of the total household income in Latin America countries, and hence moving in a similar direction over time (Messina and Silva, 2018). An important feature of the data on income inequality we used (the Standardized World Income Inequality) is that the data comparability is considered as much as maximum and maintain the widest possible coverage across countries and over long periods. This discussion has been added in the Methodology section of the revised version.

Second, it is true that trade models focus on the effect of trade on wage inequality and the skill-premium, not on income inequality. Studying wage inequalities leads to a more straightforward verification of the direct effects of trade flows, but do not account for all the indirect effects induced by trade. We argue that it is more interesting to focus on income inequality, which has a clearer socio-economic meaning than on wage inequality. We have added a discussion of these matters at the end of the Literature review section.

3 As for the measurement of openness, I also have similar concerns. Although the sectoral analysis provides a more relatively detailed view of countries' trade structure, the authors might also consider some relatively recent measures of trade integration that consider not only openness but also connectedness. See, for instance, Arribas et al. (2009, 2011), as well as the literature that explores the network structure of trade (Chinazzi et al., 2013). Maybe this could be considered as an extension of the paper, similarly to what was suggested in the above paragraph. Taking explicitly into account both suggestions would increase the overall quality of the paper substantially, but I am aware that it can be costly, but, at least, the existence of these pieces of literature should be acknowledged, including relevant citations.

We would like to thank you for providing this insightful suggestion. Arribas et al. (2009) assure that the degree of openness *per se* does not reflect countries' trade connections with the rest of the world. To capture these links accurately, they use a network analysis to characterize the extent to which the world economy has become integrated by proposing a *Standard of Perfect International Integration*, which takes into account both the degree of openness and the development of direct

and indirect network connections. In the Methodology section, we have added a discussion on the Trade openness indicators with a reference to Reyes et al. (2010) who use a network approach to examine the international economic integration of East Asia and Latin America. Regarding the work of Chinazzi et al. (2013)”, despite the relevance of international financial network, this is an interesting area for future research but unfortunately, beyond the scope of this study.

4 The economic size of the different countries in the sample is heterogeneous. Has this been taken into account? A more detailed description of the countries in the sample would be welcome.

Since we apply panel estimation models, our estimations control for the unobserved heterogeneities within countries and take into account the fixed and quasi-fixed country structural factors that affect the level of income inequality but do not change over time such as institutional context, factor endowments and economic size countries. . We added these precisions in the methodology section.

5. The analysis by sub-periods might also shed some interesting results. Many things have occurred between 1989 and 2015, particularly at least one relevant economic crisis.

Thank you for the interesting suggestion. The model includes year fixed effects that control for all the events affecting in a similar manner the countries of our sample such as the 2008 financial crisis for instance. According to trade reforms, these countries have followed different trade liberalisation processes during the first part of the period analysed. Starting from the end of the 1990s, little changes have been introduced in this regard. As long as the countries of our sample are commodity exporters and have faced a commodity boom during the period 2000-2014 (IMF, 2018¹), we build on your suggestions and propose to account for this trend trend. See the discussion about control variables below.

6. The econometric strategy looks reasonable, but perhaps some other possibilities could have also been considered. The reader ends up with the feeling that this could have been written for a master's dissertation.

Thank you for your suggestion. We carefully intent to improve the writing of this section and the justification of the estimation strategy the estimation model choice of the dynamic specification . We agree that GMM methodology could present some drawbacks given that the time spam is large but the number of countries is small (then the number of instruments is high). Following your suggestion and the one of Roodman (2006) who states that “If T is large, dynamic bias becomes

¹ International Monetary Fund. (2018, 97-98). “a commodity boom is a positive wealth shock that propagates through the economy via various channels “. Positive wealth shock would, all in all, lead to more employment and /or increase in wages in the commodity and nontradable sectors while it could crowd out the non-commodity sector due to a more appreciated real exchange rate (Harding and Venables 2016). Positive wealth shock also translates in higher fiscal revenues and expenditures. Larger transfers will have a direct impact on inequality and poverty and government investments might stimulate domestic demand, growth and hopefully reduce inequality.

insignificant, and a more straightforward fixed effects estimator works”, we have considered an alternative strategy. Specifically, we have used panel data regression models with fixed effects. The results found are very similar and allow us to check for the effect of time period as suggested above. Then, we suggest presenting in the article the models obtained with the fixed effects estimator.

7. The number of controls in the model is surprisingly low. Given the study is conducted at the country level, for which the amount of relevant information is substantial, I guess the number of controls could be increased.

The dynamic specification, which includes the level of income inequality in the previous year, already account for all the factors explaining the previous level of income inequality. Then, this specification controls for the long term determinants of inequality, even if we are not able to precise which factors there are. Bearing in mind these circumstances, accurate additional control are the variables that may influence trends in income inequality in the mid- and short term. For instance, it would be accurate to control for fiscal and labour policies but these data are difficult to gather in an accurate manner for our sample. We include GDP growth and terms of trade, defined as the ratio of exports to import prices, to account in particular for the expansion in the price of commodities after 2000 We have also tested the influence of of inflation, real exchange rate and a dummy variable for the period 2000-2014 to account for commodity booms. Results are similar and available upon request. In the revised version we present models including terms of trade that ensure that our results are not driven by the commodity boom.

Minor comments

The citation “IMF, 2017” (page 2) is missing from the list of citations

International Monetary Fund (IMF). (2017). Cluster Report: Trade Integration in Latin America and the Caribbean.

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