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Foreign direct investment and the performance of indigenous firms in China's textile industry

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ABSTRACT

This paper contributes to the debate on the effect of foreign direct investment (FDI) on indigenous firms in host economies. Using a Melitz-type theoretical model involving firm heterogeneity, we first show that FDI affects the revenue of indigenous firms, in both domestic and export markets, through a direct as well as indirect channel. In the presence of positive FDI-related productivity spillovers, the direct effect is positive but the indirect effect is negative. As the overall effect cannot be unambiguously determined, in stage two, we further investigate this issue by using firm level data from China's textile industry over the period 2005–07. We find that FDI in China's textile industry decreases (increases) the revenue of indigenous firms in the domestic (export) market. The empirical results are also robust across (i) alternative measures and (ii) sources of FDI.

1. Introduction

It is well-known that foreign direct investment (FDI) has played an important role in the rapid expansion of a number of developing economies including China and India. FDI provides not only much needed capital but also allows access to advanced technology and improved management skills. In the case of China, a large proportion of FDI takes place through partnerships with domestic firms. Domestic firms that enter into partnership with foreign firms can be categorised as foreign-invested firms. Generally speaking, FDI leads to productivity improvement in foreign-invested firms because of additional capital, advanced technology and sharing of management skills. While foreign-invested firms tend to be the direct beneficiary of FDI, domestic firms (i.e., non-foreign-invested firms) can also indirectly benefit from FDI-related spillover effects.

However, increased competition due to FDI can also force some domestic firms to shut down. The general perception is that, in overall terms, FDI contributes to economic growth in host developing countries.

This paper focuses on China where FDI inflow has coincided with rapid economic growth. From 1982 to 2013, the growth rate of real GDP in China has been as high as 10.07% (World Development Indicators, 2016). During this period, the real GDP growth rate and net FDI inflow as a percentage of GDP are positively correlated (the estimated correlation coefficient being 0.19). In addition, in the post 1995 period, this correlation is as high as 0.6. Over 1982–2013, China's GDP per capita growth rate is also positively correlated with the net FDI inflow as a percentage of GDP (the estimated correlation coefficient being 0.30).

Given the importance of FDI inflows, a great deal of attention has been paid to the impact of FDI in host developing economies. One strand of the existing literature focuses on the productivity spillovers from FDI. Conceptually, FDI can affect the productivity of domestic firms through three channels: (i) forward/backward linkages, (ii) mobility of workers and (iii) competition and demonstration effect (Blomstrom & Kokko, 1998). The first channel, which

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may involve the supplier/customer relationship between foreign and domestic firms, allows domestic firms to observe and learn from the practices of foreign firms thereby resulting in improvement in their productivity. The second channel involves mobility of domestic workers who received training while working for foreign-invested firms. The third channel involves the impact of increased competition on domestic firms. In order to survive, FDI can force some domestic firms to take steps to improve their productivity including attempts to imitate foreign firms.

Since the work of Caves (1974), a large body of literature has considered the impact of FDI-related productivity spillovers in host economies. Some of these studies report positive spillovers, while others find negative or insignificant spillovers.[1] In the case of China, a number of studies report significant positive productivity spillovers; for example, see Anwar and Sun (2014) and Sun (2011) the references therein.

In addition to the impact on the productivity of domestic firms, FDI can also affect their export and domestic market revenue. In this paper, using a theoretical model, we establish links between FDI and the domestic market sales and export market revenue of domestic firms. Specifically, within the context of a monopolistically competitive market structure with heterogeneous firms, we show that FDI can affect the export and domestic market revenue of local firms through a direct as well as an indirect channel. As the direct and indirect effects do not reinforce each other, we further investigate this issue by means of an empirical exercise. Using firm level data from China's textile industry, over the period of 2005–07, we find that FDI decreases the revenue of indigenous firms in the domestic market but revenue in the export market increases.

2. Related literature

A large number of empirical studies focus on productivity spillovers from FDI to domestic firms. As far as the impact on sales of indigenous firms in the domestic and export markets is concerned, the majority of previous studies on China focus on the impact of FDI on export market performance. Our focus is on studies that use disaggregated (firm/plant level) data.

With panel data over the period of 2000–2003, Sun (2009) uses a Heckman sample selection model to explore export spillovers from FDI on the cultural, educational and sporting product manufacturing industry in China. Sun finds that the presence of foreign firms in the industry has a significant impact on the export intensity (as measured by the share of exports in a firm's total sales) of domestic firms. This impact was heterogeneous in that some domestic firms experienced a positive impact while others experienced a negative or insignificant impact. This heterogeneity of export spillovers is also found at the aggregate level in China's manufacturing sector by Sun (2010).

Using firm level panel data from 2000 to 2003, Chen, Sheng, and Findlay (2013) focus on FDI-related horizontal and vertical export spillovers in China's manufacturing sector. They report a positive impact on both the export revenue and export intensity of domestic firms. The positive impact of export revenue arises mainly due to backward technology spillovers, whereas the positive impact on export intensity can be attributed to horizontal spillovers. The positive impact on exports of domestic firms is consistent with Sun (2012), where FDI leads to an increase in exports of domestic firms through productivity and export information spillovers.

Fu (2011) examines the impact of FDI in processing on export performance of Chinese firms using panel data from 2000 to 2007, finding that processing trade-FDI generates positive and statistically significant information spillovers to domestic firms, which enhances their export performance. On the other hand, the impact of technology spillovers arising from processing trade-FDI on export performance of domestic firms is rather limited. Mayneris and Poncet (2013), using panel data from Chinese customs from 1997 to 2007, find that FDI inflow encourages domestic firms to export. Claro (2009) shows that liberalisation of FDI promotes China's comparative advantage in labour-intensive products, which contributes to a significant increase in exports.

While a large number of studies have explored whether FDI inflow in China affects exports, only a few studies have focused on the impact of FDI on domestic sales. In addition, there are even fewer studies that explore these two aspects simultaneously. Using cross-sectional survey data from 2002, Bao, Wang, and Huang (2013) find that foreign-invested firms in China experience both productivity and domestic sales improvement, but the impact of FDI on exports is statistically insignificant. Using firm level data over the period of 2001–02 and 2005–07, Wang, Wei, Liu, Wang, and Lin (2014) argue that the presence of foreign-invested firms leads to a negative impact on domestic sales but a positive impact on the exports of indigenous firms.

Compared to previous studies, this paper differs in two important aspects. First, using a theoretical model involving firm heterogeneity, we demonstrate that FDI can affect the revenue of indigenous firm in both domestic and export markets. Second, based on the theoretical results, we use firm level data from China's textile industry to simultaneously estimate the impact of FDI on export and domestic market revenues of indigenous firms. The use of disaggregated data allows us to identify the impact of FDI on exports and domestic market revenues relatively accurately in that the problem of potential aggregation bias is avoided. As we focus on only one relatively narrowly defined industry, firms in the industry are relatively homogeneous and variations in firm behaviour are less likely to be due to factors outside of the theoretical and empirical models.

3. Theoretical model

On the demand side, we assume that consumer preferences can be described by means of a constant elasticity of substitution (CES) utility function:

$$U = \left[\int_{\omega \in \Omega} q_\omega^\rho \mathrm{d}\varpi \right]^{\frac{1}{\rho}} \tag{1}$$

where U is the utility; ω is the index of product variety and Ω is the set of products in the domestic market; q is quantity consumed; and ρ, which is positive but less than 1, is the preference parameter; $\frac{1}{1-\rho}$ is the elasticity of substitution, which is greater than 1.

Utility maximisation yields the demand function:

$$q = \Phi p^{\frac{1}{\rho-1}} \tag{2}$$

where p is the product price, and Φ is the level of aggregate demand for the product.

Each firm is small and hence satisfies only a small proportion of aggregate demand. Accordingly, each firm takes the level of aggregate demand as given. In other words, Φ is exogenous.

On the supply side, the industry consists of both domestic and foreign firms, where γ ($0 \le \gamma \le 1$), which is the proportion of foreign firms in the industry, is a measure of FDI in that industry. Upon entering the industry, firms discover their capability λ from a known distribution with probability density function of $g(\lambda)$ over the support $(0, \infty)$. Production involves a fixed cost, f, and a constant marginal cost of $\frac{c(X)}{\lambda e^{\alpha \gamma}}$, where α measures the impact of FDI on the marginal cost of a domestic firm and $c(X)$ is the cost of resources

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