

The concurrent impact of cultural, political, and spatial distances on international M&As

Maria Chiara Di Guardo, Emanuela Marrocu, Raffaele Paci

*University of Cagliari
Department of Economics and Business; CRENoS*

Abstract

The paper explores the concurrent effects of cultural, political, and spatial distances on merger and acquisition (M&A) deals among the 27 European Union countries and the 16 European neighboring countries.

By employing zero-inflated specifications, entailing both a binary and count process, we adequately model the two different mechanisms generating the zero observations, which are produced due to either the lack of any bilateral transactions or unsuccessful negotiations. We find robust evidence that the multi-dimensional distance between two countries negatively affects the probability that they will engage in M&A deals, while the recurrence rate of these deals is positively related to population, gross domestic product, and technological capital and negatively related to geographical distance.

Keywords

Cross-border M&As, cultural and political distances, geographical distance, European Union, European neighboring countries, zero-inflated models

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1. Introduction

In the last two decades, merger and acquisition (M&A) activities worldwide rose at an unprecedented pace, which has been attributed to such factors as market globalization and hyper-competition. The growth of certain emerging economies (such as those of the Brazil, Russia, India, Indonesia, China, and South Africa (BRIICS) group) has greatly increased competitive pressure. In this context, M&As are strategic tools that firms use to achieve economies of scale and gain market shares, establish a transnational bridgehead without excessive start-up costs, gain access to a foreign market, and circumvent government regulations. Opportunities notwithstanding, entering or expanding existing operations in foreign markets presents a series of risks and challenges, which are often unique to the specific target countries. The international business literature demonstrates that distance, embodied in the cultural, political, and physical dimensions, continues to have an important effect on the development of business strategy (Delios & Henisz, 2003; Kogut & Singh, 1988; Morosini, Shane, & Singh, 1998; Sleuwaegen, 1998; Brouthers, 2002). This area of research suggests that because M&A transactions represent important decisions for both the bidder and target, these transactions are systematically influenced by various forms of distance between the two parties.

The literature emphasizes that the degree of similarity between countries based on their legal, economic, administrative, political, and cultural institutions (Kostova, 1999), along with institutional relatedness, the “degree of informal embeddedness or interconnectedness with dominant institutions” (Peng, Lee & Wang, 2005; p. 623), are important factors that affect M&A strategy. The underlying assumption in this school of thought is that firms have a greater opportunity to benefit from forms of institution-based capital (e.g., political connections, cultural familiarity, and financial standards) when the cross-national institutional distance between the home and host countries is small. For example, cultural distance between countries is expected to lead greenfield investment because of the organizational risks of integrating foreign management into the parent organization.

While characteristics related to cultural elements have frequently been claimed to influence the choice of the partner M&A firm, less attention has been devoted to how geographical distance influences the decision to be involved in M&As, and the most recent research recognizes the need to study this subject in depth (Chakrabarty & Michell, 2012). Moreover, while studies have emphasized how different distances may influence the success of the post-acquisition and integration process, we know surprisingly little about how the same distances can affect whether firms are interested in undertaking acquisition activities.

To address those challenges, the aim of this paper is to explore the concurrent role of cultural, political, and spatial distances in cross-border M&A deals in a set of 43 countries

encompassing the 27 member countries of the European Union (EU) and the 16 countries that border the EU to the east or south, constituting the European neighboring countries (ENC).

Our choice to focus on M&As involving firms from the EU and ENC is based on two main reasons. First, thus far, the existing literature on M&A activity has primarily examined the EU and North American markets (Moschieri & Campa, 2009), overlooking the ENC despite that the M&A market value in Central and Eastern Europe tripled between 2004 and 2006 (PriceWaterHouseCoopers, 2006). Second, the EU and ENC are characterized by substantial differences in terms of cultural and political issues, and therefore, they represent a challenging scenario to investigate the determinants of M&As.

Our analysis focuses on completed cross-border M&As over the 2000-2011 period among 43 countries, thus considering 1,806 pairs of potential transactions. The econometric analysis is conducted within a general gravity model framework for count data.

Ideally, a comprehensive investigation of the phenomenon would entail the analysis of both the counts and monetary value of the M&A deals. However, given the lack of consistent information on the deal value for ENC, we faced a trade-off between analyzing count data for the entire sample of countries or analyzing both count and value data for a restricted sample by dropping a non-negligible number of countries. We chose to reject the latter option because it would have resulted in a selected sample of countries, yielding a partial and potentially misleading picture of the M&A activities among the EU and its neighboring countries. For these reasons, we prefer to focus our analysis on count data, which enable us to examine the entire sample of 43 countries and thus provide general evidence on the factors that activate the initial bilateral M&A interaction between two countries. Moreover, the analysis based on count data has the advantage of allowing us to investigate the determinants of the rate of recurrence of M&A events regardless of their monetary values.

The zero-inflated specification is deemed the most appropriate, as it allows for the simultaneous modeling of the two different processes that generate the zero observations. These may be either the result of the absence of bilateral transactions between any pair of countries or the unsuccessful outcome of a count process.

To our knowledge, this is the first study that models the simultaneous impact of cultural, political, and spatial distances on M&As in a bilateral country-pair setting using a two-process model. Using the zero-inflated model, we explore how those distances affect the probability that two countries choose to be involved in bilateral deals and the rate of recurrence of the actual transactions. Moreover, it may be the case that some country pairs perceive each other to be so distant and dissimilar in terms of culture, institutions, rule of law, political stability, and democratic systems that they do not even consider engaging in M&A deals. A noteworthy example of the

existence of historical and political barriers is given by Israel and the nearby Muslim countries. The costs of “becoming closer” to begin the interaction process are substantially larger than the benefits of any possible deal. Once the countries do not perceive such cultural distance as a barrier and engage in transaction activities, they are modeled using the standard gravity variables, such as population, GDP level and growth, technological level, and geographical distance.

The paper proceeds as follows. In the next section, we provide a detailed description of the features of the M&A count data included in our sample; we then present a selected review of the background literature related to our study to clarify how our contribution is positioned within the current academic debate on M&A transactions and the role of geographical proximity and other measures of closeness. Among the latter, a prominent role is being played more frequently by the different types of distances mentioned above. Therefore, in the fourth section, we present how we operationalized these notions of distance for our sample of countries and discuss their main characteristics. The empirical setting and methodology are presented in the fifth section, along with a brief description of the traditional gravity model covariates. Next, we present the results of the econometric analysis, while their main implications and possible extensions of this study are discussed in the concluding section.

2. M&A FLOWS BETWEEN THE EU AND ITS NEIGHBORING COUNTRIES

As mentioned in the previous section, the main aim of this paper is to explore the impact of cultural, political, and spatial distances on M&A deals in the 27 EU countries and the 16 ENC. Following the most recent enlargements in 2004 and 2007, the eastern borders of EU shifted drastically, reaching countries characterized by extremely diverse economic, cultural, social, and political conditions with respect to the EU. Similar differences are exhibited by the ENC on the Mediterranean sea, which have always produced concerns with respect to international relationships, given their political instability. As a consequence, the EU, as an alternative to further enlargements, has attempted to develop an integrated policy (the European Neighbouring Policy, ENP) towards the non-candidate countries, which adjoin the EU’s eastern and southern borders (Commission of the European Communities, COM 373, 2004; Dodini & Fantini, 2006).

It is useful to distinguish between two strands of the broader ENP: the eastern regional program, which includes six countries on the eastern border (Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine) and the southern regional program concerning the 10 countries on the southern border (Algeria, Egypt, Israel, Jordan, Lebanon, Libya, Morocco, Syria, Tunisia, and the Palestinian Territories). It is worth noting that Russia, although not formally associated with the ENP, has a specific policy instrument to guide strategic partnerships with the EU, which has goals

and funding instruments that are similar to those of the ENP; for this reason, Russia is included in our sample from the ENC-East.

Data were retrieved from the SDC Platinum database, which contains information on M&A deals and is updated daily using over 200 English and foreign language sources. To obtain a representative sample for the full set of 43 countries, we consider a period of 12 years and thus select transactions between January 1, 2000 and December 31, 2011. The resulting full matrix, which also includes domestic deals, contains 1,849 pairs of potential transactions for which the target and acquirer company are based in one of our 43 countries and includes a total of 111,035 completed transactions.

Note that domestic deals account for a substantial majority (an average of nearly 80%) of all completed deals. This information, although quite raw, is very revealing with respect to how distances, which are less important within the same country, are relevant factors affecting the number of cross-border deals, as transaction costs are an increasing function of the different types of distance. A thorough analysis of such effects is expected to provide novel and insightful evidence on the factors that shape international relationships among increasingly integrated economies. For this reason, our empirical investigation focuses on the cross-border sample, which comprises 1,806 possible country pairs with a total of 23,391 completed deals. Moreover, we are also interested in modeling the factors that affect the rate of recurrence of M&A events once the bilateral channel between two countries has been activated. The monetary value per se, if not complemented by the actual number of transactions, cannot be informative on how intensively two countries are interacting and on how policies, such as the ENP, are effective in offsetting existing tangible and intangible barriers.

Table 1 presents a general picture of the aggregate number of M&As for the 2000-2011 period sorted by the four groups of countries included in our sample: the 15 old member states of the EU (EU15), the 12 new accession countries (EU12), ENC-East, and ENC-South. The first two columns report the number of M&As for the target and acquirer countries, respectively. In the subsequent columns, we report the corresponding data for the cross-border deals. The final columns refer to domestic deals, confirming, although with varying degrees, the relevance of national M&As for all subgroups of countries. Recent contributions (Rodriguez-Pose & Zademach, 2003; Chakrabarti & Mitchell, 2012) have emphasized that domestic deals are highly dependent on country-specific factors and thus have to be modeled in a different manner than cross-border deals by focusing on subnational determinants.

If we focus on the ENC, the most active M&A markets are Russia and Ukraine in the east and Israel in the south. Excluding those countries, the number of deals involving the ENC is extremely low, especially when the ENC act as acquirers. Among the ENC-East group, Ukraine is

the “new star” in attracting investments (PriceWaterHouseCoupers, 2006) and represents the leading target country for cross-border M&As. Moreover, Ukraine, bordering both the EU and Russia, is characterized by a strong willingness to cooperate (Wolczuk, 2008), although with an asymmetric interdependence with respect to the EU (Melnykovska & Schweickert, 2008). Among the ENC-South group, Israel is the main target country in terms of the number of M&As. Despite its geographical location, Israel is part of the Western economy and has a high gross domestic product (GDP) per capita, comparable to that of the wealthiest EU countries, and average R&D expenditures accounting for 4.5% of GDP, even higher than that of Germany.

In Table 2, by focusing on cross-border M&As, we provide an overview of the top three acquirer/target countries for each ENC group. The strong historical, cultural, political, economic, and geographical links between the EU and its neighboring regions may explain why some EU countries occupy the top positions in both the acquirer and target rankings, as is the case for France in Algeria, France and Spain in Morocco, and the United Kingdom (UK) in Azerbaijan. An analogous pattern is exhibited by Russia and the other countries belonging to the former Union of Soviet Socialist Republics.

Israel represents a peculiar case, as it is distanced from its neighboring countries for historical and political reasons. The largest number of M&A deals for Israel are shared with spatially distant countries, such as the United States (US) and UK, with which the existing bonds are more cultural and financial in nature due to the significant presence of Jewish residents in those countries, often holding leading positions in key economic and financial institutions.

As mentioned in the introduction, the countries included in our sample exhibit substantial heterogeneity, as they are highly diverse along the cultural, political, and geographical dimensions. The existence of remarkable dissimilarities across countries can reasonably be considered the primary cause of the large number of observed zero values, which amount to 55.3% of all possible cross-border pairs. In Table 3, we report the number of zeros, the total possible country interactions, and the percentage of zeros. The lowest number of zeros (7, or 3.3%, of the total 210 possible country interactions) is found for activities within the EU15. This low number of zero is revealing, as the EU15 can be considered the most homogenous among the groups of countries considered. This group is followed by the EU15–EU12 groups (32, 17.8%) and the EU15–ENC-East groups (41, 39.1%). At the other extreme, the highest number of zero observations is found for the EU12–ENC-South groups (105, 97.2%), followed by ENC-East–ENC-South (60, 95.2%). These figures suggest that the number of zeros is increasing in the sizes of the distances between groups of countries. In the empirical section, we specifically address this issue by adopting an estimation framework that allows us to properly account for the existence of excess of zeros in the data. Note that previous studies have overlooked this relevant aspect of cross-border transactions.

3. RELATED LITERATURE

The literature concerning how the various types of distance influence cross-border M&As has addressed two important questions: the mode of entry choice and, more recently, the post-deal performance of the two entities.

On the one hand, the literature on international diversification decisions has emphasized how companies appear to tailor their choices to the traits of the host economy, and characteristics related to geographical distance or cultural elements have frequently been claimed to influence the selection of the mode of entry (Kogut & Singh, 1988; Delios & Beamish, 1999; Brouthers & Brouthers, 2001; Brouthers, 2002; Cho & Padmanabhan, 2005; Chang, Kao, Kuo & Chiu, 2012). No consensus has been reached within this research area: some studies find that high levels of cultural distance between the home and target lead to the use of greenfields; others demonstrate that greater cultural distance increases the tendency to use M&As or joint ventures. However, generally speaking, this literature on cross-border foreign direct investment (FDI) has devoted much more attention to cultural and political elements (Kogut & Singh, 1988; Morosini, Shane & Singh, 1998; Tihanyi, Griffith & Russell, 2005) than geographical ones (Ragozzino, 2009; Chakrabarti & Mitchell, 2012).¹

On the other hand, important contributions to the literature have analyzed the relationship between country distances and post-deal performance (e.g., Chakrabarti, Gupta-Mukherjee, & Jayaraman, 2009; Dikova & Rao, 2013). Focusing on the costs of integration and transaction cost economics, some studies suggest a negative relationship between cultural distance and acquisition performance, while others obtain a positive effect.

Given the long history of research in those areas, any claim of comprehensiveness would be foolhardy. Thus, in this section, we review only those contributions directly related to our research questions and that have analyzed M&A transactions by specifically investigating the role of country distances, such as culture, institutional quality, and risk, between the home and target countries (see Table 4). First, it is beneficial for our review to distinguish between contributions that examine the M&A deals aggregated at the country (or regional) level and those based on firm-level data.

Green and Meyer (1997) propose an analysis conducted at the aggregate country level for the year 1993 to examine international M&A deals worldwide, distinguishing between high- and low-tech industry transactions. Using a Poisson model, they find that socioeconomic and risk conditions in both buyer and target countries are important in explaining cross-border M&As. Surprisingly, geographical distance is not included among the regressors, although the authors acknowledge its role in influencing international transactions.

¹ Chapman (2003) suggests a potential research agenda that connects the issue of economic geography with cross-border M&As.

Di Giovanni (2005) considers cross-border M&A value flows in the 1990-1999 period for a broad set of 193 countries and estimates a simple gravity model using a Tobit specification that controls for possible bias caused by censored data. The results indicate that geographical distance negatively affects the value of international deals, which are also influenced by GDP and financial variables. Firms also tend to invest more in countries with which they trade more and with which they share a common language. In a similar vein, Hyun and Kim (2010) analyze bilateral M&As in 101 Organisation for Economic Co-operation and Development (OECD) and developing countries worldwide over the 1989-2005 period. By estimating a Tobit model, they show that market size and a common language have positive and significant effects, while distance is negatively related to cross-border M&As. Moreover, high-quality institutions in the host country play a relevant role in attracting international M&As, thus confirming that low corruption and widely enforced laws generate a favorable environment for foreign investors. Interestingly, the level and variability of the real exchange rate are never significant determinants of international deals.

Coeurdacier, De Santis and Aviat (2009) analyze cross-border M&As in the manufacturing and service sectors for a sample of 31 European and OECD countries for the 1985-2004 period. They include GDP, the degree of capitalization, the presence of a common language, and trade integration as controls for country characteristics. Geographical distance is found to have a non-significant impact on cross-border M&As, potentially because the sample consists primarily of developed countries, where the information costs measured by geographical distance are less important. Moreover, the quality of institutions, proxied by civil liberties, in the host country is only found to be an important determinant of foreign M&As in the manufacturing sector.

The role of institutional governance in the host country is specifically analyzed by Hur, Parinduri, and Riyanto (2011) for 165 countries worldwide over the 1997-2006 period, controlling for the size of economies, openness to trade, technological advancement, and financial market development. They demonstrate that the low institutional quality in developing countries is one of the causes of their relatively poor ability to attract international M&A inflows. Note that the authors do not consider the bilateral flows between each possible pair of countries, and therefore, geographical distance cannot be included in their analysis.

The contribution by Ragozzino (2009) is based on firm-level data and focuses on 608 international deals made by US companies worldwide in the 1993-2004 period. Ragozzino demonstrates that acquirers prefer shared-ownership deals in remote locations and full ownership in proximate locations due to the presence of asymmetric information. Moreover, he finds that if cultural distance and political risk are high, firms seek higher ownership stakes in more distant locations than in closer ones.

The role of spatial proximity between acquirer and target firms in domestic M&A deals is the key issue in country-specific contributions, as cultural and political differences are clearly less relevant within a particular country. More specifically, Rodriguez-Pose and Zademach (2003) examine domestic M&As in Germany over the 1990-1999 period and find that the spatial clustering of M&A transactions depends on the regional level of agglomeration (measured by GDP and population), as well as on the concentration of political power in the region. The geographical distance between the acquirer and target firms appears to play a distinctive role only when it is estimated in conjunction with agglomeration, while it is insignificant when considered on its own. Other features of the local economy, such as R&D investment, human capital, and unemployment, play a negligible role in determining M&A flows.

Chakrabarti and Mitchell (2012) consider the case of domestic transactions in the US chemical industry for the 1980-2003 period. They model the M&A data as a binary process taking the value of one if any potential pair of firms actually announces a deal in a given year and zero otherwise. Using weighted exogenous sampling maximum likelihood estimation and controlling for several individual characteristics, they demonstrate that firms tend to prefer geographically proximate targets, particularly when implementing technologically related acquisitions. The results also demonstrate the persistent effect of geographical proximity on organizational search processes due to firms' past experience.

A similar approach was followed by Ellwanger and Boschma (2012) for a set of 1,855 domestic M&As in the Netherlands over the 2002-2008 period. Following a logistic approach, they demonstrate that the likelihood of concluding an M&A deal is higher for firms that are very close on both the geographical and technological dimensions. Interestingly, the effect of industrial relatedness is found to be much stronger than the effect of geographical proximity.

Among other works that have analyzed the effects of geographical and institutional variables on FDI decisions, the contributions by Bevan, Estrin, and Meyer (2004) on Eastern European transition economies and by Rossi and Volpin (2004) on 49 major countries worldwide are noteworthy.

Overall, the literature has highlighted that spatial distance is important in influencing M&A transactions (Frankel & Rose, 2002), but it has also emphasized the key role played by cultural and national institutional settings, which may make countries relatively more distant or proximate. Therefore, our analysis is informed by many different dimensions of distance, which are likely to jointly shape opportunities in foreign markets. In the next section, we present how we operationalized the different notions of cultural, political, and spatial distance for the sample of 43 countries analyzed.

4. DISTANCE DIMENSIONS BETWEEN COUNTRIES

The literature has highlighted the roles of various types of distance in influencing foreign market entry mode decisions and cross-border M&As. The probability that a firm engages in a cross-border M&A transaction may depend on the degree of proximity between the cultural, political, and spatial characteristics of its home country and that of the potential target. To assess the effects of different proximity measures on M&A deals, we collected country-level data on the following six indicators: geographical position, cultural features, governance effectiveness, financial and economic risk, democracy score, and corruption.

Our hypothesis is that firms willing to conduct a cross-border acquisition are not concerned about the absolute levels of the cultural and institutional indicators in the partner's country, but rather the extent to which the characteristics of the host country differ from those of its own country. Therefore, our aim is to compute various measures of the distance between each pair of countries. Operationally, for each of our six dimensions, we first standardized the country values with respect to the distribution average set equal to one. Then, we computed six distance matrices based on the absolute difference of the standardized values between any two countries.

Geography. The recent literature has emphasized that geographical distance helps to explain how managerial perceptions of foreign countries may systematically influence decisions regarding firms' international activities (Hakanson & Ambos, 2010). The geographical distance (GEO) between countries has been computed as the distance in kilometers between the countries' capital cities where the concentration of economic activity is typically highest.

Culture. Cultural differences have been often indicated as one of the main drivers of economic relationships between countries, as the closer two economies are in terms of social behavior, the lower the transaction costs and, in turn, the higher the probability of observing movements of people and the exchange of capital and goods. However, several contributions have proxied for cultural closeness by simply including a dummy for sharing a common language. Recently, Ragozzino (2009) employed the well-known cultural index originally proposed by Hofstede. In his seminal contributions, Hofstede (1980, 2001) grouped countries on the basis of four cultural dimensions, namely, power distance, uncertainty avoidance, individualism versus collectivism, and masculinity versus femininity. Two other cultural dimensions were subsequently added to define the cultural profile of a nation: long-term orientation and indulgence versus restraint. In this paper, we employ the Hofstede database; missing information on some ENC's was

retrieved from Kaasa (2012) based on the World and European Value Surveys.² It is important to note that the Hofstede country cultural indices are not absolute indicators but are instead scores relative to other countries and are remarkably stable over decades. As we are interested in an overall measure of cultural features, we computed a combined index of the various components for each country. The resulting composite index appears quite informative, as we have such countries as Egypt, Jordan, and Morocco in one tail of the distribution, while Denmark, the Netherlands, and Finland are at the opposite extreme. Finally, as explained above, we computed the full matrix of cultural distance (CULT) for each pair of countries.

Governance. The role of political and institutional factors in the host country in influencing firms' decisions to invest abroad was highlighted in the seminal contribution by Dunning (1973) and has been examined in several subsequent studies. Firms are influenced by the degree of governance efficiency in the countries where the acquirer and target companies are located. These institutional elements have been investigated in depth by the World Bank, which has proposed a synthetic indicator of governance worldwide. Details on the underlying data sources, the aggregation method and interpretation of the indicators can be found in Kaufmann et al. (2010). The World Bank index is very general, as it summarizes six broad dimensions of governance: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption. Elementary data are collected from a large number of survey institutes, think tanks, non-governmental organizations, international organizations, private sector firms, and expert survey respondents worldwide on governance quality and effectiveness. The standardized synthetic index ranks Belarus, Libya, Syria, Azerbaijan, and Russia as having the poorest governance quality, while Austria, Sweden, Denmark, and Finland occupy the top positions. As before, we computed a governance distance matrix (GOV).

Risk. The degree of risk associated with each country is computed by Euromoney, which considers worldwide expert assessments of the economic, political, and structural conditions in the countries, their debt indicators, credit ratings, and access to capital. Here, we consider the synthetic Euromoney country risk (ECR) index that combines the different elements. Among the EU neighboring countries, the most risky are Syria and Libya on the southern border and Belarus and Moldova on the eastern border. Unsurprisingly, the current situation in Greece also appears very uncertain, and the country occupies the fifth-worst position in the index ranking. Conversely, according to the index, the safest environment for doing business is in Luxembourg and Nordic countries, such as Sweden, Finland, and Denmark. Using the synthetic standardized index, we

² Dikova & Rao (2013) employ a different measure of a country's cultural features based on the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project. In this paper, we use Hofstede's index because it provides more complete territorial coverage.

computed a matrix, the entries of which are the relative distance for each country pair in terms of riskiness (RISK).

Democracy. Another important feature of a country that may influence the decision to conduct M&A deals is the degree of democracy measured by the Unified Democracy Scores (UDS), recently developed by Pemstein et al. (2010). This synthetic index is computed using a Bayesian latent variable approach from 10 existing democracy scales, which are based on a variety of elements, such as participation, inclusiveness, competitiveness, coerciveness, political and civil liberties, competitive elections, party competition, civilian supremacy, national sovereignty, freedom of organization, freedom of expression, and pluralism in the media. Libya, Syria, and Belarus exhibit the worst performance on the democracy score, while the best performance is found in Finland and Sweden. The full democracy (DEM) matrix presents bilateral distances between countries in terms of democracy scores.

Corruption. The final dimension considered is the degree of corruption in the public sector. More precisely, we employ the Corruption Perception Index (CPI) collected by Transparency International, which is an aggregate indicator that combines data on corruption from 13 independent and prominent institutions worldwide. To be included in the CPI, a country must be assessed in at least three different sources. Countries with highly corrupt public sectors include Libya, Syria, Ukraine, and Azerbaijan, while Sweden, Denmark, and Finland exhibit very low levels of corruption. We computed a corruption distance matrix containing the relative distance for each pair of countries (COR).

From the description of the various indexes and country rankings discussed above, we find that the institutional and political closeness dimensions are highly correlated. In Table 5, we report the correlation coefficients computed for the six distance matrices. As expected, measures related to governance (GOV) and corruption (COR) exhibit high correlation (0.80) and also appear to be strongly associated with the measures of risk (RISK) and democracy (DEM). The cultural dimension, although positively associated with other indexes, does not yield correlation coefficients above 0.51. Finally, geographical distance is barely associated with the other dimensions. Therefore, to avoid multicollinearity problems in the econometric estimation, we include the indexes broadly related to a country's institutional and political environments (governance, risk, democracy, and corruption) individually, while the geographical and cultural distances are included in all specifications.

5. EMPIRICAL MODEL

5.1 Modeling M&A counts

The empirical analysis is based on a general gravity model framework for count data, formalized as follows:

$$M \& A_{at} = f(pop_a, gdppc_a, pop_t, gdppc_t, gr_gdppc_t, patents_t, geo_{at}, cult_{at}, pol_{at}) \quad (1)$$

where the dependent variable is represented by the cross-border M&A counts for each possible pair (a is the acquirer country and t is the target) of 43 countries over the 2000-2011 period.³ The estimation sample comprises 1,806 country-pair observations.

Turning to the explanatory variables, following a well-established stream of literature, we include the population (pop) and GDP per capita ($gdppc$) for both the acquirer and target countries. As is standard in gravity specifications, population is intended to capture the relative notion of mass, while GDP per capita is expected to represent the country's economic wealth and development level; the higher the level of population or of GDP per capita, the higher the number of expected deals. Both population and GDP per capita are considered at their year-2000 values. We also consider two additional M&A determinants specific to the target country, represented by the growth rate of GDP per capita (gr_gdppc) and the technological level ($patents$). The GDP per capita growth rate, computed as the annual average over the 2000-2011 period, is expected to capture the general economic conditions outlook of the country where the target firm is located. If the outlook is positive, the deal is expected to be more profitable, which increases the likelihood of observing additional deals.

The technological level in the host country is expected to enhance the probability of M&As motivated by technological reasons (Phene & Almeida, 2008); accordingly, acquiring a firm is one of the most effective ways to ease the transmission of knowledge and technological competencies. The technological level is measured by the stock of patents computed as the sum of patent applications submitted to the European Patent office by resident inventors per million inhabitants over the 2000-2010 period.

Finally, a crucial aspect determining firms' M&As is the distance between the two countries involved in the deal. As previously noted, the broad empirical literature on M&As has emphasized not only the relevance of geographical distance but also the degree to which cultural, political, and institutional distances may act as barriers that prevent firms located in certain countries from even

³ The sources and definitions of the variables and distance matrices are reported in Appendix.

considering engaging in deals with firms in certain other countries. In traditional trade gravity models, geographical distance is generally included to proxy for transport and general transaction costs. When the transactions involve firms' M&As, it is crucial to also consider other forms of 'perceived' distances; thus, in our analysis, we study the concurrent effects of the spatial, cultural, and political distances presented in the previous section.

5.2 Estimation issues and model selection

As the M&A counts are used as the dependent variable, the natural starting point is to consider the Poisson model. When the dependent variable (y_i from now on) is assumed to follow a Poisson distribution with the mean μ_i defined as a function of a set of covariates X_i , the density for the number of occurrences of the event y_i is defined as

$$f(y_i | X_i) = \frac{e^{-\mu_i} \mu_i^{y_i}}{y_i!} \quad \text{for } y_i = 0, 1, 2, 3, \dots \quad (2)$$

In our sample, i represents all of the potential cross-border transactions; thus, $i=1,2, \dots, N=1,806$.

As the first two moments are the same, $E(y_i|X_i)=\mu_i$ and $Var(y_i|X_i)=\mu_i$, the Poisson distribution exhibits the well-known equidispersion property. The standard parameterization of the mean is $\mu_i=exp(X_i\beta)$ to ensure that the nonnegativity constraints are not violated. As the variance is a function of the covariates, the model is intrinsically heteroskedastic.

In empirical applications, the equidispersion property of the Poisson model has often been found to be excessively restrictive, as the data are usually overdispersed. The M&A data included in our sample exhibit significant overdispersion (mean=13, standard deviation=51). One of the most common causes of overdispersion (Cameron & Trivedi, 2005) is neglected unobserved heterogeneity, which yields an excessive number of zero observations. Such heterogeneity can be modeled as a continuous mixture of the Poisson distribution by modifying the specification of the mean as $E(y_i|X_i)=\mu_i\eta_i$, with μ_i defined as before and η_i a random term with $E(\eta_i)=1$. In this case, the Poisson mixture has the same mean as the original Poisson. When η_i follows the gamma distribution with variance α , the negative binomial model results; the first two moments are $E(y_i|X_i)=\mu_i$ and $Var(y_i|X_i)=\mu_i + \alpha\mu_i^2$, and α is the overdispersion parameter to be estimated.⁴

Although the negative binomial model is generally adequate to capture overdispersion, in some instances, zero observations may not be compatible with such a model, leading to the problem

⁴ Note that this specification is referred to as negative binomial 2 (the negative binomial 1 entails a linear variance function). The NegBin2 specification is typically preferred because the quadratic form has been proven to provide a very good approximation to more general variance functions. This is a remarkable advantage because the maximum likelihood estimators for negative binomial models are not consistent when the variance specification is incorrect.

of excess zeros. This situation occurs because the mechanism generating the zero observations may differ from that generating the positive observations. A zero observation can occur in two ways: it can be the realization of either a binary process or a count process when the binary variable takes a value of one. The resulting model is the zero-inflated model, in which the count density, $f_2(\cdot)$ is supplemented with a binary process with density $f_1(\cdot)$. If the binary process takes a value of zero with probability $f_1(0)$, then $y_i=0$, while if the binary process takes a value of one with probability $f_1(1)$, then y_i can take the count values 0, 1, 2, 3... from the count density $f_2(\cdot)$, which can be specified as either a Poisson or a negative binomial density. Formally, the overall density of the y_i process is formalized as

$$f(y_i | X_{1i}, X_{2i}) = \begin{cases} f_1(0 | X_{1i}) + \{1 - f_1(0 | X_{1i})\}f_2(0 | X_{2i}) & \text{if } y_i = 0 \\ \{1 - f_1(0 | X_{1i})\}f_2(y_i | X_{2i}) & \text{if } y_i \geq 1 \end{cases} \quad (3)$$

Note that the set of conditioning variables, X_{1i} and X_{2i} , can differ between the selection mechanism function $f_1(\cdot)$ and count function $f_2(\cdot)$.

For the analysis of the determinants of M&As, the zero-inflated model is expected to be more appropriate than the Poisson or negative binomial models, as it is more reasonable to assume that the zero realizations are the result of distinct mechanisms. It may be the case that certain country pairs perceive each other as being so distant and dissimilar in terms of culture, institutions, rule of law, political stability, and democratic systems that firms from these pairs do not even contemplate engaging in M&A deals. The costs of becoming closer to begin the interaction process are substantially larger than the benefits of any possible deal.

In our sample, a striking example is presented by country pairs including Israel and one of the southern EU neighboring countries, i.e., Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Syria, or Tunisia. In these cases, the observed zero values are more likely to be the result of the well-known historical, political, and religious ‘distances’ that have prevented, or significantly limited, the occurrence of stable and trustful economic and political relationships between Israel and most of the other southern Mediterranean countries.

Thus, in analyzing M&A determinants, we argue that cultural, political, and institutional distances play a crucial role in governing the splitting mechanism, and thus, they are included exclusively as explanatory variables for the $f_1(\cdot)$ binary process, whereas the other variables, i.e., the economic indicators and geographical distance, are considered determinants of both the binary and count processes. As opposed to the other distance indicators, geographical distance is expected to also affect the number of completed deals, as it captures the unobserved transport or, more generally, transaction costs.

Importantly, the specification of the splitting process for the zero observations would also be required if value rather than count data on M&As were used, but this process has largely been overlooked in the previous literature. Therefore, we believe that our analysis may provide original and sound indications with respect to the main factors that shape the relationships among countries and that form the essential common base to activate business interactions between cross-border firms.

6. ECONOMETRIC RESULTS

6.1 Baseline specification

As stated in the previous section, economic and behavioral considerations lead us to believe that zero-inflated models are the most appropriate for modeling M&A deals. However, we test whether such a hypothesis is also empirically supported by rigorous testing procedures. Thus, our estimation strategy entails first considering the Poisson and Negative binomial models and testing for evidence of overdispersion and then comparing these models to the more flexible zero-inflation model by applying the Vuong tests.

The estimation of the Poisson model is reported in the first column of Table 6; we include population and per capita GDP for both the acquirer and target countries, while the GDP growth rate and stock of patents are included for the target country only. We also include two dummies for acquirers and targets belonging to the EU15 group to account for the fact that as the EU15 countries are the wealthiest and most technologically advanced in our sample, M&A deals between them may be driven by factors significantly different from those affecting deals involving all other countries included in the sample. As the country pairs' covariates, we include an array of distance indicators, which are expected to capture the concurrent effects of geographical, cultural, and institutional differences. Institutional distance is captured by including one of the four political indicators described in the fourth section and a dummy variable for the country pairs formed by Israel and one of the southern ENC. The political distance included in the baseline specification is based on the World Bank Governance indicator, which is considered the most general indicator, as it comprises the broadest range of relevant governance dimensions. In the next section, we also consider other political and institutional indicators by conducting an extensive robustness analysis.

Although, as argued in the previous section, due to behavioral considerations, we believe that the relative cultural and political distance measures should almost exclusively affect the splitting process (engage or not engage in any bilateral cross-border M&A deal), we decide to

include them in the Poisson mean specification as well to avoid any omitted variable problems, as misspecification of the mean could result in undue overdispersion (Cameron & Trivedi, 2005).

Because population, per capita GDP, the stock of patents, and geographical distance are log-transformed, the estimated parameters measure elasticities, while the coefficients associated with the other covariates have a semi-elasticity interpretation.

All estimated coefficients exhibit the expected signs and are significant at conventional levels, with the only exception being the target country's GDP per capita. While the level of economic development is a very important determinant of M&A deals for the acquirer, population is relatively more influential in the target country. Both the GDP growth rate and technological level act as relevant and attractive features for potential acquirers. All three distance measures, along with the 'Israel dummy', exhibit significant and negative coefficients, indicating the detrimental effects that spatial remoteness and cultural and political dissimilarities have on M&A deals.

According to the Poisson model, all zeros are outcomes of the count process; thus, the fact that the cultural and political indicators were significant in explaining the Poisson model mean is not unexpected. Such indicators are supposed to have predictive power for the proportion of zeros that is assumed to be generated by the splitting mechanism.

Given the overdispersion feature of the M&A data considered here, the adequacy of the Poisson model has to be assessed in terms of predicted probabilities. These are reported in Table 7, along with the actual probabilities up to count 25, which accounts for 90% of the total number of events. It is evident that the Poisson model substantially underpredicts the proportion of zeros (actual 55%, predicted 35%) and overpredicts positive values. This result is due to the restrictive property of equidispersion implied by the Poisson distribution.

Thus, we proceed by considering the alternative specification provided by the negative binomial model, which does not constrain the variance of the process to be equal to the mean. The results are reported in the second column of Table 6; as far as the mean of the process is concerned, the findings the means are qualitatively very similar to those discussed for the Poisson model. However, in terms of the maximized likelihood function, the negative binomial model is remarkably superior to the Poisson model. The gains are mainly produced by the more appropriate specification of the variance function; the variance parameter is highly significant (LR test=18,997 for the hypothesis $\alpha=0$). This, in turn, allows for a sizeable improvement in the predicted probabilities (see Table 7) at the expense of having to estimate an additional parameter. The proportion of predicted zeros is now very close (53.6%) to the observed value. The positives are still overpredicted, although less severely than it was the case for the Poisson model.

Notwithstanding the gains provided by the negative binomial model, we further investigate whether the differences between the actual and predicted probabilities are due to an excessive number of zero observations with respect to the number consistent with a pure count process by estimating zero-inflated models.

In columns 3 and 4 of Table 6, we report the estimation results for the zero-inflated Poisson (ZIP) model and the zero-inflated negative binomial (ZINB) model, respectively. As discussed in the previous section, in both cases, we have to simultaneously model the splitting mechanism and count processes. Given the substantial flexibility provided by the zero-inflated models in the specification stage, we can now distinguish the set of covariates that enter the binary process (X_1 in equation 3) from the set of covariates that pertain to the count process (X_2 in equation 3). Based on the discussion reported in the fifth section, we believe that cultural, institutional, and political differences are crucial in determining whether firms are willing to initiate economic interactions. If countries share common and recognized characteristics along those ‘intangible’ dimensions, the necessary conditions to consider engaging in a business deal are satisfied; otherwise, the ‘dissimilarity’ costs are excessively high and exceed any potential benefit arising from the deals. Therefore, in our models, the binary process is a function of the complete set of distances (geographical, cultural, institutional, and the ‘Israel dummy’), as well as of pure socioeconomic indicators (population and GDP per capita) and the two EU dummies for both acquirer and target countries. The binary process is specified as a logit model for the probability of observing a zero value, and the results are reported in the column labeled ‘Inflate’. The count process is modeled as above with respect to the acquirer and target variables; only geographical distance is included for the country pairs; this is expected to account for transport and transaction costs.

Focusing on the results reported in column 3 of Table 6, it is evident that the higher the relative masses (population) and economic development levels (GDP per capita) of the acquirer and target countries, the lower the probability of observing a zero value of M&A deals for given distance values. On the other hand, when holding population and GDP per capita constant, all of the distance indicators have the opposite effects, and thus, they significantly contribute to increasing the probability of observing a zero value. In essence, if two countries are very distant in terms of spatial, cultural, and institutional dimensions, the probability that they will not conclude a bilateral deal is high. In the count part of the model, all of the variables take the expected signs and are significant. The target’s GDP per capita still remains irrelevant in explaining the number of events, but it is worth noting that it now exhibits predictive power in governing the splitting mechanism. This effect was clearly concealed in the Poisson and negative binomial models.

The zero-inflated model based on the negative binomial distribution for the count part (column 4 in Table 6) yields qualitatively similar results in terms of the relevant variables.

However, comparing the two zero-inflated specifications, the ZINB specification is found to outperform the ZIP specification: the likelihood is much higher, and the variance parameter is highly significant, indicating substantial overdispersion in the data. This result is also confirmed by comparing the predicted probabilities reported in Table 7.

The Young test results reported at the bottom of Table 6 allow us to compare the ZIP and ZINB specifications with their non-zero inflated counterparts, the Poisson and negative binomial models, respectively. The high positive value of the test indicates that a significant proportion of the zero values are ‘pure’ zeros due to the complete lack of relationships and not simply the result of unsuccessful interactions between cross-border firms that resulted in failed deals.

The overall comparison of the four models reported in Table 6 enables us to argue that the ZINB model is the most appropriate specification, as it is able to simultaneously account for two important features, overdispersion and excess of zeros, of the M&A data analyzed in this study. Therefore, model 4 in Table 6 is our preferred specification.

6.2 Robustness analysis

To test the strength of the results discussed thus far, we conducted an extensive robustness analysis based on the ZINB model. The main results are reported in Table 8. In the first three estimated models, we consider an alternative measure of the countries’ relative institutional-political distances. Governance distance is thus replaced by risk, democracy, and corruption distances in the binary part of the model. All other variables are unchanged with respect to the fourth specification reported in Table 6, with the exception of cultural distance, which is not included in model 3 because of its high degree of collinearity with the corruption distance variable. The main finding is that most of the coefficients for both the binary and count part of the model are remarkably stable with respect to the consideration of different political distance measures. Only in the case of the GDP growth rate does the significance of the coefficient appear to depend on the model specification; it is not significant when the risk political distance is included, but it reaches the 10% significance level in the other two alternative specifications. All three political distance measures are highly significant and exhibit substantially larger coefficients than in the baseline model.

In the model reported in column 4, we replaced the acquirer country’s GDP per capita with the stock of patents; its positive and significant coefficient indicates that the acquirers’ technological level increases the expected number of M&A deals. However, the baseline model outperforms this latter specification, because the level of GDP per capita is a more comprehensive economic indicator of a country’s acquiring potential abroad.

Finally, to determine whether the main findings were substantially driven by M&As between the EU15 countries, we re-estimate our baseline specification using a subsample that excludes such cases. The results, reported in the last column of Table 8, are in line with those discussed for the entire sample. The only notable exception is that the target country's stock of patents is no longer significant. This result, however, can be explained by M&As deals that are motivated by technological reasons being more likely to involve countries of the EU15 group.

Overall, the analysis presented in this paper provides robust findings on the newly investigated issue of M&A activities conducted within the sample that includes the EU countries and the 16 states involved in the ENP.

7. DISCUSSION AND CONCLUSIONS

Given the importance of M&As in the contemporary international economic context, assessing the impacts of cultural, political, and spatial distances, in addition to conventional measures of economic convenience, on cross-border deals is central to international business studies.

We focus our analysis on cross-border M&As completed among 43 countries in the EU and ENC over the 2000-2011 period, thus considering 1,806 pairs of potential transactions. The choice of this highly differentiated set of countries (advanced economies, new member states, Eastern Europe, and Mediterranean Africa) allows us to provide an original contribution to the current debate on the drivers of cross-border M&As. We maintain that the heterogeneity of the data is largely attributable to the multi-dimensional distances between the countries, which are supposed to significantly affect the probability that firms in these countries consider engaging in business activities abroad and, in particular, international M&A transactions. Focusing on count data, we rigorously tested this hypothesis by estimating zero-inflated types of models. We demonstrate that the absence of completed deals for a considerable number of country pairs (excess of zeros) is the result of two distinct mechanisms: a binary process and a count process for the rate of recurrence of M&A deals.

In contrast to the existing empirical literature on cross-border M&As, the econometric setting based on zero-inflated specifications enables us to properly account for the fact that M&As are simultaneously determined by the two processes described above and that the determinants of the initial decision to enter a foreign market are substantially different from those affecting the decision to engage in an additional transaction in a market where previous transactions have occurred.

Evidence based on the estimation of the binary process suggests that the probability that a firm in a given country elects to enter into M&A negotiations with a firm in another country is inversely related to a comprehensive set of relative cultural, political (governance, democracy, risk, corruption), and spatial distances once one controls for the level of per capita GDP and population. To the best of our knowledge, this is the first study to assess the concurrent effects of different types of distance within a unified econometric framework.

The count process is estimated by employing a gravity specification, where the population and level of per capita GDP are included for both the acquirer and target countries, while the technological capital and per capita GDP growth rates are target-specific covariates included to capture the potential profitability of the deal. We find that all of the explanatory variables positively affect the rate of recurrence of M&As, while spatial distance has an adverse effect that is directly related to the transaction costs associated with the collection and interpretation of information regarding the potential target, including the costs of negotiation and other forms of personal interaction.

The awareness of cultural, political, and spatial differences could lead acquiring firms to only select deals involving culturally distant targets when they are more convinced of significant economic synergies that can compensate for the perceived risk. Chakrabarti, Mukherjee, and Jayaraman (2009) have recently shown that the long-term performance of acquirers is positively and significantly related to the cultural distance between the target and acquirer. These authors justify this finding by referring to pre-deal differences in target selection criteria. Our study is consistent with this hypothesis: if a firm is, on average, less willing to select a target that is perceived to be culturally, politically, and spatially distant from itself, we can expect that if it does so, it will be more cautious with respect to the selection criteria. In general, the literature demonstrates that profit opportunities in the destination market are seen as a driver for cross-border acquisitions (Focarelli & Pozzolo, 2005). Our study suggests that distance considerations might, to a certain extent, offset strictly economic measures of profit opportunities, such as the level of GDP in the target country (Buch, 2000).

Despite some practitioner studies (Langford & Brown, 2004; Gratchev, 2001) emphasizing the benefits of being a “cultural chameleon” when a firm ventures abroad, our evidence suggests that firms are sensitive to distance and that contrary to common perceptions, globalization has not made the world a smaller place. The firms’ sensitivity to relative distance in the selection process of M&As may be caused by the importance of extensive information exchange and interactions between acquirer and target firms. Integration problems may also arise in cross-border M&As, and although they offer the fastest means of establishing a presence in a new market, firms are subject to relevant risks that may also be amplified by spatial, cultural, and political distances.

Our findings are also consistent with the conclusions reached by international network theory. As proponents of this theory note, private actors are prone to emulate each other's successful practices for profit maximization (Gataskiewicz & Wasserman, 1989), efficiency (DiMaggio & Powell, 1983), or legitimacy reasons (Han, 1994; Haveman, 1993). This logic can be extended to the case of cross-border M&As: if the density of interactions between firms from the EU and ENC is high, neighboring countries become exposed to the influence of EU-based firms that often have more advanced technical solutions and organizational practices.

Moreover, focusing on the EU and ENC, we explore a largely neglected sample of countries. The relationships between the EU and adjacent countries has received substantial attention since 2007 when the EU has attempted to develop an integrated policy towards the non-candidate countries on the EU's eastern and southern borders as an alternative to further enlargements. Among the different ways in which valuable interactions between the EU and ENC are generated, capital transactions represent a key channel. Thus, understanding the drivers of M&A activities in this area might aid in increasing the effectiveness of the ENP, which is aimed at establishing close, peaceful, and cooperative relationships with bordering countries.

The primary managerial implication of these results is that despite the 'globalization' rhetoric and general consideration that the "sixth wave" of international M&A fever is characterized by substantially engaging in cross-border deals, it appears that invisible barriers, such as perceived differences, may still play an important role. One outcome of this process is that firms are not seeking synergies and market opportunities "on the other side of the world" but rather consider nearby and previously underexploited firms. This cautious attitude is more frequently adopted by firms in poorer countries, which perceive themselves as being even more distant from trading partners than the rich countries, given the geographic distance and language, cultural, and political barriers. Moreover, in the case of the EU and its neighboring countries, increasingly important factors that are common to other economies, such as the M&A fever and the process of market concentration, are compounded by the fact that the Euro area is a new and still somewhat unfamiliar entity, and therefore, many structural and global changes are simultaneously at work.

While the results of this study provide a sound understanding of the forces driving M&As in a highly differentiated international context, there are a number of limitations, directly connected to the research scenario analyzed here, that can be overcome by future research based on different investigation frameworks.

First, as explained in the introduction, we employ M&A count data given the lack of consistent information on deal values for the ENC. This setting has allowed us to obtain more general evidence on the determinants of cross-border M&As and, more importantly, to investigate the determinants of the M&A recurrence rate regardless of the deals' monetary values. Moreover,

this research strategy prevented us from determining whether our results also hold when the dependent variable is defined in terms of the monetary values of the M&A deals. This extension can be achieved by limiting our sample to those countries, typically the most industrialized ones, where the monetary values of the deals are generally reported.

Second, we analyzed M&A deals aggregated at the country level instead of at the individual firm level because of the lack of detailed information on companies' accounts for a large number of firms in the ENC. However, if we restrict the sample to the developed countries, a firm-level analysis might help to better understand the relationship between country distances and M&A strategic decisions within a multilevel econometric framework.

Third, we have investigated the cultural features at the national level, so further research is recommended to develop specific measures of cultural differences at the corporate level. Explanations and examinations of satisfactory corporate cultural attributes and their interactions with country-level variables remain in their infancy.

Finally, an additional interesting line of research is to analyze the sectoral dimension of the M&A data by specifically examining the degree of technological relatedness between the acquirer and target companies; such an investigation would enable us to assess how technological affinity interacts with cultural and spatial proximity in determining firms' international M&A strategies.

REFERENCES

- Bevan, A., Estrin, S., & Meyer, K. 2004. Foreign Investment Location and Institutional Development in Transition Economies. *International Business Review*, 13(1): 43-64.
- Brouthers, K.D. 2002. Institutional, Cultural and Transaction Cost Influences on Entry Mode Choice and Performance. *Journal of International Business Studies*, 33(2): 203-222.
- Brouthers, K.D., & Brouthers, L.E. 2001. Explaining the national distance culture paradox. *Journal of International Business Studies*, 32(1):177-89.
- Buch, C.M. 2000. Why Do Banks Go Abroad? Evidence from German Data. *Journal of Financial Markets Instruments and Institutions*, 9(1): 33-67.
- Cameron, A.C., & Trivedi, P.K. 2005. *Microeconometrics, Methods and Applications*. Cambridge University Press: New York.
- Chakrabarti, A., & Mitchell, W. 2012. The Persistent Effect of Geographic Distance in Acquisition Target Selection. *Organization Science*, forthcoming.
- Chakrabarti, R., Gupta-Mukherjee, S., & Jayaraman, N. 2009. Mars-Venus marriages: Culture and cross-border M&A. *Journal of International Business Studies*, 40(2): 216- 236.
- Chang, Y.C., Kao, M.S., Kuo, A., & Chiu C.F. 2012. How cultural distance influences entry mode choice: the contingent role of host country's governance quality. *Journal of Business Research*, 65(8): 1160-1170.
- Chapman, K. 2003. Cross-border merger/acquisitions: a review and research agenda. *Journal of Economic Geography*, 3(3): 309-334.
- Cho, K., & Padmanabhan, P. 2005. Revisiting the role of cultural distance in MNC's foreign ownership mode choice: the moderating effect of experience attributes. *International Business Review*, 14(3): 307-24.
- Coerdacier, N., De Santis, R.A., & Aviat, A. 2009. Cross-border mergers and acquisitions and European integration. *Economic Policy*, 24(57): 55-106.
- COM 373, 2004. European Neighbourhood Policy Strategy Paper. Final. *Commission of the European Communities*.
- Delios, A., & Beamish, P. 1999. Ownership strategy of Japanese firms: transactional, institutional, and experience influences. *Strategic Management Journal* 20(10): 915-933.
- Delios, A., & Henisz, W. 2003. Uncertainty, imitation and location: Japanese multinational corporations 1990-1996. *Administrative Science Quarterly*, 46(3): 443-475.
- Di Giovanni, J. 2005. What Drives Capital Flows? The Case of Cross-border M&A Activity and Financial Deepening. *Journal of International Economics*, 65(1): 127-49.
- Dikova, D., & Rao, S. 2013. Is cultural distance a bane or a boon for cross-border acquisition performance?. *Journal of World Business*, 48(1), 77-86.
- DiMaggio, P., & Powell, W. 1983. The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(2): 147-160.
- Dodini, M., & Fantini, M. 2006. The EU Neighbourhood Policy: Implications for Economic Growth and Stability. *Journal of Common Market Studies*, 44(3): 507-532.
- Dunning, J.H. 1973. The Determinants of International Production. *Oxford Economic Papers*, 25(3): 289-336.
- Ellwanger, N., & Boschma, R. 2012. Who acquires whom? The role of geographical proximity and industrial relatedness in Dutch domestic M&As between 2002 and 2008, *mimeo*.

- Focarelli, D., & Pozzolo, A.F. 2005. Where Do Banks Expand Abroad? An Empirical Analysis. *Journal of Business*, 78(6): 2435-2464.
- Frankel, J.A., & Rose, A.K. 2002. An Estimate of the Effect of Common Currencies on Trade and Income. *Quarterly Journal of Economics*, 117(2): 437-466.
- Galaskiewicz, J., & Wasserman, S. 1989. Mimetic Processes within an Interorganizational Field: An Empirical Test. *Administrative Science Quarterly*, 34(3): 454-79.
- Gratchev, M. 2001. Making the most of cultural differences. *Harvard Business Review*, October, 28-30.
- Green, M.B., & Meyer, S.P. 1997. International Acquisitions: Host and Home Country Explanatory Characteristics. *Geografiska Annaler. Series B, Human Geography*, 79(2): 97-111.
- Hakanson, L., & Ambos, B. 2010. The Antecedents of Psychic Distance. *Journal of International Management*. 16(3): 195-210.
- Han, S. 1994. Mimetic Isomorphism and Its Effect on the Audit Services Market. *Social Forces*, 73(2): 637-63.
- Haveman, H. 1993. Follow the Leader: Mimetic Isomorphism and Entry into New Markets. *Administrative Science Quarterly*, 38(4): 593-627.
- Hofstede, G. 1980. *Culture's Consequences: International Differences in Work Related Values*. Sage Publications: Beverly Hills, CA.
- Hofstede, G. 2001. *Culture's Consequences: Comparing values, behaviors, institutions, and organizations across nations*, 2nd ed., Sage Publication: Thousand Oaks, CA.
- Hur, J., Parinduri, R.A., & Riyanto, Y. 2011. Cross-Border M&A Inflows and Quality of Country Governance: Developing versus Developed Countries. *Pacific Economic Review*, 16(5): 638-55.
- Hyun, H.J., & Kim, H.H. 2010. The Determinants of Cross-Border M&As: The Role of Institutions and Financial Development in the Gravity Model. *World Economy*, 33(2): 292-310.
- Jones, A.M., Rice, N., Bago d'Uva, T., & Balia, S. 2013. *Applied Health Economics*. Second Edition. Routledge: Abingdom, Oxon.
- Kaasa, A. 2012. Culture as a Possible Factor of Innovation: Evidence from the European Union and Neighbouring Countries, *SEARCH Working Paper WP5/05*.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. 2010. The Worldwide Governance Indicators : A Summary of Methodology, Data and Analytical Issues. *World Bank Policy Research Working Paper* No. 5430.
- Kogut, B., & Singh, H. 1988. The Effect of National Culture on the Choice of Entry Mode. *Journal of International Business Studies*, 19(3): 411-432.
- Kostova, T. 1999. Transnational Transfer of Strategic Organizational Practices: A Contextual Perspective. *Academy of Management Review*, 24(2): 308-324.
- Langford, R., & Brown, C. 2004. Making M&A pay: lessons from the world's most successful acquirers. *Strategy and Leadership*, 32(1): 5-14.
- Melnykovska, I., & Schweickert, R. 2008. Bottom-Up or Top-Down: What Drives the Convergence of Ukraine's Institutions towards European Standards?. *Southeast European and Black Sea Studies*, 8(4): 445-68.
- Morosini, P., Shane, S. & Singh, H. 1998. National cultural distance and cross border acquisition performance. *Journal of International Business Studies*, 29(1): 137-158.

- Moschieri, C., & Campa, J.M. 2009. The European M&A Industry: A Market in the Process of Construction. *Academy of Management Perspectives*, 23(4): 71-87.
- Pemstein, D., Meserve, S.A., & Melton, J. 2010. Democratic Compromise: A Latent Variable Analysis of Ten Measures of Regime Type. *Political Analysis*, 18(4): 426-449.
- Peng, M.W., Lee, S.H., & Wang, D. 2005. What determines the scope of the firm over time? A focus on institutional relatedness. *Academy of Management Review*, 30(3): 622-33.
- Phene, A., & Almeida, P. 2008. Innovation in Multinational Subsidiaries: The Role of Knowledge Assimilation and Subsidiary. *Journal of International Business Studies*, 39(5): 901-919.
- PricewaterhouseCoopers 2006. *Cities of the Future. Global Competition, Local Leadership*, PricewaterhouseCoopers: London.
- Ragozzino, R. 2009. The effects of geographic distance on the foreign acquisition activity of US firms, *Management International Review*, 49(4): 509-535.
- Rodríguez-Pose, A., & Zademach, H.M. 2003. Rising metropoli: the geography of mergers and acquisitions in Germany. *Urban Studies*, 40(10): 1895-1923.
- Rossi, S., & Volpin, P. 2004. Cross-country Determinants of Mergers and Acquisitions. *Journal of Financial Economics*, 74(2): 277-304.
- Sleuwaegen, L. 1998. Cross border mergers and EC competition policy. *World Economy*, 21(8): 1077-1096.
- Tihanyi, L., Griffith, D.A., & Russell, C.J. 2005. The Effect of Cultural Distance on Entry Mode Choice, International Diversification, and MNE Performance: A Meta-Analysis. *Journal of International Business Studies*, 36(2): 270-283.
- Wolczuk, K. 2008. Ukraine and its Relations with the EU in the Context of the European Neighbourhood Policy. In Fischer S. (ed.) *Ukraine: Quo Vadis*. Chaillot Paper, No. 108, Paris.

Appendix. Data sources and definitions for variables and distance matrices

Variable		Definition	Primary Source
Country vectors			
M&A	Merger & Acquisition	Completed deals, 2000-2011	SDC Platinum database
POP	Population	Million of resident individuals, 2000	World bank
GDP	Gross domestic product	Billion international \$, constant at 2005 prices, in PPP, 2000	World bank
GDPgr	GDP growth	GDP annual average growth rate 2000-2011, %	World bank
PAT	Patent	Patent applications at EPO by inventor residence and priority year, per million population, 2000-2010	OECD-REGPAT
Distance matrices between pairs of countries			
GEO	Geography	Euclidian distance between country capital cities, km	Own calculation
CULT	Culture	Composite index of cultural features	geert-hofstede.com, World Value Survey; European VS
GOV	Governance	Worldwide Governance Indicators (WGI)	World bank
RISK	Risk	Financial and Economic Risk (ECR)	euromoneycountryrisk.com
DEM	Democracy	Unified Democracy Scores Index (UDS)	unified-democracy-scores.org
COR	Corruption	Corruption Perception Index (CPI)	transparency.org

Table 1. M&A completed deals per group of countries

Country	Total		Cross-Border				Domestic
	Acquirer	Target	Acquirer	Target	Share on tot acquirer %	Share on tot target %	
EU15	92199	88790	20596	17187	22.3	19.4	71603
EU12	6231	7961	1854	3584	29.8	45.0	4377
ENC-East	11297	12916	674	2293	6.0	17.8	10623
ENC-South	1305	1365	267	327	20.5	24.0	1038
Total	111032	111032	23391	23391	21.1	21.1	87641

Table 2. EN countries per top three acquirers and targets, 2000-2011

(Cross border sample: 1806 obs.)

Target Country	Top three acquirer countries					
	First	deals	Second	deals	Third	deals
<i>ENC-East</i>						
Armenia	Russia	26	UK	6	Canada	4
Azerbaijan	UK	8	Turkey	6	USA	5
Belarus	Russia	32	Latvia	5	Ukraine	5
Georgia	USA	9	UK	8	Russia	6
Moldova	Russia	17	UK	5	France	4
Ukraine	Cyprus	276	Russia	141	USA	59
Russia	Cyprus	217	UK	180	Germany	112
<i>ENC-South</i>						
Algeria	France	9	UK	9	Spain	4
Egypt	Arab Emirates	26	USA	25	France	16
Israel	USA	253	UK	36	Germany	19
Jordan	Kuwait	17	Arab Emirates	14	Saudi Arabia	8
Lebanon	France	5	USA	5	Kuwait	4
Libya	Austria	2	France	2	UK	2
Morocco	France	38	Spain	7	UK	6
Syria	Egypt	2	India	2	Lebanon	2
Tunisia	France	11	Spain	5	USA	5

Acquirer Country	Top three target countries					
	First	deals	Second	deals	Third	deals
<i>ENC-East</i>						
Armenia	Belarus	1	Russia	1	Ukraine	1
Azerbaijan	Turkey	3	Lithuania	1	Romania	1
Belarus	Belgium	5	France	1	Ukraine	1
Georgia	USA	2	Ukraine	1	Belarus	1
Moldova	Romania	1	Russia	1	Ukraine	1
Ukraine	Russia	33	Cyprus	6	Georgia	6
Russia	Ukraine	134	Cyprus	57	Germany/UK	44
<i>ENC-South</i>						
Algeria	Spain	2	6 countries	1	-	
Egypt	Pakistan	5	Arab Emirates	5	5 countries	4
Israel	USA	185	UK	35	Germany	33
Jordan	Arab Emirates	11	Saudi Arabia	5	5 countries	2
Lebanon	Australia	5	Egypt	5	UK	5
Libya	Italy	3	Uganda	3	Bahrain	2
Morocco	France	2	Gabon	2	Mali	2
Syria	Russia	1	-		-	
Tunisia	France	2	Morocco	2	4 countries	1

Table 4. Related econometric studies on spatial and institutional determinants of M&A deals

Paper	Period	Coverage	Unit of analysis	Method	Data source	Dependent variable	Geography	Culture	Governance	Risk	Other territorial variables	Firm variables
Chakrabarti, Mitchell (2012)	1980-2003	USA	2070 firms	Logit, weighted exogenous	SDC	domestic MA, chemical sector	√					prior MA, subsidiaries, age, size, product, public
Coeurdacier, De Santis, Aviat (2009)	1985-2004	mostly Europe	32 countries	Poisson	SDC	cross-border MA	√		√		GDP, common language, trade, capitalisation	
Di Giovanni (2005)	1990-1999	World	193 countries	Tobit	SDC	cross-border MA deal values	√				GDP, financial vbl, trade, language, telephon traffic, exchange rate	
Ellwanger, Boschma (2012)	2002-2008	Netherlands	1855 firms	Logistic	BVD	domestic MA	√					public, subsidiary, diversification
Green, Meyer (1997)	1993	World	countries	Poisson	Securities Data Publishing	cross-border MA			√	√	GDP, trade, tourism, patents	
Hur, Parinduri, Riyanto (2011)	1997-2006	World	165 countries	OLS	UNCTAD	cross-border M&A inflows			√		GDP, trade, technology, financial market	
Hyun, Kim (2010)	1989-2005	World	101 countries	Tobit/ probit	Thomson One Banker	cross-border MA deal values	√		√		GDP, financial vbl, trade, language, exchange rate	
Ragozzino (2009)	1993-2004	USA	608 firms	Tobit	SDC	cross-border MA % ownership	√	√		√		high tech, public, knowledge distance
Rodriguez-Pose, Zademach (2003)	1990-1999	Germany	40 regions	OLS	M&A Review	domestic MA regional flows	√		√		population, GDP, human capital, R&D, industry structure	

Table 5. Correlations among country distance indicators
(Cross border sample: 1806 obs.)

		GEO	CULT	GOV	RISK	DEM	COR
GEO	Geography	1					
CULT	Culture	0.22	1				
GOV	Governance	0.31	0.47	1			
RISK	Risk	0.13	0.48	0.71	1		
DEM	Democracy	0.25	0.48	0.76	0.53	1	
COR	Corruption	0.21	0.51	0.80	0.73	0.54	1

All coefficients are significant at the 1% level

Table 6. Model specification for cross-border M&A count data

	1		2		3		4	
	Poisson	Neg Bin	Zero Inflated Poisson		Zero Inflated Neg Bin		Inflate	Count
			Inflate	Count	Inflate	Count		
<i>Acquirer country</i>								
Population	0.565 *** (0.045)	0.622 *** (0.050)	-0.425 *** (0.071)	0.511 *** (0.066)	-0.530 *** (0.094)	0.436 *** (0.058)		
GDP per capita	2.040 *** (0.322)	2.206 *** (0.175)	-0.907 *** (0.243)	1.689 *** (0.142)	-0.975 *** (0.288)	1.558 *** (0.127)		
<i>Target country</i>								
Population	0.651 *** (0.065)	0.714 *** (0.065)	-0.467 *** (0.066)	0.609 *** (0.056)	-0.548 *** (0.107)	0.591 *** (0.072)		
GDP per capita	0.145 (0.306)	0.128 (0.215)	-0.242 * (0.142)	0.297 (0.292)	-0.493 ** (0.222)	0.203 (0.367)		
GDP per capita growth rate	0.057 *** (0.020)	0.036 (0.025)		0.060 ** (0.027)		0.122 (0.078)		
Patents per capita	0.166 *** (0.063)	0.315 *** (0.045)		0.182 ** (0.080)		0.221 *** (0.078)		
<i>A-T countries distances</i>								
Geography	-0.672 *** (0.058)	-1.145 *** (0.079)	0.919 *** (0.128)	-0.708 *** (0.052)	0.841 *** (0.248)	-1.073 *** (0.101)		
Culture	-0.018 ** (0.008)	-0.040 *** (0.008)	0.027 *** (0.007)		0.044 *** (0.016)			
Governance	-0.161 ** (0.073)	-0.017 (0.063)	0.249 *** (0.057)		0.476 *** (0.110)			
Israel dummy	-2.803 *** (0.516)	-3.858 *** (0.552)	2.525 *** (0.697)		2.738 *** (0.820)			
Shape parameter $\ln(\alpha)$		0.679 *** (0.095)				0.513 *** (0.120)		
Log-likelihood	-12976.4	-3477.9		-12602.2		-3496.4		
LR test for $\alpha=0$		18997				18000		
Vuong test of zip vs. standard Poisson				4.93				
Vuong test of zero infl neg bin vs. standard neg bin						4.96		

Observation number: 1806

M&A deals are counted over the period 2000-2011

All regressions include a constant

Two dummy variables for acquirer and target countries belonging to EU15 are included in models 1-2 and in the inflate part of models 3-4

The 'Israel' dummy takes value 1 for all country pairs involving Israel and one of the South neighbouring countries

Population, GDP per capita, patents per capita and distance are log transformed

Robust standard errors in parenthesis. Level of significance: *** 1%, ** 5%, * 10%

Table 7. Actual and predicted probabilities of M&A count data

Count	Actual	Poisson	Neg Bin	Zero inflated Poisson	Zero inflated neg bin
0	0.553	0.352	0.536	0.552	0.559
1	0.097	0.140	0.117	0.045	0.081
2	0.055	0.081	0.059	0.037	0.050
3	0.034	0.055	0.037	0.030	0.035
4	0.022	0.041	0.027	0.025	0.027
5	0.024	0.032	0.020	0.021	0.021
6	0.017	0.026	0.016	0.019	0.018
7	0.011	0.022	0.013	0.017	0.015
8	0.012	0.018	0.011	0.015	0.013
9	0.007	0.016	0.010	0.014	0.011
10	0.008	0.013	0.008	0.012	0.010
11	0.005	0.012	0.007	0.011	0.009
12	0.006	0.010	0.006	0.010	0.008
13	0.007	0.009	0.006	0.009	0.007
14	0.004	0.008	0.005	0.008	0.006
15	0.007	0.007	0.005	0.007	0.006
16	0.004	0.007	0.004	0.007	0.005
17	0.005	0.006	0.004	0.006	0.005
18	0.008	0.006	0.004	0.006	0.004
19	0.003	0.005	0.003	0.005	0.004
20	0.003	0.005	0.003	0.005	0.004
21	0.002	0.005	0.003	0.005	0.004
22	0.004	0.004	0.003	0.005	0.003
23	0.002	0.004	0.003	0.004	0.003
24	0.003	0.004	0.002	0.004	0.003
25	0.002	0.004	0.002	0.004	0.003
Sum	0.905	0.893	0.916	0.884	0.913

Table 8. Robustness analysis on determinants of cross-border M&A deals
(Zero inflated negative binomial models)

	1		2		3		4		5	
	Inflate	Count	Inflate	Count	Inflate	Count	Inflate	Count	Inflate	Count
excluding intra EU15 cases										
<i>Acquirer country</i>										
Population	-0.435 *** (0.109)	0.440 *** (0.061)	-0.560 *** (0.098)	0.445 *** (0.057)	-0.506 *** (0.088)	0.437 *** (0.059)	-0.649 *** (0.083)	0.313 *** (0.064)	-0.560 *** (0.107)	0.382 *** (0.063)
GDP per capita	-0.838 ** (0.341)	1.555 *** (0.136)	-0.946 *** (0.302)	1.585 *** (0.136)	-1.093 *** (0.294)	1.544 *** (0.139)	-1.449 *** (0.218)		-1.175 *** (0.333)	1.389 *** (0.128)
Patents per capita								0.390 *** (0.039)		
<i>Target country</i>										
Population	-0.490 *** (0.116)	0.599 *** (0.072)	-0.548 *** (0.117)	0.598 *** (0.074)	-0.545 *** (0.105)	0.595 *** (0.074)	-0.552 *** (0.102)	0.608 *** (0.080)	-0.604 *** (0.127)	0.512 *** (0.081)
GDP per capita	-0.376 (0.290)	0.167 (0.356)	-0.545 ** (0.240)	0.227 (0.350)	-0.556 ** (0.226)	0.217 (0.370)	-0.459 ** (0.199)	0.236 (0.409)	-0.645 *** (0.218)	0.362 (0.408)
GDP pc growth rate		0.101 (0.078)		0.112 * (0.068)		0.147 * (0.079)		0.111 (0.084)		0.185 * (0.101)
Patents per capita		0.220 *** (0.079)		0.187 ** (0.082)		0.258 *** (0.074)		0.211 *** (0.078)		0.121 (0.096)
<i>A-T countries distances</i>										
Geography	0.950 *** (0.322)	-1.101 *** (0.119)	0.837 *** (0.237)	-1.070 *** (0.097)	1.164 *** (0.270)	-1.062 *** (0.108)	0.995 *** (0.208)	-0.913 *** (0.093)	1.203 *** (0.297)	-0.855 *** (0.132)
Culture	0.042 ** (0.018)		0.020 (0.013)				0.039 *** (0.014)		0.048 ** (0.021)	
Governance							0.393 *** (0.091)		0.549 *** (0.121)	
Risk	2.902 *** (1.145)									
Democracy			1.318 *** (0.239)							
Corruption					1.704 *** (0.592)					
Israel dummy	2.368 ** (0.987)		2.421 *** (0.884)		4.024 *** (0.908)		3.119 *** (0.791)		3.367 *** (0.941)	
Shape parameter $\ln(\alpha)$		0.532 *** (0.119)		0.479 *** (0.126)		0.531 *** (0.119)		0.562 *** (0.124)		0.786 *** (0.125)
Log-likelihood		-3499.5		-3475.9		-3516.2		-3533.8		-2467.4

Observations: 1806 for models 1-4; 1596 for model 5. M&A deals are counted over the period 2000-2011. All regressions include a constant

Two dummy variables for acquirer and target countries belonging to EU15 are included in the inflate part of all models

The 'Israel' dummy takes value 1 for all country pairs involving Israel and one of the South neighbouring countries

Population, GDP per capita, patents per capita and distance are log transformed

Robust standard errors in parenthesis. Level of significance: *** 1%, ** 5%, * 10%