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The effects of financial development on foreign direct investment☆

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ABSTRACT

This paper empirically investigates the various effects that source and destination countries' financial development (SFD and DFD respectively) have on foreign direct investment (FDI). We establish causality by exploiting variations in both country-specific financial development and sector-specific financial vulnerability. This approach is made possible by our use of detailed databases on real manufacturing FDI projects worldwide. We find that both SFD and DFD have a large positive influence on greenfield, expansion, and mergers & acquisitions FDI, by directly increasing access to external finance and indirectly promoting manufacturing activity. The overall economic impacts of SFD and DFD tend to be similar but their direct and indirect effects vary across margins and types of FDI.

1. Introduction

Many countries actively seek to attract foreign direct investment (FDI) because they believe that multinational enterprises will contribute to economic growth by creating new job opportunities, increasing capital accumulation, and raising total factor productivity. Indeed, a large body of empirical evidence shows that FDI tends to generate net gains for both home and host countries.[1] The growth-enhancing effects of FDI flows have motivated a thorough investigation of their determinants. Robust push and pull factors are market size, cultural and physical proximity, relative labour market endowments, and corporate tax rates (Eicher et al., 2012; Blonigen and Piger, 2014). Financial development should certainly be added to this list.[2] FDI flows strongly grew during the period 2003-2007 but experienced an abrupt decline the two following years.[3] The fact that the tight external financing conditions resulting from the global financial crisis have been partly blamed for this fall (UNCTAD, 2010) suggests that access to external finance is an important determinant of FDI. We investigate this issue, by providing a comprehensive and causal exploration of the various effects that source and destination countries' financial development (SFD and DFD respectively) have on FDI.

We are not the first cross-country study to look at the effects of financial development on FDI.[4] However previous research broadly suffers from three key shortcomings: inadequate measurement of FDI, absence of causal identification, and limited scope.

The majority of studies have used easily available balance of payments (BOP) FDI data, aggregated at the country-level. Unfortunately, these data can potentially provide an incomplete picture of the international expansion of multinational enterprises (MNEs) because they only include the funds which have been provided by parent companies in the forms of equity capital, intercompany debt, or reinvested earnings.[5] The external funds raised in host countries are

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[1] Excellent surveys of the literature can be found in Moran (2001), Navaretti and Venables (2005), Caves (2007), Dunning and Lundan (2008), or Moran (2011).

[2] The World Economic Forum (World Economic Forum, 2012) defines financial development in its 2012 *Financial Development Report* as "the factors, policies, and institutions that lead to effective financial intermediation and markets, as well as deep and broad access to capital and financial services" (p.3).

[3] Global FDI flows declined by 20% in 2008 and a further 37% in 2009.

[4] See, for example, Hausmann and Fernàndez-Arias (2000), Albuquerque et al. (2005), Di Giovanni (2005), Ang (2008), Hijzen et al. (2008), Coeurdacier et al. (2009), Hyun and Kim (2010), or Mohamed and Sidiropoulos (2010). These studies tend to find a positive but not always statistically significant impact of SFD or DFD on balance of payments FDI flows or cross-border mergers and acquisitions (M&A) transactions.

[5] For example, Feldstein (1995) points out that the total value of assets of U.S. foreign affiliates (what he calls the 'natural' definition of U.S. FDI stock) was almost three times greater than the 'narrow' BOP definition of U.S. FDI stock in 1989.

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notably ignored. This omission complicates the investigation of the impacts of SFD and DFD on the foreign expansion of firms, and may possibly lead to erroneous conclusions; if SFD and DFD are substitutes, high investment in new or existing foreign affiliates can occur despite observing low BOP inward FDI.[6]

To a certain extent, this measurement issue disappears when studies use data on cross-border M & A. However, this does not solve the problem of causal identification. Financial development is likely to be correlated with other country attributes which can influence FDI, such as overall institutional quality, human capital, natural resources, capital controls liberalisation, or foreign ownership restrictions. Even with a large number of control variables, the risk of an omitted variable bias remains and multicollinearity may become an issue. Some studies have included country fixed effects, controlling in that way for any time-invariant factor potentially correlated with financial development. As discussed by Coeurdacier et al. (2009), this strategy may not be fruitful. Measures of financial development often exhibit low time-series variation, generating imprecise estimates, and relying on time-series variation to identify the parameters does not necessarily lead to the estimation of the relationship of interest if permanent and transitory changes in financial development have very different effects on FDI.[7] Overall, without a proper identification strategy, it is nearly impossible to establish that SFD and DFD are long-run causal determinants of FDI.

As a way of circumventing a potential omitted variable, a few studies use confidential firm-level data from a single source country (Japan or the United States) and rely on ingenious natural experiments to identify the causal effects of SFD on the occurrence of Japanese FDI (Klein et al., 2002) or of DFD on the sales or capital expenditures of U.S. foreign affiliates (Desai et al., 2006; Antras et al., 2009). The estimated effects are largely positive. However, these studies are confined to specific events and specific source countries. They also do not cover how the effects of SFD and DFD can diverge with the nature of the FDI project (greenfield, M & A, or expansion) or across margins of FDI (occurrence and number of FDI projects vs. average size of the projects).[8] Finally, they do not explore in a comprehensive manner the direct and indirect effects that SFD and DFD can have on FDI. While the vast majority of existing studies have stressed how financial development can increase FDI by improving access to external finance, SFD and DFD may also have indirect and not necessarily positive impacts on FDI, by promoting overall economic activity in source and destination sectors.

In response to these various gaps in the literature, we use comprehensive and under-exploited data on real manufacturing FDI projects during the period 2003-2006 to investigate the various effects of financial development on bilateral FDI in a difference-in-differences approach, where we exploit variations in both country-specific financial development and sector-specific financial vulnerability. In doing so, we can make a substantial contribution to the existing literature. Our data provide us with a worldwide coverage of source and destination countries and allow us to look at the impacts of both SFD and DFD on FDI. We have the opportunity to investigate how various types of real FDI (greenfield, expansion, M & A) at different margins (extensive or intensive) respond to financial development. By focusing on the relationship between sector-specific dependence on external finance and financial development, our identification approach, which is novel in the context of bilateral FDI, increases the likelihood that we identify causal effects.[9] The intuition is that engaging in FDI involves substantial upfront fixed costs that financially vulnerable firms (i.e. firms with high requirements for external capital) will struggle to finance without easy access to external finance (Buch et al., 2009). Hence, causal effects of SFD and DFD can be isolated by looking at whether financial development has a disproportionate impact on FDI in more financially vulnerable manufacturing sectors. Finally, to a certain extent, we are able to decompose the total effects of SFD and DFD into the direct and indirect effects suggested by our integrative literature review.

Our empirical results unambiguously indicate that a deep financial system in source and destination countries strongly facilitates the international expansion of firms through FDI. The total effects of SFD and DFD on relative greenfield FDI in financially vulnerable manufacturing sectors, as well as on the overall level of aggregate greenfield FDI, are positive, statistically significant, economically large, and complementary. SFD and DFD have net positive effects on new greenfield FDI by directly increasing access to external finance and indirectly promoting manufacturing activity in source and destination countries. This direct impact of financial development accounts for most of the total effects of SFD and DFD and primarily operates at the intensive margin through its positive contribution to the average size of FDI projects. Expansion FDI and M & A FDI are also positively influenced by greater SFD and DFD but not necessarily in the same way as greenfield FDI. For example, SFD matters much less for expansion FDI than for greenfield FDI at the intensive margin, while M & A FDI is more responsive than the two other FDI types to the direct effects of SFD and DFD at the extensive margin. Lastly, the overall economic impacts of SFD and DFD on FDI are comparatively similar. These results substantially expand existing research on FDI. In common with the few studies which have investigated in a causal manner some of the effects of SFD or DFD on FDI, we find a positive effect of financial development on the expansion of MNEs. However, we reach this conclusion by very different means,[10] and our findings yield novel insights.

Our research has implications for our understanding of both the effects of FDI on economic growth and the functioning of MNEs' internal capital markets. Many studies have stressed that a well-developed financial system is crucial for local firms to benefit from foreign technology spillovers (Hermes and Lensink, 2003; Alfaro et al., 2004, 2009, 2010) while other studies have highlighted positive links between the domestic and foreign activities of firms (Desai et al., 2005, 2009; Herzer, 2010; Navaretti et al., 2010). We show that SFD and DFD promote outward and inward FDI, thereby contributing indirectly to economic growth in source and destination countries. Highlighting the role of external finance in the expansion of MNEs also helps to understand the sources and limitations of their internal capital markets. The financial advantage that foreign firms tend to enjoy over local firms (Desai et al., 2004b, 2008; Alfaro and Chen, 2012) is related to their home countries' financial depth and, beyond short-term horizons, MNEs cannot fully bypass restricted local access to external finance by making use of foreign sources of funds.

[6] Note that this issue cannot be solved by the use of bilateral FDI data.

[7] For instance, average inward FDI may be higher in countries where the average stock market capitalisation to GDP ratio is higher, because it reflects easier access to external finance or more potential targets for cross-border M & A. However, temporary departures of the ratio of stock market capitalisation to GDP from its average size may have a negative impact on inward FDI if foreign investors are attracted by temporarily undervalued host-country assets (so-called 'fire-sale' FDI). Hence, in this scenario, the time-series effect of DFD on FDI would not be informative of the cross-sectional effect of DFD on FDI.

[8] Policymakers may be particularly interested in work on greenfield and expansion FDI as they tend to perceive these foreign projects as having more benefits, in terms of new jobs and production activity created, than M & A (Sauvant, 2009).

[9] See, among others, Rajan and Zingales (1998), Beck (2002), Braun and Larrain (2005), Kroszner et al. (2007), Manova et al. (2011), Chor and Manova (2012), or Manova (2013) for use of this identification strategy in the fields of economic growth or international trade.

[10] In the most recent version of their working paper, using a difference-in-differences approach similar to ours, Bilir et al. (2014) investigate the effects of DFD on the levels of foreign sales of U.S. MNEs. They also find an overall positive effect of DFD on the relative volume of sales in financially vulnerable sectors. However, most of their discussion and robustness checks tend to be focused on how DFD influences the share of affiliate sales to various destination markets. Hence, while their paper is extremely rich, a larger fraction of our paper is devoted to the analysis and robustness of the effects of DFD on relative FDI in financially vulnerable sectors. In addition, their sample is limited to the foreign activities of MNEs headquartered in the United States, they ignore the role of SFD, and they do not distinguish between various types of FDI.