Private information, institutional distance, and the failure of cross-border acquisitions: Evidence from the banking sector in Central and Eastern Europe[*]

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Abstract

In this paper, we develop an information theory-based framework about cross-border acquisitions in the financial intermediation industry. We argue that even though "soft" information embedded in customer relationships of local banks can, in principle, help multinational banks (MNBs) overcome informational disadvantage in host countries, the cost of verification of this private information may, paradoxically, make local banks with significant customer relationships unattractive for cross-border acquisition. Further, we propose that the relationship between the amount of customer information embedded in an incumbent bank and the likelihood of its acquisition by a MNB is modified by the institutional distance between the home and host countries of the MNB. Specifically, the strength of the negative relationship increases with institutional distance between home and host countries because it increases the verification cost of private information with institutional distance. Our hypotheses find support in the context of Central and Eastern Europe.

Keywords: Multinational bank; Cross-border acquisition; Customer relationship; Private information; Verification cost; Institutional distance; Central and Eastern Europe

1. Introduction

A fundamental characteristic of the financial intermediation industry is the pervasive informational asymmetry that exists between banks and potential borrowers (Brealey et al., 1977; Bhattacharya and Thakor, 1993; Freixas and Rochet, 2008). The consequences of this information asymmetry and the associated adverse selection problem for credit market failures are much discussed and well documented (Stiglitz and Weiss, 1981; Williamson, 1986, 1987; Berger and Udell, 1998). It follows, therefore, that mechanisms that help ameliorate the informational asymmetry problem are beneficial for both the financial intermediaries (in the vast majority of cases, banks) and borrowers. Consequently, there is a large discussion of the use of collateral and relationship banking, mechanisms that help avert credit market failures, in the financial intermediation literature (Besanko and Thakor, 1987; Bester, 1987; Boot, 2000; Degryse and Van Cayseele, 2000).

Relationship banking, in particular, is viewed as a widely used mechanism to overcome the problem of information asymmetry. As argued by Berger and Udell (2002), it facilitates "accumulation over time by the loan officer [of a bank] of 'soft' information" about potential borrowers. While such a relationship can be mixed blessing for the borrowers who may have greater access to external finance but at a higher cost (Greenbaum et al., 1989; Petersen and Rajan, 1994; Schenone, 2010; Bolton et al., 2016), largely because it ensures that banks have monopoly over the information about the borrowers with whom they have such relationships, it has been argued that relationship banking can be the source of competitive advantage for banks (Keltner, 1995). This is consistent with a wider, albeit underdeveloped, literature about the ability to reduce information costs – in the presence of informational asymmetry – as a source of competitive advantage (Nayyar, 1990). It is also consistent with the broader argument that resources such as information about borrowers (henceforth, interchangeably called customers), especially "soft" information, is not easily imitable outside a bank with which a set of customers have a relationship and that, therefore, such information can be a source of competitive advantage (Barney et al., 2001; Miller, 2003). Indeed, it has been argued that the risk of adverse selection in credit markets that is experienced by

new banks can act as an entry barrier in the banking industry (Dell'Ariccio et al., 1999; Dell'Ariccio, 2001), i.e., private information about the borrowers give the incumbent banks competitive advantage.

This has two implications for the international business literature. To begin with, when a multinational bank (MNB) enters a new country, informational asymmetry with local borrowers will put it at a competitive disadvantage vis-à-vis incumbent banks.[1] A MNB, therefore, is at an informational disadvantage in a host country, especially in emerging economy contexts where public sources of information such as credit history records are often incomplete or altogether unavailable, and where the options to screen potential customers by way of mechanisms such as externally assigned credit ratings are restricted or altogether absent. This disadvantage can force MNBs to focus mostly or entirely on clients about whom information is relatively easily available, namely, multinational enterprises (MNEs) from the home countries of the MNBs and large (or blue chip) domestic firms (Miller and Parkhe, 1998; Mutinelli and Piscitello, 2001; Mian, 2006; Berger et al., 2008). This restriction, in turn, makes it difficult for MNBs to grow their businesses significantly in the host country. Berger et al. (2008) demonstrate this in the context of India, where foreign banks operate on their own through branches and wholly-owned subsidiaries, and account for less than 10 percent of both the deposit and credit markets even after more than 20 years of banking sector reforms.

A MNB can use acquisition of a local bank, in which information about a pool of local borrowers are embedded by way of existing customer relationships, to overcome this disadvantage.[2]

[1] In some sense, a MNB entering a host country suffers from the "liability of outsidership" (Johanson and Vahlne, 2009) because it is not part of the bank-client network. The MNB has to overcome this liability not so much through "trust-building and knowledge creation", as in Johanson and Vahlne's (2009) paradigm, but through relationship-building that helps them overcome their information asymmetry vis-à-vis their customers. (Note that we deliberately use the phrase "liability of outsidership", as opposed to "liability of foreignness" that is used in discussions about internationalisation, largely because, as mentioned earlier, the problem of access to private information of customers can also pose an entry barrier for domestic entrants to the market for financial intermediation.)

[2] A perusal of the literature on internationalisation of banks suggests that de facto the acquisition of a local (or host country) bank may be the only choice available to a MNB other than a Greenfield entry, for a variety of factors such as the absence of robust and financially viable host country partners (see, for example, Bonin

Evidence suggests that the information embedded within customer relationships can be particularly valuable in contexts characterised by economic flux and crises (Ferri et al., 2001; Banerjee et al., 2017). However, in choosing the acquisition of an incumbent bank, the MNB would trade one form of informational asymmetry for another. Specifically, while the acquired incumbent bank may have "soft" information that helps reduce informational asymmetry with local customers, the MNB may not be privy to this information prior to the acquisition. The MNB would, therefore, have to strike a balance between the advantages associated with access to the customer information embedded in incumbent banks (especially the "soft" information) and the risks associated with acquiring an incumbent bank that may not – indeed, by very nature of "soft" information, perhaps cannot – share this information prior to the acquisition. Alternatively, as argued in the information economics literature, which eschews a binary can-cannot distinction in favour of a discussion about the cost of verification of the nature and cost of information, the MNB's ability to verify the nature and quality of the private ("soft") information about customer relationships embedded in incumbent banks can be fairly high before the incumbent bank is actually acquired.

In this paper, we contribute to the theory of strategic decisions about cross-border acquisitions, extending a relatively small literature (Chari and Chang, 2009; Dikova et al., 2010; Cuypers et al., 2015), and develop an information theory-based framework specifically about the financial intermediation industry. We also add to the relatively small literature on strategic decisions of companies when their acquisition targets – more broadly, counterparties – have private information (Capron and Shen, 2007; Dushnitsky and Shaver, 2009). Specifically, we bring together two different strands of the literature, namely, the literature on market failure in the

et al., 1998). Indeed, available data suggests that foreign bank entry in Central and Eastern Europe (CEE) during the first decade and a half of transition were almost entirely Greenfield entry as subsidiaries/branches or involved cross-border acquisitions (e.g., Claeys and Hainz, 2006; Hryckiewicz and Kowaleswki, 2008). In other words, access to private information about local customers in a host country may not be accessible by alternative means such as a joint venture (JV) arrangement with a local bank. While this is not germane to the narrative of the paper, which is not about entry mode choice of MNBs, it is nevertheless an interesting observation that underlines the importance of acquisitions in the process of internationalization of MNBs.

presence of information asymmetry which has wide-ranging applications (Akerlof, 1970), and that on institutional distance that has implications for strategic decisions in international business (Xu and Shenkar, 2002; Eden and Miller, 2004; Gaur and Lu, 2007). To be fair, our conceptual framework has greater relevance for MNB decisions to acquire local banks in emerging economy contexts where markets for information are highly imperfect. However, the basic reasoning has much wider implications.

We propose that the informational asymmetry about the nature and quality of these customer relationships, and the attendant risk of adverse selection, would result in a negative relationship between the amount of customer relationship embedded in an incumbent bank and the likelihood of its acquisition by a MNB. Given the importance of this embedded customer information for competitive advantage in the banking industry, this is apparently paradoxical but, as in the case of Dushnitsky and Shaver's (2009) study of firms' (un)willingness to accept investment from corporate venture capital firms belonging to the same industry, entirely logical.[3] Further, we propose that the relationship between the amount of customer information embedded in an incumbent bank and the likelihood of its acquisition by a MNB is moderated by the institutional distance between the home and host countries of the MNB. Specifically, the strength of the aforementioned negative relationship increases with institutional distance between home and host countries as the verification cost of private information embedded in incumbent banks increases with institutional distance. The propositions (or hypotheses) are tested using data on acquisition of local banks by MNBs in the Central and Eastern European (CEE) context, and the empirical results support the hypotheses.

[3] The key difference between intuition for the paradox discussed in Dushnitsky and Shaver's (2009) paper and that of ours is that moral hazard lies at the heart of the mechanism that explains their paradox while, as mentioned above, adverse selection lies at the heart of ours. However, both moral hazard and adverse selection follows from informational asymmetry between two transacting parties.

2. Hypotheses development

To reiterate the problem of a MNB, it can enhance its competitiveness in a host country market if it gains access to the private information about potential borrowers/customers that are embedded in bank-customer relationships in the incumbent banks. The MNB can get access to the headline information such as the amount and tenor of loans (and perhaps even details about repayment terms and covenants) associated with each of these relationships, by acquiring a local bank, and access to such hard information is generally available during the customary due diligence process prior to the acquisition. However, it may not get all the relevant information about the nature of these relationships that are necessary to fully (at least, sufficiently) understand the credit risk associated with the customers with whom the incumbent banks have had business relationships. Indeed, it may even be in the interest of the acquired incumbent bank to deliberately obscure certain aspects of these relationships that have implications for the true credit risk associated with these customers.[4]

It is easy to comprehend this problem in the context of emerging economy locations that are characterised by a variety of credit market imperfections which have implications for the credit risk associated with borrowers with whom incumbent banks have existing relationships. For example, banks in these countries often favour incumbent firms that have long standing relationships with the banks but weak performance and/or little growth prospect (Banerjee et al., 2005; Malesky and Taussig, 2009),[5] those that are credit risks on their own but are able to draw on implicit and explicit guarantees of related firms within business networks (Fisman and Wang, 2010), and those that have political connections (Khwaja and Mian, 2005; Claessens et al., 2008; Li et al.,

[4] A similar phenomenon can be observed in cases where it may not be in a firm's interest to reveal information about its technology to corporate venture capitalist (CVC) belonging to the same industry (Dushnitsky and Shaver, 2009). However, while this follows from the risk of expropriation of the technology by the CVC, in our context the risk to the incumbent bank involves the potential cost of releasing information about inefficient and irregular lending practices.

[5] Costa et al. (2014) observe that "[a]lthough credit is a major source of risk and revenue for the vast majority of banks in emerging economies, credit processes and underlying support mechanisms have remained largely unchanged in most—even when some banks grew tenfold. For example, many banks still do not effectively use predictive statistical models (such as scoring models or behavioral scoring) in underwriting and monitoring, although they may have made significant investments to acquire these tools." (pp. 6)

2008). Where credit risk of an individual firm is ameliorated by guarantees provided by firms in its wider business network (e.g., in the case of firms associated with business groups), the true value of these guarantees can be suspect on account of opacity and weak corporate governance of firms within these networks (Khanna and Palepu, 2000; Claessens and Fan, 2003). Similarly, where the customers in question are state-owned firms, their credit worthiness sans implicit or assumed government guarantees can be questionable on account of persistent performance-related problems (see Megginson and Netter, 2001; Bhaumik and Estrin, 2007, and references therein). Further, lending decisions may be influenced by outright bribery (Chen et al., 2013).

These contexts are also characterised by practices such as evergreening of loans – simply put, granting new loans to customers to enable them to make (past) due interest payments and principal repayments for past loans – that obscure the real credit risk associated with loans unless they are closely scrutinised.[6] These practices may be driven by high costs of bankruptcy proceedings, high cost of capital for banks that require recapitalisation after nonperforming assets have been recognised and written off, and relationships with some borrowers that prevent banks from driving them into bankruptcy and attaching their assets. Even when emerging economies may adopt the accounting rules (including Basel norms)[7] of developed countries, these rules may not be sufficient to shed light on incidents of evergreening (Caprio and Honohan, 1999). Where these practices are commonplace, the true credit risks associated with customers with whom a local bank has relationships – the "soft" information – may not be revealed until after a MNB completes the acquisition of a local bank.

[6] There is widespread evidence about evergreening of loans in the banking literature (Rosengren, 1999; Hoshi and Kashyap, 2004; Watanabe, 2010, and the references therein; Alessandri and Drehmann, 2010; Fisman et al., 2011).

[7] Basel rules suggest that a loan should be classified as non-performing not only if a borrower defaults or if the loan is impaired, but also if the "exposure" is more than 190 days past due (BIS, 2016). Additionally, the rules require that "collateralisation should have no influence on the categorisation of an exposure as non-performing" (pp. 9), and that, in most cases, all exposures to a counterparty (i.e., a customer) should be considered non-performing if any of the exposures is non-performing. It is easy to see how this is inconsistent with an agreement to evergreen loans when a customer finds it difficult to meet its repayment obligations.

While these problems are likely to be more acute in the context of emerging economies, the sub-prime mortgage crisis in the United States demonstrates that these problems are equally feasible in more developed contexts. Available evidence suggests, for example, that low documentation loans that result in borrower information falsification was one of the major problems underlying the crisis (Jiang et al., 2014). Further, once the mortgages were securitised, it was costly for investors to identify the true default risks associated with the mortgages underlying the securities, despite the presence of mechanisms such as credit rating that were meant to reveal accurate information about the credit risk associated with the securities. Indeed, it has been argued that credit rating agencies may have contributed to the crisis (Sy, 2009). Finally, in some developed contexts such as Japan and Western Europe, banks have also been known to evergreen loans, especially when they are in distress and when the need for regulatory capital is high (Spiegel and Yamori, 2003; Hoshi and Kashyap, 2004; Caballero et al., 2008; Albertazzi and Marchetti, 2010; Watanabe, 2010; Steinkamp et al., 2017). However, while the presence of information sources such as credit registers in Spain can help shed light on credit risk associated with borrowers and practices such as evergreening (Jimenez et al., 2012),[8] these information sources are at best underdeveloped in emerging economies (Costa et al., 2014). As a consequence, the problem associated with imperfect information about bank-customer relationships may be more acute in emerging economies than in developed contexts.

To summarize, therefore, a MNB that aims to acquire private information about borrowers-customers in a new host country by acquiring a local bank within whose customer relationships this information is embedded may have broad sense about the prevalence of irregular lending practices in the host country but may find it difficult or very costly to identify the true credit risks associated

[8] Jappelli and Pagano (2000) make the following distinction between credit bureaus and credit registers: "'Credit bureaus' (sometimes called 'credit reference agencies') are typical voluntary mechanisms: they are information brokers, which operate on the principle of reciprocity, collecting, filing and distributing the information supplied privately by their members. …. 'Public credit registers', instead, are databases created by public authorities and managed by central banks. Their data are compulsorily reported by lenders, who then obtain a return flow of data for use in their lending decisions."

with the customer relationships of individual incumbent banks. It is well understood that in such cases there is lemons problem (Akerlof, 1970; Parviven and Tikkanen, 2007), such that it may not be possible for a MNB to conclude a deal for acquisition of an incumbent bank. Where these acquisitions are feasible by way of exchange of shares, the MNB may proceed by offering shares that can force the shareholders of the acquired firm to share risks with the MNB (Hansen, 1987; Chemmanur et al., 2009). Alternatively, where possible, the MNB can acquire the local-incumbent bank using contingent earnout contracts (Rogozzino and Reuer, 2007). However, these risk-sharing mechanisms may not be universally available and, specifically, are likely to be infeasible in the context of emerging economies, for a variety of factors such as government ownership of incumbent banks in the host country and weak institutions for contract enforcement. For example, Godard et al. (2012) report that, on average, cash accounted for 82 percent of the payment for cross-border acquisition of emerging economy banks in their sample, the median value of cash payment being 100 percent. Paradoxically, therefore, the likelihood of an incumbent bank's acquisition by a MNB may decrease with the extent of customer relationships embedded in the incumbent bank, despite the well understood importance of the private information associated with those relationships for competitive advantage of banks.

We, therefore, hypothesize the following:

Hypothesis 1 (H1). The likelihood of acquisition of a local-incumbent bank by a MNB decreases with the extent of customer relationships embedded in the local bank.

As mentioned earlier, in keeping with the literature on information theory, it is possible to argue that information about the true credit risk associated with customers with whom incumbent banks have relationships is not binary in nature, i.e., it is not either "private" or "public". Instead, we can argue that, in principle, all information can be verified at a cost, and that the cost is high for information that is truly private (e.g., Webb, 1992; Li, 1998). Further, a MNB's ability to verify the credit risks associated with the aforementioned customer relationships before acquiring a local-incumbent bank, i.e., the cost of verification, is likely to be influenced by the institutional distance

between the home and host countries of a MNB that reflects the institutional (dis)similarity of the MNB. Indeed, it is reasonable to argue that for a MNB this cost increases with the institutional distance between its home country and a given host country.

This is easily understood once we view institutions as rules of the game (Ostrom, 1986; North, 1993; Williamson, 1998). The best practices associated with lending and management of credit risk are well understood and widely known (e.g., BIS, 2000). At the same time, banks around the world are increasingly governed by similar formal rules and regulations, generally those agreed upon by the Basel Committee. These regulations may, correspondingly, have similar effects on decisions of banks regarding credit and other risks in very different credit market contexts. For example, evidence suggests that Basel norms regarding capital adequacy, which requires banks to increase equity and other acceptable forms of capital in line with the credit and other risks to which they are exposed, have an impact on their lending behaviour across the world (e.g., Kishan and Opiela, 2000; Gambacorta and Mistruli, 2004). If all banks around the world played by the global formal rules of the game alone, therefore, institutional distance may not have mattered.

However, to begin with, practices, laws and regulations that are transplanted from one context to another, e.g., from a developed context to emerging economies, may have low legitimacy and hence low effectiveness, unless the context in which these laws etc. are transplanted are already familiar with them (Berkowitz et al., 2003). Further, individual lending decisions by banks and their officials/managers are affected by local informal rules and norms as well. Politicians, for example, have different degrees of influence on lending decisions by banks across countries which, in part, is determined by the ownership structure of banks operating in specific contexts. Similarly, the extent to which bank officials are influenced by non-commercial factors such as corruption can vary considerably across countries (Barth et al., 2008), depending on not only economic factors such as banking sector competition (e.g., Barth et al., 2009) but quite possibly also factors such as the social ties of managers-officials (Collins et al., 2009) and, more generally, the social acceptance of (or tolerance for) corruption (Jain, 2001: pp. 83; Cameron et al., 2009). By extension, the

prevalence of practices such as evergreening can to be influenced by the importance the local bank officials and borrowers place on social relationships (Fisman et al., 2017). Given that, by their very nature, these informal rules of the game are not codified and are internalised by individuals and organisations operating within specific social contexts (McAdams, 1997), it is easy to see how institutional distance between two countries, which reflects differences in both formal and informal rules of the game, can increase the verification cost of the risk associated with the customer relationships embedded in the banks.

Institutional distance may, therefore, influence a banks' decisions to invest in overseas locations (Galiendo et al., 2003).[9] In the context of our paper, the verification cost of the private information that incumbent host country banks have about borrowers, and hence the acuteness of the aforementioned lemon's problem, may increase with institutional distance between the home and host countries of a MNB. This can have an adverse effect on the likelihood of acquisition of a local-incumbent bank. We propose that institutional distance can, on its own reduce the likelihood of acquisition of a local-incumbent bank by a MNB, and that this distance can also moderate the paradox of the inverse relationship between the extent of customer relationships embedded in a local-incumbent bank and its likelihood of acquisition by a MNB.

Specifically, we hypothesize the following:

Hypothesis 2a (H2a). The likelihood of a local-incumbent *bank's acquisition by a MNB* decreases with an increase in the institutional distance between the home and host countries of the MNB.

Hypothesis 2b (H2b). Given the extent of embedded customer information in a local-incumbent bank, the likelihood of a local-*incumbent bank's acquisition by a MNB reduces at a*

[9] In a related literature, it has been argued that a plausible explanation for "home bias" in equity holdings is the information cost experienced by investors when invest overseas, and this cost is particularly high when investors from developed countries such as the USA invest in foreign contexts that have relatively few overlapping institutions with the developed home country contexts of the investors (Ahearne, Griever and Warnock, 2004; Jeske, 2001).

faster rate with an increase in the extent of institutional distance between the home and host countries of the MNB.

3. Context of analysis and data

3.1 Context of analysis

Our analysis focuses on the mode of foreign entry in the banking industries of the following CEE host countries: Bosnia-Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, FYR Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine.[10] During the transition process of the 1990s, many foreign banks entered these countries either as greenfield or cross-border acquisitions. This outcome was pre-ordained by the structure of banking in these countries during the socialist era. Nearly all transition economies inherited a monobank with multiple subsidiaries, and the first stage of banking reform in these countries – which varied considerably across countries – involved the creation of state-owned commercial banks (SOCBs) by splitting up the monobank system. These banks were weak, with significant levels of non-performing assets and limited banking expertise, and, with sweeping changes in the political and economic landscape, the strength of their relationships with governments and regulators had weakened considerably. While some countries encouraged market entry by domestic private banks, these banks "often featured low capitalization and close connections to businesses" (International Monetary Fund, 2014; pp. 41), without necessarily having significantly greater banking expertise than the SOCBs. This was not surprising because, during the socialist period, banks performed accounting functions instead of acting as proper financial intermediaries and therefore skills in the art of credit evaluation, among other things, was at a premium (Corbett and Mayer, 1991). As such, domestic banks in transition economies were not desirable JV partners, tilting the balance in favour

[10] These were a group of CEE transition countries which were growing well during the 2000-08 period under study: the sample host countries, as a whole, experienced an average growth rate of about 5% over this period, which is roughly comparable with the growth rate of about 5.2% in some Asian countries (e.g., see Prasad, 2009).

of foreign entry by way of greenfield and acquisition.

This was further facilitated by government policy. As reported by Bonin et al. (2012), governments in these countries viewed foreign bank participation as a vehicle to import banking expertise; but while some countries encouraged greenfield entry through tax holidays etc., others such as Hungary foreign bank entry by way of cross-border acquisition was facilitated by privatization of SOCBs. Indeed, with the exception of Slovenia, privatization was the dominant form of banking sector reform in these countries (Wihlborg, 2004), and in the absence of strong private domestic banks, privatization was largely associated with sale to foreign banks.

Further, many of these countries, which experienced a prolonged period of transition in their economic, political and legal institutions since 1989, were characterised by institutional weaknesses – important manifestations of which are pervasive corruption and weak rule of law – during the transition process (Varese, 2000). Decisions about loans could, therefore, have been made on the basis of factors that did not accurately reflect the credit risk associated with the borrower (and the associated business or project). It has been documented, for example, that during the 1990s banks had extended loans to state-owned enterprises to enable them to escape hard budget constraints (Borish, Long and Noel, 1995). Often, "[u]npaid interest and principal were rolled over, increasing dramatically the banks' stock of nonperforming loans" (The World Bank, 1996). In addition, the 1990s were also characterised by continuation of "related party lending and political intervention into credit allocation" in many of these countries (Pistor, Raiser and Gelfer, 2000). At the same time, the resources needed to create institutions such as accounting and auditing practices in these countries imposed "massive additional burdens" on their governments and economies (The World Bank, 1996; pp. 16). Disclosure standards of even hard information were deemed rudimentary, in comparison with international best practices. In other words, verification cost of private information associated with customer relationships embedded in domestic banks in these countries could very high, especially for MNBs hailing from countries that had very different institutions. The CEE context, therefore, provides an interesting and relevant context for testing our

hypotheses.

3.2 Data

Our data are collected from three different sources. The ownership information of incumbent CEE banks, which enables us to identify acquisition of (some of) these banks by MNBs, is obtained from de Haas et al. (2011). This data also enables us to verify change of ownership status of a bank during the sample period of 2000-2008.[11] A third of the CEE banks in our sample were acquired by foreign banks.

We add to this data financial information about the incumbent CEE banks that are obtained from much used Bankscope data obtained from Bureau van Dijk Electronic Publishing (e.g., Jeon et al., 2011; Barth et al., 2013). As we discuss later, this financial information is used to construct the measure of customer relationships embedded within the incumbent banks. We also add information about competition in the banking sectors in the CEE countries – the proxy for which is the Herfindahl index that is computed using Bankscope data – and that about annual GDP growth rates of the CEE countries. These account for some of our control variables.

Finally, we add to this data two measures of country level institutions that are the basis for constructing a measure of institutional distance between home and host countries of MNBs. Our measures of institutions are taken from the Worldwide Governance Indicators that are discussed in Kaufmann, Kraay and Mastruzzi (2009), which is an updated version of the institutional indices constructed by Kaufmann, Kraay and Zoido-Lobaton (2002), both on account of its popularity (e.g., Galindo et al., 2003; Cull et al., 2011; Lensink et al., 2008) and because it is available for all the countries in our sample.[12] Specifically, we choose corruption and rule of law as the measures of

[11] We stop considering beyond 2008 as we wanted to avoid our results to be affected by the last financial crisis that started around this time and also affected the sample countries.

[12] Other comparable indices widely employed in studies on corruption include the Transparency International index (TI index) and the International country risk Guide (ICRG) index, which were not available for all the sample countries under consideration. The challenge with using such perception-based indices is that

institutions. There are two key reasons for choosing these proxies of institutional quality. First, these two are fairly common measures of institutions, e.g., corruption in Kwok and Tadesse (2006) and Meyer et al. (2009), and rule of law in Rodrik et al. (2004). Second, in our judgement, these are consistent with the focus of the hypotheses developed earlier in the paper. Absence of rule of law implies deviation from set rules and/or differential treatment of individuals and organisations who should, in principle, be treated similarly. When banks lend to companies (or evergreen their bad loans) based on factors such as their political connections and social networks, they are in violation of rule of law. Corruption, which is correlated with most other measures of institutions including rule of law, implies the ability of individuals and organisations to enter into transactions that are in violation of set criteria (e.g., lending criteria), and rules and regulations (e.g., the spirit of Basel regulations about recognition of bad loans). Further, corruption implies that these deviations remain obscure, within the domain of private information of the transacting parties (Li et al., 2015).

The final sample includes 538 bank-year observations, and it includes CEE banks that have been acquired by MNBs and those that have not been acquired.

4. Model and main variables

4.1 Model

To recapitulate, we aim to examine the effects of the risk associated with the private (often "soft") information about relationships with borrowers that are embedded in incumbent banks that are potential acquisition targets of MNBs, institutional distance between home and host countries of MNBs, and the interaction between these two factors on the likelihood of acquisition of local banks. Our outcome variable of interest TO is defined as follows: TO = 1 if a local bank was acquired by a MNB, and is 0 if the bank remains domestic. The time period of acquisition could be any of the

perceptions may well be formed not only by conventional wisdom, but also by existing climatic conditions such as current economic performance of the country (Aidt, 2003).

years in our 2000-2008 sample period.

Our interest lies in understanding how the aforementioned factors affect the acquisition of an incumbent bank in a CEE country by a MNB. Since the observed status of an incumbent bank can change during any of the years in our sample period, and given that this change in status results from a strategic decision by MNBs that are exogenous to the incumbent banks themselves, we treat each bank-year observation as an independent observation. Econometrically, following Dushnitsky and Shaver (2009), we estimate the probability that a MNB i will acquire an incumbent bank j in year t, using a probit maximum likelihood approach. The pooled nature of our data enables us to control for unobserved time effects accounting for any positive/negative shocks over the sample years. As such, the likelihood of acquisition TO is given by the following equation:

$$TO_{jt} = \beta_0 + \beta_1 CUS_{jt} + \beta_2 ID_{jt} + \beta_3 (ID_{jt} * CUS_{jt}) + \Phi' Z + u_{jt} \quad \textbf{(1)}$$

where TO_{jt} is as defined above, CUS is a measure of the customer relationships embedded in the local banks, ID is a measure of the institutional distance between the home and host countries of the MNB, Z is a vector of control variables (see discussion in Section 4.2), Φ is a vector of coefficients for the Z variables, and u is the error term.

After careful consideration, we use our chosen proxies for institutional quality, and the associated measures of institutional distance, separately in our regression model. In doing so, we are consistent with studies such as Keefer and Knack (1997), Rodrik et al. (2004) and Meyer et al. (2009) that have used single measures of institutions such as corruption, rule of law and contract enforcement in their regression specifications. In part, this is necessitated by the fact that most measures of institutions are highly correlated.[13] However, as mentioned earlier, the underlying rationale is that these measures are individually consistent with our narrative about the private nature of the "soft" information about customer relationship embedded in CEE banks, and the cost of verifying this information. Other Worldwide Governance Indicators such as indices for voice

[13] For example, for the CEE countries in our sample, the correlation between control of corruption and bureaucratic quality is 0.66, while that between control of corruption and democratic accountability is 0.55.

and accountability, political stability and absence of violence, and government effectiveness are not compatible with the focus of our narrative and aggregating these measures in some way would considerably weaken any interpretation of our regression estimates. [14]

4.2 Main variables

Our dependent variable TO has already been defined above. The explanatory variables used in equation (1) have been constructed using the data sources discussed above. The definitions of all variables used in the empirical analysis are described in Table 1.

Customer relationships (CUS): As argued in this paper, a bank's ownership advantage lies with (or are embedded in) its relationships with its customers. The more a bank's assets are credit-relationship based, and the larger its share of the domestic credit market, the greater is the ownership advantage embedded with that bank. We, therefore, measure customer relationships embedded in a (local) bank by the loans-to-total assets ratio.[15] We argue that the greater the size of the loans ratio, the greater is the extent of private information held by the incumbent bank and therefore the greater is the verification cost.

Institutional distance (ID): As indicated above, we use the control of corruption index and rule of law index of Kaufman et al. (2009) as proxies for institutional quality. The value of the former ranges from -2.5 to 2.5; higher values indicate less corrupt countries, while lower values will indicate more corrupt countries. Similarly, for the rule of law index, a higher value indicates

[14] By the same token, while the use of a composite index such as the Heritage Foundation "economic freedom" index, which includes a wide range of factors such as rule of law, government size, regulatory efficiency and open markets, may be appropriate for a discussion of transactions cost and institutional quality generally, it is not a good fit with our information theory-based narrative.

[15] Ideally, one would like to have information on the number of customer relationships embedded in banks, the length of these relationships, the scope of these relationships (e.g., whether a customer has just a current account and an overdraft facility at a bank or whether the bank is also a provider of other services to the customer that facilitates collection of "soft" information), and nature of the covenants associated with loans (where applicable). However, given that this data is unavailable, we rely on bank-level information on total loan size as a share of total assets as our proxy for customer relationships. The implicit (and reasonable) assumption is that the more customer relationships a bank has, when measured in dollars, the greater would be the extent of private information associated with these relationships which a MNB would find difficult to verify.

greater adherence to rule of law, and vice versa. In order to facilitate interpretation of the regression results, we reverse the scale of the corruption measure, such that a higher value of the index indicates higher corruption (instead of control of corruption). The two alternative measures of institutional distance are measured as the difference between the measures of the relevant index in the host (i.e., CEE) country and the home country of a MNB. As evident from Figure 1, that, by and large, corruption was higher and rule of law weaker in the CEE host countries than in the home countries of the MNBs.

Following convention in the international business literature (see Bhaumik et al, 2010; pp. 443), the implications of the hypotheses for the regression coefficients can be enumerated as follows:

		Institutional distance	
	Variables	Corruption based	Rule of law based
Hypothesis 1:	CUS	$\beta_1 < 0$	$\beta_1 < 0$
Hypothesis 2a:	ID	$\beta_2 < 0$	$\beta_2 < 0$
Hypothesis 2b:	ID*CUS	$\beta_3 < 0$	$\beta_3 < 0$

Control variables: We control for characteristics of incumbent CEE banks such as size (Petrou and Thanos, 2014), and age (Bonin et al., 2005).[16] We use two dummy variables that indicate whether a bank is large or medium sized – based on the size distribution of banks within each host country, with small banks as the omitted category. In addition, our perusal of the literature on banking suggests that factors such as the degree of competition may matter as well (Casu and Girardone, 2006). We use the Herfindahl index of host country banking sector as the proxy for competition. In particular, we construct the Herfindahl index for deposits of the context bank

[16] The legacy of socialist era governance structures increases with a bank's age.

relative to all other banks in the host country. We control for macroeconomic conditions in the host countries using measures of GDP growth. Finally, we control for unobserved year effects using appropriate dummy variables.

4.3 Summary statistics

Table 2 summarises the descriptive statistics of the key regression variables along with data source. On an average, about 37% of host banks had been acquired by MNB. The average value of customer relationships (CUS) is about 0.20 and, as we have already observed (Figure 1), institutions are, by and large, weaker in the host CEE countries than in the home countries of the MNBs. Considering other characteristics, host banks are, on an average, 13-14 years old. In general, host banks are reasonably large and host country banking sectors are fragmented, with a low Herfindahl index of 0.06. Finally, many of the sample host countries had decent GDP growth rates resulting in an average of nearly 5%.

The correlations are reported in Table 3. The correlation matrix suggests that there is not much cause for worry about multicollinearity. The variance inflation factor (VIF) associated with the regression model is estimated to be 1.0407, much lower than the usual threshold value of 5. This confirms that there is little cause for concern about multicollinearity in our sample.

5. Results and discussion

5.1 Results

The regression results are reported in Table 4. In keeping with the discussion earlier in the paper, we report the results for two alternative measures of institutional distance, one based on corruption and the other based on rule of law. Further, in keeping with Dusknitsky and Shaver (2009), we report both the probit coefficients and the marginal effects. The standard errors of the probit coefficients and marginal effects are corrected for heteroskedasticity. The likelihood ratio (LR) test indicates that both the regression models are meaningful. At the same time, the results indicate that

a number of variables in the regression specification – including the key variables of CUS, ID and their interaction – are individually statistically significant. The results are robust to the choice of the proxy for institutional distance.

The results are consistent with our hypotheses.

H1: The probit estimates and the corresponding marginal effects indicate that the likelihood of an acquisition of an incumbent CEE bank in our sample, by a MNB, indeed decreases with the extent of private information about customer relationships embedded in the former. The probit coefficient and the marginal effects for CUS are negative (and significant) for both the regression models. Our HI, therefore, is supported by our empirical results.

H2a: Consistent with our expectations, the likelihood of acquisition of an incumbent CEE bank decreases with the institutional distance (ID) between the host CEE countries and the home countries of MNBs. The probit estimate and the associated marginal effect are negative (and significant) as institutional distance increases irrespective of whether we use the corruption-based institutional distance measure or the rule of law-based institutional distance measure. Our H2a, therefore, is supported by our empirical results.

H2b: Finally, the interaction term between CUS and ID has a negative (and significant) coefficient and marginal effect and this holds for both the ID measures. In other words, given the extent of private information about customer relationships embedded in incumbent CEE banks, the likelihood of acquisition decreases when the ID measure in a MNB's host country increases relative to home country. Our H2b, therefore, is supported by our empirical results.

Overall, the results support our theoretical argument. Even though access to private (and "soft") customer information embedded in incumbent CEE banks can add to competitive advantage of MNBs, the private nature of this information and the associated problem of adverse selection, reduces the likelihood of acquisition by multinational banks precisely when their extent of customer relationship, and hence private information, increases. While this is apparently paradoxical, this is perfectly consistent with rational behaviour in information theory. Further, since verification cost

for this private (and embedded) information increases with institutional distance between the host and home countries of MNBs, the likelihood of acquisition decreases with increase in institutional distance, for all amounts of the aforementioned private information.

The regression estimates for the control variables suggest that the likelihood of acquisition is higher for a medium sized or large incumbent bank relative to the small banks, which is consistent with evidence that suggests that larger CEE banks are more efficient (Yildirim and Philippatos, 2007), and therefore more attractive acquisition targets. This likelihood decreases with the age of incumbent banks, which possibly suggests that MNB are not keen to acquire banks with relatively strong socialist legacies. Finally, the likelihood of acquisition increases with the increase in market concentration in the host CEE country banking sectors, which is consistent with the available literature on cross-border acquisitions in the European banking context (Hernando et al., 2012).

5.2 Discussion

Contributions. In this paper we develop an information theory-based framework to discuss strategic decisions about cross-border acquisitions in the banking industry, thereby contributing to the literatures on cross-border acquisitions in general (Chari and Chang, 2009; Dikova et al., 2010; Cuypers et al., 2015), and strategic interactions between companies when one (or both) of them has private information that cannot be easily (or costlessly) be observed by the other (Capron and Shen, 2007; Dushnitsky and Shaver, 2009). Theoretically, we argue that (1) even though acquisition of a local bank in which "soft" information about local customers are embedded would help a MNB overcome a competitive disadvantage in a host country, the cost associated with pre-acquisition verification of this information would, paradoxically, make local banks with large stock of embedded information about customers less attractive targets for acquisition; and (2) the likelihood of this market failure would increase with increase in institutional distance between the host and home countries of the MNBs which, we argue, is correlated with the aforementioned verification cost. Specifically, we argue that this institutional distance would reduce the likelihood of

acquisition of a host country bank on its own, and also modify the negative relationship between the extent of customer information embedded in a host country bank and the likelihood of its acquisition.

Empirically, we test these hypotheses in the context of CEE countries which were characterised by opaque lending decisions that may have been affected by relationships between the banks and their customers, state-intervention and corrupt practices. These countries were also characterised by weak disclosure norms and the absence of formal institutions such as credit registers that made verification of the true nature of the customer relationships embedded within banks costly. At the same time, persistent corruption and weak rule of law in these countries during the transition process resulted in significant institutional distance between the host and home countries of MNBs that invested in the CEE countries during the transition process. Our empirical results are consistent with the hypotheses that are associated with our theoretical framework.

Managerial implications. Managers routinely deal with challenges posed by informational asymmetry that is manifested in a number of contexts such as labour markets (Greenwald, 1986) and credit markets (Sharpe, 1990). In order to deal with these challenges, they develop screening (e.g., setting minimum qualifications for job applicants) and signalling (e.g., by posting collateral) mechanisms that help mitigate them. However, in the context of acquisitions, if there is informational asymmetry about a key attribute of the target company and the cost of verification is high then overcoming this challenge may not be feasible and use of mechanisms such as share-based acquisitions and contingent earnout contracts may not be feasible in all contexts. In such cases, the optimal decision may involve non-acquisition of the target company, especially when the target company is a different country with whose institutions the managers are not very familiar. In this paper, we argue that this may indeed be the case in the context of cross-border acquisitions in the banking sector, especially in emerging economy contexts. Acquisition in the presence of significant private and unverifiable "soft" information about customer relationships of the target banks, and in unfamiliar institutional contexts, can result in a winner's curse (Thaler, 1988) that

can adversely impact a MNB's cost of capital and performance for a number of years.

Limitations of the paper. To begin with, a common concern about all empirical results is their generalisability. The empirical analysis of this paper has been undertaken in a context that has undergone economic and political transition that are unique in recent history. On the one hand, this accentuates the problems of opaque lending practices, costly verification and institutional distance with MNB home countries, and this makes the CEE context suitable for testing our hypotheses. At the same time, it would be important to verify whether data from other emerging economy contexts, more generally, support the hypotheses. A second concern in empirical studies is the choice of proxies for key variables. In this paper, CUS is a key variable and, as we have explained earlier in the paper, while our proxy for it is reasonable, a measure of CUS that takes into consideration attributes such as the length of the relationship may be more meaningful. Future research may aim to address this problem by using contract-level information about customers which are unavailable for the CEE context but may be available for some other emerging economies. A third possible way to improve the empirical analysis in this paper would be to incorporate some characteristics of the MNBs in the regression specification, something that we were unable to do because it reduced our sample size considerably. A study with a wider coverage of emerging economies may be able to overcome this problem. Finally, by focusing on the likelihood of acquisition of local banks by MNBs, we have not explored two related issues, namely, how MNBs that do acquire host country local banks evaluate and restructure customer relationships subsequent to acquisition, and how MNBs that enter host countries (especially, emerging economies) using non-acquisition (in most cases, greenfield) mode of entry deal with the informational disadvantage in host country contexts. Addressing these questions in future research would, in our view, extend the literature on MNBs and their informational disadvantage during the process of internationalisation significantly.

6. Concluding comments

What determines the likelihood of acquisition of host country banks, especially in emerging

economy contexts, by MNBs, whose competitive disadvantage in host countries can be ameliorated by the "soft" information about customer relationships embedded in the host country banks? Our answer is that (1) when this information is private such that it is costly for a MNB to verify the nature of this information prior to acquisition, the likelihood of acquisition is influenced by this verification cost, and (2) the verification cost is itself influenced by the institutional distance between the host and home countries of the MNB such that the likelihood of acquisition is influenced by this institutional distance as well. In this paper, this is captured in an information theory-based framework that has been developed to discuss cross-border acquisitions in the banking industry. In conclusion, the single most important message of this paper is that informational asymmetry and verification cost of private information matters in the context of cross-border acquisitions, at least for the banking industry, and non-acquisition may paradoxically be the optimal decision even when access to information embedded in a target bank may grant a MNB the ability to overcome competitive disadvantage in a host country market.

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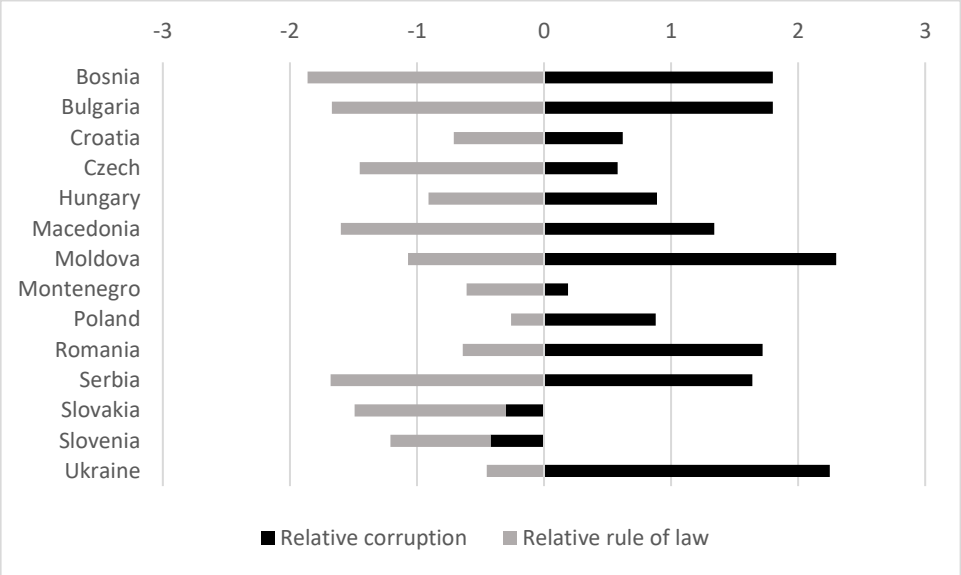
Table 1: Descriptive statistics for the regression sample 2000-08

Variable	Abbreviation	Source	Measure
Foreign takeover	TO	De Haas et al. (2011)	Binary indicator of acquisition of a CEE bank by a foreign bank; TO = 1 if a local bank was acquired by a MNB, and is 0 if the bank remains domestic
Customer relationship	CUS	Bankscope	Customer relationships embedded in CEE banks, measured by their loans-to-assets ratios
Institutional distance	ID	Kaufman et al. (2009)	The difference between host and home country institutions of MNBs, the proxies for institutions being corruption and rule of law, such that the two measures of institutional distance are relative corruption (RC) and relative rule of law (RRL)
Incumbent bank age	AGE	Bankscope	Bank age in years
Incumbent bank size - Large	LRG	Bankscope	Binary indicator of a large CEE bank
Incumbent bank size – Medium	MED	Bankscope	Binary indicator of a medium sized CEE bank
Host country banking sector competition	COMP	Bankscope	The Herfindahl index which is a stylized measure of industry concentration and hence competition
Host country GDP growth rate	GROWTH	EBRD	Percentage growth rate of GDP in each host country in each year

Figure 1. Institutional distance



Note: The measures of institutional distance are based on corruption and rule of law indices that are discussed in Kaufman et al. (2009). Relative corruption is the distance between host and home corruption indices. Similarly, relative rule of law is the distance between host and home country rule of law indices.

Table 2. Summary statistics and correlation matrix

Variables	Mean	Std Dev	TO	CUS	RC	RRL	MED	LRG	AGE	COMP	GROWTH
TO	0.36	0.48	1								
CUS	0.19	0.29	-0.51	1							
RC	1.12	1.03	0.20	-0.10	1						
RRL	-1.08	0.85	-0.04	-0.06	0.59	1					
MED	0.50	0,50	-0.12	0.23	0.02	-0.02	1				
LRG	0.18	0.38	0.01	-0.20	-0.19	-0.30	-0.53	1			
AGE	13.66	14.09	-0.24	0.26	0.09	0.14	0.11	0.03	1		
COMP	0.06	0.16	0.04	-0.10	0.05	0.07	0.00	0.23	-0.02	1	
GROWTH	4.66	2.21	0.31	-0.32	-0.29	0.07	0.03	0.006	-0.15	-0.07	1

Table 3. Binary probit estimates of the likelihood of acquisition of host country bank by MNB

	Corruption based institutional distance		Rule of law based institutional distance	
	Probit coefficient	Marginal effect	Probit coefficient	Marginal effect
Hypothesis 1				
CUS	- 0.47**	- 0.12**	- 1.37***	- 0.38***
	(0.23)	(0.06)	(0.39)	(0.11)
Hypothesis 2a				
ID	- 0.22***	- 0.06***	-0.19**	-0.0548**
	(0.06)	(0.01)		(0.0226)
Hypothesis 2b				
ID*CUS	- 0.93***	- 0.25***	- 0.64**	-0.17**
	(0.29)	(0.08)	(0.26)	(0.0759)
Host bank controls				
MED	0.68***		0.71***	
	(0.16)		(0.16)	
LRG	1.26***		1.33***	
	(0.22)		(0.23)	
AGE	- 0.17***		- 0.16***	
	(0.02)		(0.02)	
Host country control				
COMP	- 2.43***		- 2.50***	
	(0.52)		(0.55)	
GROWTH	0.01		0.05	
	(0.03)		(0.03)	
Constant	0.55		- 0.001	
	(0.37)		(0.37)	
Year dummies	Yes		Yes	
LR stat χ^2	106.30		95.12	

(p-value)	(0.00)	(0.00)
Observations	530	538

Note: The values within parentheses are robust standard errors. ***, ** and * indicate significance at the 1%, 5% and 10% levels, respectively.