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FDI stocks are a biased measure of foreign affiliate activity

by

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Researchers often call the value added (VA) in a host country by firms based in another country foreign direct investment (FDI) and use FDI stocks and flows from a country's balance of payments to measure it. What FDI stocks and flows actually measure, however, is narrower, since they record long term financial transactions by which domestic firms exert control over foreign firms. French FDI stocks in Australia, for example, measure the value of shares and reinvested earnings of Australian firms owned by French firms and the net indebtedness of these Australian firms to their French parents.

FDI stocks in a host country may diverge from the aggregate foreign affiliate VA in that country for three reasons. First, not all FDI in a country is used to generate VA there. Part of the flows may be sent on to other countries. Thus inward FDI stocks may overestimate affiliate VA in some countries, especially tax havens.

Second, FDI only measures part of what foreign affiliates use to finance their activities because it excludes the substantial amount they raise from external sources, for example local banks. Local and third-country financing accounts for 40% of the funds used by US majority-owned affiliates in developed countries.[1] The larger the recourse to such financing, the more FDI stocks will underestimate actual affiliate VA.

Third, FDI is a financial input, while VA is generated by both labor and capital. FDI stocks underestimate the amount of affiliate VA because they ignore the contribution of labor. The higher that contribution, the greater the underestimation.

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[1] Alexander Lehman, Selin Sayek and Hyoung Goo Kang,"Multinational affiliates and local financial markets," International Monetary Fund Working Paper 04/107 (June 2004).

In a recent paper we showed that these three factors make FDI stocks a *biased* measure of affiliate VA.[2] We argued that FDI stocks overestimate VA in tax-haven countries, undervalue it in most other countries and that that undervaluation is larger in countries where financial markets are more developed and labor more productive, i.e. in more developed countries. Hence the mismatch between FDI stocks and foreign affiliate VA is not random, but is systematically correlated with host country characteristics such as their level of economic development. This makes FDI stocks a biased measure of the relative level and change of the VA of foreign affiliates in a host country and suggests that studies of the determinants and consequences of affiliate VA that have used FDI stocks as their dependent or main independent variable may have reached erroneous conclusions.

In fact, the mismatch between FDI stocks and the actual VA of foreign affiliates in a host country is systematically correlated with specific characteristics of that country. This can be demonstrated by comparing US FDI stocks in 50 host countries and the sales and VA generated by affiliates of US MNEs in these countries over a period of 22 years in the case of sales, and 11 years in that of VA.

If one regresses the country and year-specific mismatch between US FDI stocks and US foreign affiliate sales and VA on the size of a country's stock and bond markets, the concentration of its banking sector, the level of its interest rate, its exchange rate volatility (all likely determinants of local external borrowing), whether the host country is a tax haven, and the labor productivity of its US affiliates, one finds that all these variables are statistically significant and take the right sign, supporting the view that the mismatch between FDI stocks and actual foreign affiliate activity is not random and hence that FDI stocks are a biased measure of that activity.

Hence, one cannot safely infer from FDI stocks the true level of VA by foreign affiliates in a country. Finding that FDI stocks are twice as large in country A than in country B does not necessarily mean that the actual level of affiliate VA in A is twice as large as in B, since foreign affiliates in A may obtain much of their financing from their parents while those in B may rely mostly on local external sources. Similarly, a downward trend in a country's FDI stocks can either indicate that it is becoming less attractive to foreign firms or that its financial markets are becoming more efficient and its exchange rate more stable. Because some of the hypothesized determinants of foreign affiliate activity are significantly correlated to the mismatch between FDI stocks and actual affiliate activity, studies that have used FDI stocks to measure the latter may have obtained misleading results as well.

FDI stocks and flows are perfectly appropriate measures of a country's inflows and outflows of financial capital and of their cumulative size, but they should not be used to measure host-country foreign affiliate activity.

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[2] Sjoerd Beugelsdijk, Jean-François Hennart, Arjen Slangen and Roger Smeets, "Why and how FDI stocks are a biased measure of MNE affiliate activity," 41(9) *Journal of International Business Studies* (2010).

The Vale Columbia Center on Sustainable International Investment (VCC), led by Dr. Karl P. Sauvant, is a joint center of Columbia Law School and The Earth Institute at Columbia University. It seeks to be a leader on issues related to foreign direct investment (FDI) in the global economy. VCC focuses on the analysis and teaching of the implications of FDI for public policy and international investment law.

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