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Entrepreneurship and spillovers from multinationals: Evidence from Chinese private firms

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ABSTRACT

Using nationwide survey data in China, we find evidence of positive FDI spillover effects via entrepreneurship. After controlling for a series of entrepreneur and firm attributes, our OLS estimates suggest that private firms run by entrepreneurs with MNE work experience outperform their counterparts run by entrepreneurs without MNE work experience. To deal with the potential endogeneity in the sense that inherently more capable entrepreneurs may self-select into MNEs before launching their own businesses, we use a nonparametric way, i.e., the propensity score matching (PSM) method, to identify the MNE "treatment" effect. The PSM estimates remain consistent with the OLS evidence, and the estimates are robust to different sensitivity analyses. We further find that private firms run by MNE-trained entrepreneurs do operate differently from their counterparts in both their global involvement and internal management, which are the underlying channels of the spillovers.

1. Introduction

Knowledge transmission has been well acknowledged as an important motivation for policies in favor of foreign direct investment (FDI), especially in developing countries. Many countries use a wide range of investment incentives to attract prospective multinational enterprises (MNEs).[1] A good deal of empirical literature has rationalized the pro-FDI policies by showing the productivity gains of domestic firms from an increasing multinational presence (see Gorg & Greenaway, 2004, for a survey).[2] However, little in this literature is directed at illuminating specific mechanisms through which knowledge spillovers occur and thus the spillover is taken as a black box.

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[1] For instance, China provided significant tax benefits (such as five year tax breaks) to FDI in the past decades. An equivalent of $150,000 per employee subsidies has been paid by Alabama government to Mercedes for production plant in the state, and also an estimated equivalent of $30,000 per employee subsidies has been provided by UK government to attract Samsung to northeast England (Head, 1998; Gorg, 2002).

[2] Studies using aggregated datasets have documented the productivity gains of FDI presence (Blomstrom, 1986; Kokko, Tansini, & Zejan, 1996; Sjoholm, 1999); However, firm-level evidences show that positive FDI spillover effects exist mainly via backward linkages as vertical spillovers (Javorcik, 2004), while FDI presence appears to have negative effect on local firms operating in the same sector, negating the existence of horizontal FDI spillovers in developing countries (Aitken & Harrison, 1999).

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Labor mobility has been widely regarded as a potential channel of FDI spillovers. Reasons why domestic firms can benefit from MNEs through recruiting workers from MNEs generally include the following: (1) MNEs have firm-specific assets, which manifesting as superior knowledge base regarding innovations, production process, exporting or marketing, and management techniques (see Caves, 1974; Markusen, 1995), and (2) MNEs devote a great deal of efforts to staff training in developing countries (Edfelt, 1975; Lindsey, 1986). MNE workers are henceforth likely to acquire the tacit knowledge through work experience, social interaction and training. The knowledge regarded unalienable by MNEs thus become transferrable once workers switch jobs from MNEs to indigenous firms. This channel has recently been formalized by Fosfuri, Motta, and Ronde (2001), Glass and Saggi (2002), Markusen and Trofimenko (2009), Dasgupta (2012) theoretically.

However, possibly due to data availability constraints, only until recently, the labor mobility channel for FDI spillovers has been empirically tested. For example, by exploiting the matched employer–employee data sets for Brazil, Poole (2011) shows that wages of workers in indigenous firms go up in the presence of former MNE-trained workers. Using similar data set from Norway, Balsvik (2011) finds that workers with MNE experience contribute more than 20% to domestic firms' productivity comparing with those without such experience. Gorg and Strobl (2005) focus on entrepreneurs rather than workers, and show that firms run by owners who used to work for MNEs in the same industry immediately prior to opening up companies are more productive than other domestic firms in Ghana.

This paper contributes to the literature by investigating the FDI spillover effect through the mobility of entrepreneurs in China with a nationwide survey data in year 2000, 2002, and 2004 of Chinese private firms. Specifically, we investigate whether Chinese private firms benefit from their entrepreneurs' work experience in MNEs. Our baseline OLS regression results show that, after controlling for a series of entrepreneur's and firm's characteristics, firms run by entrepreneurs with MNE experience make higher return on equity (ROE) by 4.28% and higher return on assets (ROA) by 3.47% than other private firms run by entrepreneurs without MNE experience. This effect is both statistically and economically significant.

However, the OLS estimates may be biased due to potential sample selection problems. Clearly MNEs do not recruit employees randomly. Those entrepreneurs with MNE experience can be systematically different from those entrepreneurs without MNE experience, and the firm performance difference may be due to the systematical difference between the two types of entrepreneurs but not exactly due to the MNE work experience per se. We employ the widely used propensity score matching (PSM) technique to alleviate this potential endogeneity problem. We use a large set of entrepreneur characteristics that have significant predictive power in determining MNE participation to estimate the propensity score i.e. the probability of joining MNEs, based on which we pair the entrepreneurs having MNE experience with similar entrepreneurs who do not. With the balanced and matched sample we calculate MNE's average treatment effect on the treated entrepreneurs (ATT). We find significant MNE treatment effect, and the magnitudes of the ATT are comparable to the OLS estimates, that is, MNE experience increases ROE by about 3.1% and ROA by about 3.4%.

The ATT estimates are robust to a series of tests. First, we try different matching specifications and criteria, revealing significant treatment effects with similar magnitudes. Second, one potential problem for treatment effect estimation is that the effect may be intervened by other subsequent treatments. For example, in our case, the entrepreneur may have work experience in other firms after leaving the MNE but before starting the private firm, which will complicate the estimation of the treatment effect of MNE experience. A special advantage of our dataset is that it provides sequential information of the entrepreneurs' career before opening up their own businesses, which enables us to identify whether entrepreneurs received their latest "treatment" from MNEs. We then redefine MNE experience as an indicator for immediate treatment by MNEs before starting private businesses. We find significant and even stronger treatment effect, suggesting the decay of multinational knowledge over time.

Third, matching estimators may still suffer from hidden bias caused by unobserved characteristics which simultaneously affect both MNE participation and firm performance. We follow Dehejia (2005) and Rosenbaum (2002) respectively to do sensitivity analyses. The former tests the sensitivity of matching estimators to the changes of propensity score specifications. The latter, known as Rosenbaum's bounding approach, tests the robustness of matching estimates when there are deviations from conditional independence assumption (CIA) and checks the "response" of outcome variables by adding up the hypothetical worst-case odds ratio of unobservables. Our estimates are robust to both sensitivity analyses.

Given the above robust evidence of positive spillovers through entrepreneur mobility, we proceed with showing specifically how entrepreneur's MNE "treatment" may change the firms' practice and thus enhance firm performance. We find that MNE experience helps to promote firm's global activities and internal management practices, which we argue to be potential underlying mechanisms of the spillovers.

This paper contributes to the large literature on FDI spillovers in several ways. Firstly, to our knowledge, we are the first (except Gorg & Strobl, 2005) to explicitly and systematically test entrepreneurship as a novel channel of FDI spillovers. Second, different from the literature mainly relying on simple OLS regressions, our methodological contribution is that we employ the nonparametric PSM technique to calculate the treatment effect, which helps to deal with the potential sample selection problem in this setting. Third, we investigate the largest FDI recipient among developing countries, China, which has experienced remarkable growth in the past decades and FDI has widely been regarded an important driving force. However, there is no empirical paper studying the spillover effect of FDI via entrepreneurship in China. We fill this gap.

The remainder of this paper is structured as follows. The next section describes the data and presents our econometric models of OLS and PSM. The main results are discussed in Section 3. In Section 4, we investigate the potential mechanisms of human capital spillovers from MNEs for the entrepreneurs, and Section 5 provides the conclusion.