Joachim Wagner / 12. November 2012

Remarks on Referee Report #1 on my paper "The Granular Nature of the Great Export Collapse in German Manufacturing Industries, 2008/2009"

I thank the referee for carefully reading my paper and making several suggestions that will help to improve it in a revised version that I will prepare in due course. The referee's comments are repeated *in italics* below, my remarks are added in red.

Summary:
The study documents that large exporting firms played a prominent role during the 2008/2009 recession in Germany. The main contributions are the following: First, the German manufacturing export industry has a "granular" nature. That is, the export share is not evenly distributed. Second, firm-level shocks play an important role in explaining the export collapse. Moreover, the analysis reveals that the slump of exports is due to a reduction at the intensive margin, whereas the biggest share of the decline is traceable to very large firms.

General remarks:
The strength of the paper lies in the representativeness of the dataset. It uses high quality data collected by the federal statistical office. The paper is well structured. However, the aim of the paper remains somewhat vague to me and, hence, the contribution of the paper is not so obvious. Finally, I don't concur with some of the conclusions.

Major points:

1.) I am not fully convinced by the way the author motivates the use of micro-data to explain the export collapse. Why does the author choose the GFC to show that the German export sector is granular? In my view it should be made clearer what the benefits from the micro data approach are. Maybe using micro-data helps to understand some stylized facts or puzzles that have been documented during the GFC. What do the results imply for theoretical modeling strategies?

In this paper I do not attempt to "explain the export collapse" and I do not "choose the GFC (Great Financial Crisis, JW) to show that the German export sector is granular" – my aim is much more modest: I want to contribute to a better understanding of what happened to exports of manufacturing industries of one of the largest actors on the world market for goods in the largest export crash in recorded history. This is why I look at the role of the extensive and the intensive margin, document the amount of heterogeneity in exporting firms in total and in different size classes, demonstrate the role of the largest firms and point to the granular nature of the export collapse. This will be made more explicit in the next version of the paper. Furthermore, I will discuss the implications for theoretical modeling strategies, pointing to the role of multi-product, multi-destination exporters (which tend to be large firms, as we know from

other data on German exports that, unfortunately, are not available for the crisis years 2008/09).

2.) In section 2, there is a description of the dataset used. Admittedly, calculating real volumes on the firm-level is a challenging task. However, one might wonder whether the price index for aggregate exports is appropriate here because the same price index is associated with all firms. The author should rather consider the price index at the industry level (4-digit) to approximate prices at the firm level.

I fully agree with the referee that the use of the price index for aggregate exports is not fully appropriate here. I would prefer an index at a much more disaggregate level. However, to the best of my knowledge this index is not published for exports. I will approach the Statistical Office to check whether (unpublished) data are available at the 4-digit level (or the 3-digit level or the 2-digit level). If these price indices can be used, I will do so in the next version of the paper.

3.) The third and the fourth section seem to answer different questions (in particular as the definition of "firm size" seems to change). I would suggest shortening the analysis considerably and drop section 3. Instead, the tables 1 and 2 can be integrated into the section "Data", whereas table 3 provides a motivation for the analysis in section 4 and, hence, should show up there. The distinction with respect to number of employees in tables 1 and 2 can be easily dropped.

In my view, the decomposition of export dynamics in section 3 is an important contribution to an attempt to document what happened during the Great Export Collapse. I will keep it in the next version of the paper.

4.) The paper states that the manufacturing export sector has a granular nature. From this finding the author deduces that firm-specific shocks are a major driving force behind the decline in exports during 2008/2009. I am not sure whether the avenue followed here allows for an identification of firm-specific export shocks. Here, the mean growth rate is used to control for aggregate movements and enables the author to identify the firm-specific part. The author should at least discuss the problems associated with such an approach.

I find that in West Germany about one third of export fluctuations can be explained by idiosyncratic movements of the top 10 firms in an industry. The strategy to identify these shocks closely follows the strategy introduced by Gabaix in his Econometrica paper. I used this strategy before to document the granular nature of the German manufacturing sector (see my paper cited as Wagner 2012). By the way, Xavier Gabaix read this paper and an earlier version of the paper on the export collapse, and he agreed that the method I use is in accordance with his ideas (in private e-mails).

Moreover, the paper lacks an economic interpretation of the firm-specific export shocks. While in the case of TFP Gabaix (2011) gives a nice interpretation of firm-specific productivity shocks, a firm-specific shock that adversely affects exports

seems to be hard to justify. Hence, it is not clear what this shock represents, and it remains unclear what the author identifies in the empirical analysis.

I fully agree that this point needs to be elaborated upon. The next version of the paper will include a discussion of this point and some examples. Note that these examples have to be hypothetical, because I am not allowed to identify the firms and to check the annual reports etc. to shed more light on this.

Finally, it might be the case that large firms are more exposed to global demand shocks and, hence, the impact of the demand shock is firm-specific (i.e. the beta coefficient in Gabaix (2011) equation (30) is firm-specific). How does the analysis ensure that this is not driving the results here? These points need to be addressed / discussed in the paper.

I agree that this point has to be discussed in the next version of the paper.

Further remarks:

1.) In the motivation the main purpose of the paper is somewhat hidden in the penultimate paragraph. I would suggest motivating the paper in the second paragraph and tell the reader right away why he should be interested in the paper.

I agree, and I will do so in the next version of the paper.

[Please note that there is no "further remark 2" in the referee report]

3.) The paper motivates the distinction between West and East Germany hidden in footnote 10. The reader would want to read about this more prominently. Moreover the reader might also want to know why dividing the dataset is beneficial.

I agree, and I will do so in the next version of the paper.

4.) The author uses the number of employees to measure size in section 3 and exports in section 4. Why does the definition of size change between section 3 and 4?

The number of employees is a standard measure of firm size (that is highly positively correlated with the amount of total turnver, but not necessarily with the amount of total exports). This is why it is used in section 3. In section 4, however, the largest exporters are investigated. This is the reason for the different measures of size applied. I will explicitly state this in a footnote in the next version of the paper.

5.) Considering the 10 largest firms in section 4 appears somewhat arbitrary. Are the results robust to the choice of this number (particularly as Gabaix (2011) considers the top 100 firms)? What about the largest quartile or the largest decile?

I thank the referee for pointing out this. I will experiment with other ways to define the number of firms, and report the results of this robustness check in the next version of the paper.

6.) *The author concludes that "...idiosyncratic shocks in the largest firms are important for an understanding of aggregate volatility..."This statement does not follow from the previous analysis. It is hard to believe that the export collapse in the follow-up of the GFC is due to shocks originating from individual exporting firms. It is not so clear what the granular residual represents (see comment 4 above).*

I find that in West Germany about one third of export fluctuations can be explained by idiosyncratic movements of the top 10 firms in an industry. As stated explicitly on page 12, the granular view does not neglect the role of aggregate shocks – it only argues that such aggregate shocks are not the only important drivers. I will make this more clear in the conclusions of the next version of the paper.

7.) *The conclusion in the penultimate paragraph of section 5 is not justified. The paper does not conduct a welfare analysis to deduce the optimal policy. Moreover, it should be welfare optimal to have many small (marginal) firms.*

I agree, and I will drop this paragraph in the next version of the paper.