Response to "A Replication of "The Role of Intermediaries in Facilitating Trade" (*Journal of International Economics*, 2011)" by Duan, Qian, Das, Meriluoto, and Reed

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Duan et al. (2019, henceforth DQDMR) have analyzed the results of a 2011 paper we published in the *Journal of International Economics*, "The Role of Intermediaries in Facilitating Trade." Their paper has two parts: 1) it replicates our findings by independently sourcing, cleaning, and analyzing the data used in the analysis; 2) it performs additional regressions that use different subsamples and years of data.

DQDMR replicate the results of our paper. This verifies that our findings are reproducible from scratch and confirms the integrity of our findings.

DQDMR further runs many additional regressions to check the robustness of the results. They view each of these regressions as separate "tests" of the underlying framework. However, as we discuss below, several of their checks are not testing the framework presented in Section 2 of our paper.

1. On the exercise examining the results across geography.

   DQDMR re-run our main specification by breaking the customs data into three mutually exclusive geographic areas. They view each of these as regressions as tests of the underlying theory of intermediation. In doing so, they are making an assumption about the data generation process: that the geographic samples are independent draws. However, we do not believe that is the case, and their assumption is inconsistent with our framework. The model assumes that the goods market is fully integrated within China (a standard assumption in trade models), which implies that intermediaries can export products produced from outside their region. Therefore, we are unsure what their analysis of regional heterogeneity is testing. Compare direct versus indirect exports within regions in China fails to account for the fact that indirect exporters may be sourcing products from throughout the country.

2. On the exercise examining the data before 2005.

   We are explicit in our paper as to why we use the customs data from 2005 for our analysis. Our model assumes free entry into intermediation. Before 2005, China did not allow free entry into the export market across all sectors. Without knowing how China allocated these licenses, the strict sorting mechanism in the model can break down. For example, Khandelwal et al. (2013) examine the breakdown of productivity sorting into exporting in the apparel sector. A similar point is also emphasized in Bai et al. (2017).

3. On using different vintages of the Enterprise Survey and WB Doing Business data.

   The 2012 Enterprise Survey data became available after our paper's publication, so we could not use these data in our analysis. The 2012 ES data contains 40% fewer manufacturing firms compared to the 2002/03 data that we used in our paper, which suggests that the sampling methodology may have changed between survey rounds. Additionally, China's trade costs in 2012 were very different relative to a decade earlier. Our paper supplements the 2002/03 data from China with a unique dataset that tracks direct and indirect exports in a panel of Ghanaian firms (the Ghana RPED/GME data). Previous work by Krüger (2009) had confirmed that low productivity firms are more likely to export indirectly. Our analysis further demonstrates that firms that indirectly export in an initial period are more likely to transition into direct exporters in the subsequent period (see Tables 10 and 11 of our paper). This dataset, which captures firms operating in a different setting, provides additional support that intermediaries facilitate trade through indirect exports.

   DQDMR demonstrates that the coefficient on the number of import procedures in destination markets is sensitive to the version of the Doing Business database. They further document that the published version of the database differs from the values from the online version (conditional on the year). The WB Doing Business database[1] notes that "Previously published data points may be revised as new information is available," so we view the online database as the most accurate version.

We welcome DQDMR's replication exercise and believe that replication plays a vital role in economics. We are pleased that DQDMR can independently replicate our results from scratch. The additional specifications that they run are not consistent with the framework we have written. The usual approach to test sensitivity is a leave-one-out strategy, as opposed to examining heterogeneity across coefficients. Additionally, we believe that DQDMR should have offered an *ex ante* methodology for the additional specifications, as it is always possible to slice data into subsamples until the effect deviates from the pooled sample. Finally, the main predictions of the framework have been confirmed in several published papers, including Abel-Koch (2013), Akerman (2018), Crozet et al. (2013), and Lu et al. (2016).

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