



# Big fish in small banking ponds? Cost advantage and foreign affiliate presence <sup>☆</sup>

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## ABSTRACT

We distinguish cost advantage at home from cost advantage vis-à-vis incumbent banks in destination markets to explain the probability of foreign bank affiliate lending. We combine detailed affiliate lending data of all German banks with public bank micro data from 59 destination markets. The likelihood to operate foreign affiliates depends positively on both types of cost advantage. Only cost advantage at home is economically significant. Generally, risk, return, and unobservable bank traits explain a larger share of the variation in foreign affiliate operations. Less profitable, more risky, and larger banks are more likely to operate affiliates abroad.

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## 1. Introduction

Do cost advantages determine foreign direct investment (FDI) in banking? We investigate the role played by the efficiency of banks in the home country and in the efficiency of its competitors in potential host countries. We assess efficiency differences in terms of cost advantage, i.e. banks having lower costs than their competitors, and distinguish two types of cost advantages: a cost advantage of banks compared to competitors at home and a cost advantage compared to competitors abroad. We empirically identify these two different types of cost advantage and quantify their economic significance relative to other observable bank and destination market traits.

Foreign banks improve general lending standards and access to finance (Giannetti and Ongena, 2012), enhance competition and lower the cost of financial intermediation (Claessens and van Horen, 2014a), thereby fostering real growth of local borrowers (Bruno and Hauswald, 2014).<sup>1</sup> In the run up to the Great Financial crisis, foreign operations of banks grew signif-

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<sup>1</sup> Also note that financial services are a very important component of services trade. With 32% growth in 2007 it was the fastest growing segment of the services sector and it recovered fastest after the Great Financial Crisis. Global exports of services continued to increase by 5% in 2014, compared with 0.5% for goods (WTO, 2009, 2011, 2015).

icantly, with multinational banks from developed markets managing liquidity on a global scale (Cetorelli and Goldberg, 2012a). In the crisis' aftermath, cross-border lending collapsed (Giannetti and Laeven, 2012) and international banks retreated from numerous credit and funding markets. The withdrawal of funds from foreign activities was a function of how banks operated abroad: De Haas and van Horen (2013) show that “sudden stops” in cross-border lending were mitigated if foreign banks also operated foreign affiliates in host markets. In addition, the networks of multinational banks' foreign affiliates remained remarkably stable, whereas cross-border lending reduced significantly (Claessens and van Horen, 2015).

This paper combines detailed foreign activity data of German banks—the so-called External position of banks data (AUSTA “Auslandsstatus”)<sup>2</sup>—with publicly available bank-level information in all major foreign credit markets to better understand the importance of host country banking sector efficiency. We use bank-level data between 2003 and 2012 to estimate the heterogeneous cost advantage of all German banks vis-à-vis 59 major foreign credit markets. This allows us to analyze the relative importance of cost advantage of banks in the home market versus cost advantage in potential host markets.

Our empirical work is inspired by the goods trade literature in which firm-level heterogeneity of productivity implies that some firms possess a variable cost advantage that compensates for the fixed costs of catering to foreign markets (see Helpman, 2006, for an overview). Exporting goods and services entails higher fixed cost compared to domestic activities and the operation of foreign affiliates is associated with even higher fixed set-up cost. Firm-level heterogeneity leads to a sorting of firms into foreign modes according to their productivity: The few largest, most productive firms pursue foreign direct investment in the form of affiliates, some sufficiently productive firms engage in international trade and export, whereas most firms operate only on domestic markets (Melitz, 2003; Bernard et al., 2003; Helpman et al., 2004). Most evidence focuses on manufacturing and goods trade, but Breinlich and Criscuolo (2011)'s findings suggest that firm-level productivity heterogeneity could also explain services trade.

A few theoretical multinational banking studies adapt these ideas, thereby complementing earlier approaches that hinge on the notion of portfolio theory and risk diversification to rationalize cross-border banking (Buch, 2000, 2003; Focarelli and Pozzolo, 2005). These novel theories explain cross-border banking activities with cross-country differences in banking technologies that generate bank-level heterogeneity in cost structures. De Blas and Russ (2013) embed banks with heterogeneous cost structures in a theoretical general equilibrium model. The low-cost leader bank can charge a markup and realize economic profits. If more efficient foreign banks offer cross-border lending, their model predicts a decline in loan rates and markups because consumers will demand credit from low-cost providers abroad. In contrast, the entry of foreign banks that are more efficient than domestic incumbents will not reduce loan rates, but increase markups and producer surplus accruing to owners of contesting banks from abroad. Niepmann (2015) provides a general equilibrium model in which perfectly competitive banks use a technology that is homogeneous within each country, but differs across countries. Paired with different exogenous factor endowments at home and abroad, the scope for cross-border banking activities in both loan and deposit markets arises. As a result, cross-border banking activities are driven by relative efficiency advantages of one banking system relative to another. Niepmann (2016) extends these results by allowing for within-country differences of bank efficiency. Heterogeneous production technologies together with differential factor endowments predict the observed modes of international banking: cross-border lending and funding or foreign direct investment. Banks are more likely to operate foreign affiliates if they incur less overhead costs relative to total assets, i.e. are more cost inefficient. This result is consistent with the Melitz-notion of sorting in the cross-section of banks in home markets.

We complement these important (primarily) theoretical contributions with empirical evidence based on micro-level data for both German home market banks and their potential foreign markets over the period 2003 until 2012. We estimate the marginal costs of banks for a sample of about 133,000 bank-year observations between 2003 and 2012. We combine the detailed information about the foreign lending of German banks reported in the AUSTA with publicly available Bankscope data. The AUSTA contains information about the international assets of German banks held via foreign branches and subsidiaries, year-by-year and country-by-country. The Bankscope data provides financial accounts for a large sample of the world's banks.

We predict the likelihood of home banks' foreign presence based on three cost measures. First, consistent with Melitz-type arguments, higher *Bank marginal cost* of parent banks in Germany are expected to decrease the likelihood of foreign presence. Second, *Marginal cost abroad*, i.e. those of the average bank in host markets, are expected to increase the likelihood of foreign presence, because they increase the cost advantage of German banks compared to foreign incumbents. Third, inspired by De Blas and Russ (2013), the indicator of *Cost leadership* indicates whether German bank marginal costs are lower than marginal costs abroad, which is expected to make foreign presence more likely. Finally, country fixed effects, which should control for the unobserved heterogeneity that largely determines foreign market attractiveness, capture the fixed costs associated with the decision to set up a presence abroad.

This paper makes three contributions. First, we extend the empirical results from Niepmann (2015, 2016), because the panel structure of the AUSTA allows us to saturate specifications with a richer set of fixed effects to control for unobservables. In addition, we specify controls for previously omitted bank-level factors and other macro traits of foreign markets. Thereby, we can quantify the relative contribution of different types of cost advantage relative to competing bank-level and macroeconomic factors in explaining the extensive margin in international banking.

<sup>2</sup> Note that these data are used in a series of previous studies: Fiorentino et al. (2010) describe the AUSTA data in detail, which can be accessed via the Research Data Service Center of Deutsche Bundesbank. Examples of empirical applications are Buch et al. (2011, 2013, 2014), Frey and Kerl (2015), Kerl and Koch (2015), Galema et al. (2016).

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