more total CDIA in a country. When the sample is split into advanced and emerging economies (as denoted in Figure D1 by the different coloured points) the same spray pattern manifests in both groups, but on different scales, with the quantities invested in advanced economies being substantially larger. Interestingly, if the groups are examined separately, the slope of the trend line is higher in the emerging economies. That is, having technology closer to Canada's is related to higher CDIA, and the importance of higher technology is relatively greater in the emerging markets, compared to the advanced economies.[2] The pattern observed is interesting, but this positive relationship bears further investigation: there may be other factors at play here that are not visible in these graphs. Moreover, the graph does not distinguish between vertical and horizontally motivated foreign direct investment.

Model and Regressions

In an effort to better understand the role of technology differences in determining the location of Canadian direct investment, this section draws on the work of Ihrig (2005), applying the model developed therein to the case of Canada. The model is as follows:

$$\begin{aligned}&\textit{Real direct investment from country } j \textit{ to country } i \\ &= h_1(\textit{sumgdp}) + h_2(\textit{sumgdp} \times \textit{tech}) + h_3(\textit{gdpdiff})^2 + v_1(\textit{skilldiff}) \\ &\quad + v_2(\textit{skilldiff} \times \textit{tech}) + v_3(\textit{skilldiff} \times \textit{gdpdiff}) + \textit{controls}\end{aligned}$$

where country *j* is Canada, and country *i* is the recipient country, *sumgdp* is the sum of Canada and the other country's real GDP, *tech* is defined as $|(A^i/A^{world}) - 1|$, where A^i is labour productivity measured as output per hour, in country *i*, and A^{world} is the world average, based on an average of all countries available for that year, *gdpdiff* is the difference between the real GDP of Canada and the other country, *skilldiff* is the absolute value of the difference in skilled labour between Canada and the other country, with skilled labour measured as the proportion of people employed in professional, technical, and similar professions, relative to total employment, and *controls* consist of indices of trade costs and investment costs by country as well as a variable indicating the approximate distance between that country and Canada.

The first three terms in the model, which have h_n coefficients, are used to capture the horizontal motive for direct investment. The result for *sumgdp* is thus expected to be positive, as more horizontal direct investment is likely to occur between countries of larger economic size. Since *sumgdp* × *tech* is used to capture the effect of technology on horizontal direct investment, the result for this term could be positive or negative, as technology could conceivably dampen or amplify the size of horizontal direct investment. Lastly, $gdpdiff^2$ is expected to be negative, as it is expected that larger differences in GDP would decrease the motivation for horizontal direct investment. The following three terms, with coefficients v_n, attempt to capture the motive for vertical direct investment. The expectation is for the result on *skilldiff* to be positive, as vertical direct investment is motivated by a desire to take advantage of differences in endowments, such as more skilled labour or lower wage costs. As with the terms for horizontal direct investment, *skilldiff* × *tech* is used to measure the amplifying or dampening effect of technology on vertical direct investment, and could be positive or negative. Lastly, *skilldiff* × *gdpdiff* is expected to be negative.

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[2] Note that this comment is based on a relatively small number of observations; a larger sample might obviate the comment.
[3] Note that similar regressions were conducted with FDIC as the dependent variable; however, variable registered as insignificant; therefore, the results are not reported here. Further work would have to be done in order to explain these insignificant results.
[4] Countries are split into advanced and emerging based on the listings in the International Monetary Fund's World Economic Outlook Database. Ihrig's definition of advanced economies as countries in the OECD as of 1994 omits some countries that the IMF definition includes, such as Singapore and Taiwan.