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Comment

Irene Brambilla

Much has been speculated and argued in light of China's exceptional growth and progressive integration into world markets. The discussion has ranged from competition effects, whereby China may be crowding other countries out both as recipients of foreign direct investment (FDI) and as suppliers in international markets, to positive effects such as the increase in business opportunities and the potentially huge expansion in demand for commodities.

Within this broad topic, Hanson and Robertson look into a very specific question: the effect of China's expansion in the manufacturing exports of a selected group of ten developing countries. They perform a neat and simple empirical exercise where they first estimate a gravity equation model and then run a counterfactual exercise to simulate what demand for exports of these ten countries would have been in the absence of China's relative expansion during the last decade.

Results are sobering. They show that, on average, manufacturing exports of the ten selected industrialized economies would have been only 1.6 percent higher (0.8 percent on a different specification) had China not expanded

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between 1995 and 2005. Results vary by country, with the effect being largest for Romania: the impact of China on Romanian manufacturing exports is 3.3 percent. The most unusual case is Sri Lanka, where the impact on exports is positive.

In December 2001, China signed its much anticipated accession to the World Trade Organization (WTO). How are Hanson and Robertson's results compatible with this event? How does it happen that the most-populated, fastest-growing country in the world has such seemingly small impact on international markets?

Supply-Side Factors versus Market Access

One answer is that Hanson and Robertson's counterfactual exercise is *not* designed to simulate China's accession to the WTO, or, more generally, to simulate China's newly granted market access. It is a supply-side exercise. They look at export supply capacity.

It is worth taking a look at how export supply capacity enters into the gravity equation. Let us consider a pair of countries, Mexico and the United States, for example. Exports from Mexico to the United States in a particular industry depend on three factors: (a) demand conditions in the United States, given by the share of the industry in total consumption, by income in the United States, and by what is being offered by Mexico's competitors; (b) Mexico's supply capacity, that is, the cost of production and availability of varieties in Mexico; (c) finally, gravity-type variables such as bilateral distance, cultural barriers, and trade policy variables (i.e., tariffs) also play a role. Demand conditions conceptually refer to *residual* demand conditions, that is, U.S. demand for Mexican products given the "state" of Mexico's competitors, including China. Thus, residual demand for Mexican products depends on among other things, the varieties and prices offered by China, where prices are determined by production costs, tariffs, distance, and other gravity-type variables.

Here is where the counterfactual exercise comes into place. The exercise compares 1995 and 2005. In actuality, between 1995 and 2005, conditions in China and in other countries change. In the counterfactual exercise, Mexico's exports to the United States are simulated for the year 2005 using some of China's conditions in 1995. This is later aggregated across industries and countries of destination, to compute the total impact on Mexico's exports by comparing actual exports in 2005 with simulated exports in that same year.

The distinction between supply capacity and market access refers to which conditions are kept constant at their 1995 level and which conditions are allowed to vary. Hanson and Robertson choose to keep the number of varieties and costs of production constant at their 1995 level, thus focusing on a supply-side mechanism. In doing so, they abstract from the changes

in tariffs that occurred between 1995 and 2005. The supply-side factors can be broadly understood as improvements in infrastructure, information technology, regulation, human capital, and other variables that affect production costs. An alternative question could look at the impacts of change in market access. In this exercise, the counterfactual exports of 2005 would be generated using the tariffs of 1995, and, as expected, would yield higher impacts on the exports of the selected ten countries, Mexico included among them.

There is a small caveat to the export supply capacity counterfactual exercise. Supply-side conditions are not exogenous of market access and gravity-type variables. In the model, the number of varieties is an equilibrium result, determined jointly with prices and quantities and affected by market access variables such as tariffs. If we consider that tariffs faced by China fell between 1995 and 2005, the measured increase in export supply capacity is partially an endogenous response to the tariff change, and the counterfactual estimates provide an upper bound. Additionally, demand-side conditions are estimated as an exporter dummy, which in the model is well determined but in practice can capture unobserved market access variables such as nontariff barriers that might have also changed between 1995 and 2005. The textile and apparel sectors are examples where nontariff barriers dropped between 1995 and 2005.

Looking into Specific Industries

Differences across industries are another point to consider. China's expansion has been far from homogeneous. Between 1995 and 2005, changes in China's market share in world exports have ranged from a decrease of 68 to an increase of 73 percentage points across Harmonized System (HS) six-digit products in the COMTRADE data set. Of nearly 5,000 HS six-digit products with positive exports from China in both years, the increase in market share has been below 2 percentage points for over half of them, while for forty-eight product lines, the increase in China's market share has been above 40 percentage points. Naturally, these forty-eight industries are at greater risk of suffering a large negative impact from China's expansion in supply. The extent of the impact on aggregate countrywide results in the ten countries subject to study depends on the importance of the industries where China's expansion has been largest in these countries' composition of exports.

Table 4.3 in the paper reports the five most important industries in each of the ten selected countries, defined as the five industries with largest share in total exports. By showing that these industries are not as important within China's exports, Hanson and Robertson support their claim that there is not much overlap between China's and the ten countries' composition of exports.

Table 4C.1

	Correlation		Highly endangered products
	Values (1)	Rank (2)	(3)
Hungary	–0.023	–0.0201	195
Sri Lanka	–0.035	0.0223	119
Mexico	0.002	0.1048	31
Malaysia	0.0262	0.111	19
The Philippines	0.0169	0.1137	155
Poland	–0.0006	0.0569	76
Romania	–0.0066	0.0116	223
Thailand	0.0497	0.1987	31
Turkey	0.0294	0.1048	43

Source: UN COMTRADE.

It is potentially more informative to look at this from the angle of changes in China's market shares in world exports. Column (1) in table 4C.1 shows the correlation between two variables: (a) changes in China's market share in world exports between 1995 and 2005; and (b) the participation of each product in total country exports for each of the ten countries.[1] Observations are defined at the HS six-digit level. The coefficients are very close to zero, indicating that industries in which China has expanded are of low relative importance within the exporting structure of each country. Column (2) shows analogous correlations using ranks of products instead of shares. This result is consistent with finding a low *aggregate* impact of China on total country exports.

Column (3) looks at the forty-eight product lines in which the market share of China has increased by more than 40 percentage points. These are the products that are more at risk of suffering the impact of China's expansion. For each of the ten countries, HS six-digit product lines are sorted in order of importance according to their share in total country exports. Column (3) displays the position in the ranking of the *first* product that overlaps with the products in which China's expansion has been largest. In the case of Hungary, for example, the result is 195. This means that *none* of Hungary's 194 most important product lines are among the "highly endangered products" for which the share of China has increased by more than 40 percentage points.

The bottom line is that there is not much overlap between products of

1. Let m, l, and h denote value of imports, industries and HS six-digit products. The first variable is defined as $(m_{h,\text{China},2005}/\Sigma_i m_{h,i,2005}) - (m_{h,\text{China},1995}/\Sigma_i m_{h,i,1995})$. The second variable is $(m_{h,i,1995}/\Sigma_k m_{k,i,1995})$.

large expansion of Chinese exports and products in which the ten countries specialize, which largely explains the low aggregate numbers. These empirical facts are consistent with the econometric findings in the paper obtained using structural methods. Additionally, they suggest that, albeit low in aggregate, the impact of China's expansion is potentially large in specific industries and in countries in which the composition of exports is more similar to China's.