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**Article**

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*Collaborations: Evidence from U.S. Universities, 1981–1999*,” *Research Policy* 34 (April 2005): pp. 259–85.

<sup>10</sup> J. Adams, G. Black, J. R. Clemmons, and P. Stephan, “Scientific Teams and Institutional Collaborations: Evidence from U.S. Universities, 1981–1999.”

<sup>11</sup> D. Mowery, “The Boundaries of the U.S. Firm in R&D,” in *Coordination and Information: Historical Perspectives on the Organization of Enterprise*, N. Lamoreaux and D. Raff, eds., Chicago: University of Chicago Press for NBER, 1995.

<sup>12</sup> J. Adams, E. Chiang, and J. Jensen, “The Influence of Federal Laboratory R&D on Industrial Research,” NBER Working Paper No. 7612, March 2000, and J. Adams, E.

Chiang, and J. Jensen, “The Influence of Federal Laboratory R&D on Industrial Research,” *The Review of Economics and Statistics* 85 (November 2003): pp.1003–20.

<sup>13</sup> J. Adams, E. Chiang, and K. Starkey, “Industry-University Cooperative Research Centers,” NBER Working Paper No. 7843, August 2000, and J. Adams, E. Chiang, and K. Starkey, “Industry-University Cooperative Research Centers,” *The Journal of Technology Transfer* 26 (January 2001): pp.73-86.

<sup>14</sup> J. Adams and M. Marcu, “R&D Sourcing, Joint Ventures, and Innovation: A Multiple Indicators Approach,” NBER Working Paper No. 10474, May 2004.

<sup>15</sup> J. Adams, “Fundamental Stocks of

*Knowledge and Productivity Growth*,” *Journal of Political Economy* 98 (August 1990): pp. 673–702. See also J. Adams and Z. Griliches, “Measuring Science: An Exploration,” NBER Working Paper No. 5478 (Reissued July 1997), and J. Adams and Z. Griliches, “Measuring Science: An Exploration,” *Proceedings of the National Academy of Sciences* 93 (November 1996): pp.12664–70; and J. Adams and Z. Griliches, “Research Productivity in a System of Universities,” NBER Working Paper No. 5833, November 1996, and J. Adams and Z. Griliches, “Research Productivity in a System of Universities,” *Les Annales d’Economie et de Statistique* 49/50 (1998): pp.127–62.

## Foreign Direct Investment Behavior of Multinational Corporations

**Bruce A. Blonigen\***

There is increasing recognition that understanding the forces of economic globalization requires looking first at foreign direct investment (FDI) by multinational corporations (MNCs): that is, when a firm based in one country locates or acquires production facilities in other countries. While real world GDP grew at a 2.5 percent annual rate and real world exports grew by 5.6 percent annually from 1986 through 1999, United Nations data show that real world FDI inflows grew by 17.7 percent over this same period! Additionally, MNCs mediate most world trade flows. For example, Bernard, Jensen, and Schott find that 90 percent of U.S. exports and imports flow through a U.S. MNC, with rough-

ly 50 percent of U.S. trade flows occurring between affiliates of the same MNC, or what is termed “intra-firm trade”.<sup>1</sup>

Despite the obvious importance of FDI and MNCs in the world economy, research on the factors that determine FDI patterns and the impact of MNCs on parent and host countries is in its early stages. The most important general questions are: what factors determine where FDI occurs, and what impacts do those MNC operations have on the parent and host economies? As I discuss in a recent survey of the empirical literature addressing the first question — the determinants of FDI decisions — the answers are not straightforward.<sup>2</sup> In particular, the literature has shown that we cannot simply conclude that factors such as exchange rates or tax policies have an unambiguous general impact on FDI patterns. Instead, meaningful insights come from developing

hypotheses about, say, when a factor should matter for FDI, or even just a particular form of FDI, and then finding creative ways to test these hypotheses in the data.

### Exchange Rates and FDI

One good example of this is the effect of exchange rate movements on FDI. For years, the conventional theory was to compare FDI to bonds, for which exchange rate movements do not affect the investment decision. A depreciation of the currency in the host country reduces the amount of foreign currency needed to purchase the asset, but it also reduces the nominal return one receives in the foreign currency. Thus, the rate of return for the foreign investor does not change. Empirical studies of FDI seemed to confirm this, often finding insignificant effects of exchange rates. In contradiction to this, the popular press

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often points to host-country exchange rate depreciations as a contributing factor to inward foreign investment booms, and worries about the selling of key national technological assets.

I find a resolution to this puzzle by considering FDI that involves firm-specific assets (such as patents or managerial skills) — the type of assets previous literature established as crucial to formation of MNCs and FDI.<sup>3</sup> Such assets are typically intangible and easily transferred across a firm's operations. Thus, the purchase prices of such assets through FDI are in the host-country's currency, but returns can be generated anywhere the firm operates and are not necessarily tied to the home country's currency. This means that host-country currency depreciations theoretically can lead to increased acquisition of FDI, particularly of firms that have firm-specific assets. This hypothesis is strongly confirmed for a panel of acquisitions of U.S. firms by Japanese and German firms and provides evidence for the notion in the popular press that currency depreciations ease foreign firms' purchases of U.S. host-country technological assets.

## Taxes and FDI

Another factor that the literature finds does not affect FDI in a straightforward manner is tax policy. MNCs are potentially subject to taxation in both the host and parent country. However, most parent countries have policies to reduce or eliminate double taxation of their MNCs. James R. Hines, Jr. and co-authors have shown that the way in which parent countries reduce double taxation on their MNCs (for example, allowing credits or deductions) can have quite different implications for FDI activity.<sup>4</sup>

Many countries also have negotiated bilateral investment treaties (BITs) to mutually reduce withholding taxes on

MNCs based in the other country. The Organisation for Economic Co-operation and Development (OECD) has been a big advocate of BITs as a way to enhance FDI across member countries. Others contend that BITs are mainly intended to share tax information across countries in order to deter tax evasion and to reduce administrative costs and, thus, should have little, or even negative, effects on FDI flows.<sup>5</sup> Ron B. Davies and I examine whether the empirical evidence suggests that such treaties increase FDI flows across nations, as the OECD and many economists presume.<sup>6</sup> In separate studies, we examine the evidence for the U.S. and for OECD BITs, respectively, in panel data that span a variety of bilateral country pairs over time. Across these various samples and numerous specifications, we find little evidence that these BITs increase FDI activity, a surprising result in light of OECD promotion of these treaties.

## Trade Protection and FDI

The notion that trade protection encourages FDI is folk wisdom for economists, so much so that it is rarely examined empirically. But my research into this relationship has also yielded surprises. In a study examining all U.S. antidumping trade protection actions from 1980 through 1995, I find that FDI responses to these trade actions (tariff-jumping FDI) occur only for firms with previous experience as MNCs.<sup>7</sup> Most firms facing such trade policies (many from developing countries) have no such experience and do not respond with FDI. Instead, these firms must face either significant antidumping duties or go through the costly process of raising U.S. prices and requesting recalculations of the duties.<sup>8</sup> For domestic firms, whether foreign firms tariff-jump the antidumping duties matters significantly. Work with

Tomlin and Wilson finds that domestic firms experience a 3 percent increase in expected discounted profitability from antidumping duties unless the foreign firms subject to the duties decide to tariff-jump, in which case the domestic firms do not experience any increase.<sup>9,10</sup>

## Information and FDI

An almost unexplored issue in the literature has been the role of information on FDI decisions. FDI requires substantial fixed costs of identifying an efficient location, acquiring knowledge of the local regulatory environment, and coordination of suppliers. Thus, access to better information about some host countries may make FDI to that location more likely. Ellis, Fausten, and I find an interesting avenue for investigating this hypothesis using information on Japanese industrial groups called *keiretsu*.<sup>11</sup> Horizontal *keiretsu* are groups of firms across a wide range of industries, typically centered around a main bank that owns significant shares in these firms. A number of studies have focused on the potentially favorable financing received by *keiretsu* firms from their main bank as one impetus for greater investment by these firms, including FDI — but the evidence is mixed on this. However, the major firms in a *keiretsu* also get together on a regular basis in what are termed Presidential Meetings and presumably share information more than other firms would. My work with Ellis and Fausten examines whether this information affects FDI choices, by estimating how much prior-year FDI by members of a firm's *keiretsu* in a particular host country increases the likelihood that the firm will also choose that country for its FDI. We find that prior-year investment by a firm in the same *keiretsu* will raise a firm's probability of locating an investment in that same host country by about 20 percent.

A related paper with Wooster examines whether U.S. firms increase overseas investments when a new CEO who is foreign-born takes over.<sup>12</sup> Our examination of CEO turnover among Fortune 500 firms in the 1990s does show evidence of significant increases in FDI when a “foreign” CEO takes over. It is difficult to disentangle whether such an effect is attributable to better information of foreign markets by the foreign CEO or to different personal preferences influenced by a less U.S.-centric perspective. Regardless, the results suggest that there are likely other important factors behind FDI patterns than the standard economic ones so often mentioned in the literature.

## Estimating Long-Run General-Equilibrium Determinants of FDI

Much of the literature described to this point motivates analysis with partial equilibrium models of individual firm-level FDI decisions. But we also want to have empirical specifications of FDI that are grounded in theory and that do a good job of explaining FDI patterns across the world. Researchers looking at world FDI patterns have generally used variations of a gravity framework to model FDI, specifying parent- and host-country GDPs along with distance as core determinants of FDI. These models seemingly do well to describe FDI patterns statistically, but while Anderson and van Wincoop have solidified an appropriate gravity specification as theoretically valid for trade patterns, it is not clear this is true for FDI patterns.<sup>13</sup>

Of course, deriving a theoretically based empirical specification of FDI is a fairly complicated problem. General equilibrium theoretical models of MNCs and their FDI activities only first began to be developed in the mid-1980s with Markusen’s development of a hor-

izontal model of FDI where an MNC replicates its process across multiple countries to avoid trade frictions, and Helpman’s vertical MNC model where firms locate their production process abroad to take advantage of lower factor costs.<sup>14</sup> A recent important step by Carr, Markusen, and Maskus (CMM) was estimation of empirical specifications of FDI based on general equilibrium models of MNCs.<sup>15</sup> Their work shows that other factors missing from gravity-based FDI specifications, particularly factor endowment differences, are important for explaining FDI patterns.

In recent work with co-authors I have explored the central question of how well these specifications actually fit the real-world data we observe. The empirical specification estimated by CMM was a starting point in this research, since its inclusion of endowment differences clearly outperforms a standard gravity equation of FDI. In initial work with the model, Davies, Head, and I found that the CMM model had a specification of endowment differences that was not consistent with the theory. Once corrected, the model no longer provides evidence that vertical FDI motivations are very important in overall FDI flows between countries.<sup>16</sup> Work with Davies and Wang shows that specification error goes beyond this with not only the CMM model, but also with the gravity specification.<sup>17</sup> Data on FDI between countries are highly skewed, with very large activity between developed countries and small or even no activity for very small countries. We show that even after logging variables, adding country fixed-effects, and splitting samples into developed countries versus less-developed countries, one is still not guaranteed of having normally distributed error terms. In other words, finding an appropriate specification that effectively models the substantial heterogeneity in FDI activity

across countries is still an open issue. Until this is resolved, using these models as control variables in studies of how new factors of interest affect FDI can be misleading.

An additional concern is that MNC models typically use a two-country framework and empirical FDI specifications use bilateral FDI data. This assumes that FDI decisions to different markets are independent. There are a number of reasons to think this may not be true. For example, U.S. firms may prefer to locate FDI in one country and then export to neighboring countries (export-platform FDI). In this case, more FDI in a particular host country would mean less in neighboring ones. Alternatively, U.S. firms may have vertical production relationships between affiliates such that more FDI in a country will naturally be associated with more in neighboring ones because of production externalities. Davies, Naughton, Waddell, and I explore this by explicitly modeling spatial interdependence in empirical estimation of U.S. FDI patterns.<sup>18</sup> We find that spatial interdependence shows up significantly in the data, although the nature of these spatial relationships is strongly affected by the particular geographic features of the sample of countries one chooses to examine. However, our finding that the coefficients on the standard control variables in FDI studies are hardly affected by including these spatial considerations is relatively good news for previous work using these empirical specifications.

## Conclusion

The study of FDI and MNCs is both fascinating and important for understanding economic globalization. There has been substantial progress in the literature in the past couple of decades, but it is complicated enough that, in many ways, we are still in the

process of uncovering what we don't know. I am excited to work on filling more gaps in our understanding in my future research efforts.

<sup>1</sup> A.B. Bernard, J.B. Jensen, and P.K. Schott, "Importers, Exporters and Multinationals: A Portrait of the Firms in the U.S. that Trade Goods," NBER Working Paper No. 11404, June 2005.

<sup>2</sup> B.A. Blonigen, "A Review of the Empirical Literature on FDI Determinants," NBER Working Paper No. 11299, May 2005, and forthcoming, Atlantic Economic Journal.

<sup>3</sup> B.A. Blonigen, "Firm-Specific Assets and the Link Between Exchange Rates and Foreign Direct Investment," American Economic Review, 87(3), June 1997, pp. 447–65.

<sup>4</sup> For example, see J.R. Hines, "Altered States: Taxes and the Location of Foreign Direct Investment in America," NBER Working Paper No. 4397, May 1997, and American Economic Review, 86(5), December 1996, pp. 1076–94, and M.A. Desai, C.F. Foley, and J.R. Hines, "Foreign Direct Investment in a World of Multiple Taxes," NBER Working Paper No. 8440, August 2001, and Journal of Public Economics, 88(12), December 2004, pp. 2727–44.

<sup>5</sup> For example, see T. Dagan, "The Tax Treaties Myth," New York University Journal of International Law and Politics, Summer 2000, pp. 939–96.

<sup>6</sup> B.A. Blonigen and R.B. Davies, "The Effects of Bilateral Tax Treaties on U.S. FDI Activity," International Tax and Public Finance, 11(5), September 2004, pp. 601–22, and B.A. Blonigen and R.B. Davies, "Do Bilateral Tax Treaties Promote Foreign Direct Investment?" NBER Working Paper No. 8834, March 2002, and Handbook of International Trade, Volume II: Economic and Legal Analysis of Laws and Institutions, J. Hartigan, ed., Blackwell Publishers, 2005.

<sup>7</sup> B.A. Blonigen, "Tariff-jumping Antidumping Duties," NBER Working Paper No. 7776, July 2000, and Journal of International Economics, 57(1), June 2002, pp. 31–50.

<sup>8</sup> B.A. Blonigen, "Evolving Discretionary

Practices of U.S. Antidumping Activity," NBER Working Paper No. 9625, April 2003, and, forthcoming, Canadian Journal of Economics, documents the rapidly rising trend in U.S. antidumping duties and the sources of this trend. B.A. Blonigen and S.E. Haynes, "Antidumping Investigations and the Pass-Through of Exchange Rates and Antidumping Duties," NBER Working Paper No. 7873, October 1999, and American Economic Review, 92(4), September 2002, pp. 1044–61, and B.A. Blonigen and J.-H. Park, "Dynamic Pricing in the Presence of Antidumping Policy: Theory and Evidence," NBER Working Paper No. 8477, September 2001, and American Economic Review, 94(1), March 2004, pp. 134–54, address the economics of firms' strategic pricing decisions in the face of antidumping duties.

<sup>9</sup> B.A. Blonigen, K. Tomlin, and W.W. Wilson, "Tariff-jumping FDI and Domestic Firms' Profits," NBER Working Paper No. 9027, June 2002, and Canadian Journal of Economics, 37(3), August 2004, pp. 656–77.

<sup>10</sup> A related issue is how FDI may affect trade protection policies (that is, reverse causality), which I address with co-authors in B.A. Blonigen and R.C. Feenstra, "Protectionist Threats and Foreign Direct Investment," NBER Working Paper No. 5475, March 1996, and in Effects of U.S. Trade Protection and Promotion Policies, R.C. Feenstra, ed., Chicago: University of Chicago Press, 1997, pp. 55–80, and B.A. Blonigen and D.N. Figlio, "Voting for Protection: Does Direct Foreign Investment Influence Legislator Behavior?" American Economic Review, 88(4), September 1998, pp. 1002–14.

<sup>11</sup> B.A. Blonigen, C.J. Ellis, and D. Fausten, "Industrial Groupings and Foreign Direct Investment," Journal of International Economics, Vol. 65(1), January 2005, pp. 75–91. (An earlier version was circulated as "Industrial Groupings and Strategic FDI: Theory and Evidence" NBER Working Paper No. 8046, December 2000).

<sup>12</sup> B.A. Blonigen and R.B. Wooster, "CEO Turnover and Foreign Market Participation," NBER Working Paper No. 9527, March 2003.

<sup>13</sup> J.E. Anderson and E. van Wincoop,

"Gravity with Gravititas: A Solution to the Border Puzzle," NBER Working Paper No. 8079, January 2001, and American Economic Review, 93(1), March 2003, pp. 170–92.

<sup>14</sup> J.R. Markusen, "Multinationals, Multi-Plant Economies, and the Gains from Trade," Journal of International Economics, 16(3–4): pp. 205–26, and E. Helpman, A Simple Theory of International Trade with Multinational Corporations," Journal of Political Economy, 92(3), pp. 451–71.

<sup>15</sup> D.L. Carr, J.R. Markusen, and K.E. Maskus, "Estimating the Knowledge-Capital Model of the Multinational Enterprise," NBER Working Paper No. 6773, October 1998, and American Economic Review, 91(3), June 2001, pp. 693–708, and J.R. Markusen, and K.E. Maskus, "Discriminating Among Alternative Theories of the Multinational Enterprise," NBER Working Paper No. 7164, June 1999, and Review of International Economics, 10(4), November 2002, pp. 694–707.

<sup>16</sup> B.A. Blonigen, R.B. Davies, and K. Head, "Estimating the Knowledge-Capital Model of the Multinational Enterprise: Comment," NBER Working Paper No. 6773, October 1998, and American Economic Review, 93(3), June 2003, pp. 980–94.

<sup>17</sup> B.A. Blonigen and R.B. Davies, "The Effects of Bilateral Tax Treaties on U.S. FDI Activity," International Tax and Public Finance, 11(5), September 2004, pp. 601–22, and B.A. Blonigen and M. Wang, "Inappropriate Pooling of Wealthy and Poor Countries in Empirical FDI Studies," NBER Working Paper No. 10378, March 2004, and Does Foreign Direct Investment Promote Development? T.H. Moran, E.M. Graham, and M. Blomstrom, eds., Institute for International Economics, April 2005, pp. 221–44.

<sup>18</sup> B.A. Blonigen, R.B. Davies, G.R. Waddell, and H.T. Naughton, "FDI in Space: Spatial Autoregressive Relationships in Foreign Direct Investment," NBER Working Paper No. 10939, December 2004, and "Spacey Parents: Spatial Autoregressive Patterns in Inbound FDI," NBER Working Paper No. 11466, July 2005.