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Chapter Author: Raymond Robertson

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Comment Raymond Robertson

Like many developing countries in the 1990s, China pursued export-led market liberalization with the intention of fostering development. China seems to stand out in several important dimensions, including the share of exports in manufacturing and the kinds of products that China exports. Several papers have documented that China's exports are more on the "high end" of

Raymond Robertson is professor of economics at Macalester College.

the product spectrum when comparing across industries, but possibly in the "low end" of the product spectrum when comparing within industries. Other papers, including this one by Blonigen and Ma, document the important role that foreign firms are playing in China's remarkable export growth.

In this context, Blonigen and Ma's chapter makes several important contributions. The chapter's focus on Chinese firms' performance relative to foreign firms certainly gets at the heart of a critical question: what are the benefits of China's FDI-driven export-led growth policies for domestic (Chinese) firms? The answer to this question would tell us a great deal about the long-run prospects of China's growth.

This chapter addresses this question with a model of location choice to identify the key factors that would affect the relative performance of Chinese firms: the more difficult it is to transfer technology from foreign to domestic firms, the less Chinese firms will catch up to foreign firms in terms of market share and unit values. Furthermore, government policies to encourage investment should help domestic firms catch up, holding the cost of technology transfer constant.

The model generates several straightforward predictions that are then taken to a relatively new data set of sector- and region-specific exports that are disaggregated into six groups based on firm ownership: state-owned enterprises (SOEs), foreign-invested enterprises (FIEs), contractual and equity joint ventures, collectively owned enterprises (COEs), and privately owned enterprises (POEs). The main emphasis is to compare the performance of the domestic firms to the foreign firms. The performance criteria are the shares of total exports of foreign and domestic firms and the ratio of unit values of foreign and domestic firms. The data cover the 1995 to 2005 period.

As the reader is probably aware, Blonigen and Ma's main result (which seems to be quite robust) is that there is little, if any, evidence of "catch up" of domestic firms. If anything, domestic firms seem to be losing export shares (in most cases) to foreign firms and have experienced falling relative unit values.

This chapter does an excellent job of clearly presenting a useful model and clear empirical results. As with any valuable contribution, there are several implications for future research that seem to follow from this chapter. The lack of evidence of catch-up seems to raise the question about the relative success of the government's policy. Indeed, if the criteria used to motivate the liberalization policies was to enable domestic firms to compete with foreign firms in export markets (in terms of export market share and unit values), the results of this chapter suggest that this policy has not been successful. An alternative hypothesis, however, is that these are actually not the relevant criteria.

Assuming alternative criteria could generate predictions that are consistent with the empirical results. Two possibilities come to mind: establishing

and fostering the private sector. One policy that may be relevant for the analysis is privatization. Privatization policies may signal intent to establish a private sector and in the process may affect the relative export shares and unit values of domestic firms. The number of SOEs fell from 114,000 in 1996 to 34,000 in 2003. Half of this decline was due to privatization. The characteristics of firms that were privatized, and when they were privatized, could easily have affected the measures highlighted in this paper. Furthermore, in 2002, the 16th Party Congress opened SOE privatization to foreign investment, which could have had a distinct impact on the share of exports by foreign and domestic firms. Until firm-level data are available, however, these questions remain on the agenda for future research.

More at the heart of the chapter's analysis, however, lies the relationship between technology transfer and catch-up. Productivity spillovers seem to be limited in China and other developing countries. Blonigan and Ma review the literature of technology spillovers for foreign firms in China, which suggests that there is very limited evidence of technology spillovers. They do not review the literature of technology spillovers in other developing countries, but these papers tend to find similar results.[1] Overall, then, it is not surprising that the influx of foreign firms has not led to significant spillovers and catch-up. On the other hand, any positive technology transfer should have generated evidence of catch-up. The results, therefore, do not seem consistent with the model.

The model's underlying assumption (and, therefore, the underlying assumption of the paper) is that foreign firms and domestic firms are both competing in final goods in the export market. Under this assumption, foreign firms and domestic firms are competitors and their products are substitutes. An alternative approach would be to allow for the possibility that domestic and foreign firms are complements. Allowing for an endogenous choice of vertical specialization would allow for this possibility and, I would argue, would better fit the empirical results.

Imagine that prior to entry of foreign firms, domestic firms produce intermediate and final goods, and that final goods have higher unit values than intermediate goods. Prior to entry, domestic firms would be the only exporters (and thus have export shares of 100 percent) and would have relatively high unit values. Furthermore, assume that the entry of foreign firms creates the possibility of vertical specialization. Given the foreign firms' technological superiority, they might have a comparative advantage in final goods, giving domestic firms the comparative advantage in intermediate goods.

Given the comparative advantage of the arriving foreign firms, the relative price of final goods falls for domestic firms when foreign firms enter,

1. For, example, see Rossitza B. Wooster and David S. Diebel, Productivity Spillovers from Foreign Direct Investment in Developing Countries: A Meta-Regression Analysis, http://ssrn.com/abstract=898400 (2006). This paper conducts a meta-analysis of thirty-two studies and finds very weak evidence of productivity spillovers.

inducing a change in their production into intermediate goods. These intermediate goods might be sold to the foreign firms in China or exported as intermediate inputs (say, to Taiwan, Indonesia, or other countries). In other words, the arrival of foreign firms may push domestic firms to a lower stage in a vertically integrated production process, possibly through outsourcing relationships with the arriving foreign firms.

This simplistic vertical integration model has several predictions for unit values and export shares. First, under the assumption that intermediate goods have lower unit values than final goods, the observed unit values of the domestic firms should fall when compared to the foreign firms. Second, because final goods are exported, this model predicts that the foreign firms' market share should be increasing as foreign firms enter the market. Note that this does not mean that the production of the domestic firms is not increasingly exported. The production of the domestic firms is exported as part of the final goods but is not measured separately.

The basic results of the model seem consistent with these predictions: the entrance of foreign firms coincides with rising, not falling, foreign export shares and rising, not falling, relative unit values. If differentiated products are more likely to be characterized by outsourcing, the differentiated results are also consistent with the vertical integration model. In particular, the empirical results suggest rising export shares but falling unit values for domestic firms in differentiated industries. Again, if differentiated products are more likely to be characterized by outsourcing relationships, one might expect that falling prices and rising export shares would be found in differentiated products as domestic firms increased their production and export of intermediate inputs.

If the vertical specialization model has merit, it might suggest that other criteria for judging the "success" of China's FDI-driven export-led growth policy might be relevant. For example, it may take more than ten years for Chinese firms to move up the quality ladder and be able to export final goods that would compete with foreign firms. In the meantime, the success of the Chinese policy might be gauged by changes in employment and production, rather than exports, and wages paid by the Chinese firms. The vertical specialization model predicts that the influx of foreign firms increases the demand for Chinese production, while the competition model predicts the opposite.

This important paper raises the question of whether Chinese firms have been catching up to foreign firms in terms of export shares and unit values. The results suggest that, in general, they have not. Does this imply a lack of success of Chinese policies? The results of this chapter are consistent with the idea that the policies may have been successful along alternative lines, leaving open several possible avenues for future research.