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Comment   Chong Xiang

The explosive growth in China's trade with the rest of the world has been one of the hallmark events for globalization over the last decade. Looking ahead, will this growth continue? How will this growth affect China's neighboring countries and trading partners? In addition, which country and which industry will be affected the most? The authors have delivered timely and convincing answers to these questions that have gripped the attention of economists and policymakers alike from a novel angle: the role of geography and trade costs in shaping China's patterns of trade. Geography and trade costs are especially relevant for China's neighboring countries because these countries have different geographical locations relative to China and so are likely to face different degrees of competition from China.

To illustrate the role of geography, the authors consider trade costs that are proportional to weight and independent of value. There are "light," or high-quality goods, and "heavy," or low-quality goods. A super-premium delicious apple and a rotten apple may have very different values, but they cost the same to ship if they weigh the same. This suggests that light goods are more immune to the effects of trade costs over long distances so that China has a comparative advantage in light goods relative to heavy goods in distant markets. The authors deliver this point clearly and concisely in a partial-equilibrium setting.

The authors then consider a general-equilibrium setting à la Eaton and Kortum (2002), where every national market around the world is contended by firms located in each country and the lowest-cost firm wins the entire national market. The authors then rigorously show that as distance increases, the probability that China exports a heavy good decreases relative to the probability of exporting a light good; conditional on being successfully exported, the price of a heavy good increases relative to the price of a light good. Both imply that over long distances, light goods account for larger

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shares of China's exports. As light goods have high qualities and high prices, the unit value of China's exports increases in distance. In addition, as air shipping is expensive relative to surface shipping, light goods are more likely to be air-shipped than heavy goods, and so China ships a larger fraction of its exports to distant markets by air.

A bonus of the general equilibrium setting is the predictions concerning China's growth: (a) it is the largest in the markets where China already has a substantial presence; and (b) China's growth leads to the biggest market share losses for the countries that have large market shares where China also has large market shares. These simple, elegant predictions are also parsimonious: they explain the changes in the market shares for China and her trading partners around the globe using nothing more than the allocation of market shares prior to China's growth. These predictions are also broadly consistent with data! The predicted changes in China's market shares and the actual changes have a (weighted) correlation coefficient of 0.46. The predicted changes in the market shares of China's neighboring countries are also positively correlated with the actual changes.

To investigate the relation between unit values for China's exports and distance, the authors employ a rich data set that breaks down China's exports by eight-digit Harmonized System (HS) codes $\times$ Chinese customs regions $\times$ types of exporting firms $\times$ trade regimes. Consistent with the authors' predictions, a 1 percent increase in distance raises the unit value by 6 percent to 12 percent, and the results are strongest for the markets that are more than 2,500 kilometers away from China, for the products whose units are in kilograms (versus those measured in counts), for state and collective firms, and for ordinary trade (versus processing trade).

As one reads the paper, one cannot help being struck by how often processing trade contributes to data "anomalies" at odds with the authors' predictions. (a) Malaysia, Taiwan, and Thailand are "large positive outliers" for the predictions of the growth in China's market shares, "probably reflecting their participation in processing trade . . ." (b) South Korea and Taiwan are also outliers for the predictions of the loss in market shares by China's neighboring countries and these "are suggestive of the growing importance of processing trade among the middle-income East Asian countries." (c) The largest shares of air shipping in China's exports go to Malaysia and Singapore, "a result that is suggestive of China's role in time-sensitive international production networks" (i.e., processing trade). (d) The relation between unit values of China's exports and distance is much weaker for processing trade than for ordinary trade. (e) Processing trade by private and foreign firms accounts for over 80 percent of air shipping in China's exports. These findings point to the significance of processing trade in determining China's comparative advantage and shaping China's trading relationships with her neighboring countries. Although the authors have run out of space in this paper to further investigate the role of processing trade, they have put the

issue on the table. The significance of processing trade, and the payoff of understanding it, is likely to grow as China continues her expansion and the world deepens its integration.

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