Which Foreigners are Worth Wooing? A Meta-Analysis of Vertical Spillovers from FDI

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Few topics in international economics have been examined as extensively as technology transfer from foreign affiliates to domestic firms, and the amount of empirical research in this area is still growing at an exponential rate, with more than a score of studies published in the last two years alone. The topic is so attractive because the assumed externality associated with the transfer,"technology spillover," constitutes the principal rationale for government subsidies to foreign direct investment (FDI). Many policy makers who encourage inward FDI expect that domestic firms in the same sectors can benefit from know-how brought by foreigners, that firms in supplier sectors can benefit from direct knowledge transfers from foreigners, and perhaps also that firms in customer sectors can benefit from higher-quality intermediate inputs produced by foreigners. The per-job value of spillovers stirred up by linkages can be compared with the amount of government subsidies; hence, for policy recommendations precise estimates of spillovers are required. Yet researchers report mixed results on spillovers.

To take a step beyond single-country case studies and examine the sources of heterogeneity in a systematic way, we employ the meta-analysis methodology. Meta-analysis is more than a literature survey: it sheds light on the determinants of the examined phenomenon that are difficult to investigate in primary studies because of data limitations. In comparison with previous meta-analyses on productivity spillovers, this paper concentrates on between-sector instead of within-sector spillovers. We also include more estimates to investigate the full variability in the literature: 3,626 compared with 25 and 121. Finally, the previous meta-analyses used the reported t-statistics to evaluate the statistical significance of spillovers, whereas this paper uses an economic measure of spillovers and employs new synthesis methods.

We seek answers to three main questions. First, what is the underlying spillover effect? It would be helpful to determine whether the literature indicates some general effect, or whether all positive results are country- or sector-specific. Novel meta-analysis methods allow us to estimate the underlying economic effect net of publication and misspecification biases. Second, is FDI from certain countries systematically more beneficial for domestic firms? Primary studies on spillovers do not usually have access to detailed information on the nationality of foreign investors. The meta-analysis approach is convenient as it can exploit the results for all 47 countries examined in the literature. Third, do some host countries receive greater spillovers? We create country-specific variables capturing macroeconomic determinants of spillovers and control for the aspects of data, methods, and study quality.

Our results indicate that model misspecifications reduce the reported estimates, but that journals select relatively large estimates for publication. The underlying spillover to suppliers is positive and economically significant, whereas the spillover to buyers is insignificant. Greater spillovers are generated by investors that come from distant countries and that have only slight technological advantages over local firms. In addition, greater spillovers are received by countries that have underdeveloped financial systems and that are open to international trade.

The full version of the paper can be found at http://www.irsova.info/meta-analysis/Spill_vert_meta.pdf