Referee report on

Exporting Firm Dynamics and Productivity Growth: Evidence from China

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Overview of the paper

This paper explores the dynamics of productivity of exporters using firm-level accounting data for Chinese firms that were operating between 2005 and 2009. The paper applies the dynamic Olley-Pakes decomposition with entry and exit proposed by Melitz and Polanec (2015), which allows one to decompose the change in aggregate productivity in contributions of surviving (within-firm growth and reallocation of market shares between these firms), entering and exiting firms. The paper shows that in China the combined contribution of the three components capturing reallocation (reallocation of market shares, entry and exit) amounts to almost half of the change in aggregate productivity. The between-firm market reallocation is found to contribute most among the three components, followed by exit of inefficient producers. The paper also finds that the aggregate productivity growth of firms varies with type of firm (state, collective, private, foreign-owned and Hong Kong-Taiwan-Macao owned), location of firm (four regions) and industry. They found faster growth of aggregate productivity in firms foreign-owned firms, in firms located in the Eastern China and specific industries (e.g. textiles, manufacturing of computers).

Contribution of the paper

The paper's main contribution is to apply dynamic Olley-Pakes decomposition with entry and exit to Chinese exporters, which has not yet been done. However, the paper uses this decomposition for a subgroup of firms that does not compete only in foreign markets and thus ignores important parts of reallocation. As it is evident from one of the tables in the paper, the shares of exports in total sales are below 50% even in those firms that exported for five consecutive years. Hence the analysis of reallocation between exporting firms captures the productivity dynamics that reflects performance in domestic and foreign markets, where performance of firms present only in domestic markets is completely ignored. Hence one can not be sure about the relative value of such attempts. Moreover, the paper continues with such decompositions with further splits of firms based on ownership, location and industry affiliation, which raises further questions about the interaction between these firms and affects on aggregate productivity dynamics. One would expect at least some methodological discussion of such issues if not advancement of methods of decompositions in a way that one could infer what is the role of exporting (or any other dimension) for aggregate productivity dynamics. The paper also makes claims about the presence of misallocation, which cannot simply be made based on the performed decomposition without some reference to what is

optimal allocation. The paper in its present form is also poorly written and structured, and would need substantial rewriting for publication.

Major comments

1. The main comment is stated above and is explained in further detail here. The key issue that authors of the paper should address is whether the change in aggregate productivity of exporters is a relevant economic category. This measure does not capture the contribution of exports to the change in aggregate productivity as exporters are also involved in the domestic market. It also does not capture the entire dynamics in a specific country as non-exporters are excluded from the sample. One possible approach could be be export-share-weighted measure of aggregate productivity. Alternatively, one could instead consider the dynamics of aggregate productivity change of all firms in the industry and try to capture the contribution of exporting firms to this aggregate. The starting from the premise that aggregate productivity is a weighted average of aggregate productivities of subgroups of firms. This can be done using the appropriate reference productivity measures for different groups of firms (e.g. firms present in domestic market are reference for evaluation of exporting firms).

2. The results of decompositions for subgroups of firms are similarly problematic as these again appear as if they do not interact with other firms. For example, state-owned firms may compete with foreign-owned firms and due to differences in aggregate productivity of these groups of firms, reallocation may take between these firms. If the aggregate market share of more-productive foreign-owned firms increases, such reallocation process is productivity enhancing. The authors could exploit the decomposition also proposed by Melitz-Polanec (MicroDyn Working Paper, 2009), which starts from the fact that aggregate productivity can be expressed as a weighted average of an arbitrary group of firms, including state and foreign owned. There is an unresolved issue of allocation of switchers between different groups if authors decided to follow this approach. Similar comment applies also to regional and industry decompositions.

3. Next comment is about the organization of the paper. It has too lengthy section on review of aggregate productivity decompositions. It starts with Baily et al. (1992) decomposition, which is not even used in the empirical application. Authors may refer the reader to original references instead. Also, given that paper relies on dynamic Olley-Pakes decomposition with entry and exit, the robustness check with two alternative decompositions is not needed in the paper, especially given the fact that the two methods yield biased contributions of surviving, entering and exiting firms. The authors could put the tables in the appendix or just mention in the appendix.

4. Authors mention at several points that there might be misallocation of resources. The only group of firms for which there seems to be misallocation are entrants. These typically have a

negative contribution to the change in aggregate productivity, which has an interpretation of having lower aggregate productivity than surviving firms and is consistent with misallocation. However, this interpretation should at least be used with caution as entrants are known to set lower prices (see e.g. Haltiwanger et al., AER, 2008), may face higher costs related to early promotion, etc.

5. The paper uses the estimates of firm-level productivity that are obtained using pooled sample of exporting firms. These estimates should be estimated at the level of industries as the obtained measures of total factor productivity may be biased and would also reflect differences in production function parameters.

6. The description of the sample and firm dynamics is not very interesting. It should be used only to help the reader understand the key features of firm dynamics and should occupy less space. For example, the authors do not exploit in aggregate productivity decompositions varying time spells, while in the description of firm dynamics in export markets this is done with focus on spell in export markets. Such approach is incoherent as firm dynamics seems rudimentary in comparison to aggregate productivity decompositions.

7. The sample is cut due to a missing year (2004). Maybe authors could use longer time differences and focus on longer differences, which might also be interesting for the reader. This might be particularly interesting if authors could relate the changes in components to some policy experiments such as privatization, removal or reduction of tariffs.

8. Maaliranta et al. (Journal of Royal Statistical Society B, 2015) also provide testing procedures that can be used to compare the size of different components of Olley-Pakes decomposition. The appropriate redefinition of variables allows one to even use a regression framework to estimate the statistical significance of different components. Authors could then compare the aggregate productivity of foreign-owned and state-owned firms and state whether these differences are also statistically significant.

Minor comments

1. Authors use an unusual mode of using footnotes. For example, the groups of firms (state-owned, etc.) are used in the main tables, while the description of these is only given in the footnote. Thus, tables are thus not self-contained.

2. Authors should check the grammatical errors that are still in the text. As there are several, I refrain from making an explicit list.