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# FDI versus exports: Evidence from German banks

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**Abstract**

We use a new bank-level dataset to study the FDI-versus-exports decision for German banks. We extend the literature on multinational firms in two directions. First, we simultaneously study FDI and the export of cross-border financial services. Second, we test recent theories on multinational firms which show the importance of firm heterogeneity [Helpman, E., Melitz, M.J., Yeaple, S.R., 2004. Export versus FDI. American Economic Review 94 (1), 300–316]. Our results show that FDI and cross-border services are complements rather than substitutes. Heterogeneity of banks has a significant impact on the internationalization decision. More profitable and larger banks are more likely to expand internationally than smaller banks. They have more extensive foreign activities, and they are more likely to engage in FDI in addition to cross-border financial services.


*JEL classification:* F0; F21

*Keywords:* International banking; Foreign direct investment; Cross-border financial services; Heterogeneity

## 1. Motivation

Activities of non-financial multinational firms have been the subject of a large and growing literature over the past decade. Studies have particularly addressed the motivation to form horizontally or vertically integrated multinational firms. Whereas vertically

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integrated multinationals aim at lowering production costs, horizontally integrated multinationals move abroad in order to access large markets. These firms face a trade-off between exporting, which involves variable transportation costs, and foreign direct investment (FDI), which involves the fixed costs of market entry. Literature on international banking has developed in a somewhat different direction (Berger et al., 2004; Focarelli and Pozzolo, 2001, 2006; Moshiran, 2004). The focus has been on questions of whether banks follow their customers to foreign markets or whether banking relationships and information costs are important. The choice between FDI and exports of financial services has received less attention.

This disconnect between the literatures on multinational banks and on multinational non-financial firms is surprising since theories of multinational firms can, in principle, be applied to the international banking firm as well (Berger et al., 2004). Moreover, financial services account for a sizeable share of about 20% of global FDI flows (UNCTAD, 2003).

This paper links recent theories of multinational firms to international banking by using a novel dataset. We use bank-level data on the foreign direct investments, on the cross-border provision of financial services, and on the balance sheets and income-statements of German banks. Hence, our dataset contains information on *all* German banks, with regard to both their domestic and their full range of international activities. The richness of our dataset allows us to address questions such as 'What are the characteristics of German banks which expand internationally as compared with purely domestically-oriented banks?' and 'Are decisions to engage in FDI and to provide cross-border financial services linked?' To the best of our knowledge, these issues have not yet been addressed before using bank-level data. (See Moshiran (2004) for a recent survey of literature on the complementary role of FDI and trade in financial services.)

Our research is linked to three strands of the empirical literature on international banking and finance. A first group of papers has analyzed the foreign direct investment decisions of banks at an aggregated level. There is evidence on the foreign activities of US financial institutions (Goldberg and Johnson, 1990; Sagari, 1992), on foreign banks in the United States (Goldberg and Saunders, 1981; Molyneux et al., 1998), on Japanese banks abroad (Yamori, 1998), on foreign banks in the UK (Fisher and Molyneux, 1996), and on FDI of German, UK, and US banks (Moshiran, 2001). A second group of papers has used gravity-type models to study the determinants of global equity flows (Portes and Rey, 2005). These papers find that geographical distance has a negative impact on bilateral financial linkages. A third group of papers has used bank-level data to study the determinants and effects of international mergers and acquisitions in banking as an important channel through which FDI occurs (Berger et al., 2004; Focarelli and Pozzolo, 2001, 2006). Bank-level data have also been used to study lending by banks abroad (Goldberg, 2001).

Our work differs because we use bank-level information on stocks of banks' FDI abroad, and because we link FDI and the cross-border provision of financial services for individual resident banks. Also, we can study the characteristics of banks that expand internationally relative to those banks that stay domestic. And, given that banks expand internationally, we ask for the determinants of their foreign activities.

There are two main reasons why studying the globalization of the German banking industry is of interest. First, German financial institutions accounted for 9% of cross-border acquisitions of financial institutions that took place in OECD countries between