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The Role of Information Quality on Cross-Border Mergers and Acquisitions

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Abstract

A sample of cross-border M&As from acquiring and target countries from all over the world has been used to examine the relationship between geographical distance and cultural differences on the profitability of cross-border M&A deals. The results of this paper suggest that the greater the cultural differences between the acquiring and target nation, the lower the profitability of the deal as a result. The same applies to the geographical distance, where a larger distance geographically between countries leads to a less profitable M&A deal. In addition, there are also results presented which show that the level of information quality serves as a moderating variable in this research. The results of this paper are the first that provide evidence that information quality positively affects the relationship between the determinants of the cross-border M&A deals and the profitability.

1. Introduction

Where the volume of worldwide mergers and acquisitions (M&As) in 1990 was only 10.814 respectively, the number has grown to 49.386 M&As worldwide in the year 2019 (M&A Statistics - Worldwide, Regions, Industries & Countries, 2019). This growth can be attributed to several reasons. One of the most striking explanations for the increased volume of worldwide M&As is the enhanced amount of cross-border M&A transactions. Cross-border mergers and acquisitions entail a transaction that involve an acquiring firm and a target firm, which are established in different countries. This phenomenon has grown rapidly since the 1990s (Erel et al. 2012).

The number of cross-border M&As worldwide is respectively 13.606 in 2018. This number is almost six times the amount it was 3 decades ago, in 1988 (Cherowbrier 2019). Erel, Liao and Weisbach (2012) also show that the amount of cross-border M&As has almost doubled, during the last decade only. Moreover, they show that cross-border M&As in 1998 only reflected 23 percent of the total amount of M&As, while its stake increased to 45 percent in the year 2007. Furthermore, cross-border M&As constitute for approximately 78 percent of the foreign direct investments worldwide (UNCTAD 2000). These statistics show that cross-border M&As are becoming increasingly important in the modern financial world.

The topic of mergers and acquisitions is a well-known concept in the world of financial accounting research. Nevertheless, the majority of academic research on M&As has been primarily focused on domestic deals. The world is becoming ever more globalized, and this is also reflected in the world's economies, which are becoming more and more integrated. However, research on cross-border M&As has failed to keep up with the current trend it is in (Shimizu et al. 2004). Despite the fact that there have been researchers that have started doing research on the topic of cross-border M&As, there are still a lot of elements that play a significant role, which have not been examined yet. Given the growing number of cross-border M&As and the growing importance it has on the global market, a better understanding of both the opportunities as the challenges it brings when firms apply this strategy is necessary.

This paper will contribute to the existing literature in several ways. First of all, it will extent the existing literature on cross-border M&As by examining what the role of information quality is relating to this concept. This paper argues that when the information of a target firm becomes of higher and more reliable quality, it will lead to more profitable cross-border M&As. When the information, e.g. the valuation of the target company, would be more reliable for the potential acquirer, both the premium for a merger or acquisition as the volume of the total cross-border M&As increases. In other words, a higher level of information quality will lead to a decreased discount of the premium. Seeing that lower trust on the information concerning the target company, results in a decreased willingness for the acquiring company to pay the 'regular' price.

In contrast, greater information could lead to an increase of the price an acquiring company has to pay to engage in either a merger or acquisition. The obtainment of more reliable information for the target company can possibly lead to a higher valuation of the company. As a result, the relative value of the deal will be higher, which will possibly have a negative effect on the profitability of M&A transactions. This leads to the following research question: "*What effect does the level of information quality on company level investment decisions, specifically, cross-border M&As have?"*

To test the set predictions in this paper, the variable of interest, information quality, will be examined in a certain way. The element of information quality this paper will focus on, is the level of audit quality the target firm of a cross-border M&A firm receives. Conceptually, this paper predicts that a better accountancy firm as the auditor, will lead to more credible and reliable information, which will ultimately lead to an increase in the profitability of a cross-border M&A. In this paper, the Big 4 accountancy firms are seen as the most reliable accountancy firms, delivering the highest quality. This would imply that having a Big 4 auditor as the target company would have less information costs for foreign acquirers as a result and it would enable them to better value and monitor these firms.

This paper will also add to the existing literature on the topic of cross-border M&A deals by the role that information quality has, specifically, the role of the level of audit quality a target firm receives. Plenty of research has been done on the role of the auditor on the aspect of information quality. Most of these researches examine the provided audit quality by comparing bigger office sizes versus smaller ones (DeAngelo 1981; Simunic and Stein 1987; Francis and Wilson 1988; Francis & Yu 2009). Although, how these variables relate to the profitability of cross-border mergers and acquisition has not been examined yet. Besides, There has also been prior research on how investment bankers advisory affects the decision making of M&As on firms (Huang et al. 2014). Moreover there has been research on whether prestigious investment banks deliver more gains to their acquiring clients as less prestigious investment banks do (Ismail 2010). However, the research on this topic has not been thoroughly and extensive, meaning there is still a lot of research possible which can add to this literature.

Moreover, this paper will extent on the prior paper written by Erel, Liao and Weisbach (2012), where they examine the determinants of cross-border mergers and acquisitions. This paper suggests future research on cross-border M&As, as this concept has unique and important differences with domestics M&As. They state that it is likely that more cross-border mergers will happen in the future, as the world's economies are integrating increasingly. This paper will

further built on the preliminary analysis of patterns and reasons for cross-border mergers in the paper of Erel, Liao and Weisbach (2012). This will be accomplished by extending on this research by adding the element of the level of information quality in examining the profitability of firms merging or taking over one another.

This research should be of interest to several groups of people. Firstly, this paper will be interesting to managers and others who participate in the decision making of the firm. This paper will provide answers on how the quality of information relates to the volume of M&A transactions. The results of this paper will be useful information to those who are involved in the economic decision making regarding mergers and acquisitions. It shows them how the accountancy firm of a target firm will affect the information quality and therefore M&A deals.

Moreover, the research of this paper will also be interesting to accounting firms, such as the Big 4 companies, but also to other accounting firms. In this paper, the quality of the audit of the target firm will be used to reflect information quality. The accounting firms who generally provide these audits, will be able to see how their level of audit quality will affect the profitability of the cross-border M&A deals.

Also investors will care about the question answered in this paper. Governance-related differences are elements that affect he volume of M&As. Those differences mainly concern investor protection for target-firm shareholders. The governance standards around investor protection are naturally of importance to the investors.

2. Literature Review and Hypothesis Development

Prior research indicates that mergers and acquisitions have become the most presiding method for firms in seeking competitive advantage. As the world's economies are becoming ever more global and as a result become more complex, this is a great strategy for firms to take advantage of it (Adler et al. 1987).

Preceding research shows that there are several perspectives on why a firm should want to consider engaging in a cross-border merger or an acquisition. Shimizu, Hitt, Vaidyanath and Pisano (2004) state that there are three different perspectives. Those are cross-border M&As (1) as a mode of entry in a foreign market, (2) as a dynamic learning process from a foreign culture, and (3) as a value-creating strategy. Other research adds to this by suggesting that a firm can also be encouraged to engage in a merger or acquisition as a strategic move to ensure that their current relationships do not start a relationship with an alternate foreign supplier. Thus, a cross-border M&A can also be motivated by the avoidance of a possible future threat (Martin et al. 1998).

However, the vast majority of mergers and acquisitions occur when the management of a firm is seeking to grow their business. A firm would generally participate in a merger or acquisition when they perceive that the combined value of the combined firm would be greater than the sum of values of the two individual firms separately. Prior research shows that mergers create value for the stockholders of the two firms that have been combined. Moreover, they conclude that a large part of the gains are received by the target firm's stockholders (Jensen and Ruback 1983; Jarrell et al. 1988). These M&A-specific synergies appear from lower costs or increased revenues, which are a result of the interaction of the economic fundamentals of the two combined firms (Ahern et al. 2015). Furthermore, prior research suggests that cross-border M&As can create a greater value than domestic M&As can. This is due to the fact that firms have a larger pool of potential target firms to merge with or acquire, which allows for greater potential synergies (Ahern et al. 2015).

In general, cross-border M&As happen for the same reasons as domestic M&As. Despite the big resemblance, there are also considerable differences between the two variants due to the international nature of cross-border M&As. For example, the geographic distance between the two firms' countries is something to consider when participating in cross-border M&As. The results of the paper by Erel, Liao, and Weisbach (2012) suggest that the odds of acquiring a firm, established in a country which is relatively nearby, are substantially higher than the odds of acquiring a firm that is much further away. This paper also finds evidence on the relationship between currency movements and cross-border M&A transactions. They state that currency appreciating countries have a higher probability of having acquiring firms, while countries which currencies have depreciated are more likely to have target firms. In addition, the same effect is shown when examining the relative stock market performance. Entailing that there is a higher probability that firms from a superior-performing country, when it comes to stock market performance, purchase firms in a country that is performing worse. As both of these valuation effects show a similar effect, this indicates that more highly valued firms tend to purchase more lower-valued firms (Erel, et al. 2012).

Ahern, Daminelli and Fracassi (2015) extent on this literature by examining the effect of another variable on merger volume and synergy gains, which is the effect of cultural values. To examine the variable culture, they split their variable of interest up into three key dimensions of national culture, which are trust, hierarchy, and individualism. They find that culture also plays a significant role on the volume of cross-border mergers. In their results they find evidence that the greater the difference in culture between countries, the smaller the volume of cross-border mergers is. As well, they find that less cultural differences between the acquiring firm and its target lead to higher combined announcement returns. This suggest that greater cultural difference has costly friction as a result, causing there to be less mergers between those countries. These costly frictions can be explained by the affect it has on the ability to work together and coordination between groups of employees with different cultural values. These are certain characteristics of cross-border M&As that can lead to friction and thus higher cost of merging with a firm which is from abroad.

In contrast, there are also elements that support the combination of firms of two different countries. Governance-related differences, for instance, can motivate firms to merge with cross-border firms, when the combined firm has better protection for target-firm shareholders, because of higher governance standards in the acquiring firm's country. Moreover, when capital markets across different countries are not integrated perfectly, a cross-border merger can lead to a situation where an acquirer can overtake a firm for a relatively inexpensive price. This is due to changing stock market valuation in local currency or changes in exchange rates (Erel et al. 2012). Target firms are generally based in countries that have inferior investor protection in comparison to the country of the acquiring firm (Pagano et al. 2002; Reese and Weisbach 2002). These findings suggest that cross-border M&As are an important mode for effective convergence in corporate standards worldwide (Rossi and Volpin 2003).

In addition to research on non-financial elements, there has also been research on elements like the role of accounting standards on cross-border mergers and acquisitions. Here they focus on information costs that inhibit firms from investing in foreign markets. The results of this paper suggest that countries with greater similarity/comparability in accounting standards, have a larger volume of M&As between country pairs. The larger volume of M&As is mainly driven by the strong enforcement of target countries, because this makes the implementation of accounting standards like GAAP more reliable. Furthermore, they find that as the accounting standard became more similar due to the introduction of IFRS, there was a larger effect on the total amount of M&As. Their findings suggest that differences in accounting standards between different counties, causes a certain informational barrier that prevents firms from investing in foreign markets, when referring to M&As (Francis et al. 2016).

Prior research has examined several determinants of cross-border mergers and acquisitions. Especially the paper by Erel, Liao, and Weisbach (2012) where they examine the effect of geographic distance and the examination of the effect of cultural values in the paper by Ahern, Daminelli and Fracassi (2015) are two of the most remarkable researches regarding specific cross-border M&A research. However, the samples the researchers used in their papers are not very recent and thus representative for cross-border M&As. Where Erel, Liao, and Weisbach (2012) used a sample time-frame of 1990 through 2007, Ahern, Daminelli and Fracassi's (2015) timeframe of their sample is 1985 through 2008. As cross-border M&As has been significantly

growing over the last two decades, one could argue that their research would have other results and conclusions when using a sample of M&A transactions within a more recent time-frame.

Moreover, the two prior papers have primarily focused on what the effect of these determinants of cross-border M&As are on the actual volume of the regarding transactions. Nonetheless, they have not focused on what the substantial effect of these characteristics is on the profitability of confirmed cross-border M&A transactions.

As it would be contributing to the research concerning cross-border M&As, the effects of both geographic distance and cultural values will be examined again using a sample including more recent data. Moreover, the dependent variable of the examination will be changed into a firm-level variable, to see what the effect these determinants have on the M&A deal. The prediction is that the findings in those prior papers still hold, meaning that increasing both the geographic distance as the cultural distance will have a negative effect on a cross-border M&A transaction. Therefore, the following two hypotheses have been formulated as follows:

Hypotheses 1a: The profitability of a merger or acquisition between cross-border firms decreases as geographical distance increases

Hypotheses 1b: The profitability of a merger or acquisition between cross-border firms decreases as cultural differences increases

There has been prior research on the role of advisory quality relating to M&A transactions. Ismail (2010) has examined whether financial advisors which are perceived as good are indeed really good, by examining the performance of investment banks in the M&A market. The paper finds that during their sample of more than 6.000 US M&A deals during a timeframe of 1985 through 2004, bigger (more prestigious) advisory companies may not be as good as people traditionally think they are. They found that the employment of a prestigious financial advisor (a tier-one) led to a destroyed value of more than 42 billion dollar for acquiring firms' shareholders. On the other hand, the employment of tier-two investment banks resulted in a total gain of more than 13.5 billion dollar. These findings are inattentive of both the size of the acquiring firm as the size of the deal. However, those results are defined to that particular sample. The paper states that the results may be misleading due to some limitation of the research, such as the timeframe of the research, as the timeframe includes the bear market period (Ismail 2010). Nonetheless, this paper provides some interesting suggestions and it serves as a sufficient footing for this research.

Furthermore, prior research has examined the role of investment banker directors on M&A decision making. This research shows that firms with directors, who have had a senior position at an investment bank at some point in their career, have a higher probability of making acquisitions. In addition, they make better acquisitions when they choose to engage in one. This suggests that a firm with a director with investment banking experience help firms make better acquisitions, due to a better identification of suitable target firms and due to reducing the cost of the deals (Huang et al. 2014).

Focusing on the topic of the quality Big 4 firms deliver, there is a lot of research to be found. First, there is DeAngelo (1981) who argues that the size of an accounting firm is a proxy for information quality, also known as auditor independence. This is based on the assumption that no individual client is important to a large auditor. In addition, large auditors have a greater reputation at stake, meaning that they will have more incentive to provide high-quality audits to protect their reputation. This research by DeAngelo (1981) can be seen as the foundation of research relating to audit quality. There has been a lot of research extending on this paper.

For example, Dye (1993) elaborates on this paper by assuming that the bigger auditors have a greater incentive to deliver high quality reports, due to the fact that they have more wealth at risk from litigation. This phenomenon is also known as the deep pockets hypothesis. Research from the United Kingdom tries to examine this set assumption (Lennox 1999). According to their findings, larger auditors have more incentive to issue accurate reports, if investors know that these large auditors have deeper pockets. Furthermore, it suggest that the main driver of superior accuracy are not the client-specific rents, but is the threat of litigation. It overall supports the prediction that larger auditors provide reports with greater accuracy

Moreover, Weber and Willenborg (2003) find that a pre-IPO audit report by a Big 4 accounting firm has more accuracy in the prediction of future stock returns, in comparison to smaller accounting firms. Also there is other evidence, which uses the abnormal accruals paradigm, that suggest that client audited by Big 4 accounting firms have lower abnormal accruals (Jones 1991). This implies that they engage in less aggressive earnings management behavior and thus have higher earnings quality (Francis et al. 1999).

Another paper further examines whether Big 4 auditors with larger offices are predicted to provide audits of higher quality due to greater in-house experience (Francis and Yu 2009). This paper finds a persistent association between the office size of a Big 4 firm and the relating audit outcomes, where the larger offices produce audits of higher quality. This evidence supports prior research where they state that office size is positively related to audit quality.

Nonetheless, there has also been research that suggest that smaller accounting firms have a greater incentive to provide higher quality reports. This is the result of only having one or a couple of clients, making it more appealing for them to gain by going along with their client (misreporting), than by being obstructive and losing that client (Simunic and Stein 1987; Francis and Wilson 1988). This contradicting evidence causes considerable tension, which causes it to be an interesting topic for examination.

The level of accounting quality can be seen as a characteristic of information quality. It will affect the quality of information in its own manner. The prediction set by this paper is that information quality serves as a as a moderating variable to the relationship between geographic distance/cultural difference and the profitability of mergers and acquisitions. The corresponding change of effect is predicted to be positive, meaning that it will positively affect the relationship between geographic/cultural distance and profitability. To test this prediction the following hypotheses have been formulated. To test whether the variable of interest, which is the level of information quality, serves as a moderating variable, a null and alternative hypothesis have been formed:

Hypotheses 2_0: The level of information quality has no effect on the relationship between geographical distance/ cultural differences and the profitability of cross-border mergers and acquisitions

Hypotheses 2_1: The level of information quality has an effect on the relationship between geographical distance/cultural differences and the profitability of cross-border mergers and acquisitions

3. Research Design

To test the first hypotheses in this paper, the following models will be applied to generate an empirical estimation equation. The models are based on prior cross-border M&A research, like the paper by Ahern, Daminelli and Fracassi (2015). These models will be used to estimate the change in profitability of the firms from domestic countries *d* and the firms from foreign countries *f* in year *t*, which have engaged in cross-border mergers and acquisitions in dollar between:

$$\Delta\text{Profatibility}_{df,t} = \beta 1\ Geographic\ distance_{df} + \beta 2\ Country - level\ effects + \beta 3\ Country - pair\ effects + \beta 4\ Year\ fixed\ effects + \beta 5\ Time - varying\ country - level\ effects + Constant + \varepsilon_{df,t}$$

$$\Delta\text{Profatibility}_{df,t} = \beta 1 Culutral\ difference\ _{df} + \beta 2\ Country - level\ effects + \beta 3\ Country - pair\ effects + \beta 4\ Year\ fixed\ effects + \beta 5\ Time - varying\ country - level\ effects + Constant + \varepsilon_{df,t}$$

The dependent variable in both these models is $\text{profitability}_{df,t}$. In this paper, regression analyses will be performed using two different measures of profitability. The first measure of this outcome variable reflects the change in percentages between the weighted profitability of the acquiring firm from country *d* and the target firm from country *f* before the M&A deal and the profitability of the combined firm, 1 year after the cross-border M&A deal has been confirmed. The second measure of profitability is similar to the first one, but the period of time has been extended to a period of 3 years. It is unlikely for synergies relating to a cross-border M&A deal to be realized 1 year after the deal. Therefore, the second measure of change in profitability, using a period of 3 years, will be leading in drawing conclusions regarding the set predictions.

Two unique variables of interest can be found in these models. The first variable that is of interest to this research is the geographical distance. This variable entails the difference geographically in thousands of kilometers between the two most populated cities in each country. The two countries consist of a domestic country *d* (acquirer) and a foreign country *f* (target).

The other variable of interest is cultural distance, which implies the absolute difference between the culture of two countries. Again these two countries consist of a domestic country *d* (acquirer) and a foreign country *f* (target). The cultural distance is measured based on the three key dimensions of national culture, which are Trust, Individualism and Hierarchy. The determination of cultural value is based on prior research by Ahern, Daminelli and Fracassi (2015). These variables are added to examine how cultural differences and geographical distance affect the profitability of cross-border M&As across countries.

The control variables used in this model are added to capture elements of a country that will possibly affect the profitability of cross-border M&As. The control variables are based on prior literature on cross-border M&As (Ahern et al. 2015; Erel et al. 2012). The control variables can be categorized into four different groups. (1) Country-level effects, which capture any effects that do not vary over time, such as legal origin (investor protection laws), religion, language and the total area of a country. For instance, when a cross-border M&A transaction occurs, due to the acquiring firm's country having a stronger governance law than the target firm's country, it will be covered in these fixed effects. (2) Country-pair effects, such as a shared language, shared religion, a shared currency or a shared border. (3) Year fixed effects, to control for macro-economic shocks which are felt worldwide. An example of a world-wide shock like this, could be a currency crisis or changes in world market valuations. (4) Time-varying country-level effects, such as the gross domestic product (GDP), GDP/capita and the total population of a country.

Subsequently, an examination will take place on how information quality relates to the relationship between cultural/geographical distance and profitability of cross-border M&As. Again, the two different measures of profitability will be used in this examination. The prediction is that information quality will have a moderating effect on the above described relationship. The measure for information quality, the moderating variable, will be whether the target firm which has merged or been taken over is audited by one of the Big 4 auditing companies or not. To test this prediction, a moderation model is included in this research. This model will test whether the relationship between the dependent variable (Y) and an independent variable (X), differs across levels of a third variable (M). This third variable is better known as the moderating variable, and will affect the strength and/or direction between a dependent and an independent variable. This could entail enhancing, reducing or changing the influence the predicting variable has. The regression coefficient for the interaction term (β_3), will provide an estimate of the moderation effect (see figures 1 and 2 in the appendix for more information regarding the relation). The following models are used to test the second pair of hypotheses:

$$\Delta\text{Profatibility}_{df,t} = \beta 1\ Geographic\ distance_{df} + \beta 2\ Information\ quality + \beta 3\ Geographic\ distance\ x\ Information\ quality + \beta 4\ Country - level\ effects + \beta 5\ Country - pair\ effects + \beta 6\ Year\ fixed\ effects + \beta 7\ Time - varying\ country - level\ effects + Constant + \varepsilon_{df,t}$$

$$\Delta\text{Profatibility}_{df,t} = \beta 1\ Culutral\ difference_{df} + \beta 2\ Information\ quality + \beta 3\ Culutral\ difference\ x\ Information\ quality + \beta 4\ Country - level\ effects + \beta 5\ Country - pair\ effects + \beta 6\ Year\ fixed\ effects + \beta 7\ Time - varying\ country - level\ effects + Constant + \varepsilon_{df,t}$$

4. Sample Selection/Data

Sample

Although historically Thomson Reuters' Securities Data Company M&A (SDC) has been the dataset to use when conducting research in the field of M&As, this is not the dataset used in this paper for collecting information regarding completed M&A transactions. To empirically test the predictions, the Bureau van Dijk's Zephyr dataset on M&A transactions has been selected. As one of the main fields of interest of this paper will be the financial advisory and audit quality, as a measure of the level of information quality, the Zephyr dataset will have the advantage over the SDC dataset. Zephyr provides a lot of information concerning advisors, classified in the following three categories: (1) advisors to target, (2) advisors to acquirer and (3) advisors to vendor. Moreover, several items of financial advisors are available within the Zephyr dataset. The SDC dataset, which is commonly used for conducting M&A research, is less detailed around the concept of advisory on firms related to M&A transactions (Bollaert & Delanghe, 2015).

The Zephyr dataset is relatively new and has started collecting data on worldwide M&A transactions since 1999 (Bollaert & Delanghe, 2015). To empirically test the predictions, all announced cross-border M&As worldwide will be used, over a period of time from 1999 through 2018. The focus will be on this period, as this covers the period that cross-border M&As have become really forthcoming and started having a more important role in the global market. To be recognized as a M&A deal by the Zephyr dataset, (1) the deal value has to be at least GBP 1 million or (2) the deal must involve a stake of at least 2 percent.

Furthermore, some more restrictions have been added to the Zephyr dataset to match this specific research. Those restrictions include that (1) the deal status is 'completed', (2) the deal value must be at least USD 1 million and (3) the percentage of the acquired stake is a minimum of 50%.

Bureau van Dijk's Zephyr dataset provides a lot of information for this research. This includes comprehensive information about the deal, such as the deal value, deal status, the stake that is acquired and announcement/completement dates. Also, detailed information about both the acquiring firm as the target firm will be collected from Zephyr, such as their name, country of their establishment, sector and unique ID numbers to match the data with other databases (BvD & ISIN). Lastly, data regarding the accountancy firm of the concerning firms will be collected from Zephyr. This includes information such as the name of their accountancy firm, their national origin and their unique ID numbers.

Data Collection

Financial performance data

In order to measure the probability of firms when engaging in either a merger or acquisition, information regarding the financial performance of the firms is required. This data can be accessed through Bureau van Dijk's Orbis. This database contains Financial data of 79 million companies worldwide. The data which can be acquired through the Orbis database can be merged with the information which has been collected from the Zephyr database. This is

enabled by the fact that both databases are from the Bureau van Dijk and they work with an unique BvD ID number for each company.

Cultural values data

All the data regarding cultural values are collected from the World Values Survey. It is a global network of social scientist, examining the changing values of countries and what effect they have on a countries social and political life. The database contains information about approximately 100 countries worldwide, covering around 90% of the world's population. The results of the survey are used to describe a countries culture and it enables the comparison between different countries based on their cultural values. The survey has been executed in six waves, each representing a period of time of either four or five years. Since the period of time of the sample in this research is from 1999 through 2018, the last three waves of surveys are used. Wave 4 representing the years 1999 through 2004, wave 5 covering 2005 through 2009 and finally wave 6, which covers the period from 2010 through 2014. Although the surveys have been performed in different waves, the exact year of the country survey's has been mentioned. This enables to match all the country-level, firm-level and deal-level data with the most recent survey data that includes the necessary information.

However, not all norms and values are expected to influence economic decision making. Therefore, in this paper the focus will merely be on three of the cultural values. These values have been studied extensively in prior economical, psychological and sociological studies. This literature has identified that the following are essential dimensions of culture: trust, hierarchy, individualism (Ahern, et al., 2015).

First of all, the level of trust within a country will be recorded using the results of the following question in the survey: "Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people? (1) Most people can be trusted, (2) need to be very careful or (3) don't know". This relates to the average level of trust that people have in each other within their country. Meaning that the corresponding results are not related to the level of trust between pairs of countries.

Secondly, to measure the national attitude people have towards hierarchy the following question of the survey will be used: "People have different ideas about following instructions at work. Some say that one should follow one's superior's instructions even when one does not fully agree with them. Others say that one should follow one's superior's instructions only when one is convinced that they are right. With which of these two opinions do you agree? (1) Should follow instructions, (2) Must be convinced first, (3) Depends or (4) Don't know". This entails to countries where people are more inclined to follow instructions without question, are considered to be more hierarchical.

Lastly, individualism will be measured using the following question from the survey: "How would you place your views on this scale? 1 means you agree completely with the statement on the left; 10 means you agree completely with the statement on the right; and if your views fall somewhere in between, you can choose any number in between. Incomes should be made more equal or we need larger income differences as incentives for individual effort?" More individualistic countries will likely have more incentive to focus on individual effort instead of a focus on that everyone benefits.

An important limitation to notice here is that some countries are either not included in all of these three waves, or are included but not in all three waves. In the last case, information from a country in a certain wave will be generalized over a longer or even the whole period.

Geographical data

Geographical data is collected from the database which has been composed by Centre D'Études Prospectives et D'Informations Internationales, in short CEPII. CEPII is the leading research center on the world economy, based in France. Their database includes geographic bilateral and cultural data for 225 countries. This includes data such as geographical distances, language and colonial history. Especially the geographical distance between different countries is of great significance for this research, as it is one of the variables of interest. During this research, geographical distance is measured as the distance between the two most important cities, in terms of population, of each country. Mostly, these will be the capital cities of the respective countries. However, in a considerable amount of cases this would be a poor measure of geographical distance between countries. For example, the geographical distance between two big countries such as the Unites States and Canada would be significantly large, while in reality the two countries actually share borders. To address this type of geographical distance, a dummy variable will be included when two countries share a border. This will be referred to as contiguity in this paper.

Country-level effects and Country-pair effects

To control for Country-level and Country-pair effects in this research, information regarding specific country characteristics have been recorded. This data is collected using various databases. First of all, the legal origin of a country is taken from prior research by La Porta, Lopez-de-Silanes, Shleifer ,and Vishny (1998). In their paper they recorded a country's legal origin as either French, German, Scandinavian Civil Law or English Common Law.

The primary religion of each country is recorded using data from the most recent World Factbook from the Central Intelligence Agency (CIA), which is the World Factbook 2018. This database contains each country's religions, including the respective stakes, among other things.

Lastly, each country's primary language and second most spoken language have been recorded using the CEPII database. These different sets of data will be merged into one set of country-level and one set of country-pair effects.

Year fixed effects

To control for year fixed effects, a dummy variable has been added to control for the worldwide felt currency crisis. For M&A deals that have been completed during the end of 2007 through 2009, the dummy variable has been given a value of 1. Otherwise, the variable has been valued at 0.

Time-varying country-level effects

Lastly, also time-varying country-level effects will be controlled for. To control for these effects, each country's size and individual wealth will be recorded. This will be accomplished by using data from the Penn World Tables. This is a database contains information on relative levels of income, output, input and productivity. It covers 182 countries over a period of time from 1950 through 2017.

Besides, the average corporate tax rate for each country will be recorder for. This data will be collected from the Economic Freedom Index. This database is created to help track over the advancement in the economic freedom, prosperity and opportunity of 186 different economies worldwide. Both the GDP per capita as the corporate tax rate can reflect the financial development in a country.

Information quality data

To examine what effect information quality has on the relationship of either geographical or cultural distance on the profitability of cross-border M&As, the accounting firms of the target firms need to be recorded. A firm's accountant, at the time of the M&A transaction, can be gathered from the Zephyr database. This database not only provides the name of the firm, but also grants us with further detailed information about the concerning accountants, such as their role and the country their based in.

Furthermore, it is fundamental to this research to set the level of quality an accounting firm delivers. To set the level of quality a target firm receives, a dummy variable has been added. If a target firm is audited by one of the a Big 4 companies, the dummy variable has been set to 1. The value of the dummy variable has been given a 0 if the target's accountant is not a Big 4 company.

Sample overview

For the tests on cross-border M&A deals, as much deals worldwide as possible have been collected. The initial sample has been gathered from the Bureau van Dijk's Zephyr dataset on mergers and acquisitions. It includes all completed deals from 1999 through 2018. Moreover, the M&A deals have a deal value of minimum 1 million US dollar and there has been an acquirement of stake of minimum 50%. This implies that the acquiring firm either acquired 50% or more from the target firm or that the two firms have engaged into a merger. Moreover, the M&A deals where no country is known for the firms are excluded from the sample, since this is of great significance for this research. No restrictions have been put on the public status of the concerning firms. The majority of studies on mergers or acquisitions do exclude firms with a private public status. Given the fact that most of the target firms in M&A deals are actually private firms, including those into this research will provide a much more complete sample.

With the restrictions mentioned above, the initial sample consists of 156.835 M&A deals that have taken place, within the period of time between 1999 and 2018. Of this total amount of deals worldwide, 43.908 of them have a cross-border nature. An overview of the M&A deals worldwide which have been acquired has been presented in *table 1*. The table

Table 1 – Sample overview M&As worldwide

Acquiring country	Target country																															
	US	CN	GB	CA	AU	JP	FR	DE	IT	RU	ES	MY	KR	IN	VG	SE	SG	NL	BR	PL	HK	ZA	NO	TH	IE	FI	BE	TW	CH	KY	Total
USA (US)	27490	367	1467	1071	280	105	385	513	186	52	163	20	82	161	56	162	51	219	132	62	68	36	86	13	111	42	83	37	122	43	33665
China (CN)	87	20985	37	19	36	13	19	37	25	6	9	8	11	13	88	3	29	18	15	1	156	4	5	10	2	2	6	6	7	50	21707
UK (GB)	1596	89	13822	195	276	39	324	403	195	83	197	23	26	88	54	163	48	264	60	49	58	87	103	11	265	51	96	15	90	14	18784
Canada (CA)	1465	52	201	5323	98		49	68	15	7	24	3	11	11	49	22	9	39	53	7	12	24	15	1	15	12	13	2	22	10	7632
Australia (AU)	284	31	205	67	5070	6	14	37	9	4	11	23	5	9	16	12	55	15	18	3	37	51	6	6	15	6	9	4	6	7	6041
Japan (JP)	245	426	85	15	53	4274	27	42	20	12	11	35	56	79	2	9	62	17	25	4	26	8	3	73	2	7	7	36	20	13	5694
France (FR)	267	66	180	39	24	12	1916	115	98	14	109	3	18	35	4	32	12	63	36	34	17	10	12	6	11	7	52	5	38	1	3236
Italy (IT)	76	34	82	9	7	3	94	73	2224	13	65		1	17	1	10	2	24	23	21	2	4	5	1	3	2	10		30		2836
Malaysia (MY)	8	29	21		16	3	1	5	2		2	2240		11	14		88	5	4		15	1		22			2	3	6	9	2507
Republic of Korea (KR)	59	87	8	5	9	19	5	12	1	3	5	5	2209	11	2	1	11	3	5	1	8	1	2	8		1	4	8		2	2495
Virgin Islands (VG)	33	255	58	11	19	8	5	3	2	30	3	21	1	1	1229	4	72	4	1		517	4	1		7			9		156	2454
Germany (DE)	231	64	159	12	20	10	82	1297	58	40	47	8	13	27	1	43	9	70	15	37	6	9	21	2	14	13	34	7	54		2403
Russia (RU)	15	2	12	5	2	1	6	5	11	2280	1			2	5	2	1	11		2	2		1		2	3	2		3	2	2378
Spain (ES)	97	5	49	7	7	1	72	29	67	9	1851	3	1	13		6		15	43	17	2	5	7		1	5	8		8	1	2329
Sweden (SE)	152	12	128	22	12	2	55	89	21	18	28	2	3	9		1345	3	46	7	14	1	9	155	2	9	110	18	3	12	2	2289
India (IN)	180	9	78	12	17	1	19	26	15	4	12	5	5	1686	3	5	23	8	7	3		17	3	1	3	4	7		8	1	2162
Singapore (SG)	53	259	48	3	67	19	7	6	2	3	6	122	19	87	75	4	1138	11	9		79	5	5	29	2	2	3	9	5	10	2087
Hong Kong (HK)	29	861	31	17	33	14	7	12	6	2	4	24	20	5	354	1	46	8	4	1	428	1	2	10	1	3	1	14	3	66	2008
Netherlands (NL)	206	33	161	28	24	10	76	107	40	53	35	8	12	27	3	35	9	667	11	36	13	10	16	2	17	10	72	7	16	4	1748
Poland (PL)	6	1	11		2		3	21	3	10	7			1		5		5		1248		1		1	2		1		3		1331
South Africa (ZA)	15		61	2	20		5	3	1	5	1			4	3	2	1	6	4	2	4	1141			3	2	1		3	1	1290
Norway (NO)	50	1	57	7	13	1	13	22	6	8	11			5		147	4	8	13	4	1		842	1	5	18	6		8		1251
Brazil (BR)	30	3	5	4	4	1	3	2	2	1	2							2	1131			1	3				1		1		1196
Cayman Islands (KY)	88	294	57	24	19	16	8	9	5	13	3	7	7	6	274	3	36	10	7	4	94	1	4	3	1	2	1	14	4	99	1113
Ireland (IE)	174	5	262	16	7	5	12	24	11	9	7		2	2	1	13	2	19	3	5	1	2	1		372	3	5		4	2	969
Finland (FI)	50	16	29	6	6		12	38	10	30	1	1	1	6		91	4	19	6	10	2		34	1	2	527	6		3		911
Switzerland (CH)	172	24	57	23	17	6	37	92	27	14	16	4	4	8	1	20	4	26	15	6	4	7	8	2	2	13	8	2	288	4	911
Taiwan (TW)	46	117	7	3		11	2	4	2			10	2	3	19		14	1	3	1	17			3				606	1	11	883
Thailand (TH)	5	13	7	1	6	4	1	1	1	1	1	5	1	5	3		18	1			2		1	783	1			1	1	1	864
Belgium (BE)	56	15	55	4	7	2	84	38	25	5	15	2	6	5		3	3	68	4	11	2	2	5	2	3	5	353		4		784
Total	33265	24155	17440	6950	6171	4586	3343	3133	3090	2729	2647	2582	2516	2337	2257	2143	1754	1672	1654	1583	1574	1441	1346	993	871	850	809	788	770	509	135958
% Foreign acquirer	17.4%	13.1%	20.7%	23.4%	17.8%	6.8%	42.7%	58.6%	28.0%	16.5%	30.1%	13.2%	12.2%	27.9%	45.5%	37.2%	35.1%	60.1%	31.6%	21.2%	72.8%	20.8%	37.4%	21.1%	57.3%	38.0%	56.4%	23.1%	62.6%	80.6%	34.3%

shows the top 30 target countries which have participated in a merger or acquisition within the set timeframe. As shown by the table, the United States is by far the most popular target nation for either a merger or acquisition (33.655). Although this amount is substantially high, only 17.4% of the deals where a US firm is targeted consisted of a foreign acquirer (shown in the bottom line). Other countries which have taken a spot in the top 5 target nations are China (21.707), the United Kingdom (18.784), Canada (7.632) and lastly Australia (6.041). A significant decline in M&A activity is noticeable below the top 3 target nations. Even within the top 5 target nations, a huge difference in M&A activity is shown. Australia's participation in M&A activity, which is the 5th most popular country when it comes to target firms, is only 17,9% of the total of the United States.

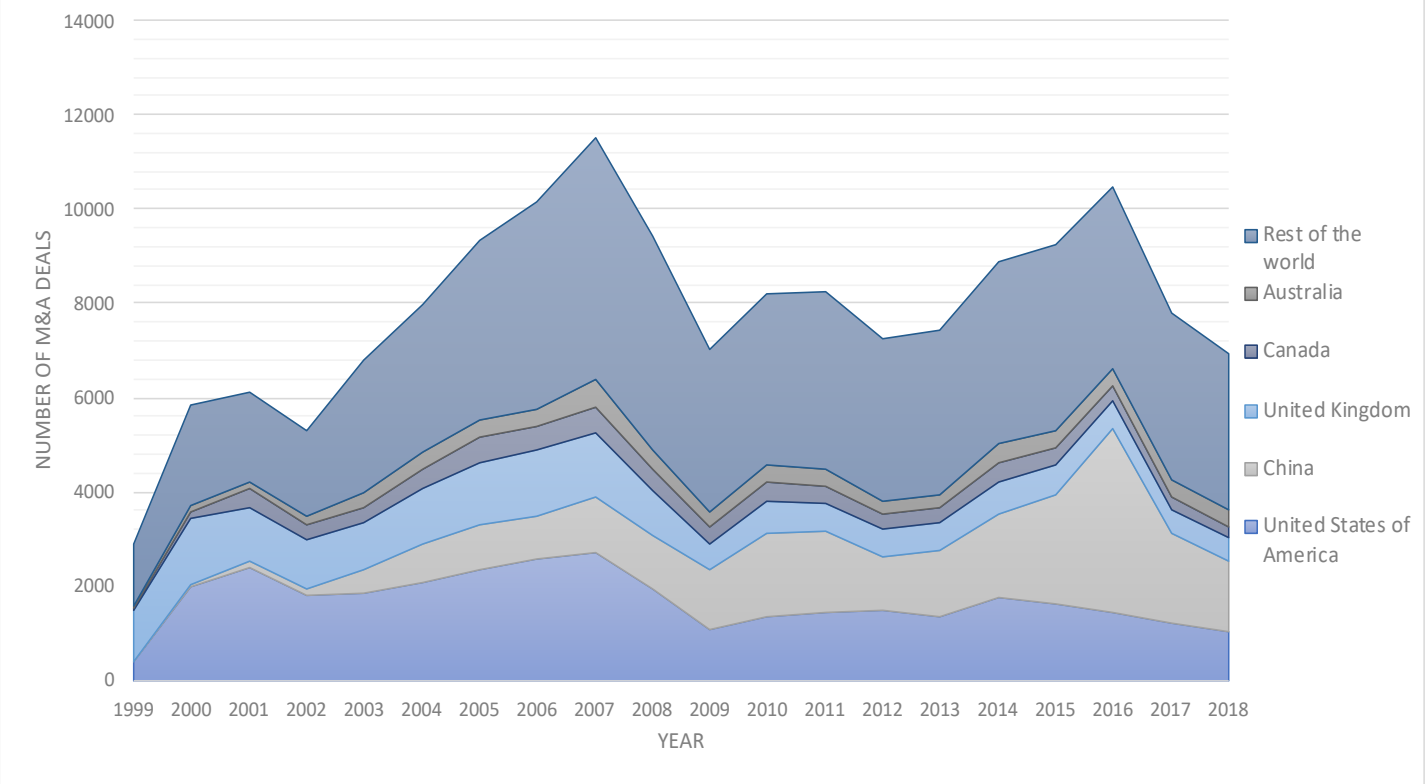
Another interesting fact about the initial sample is that the percentage of foreign acquirers within Japan is only 6,8%. This is the lowest stake of all the countries within our sample and moreover, considerably lower than the average percentage of foreign acquirers (34,4%). In general, the top target nations within the initial sample, show only a small percentage of foreign acquirers. Contradictory, the share of M&A deals in the Cayman Islands (KY) where a foreign acquiror is involved (80,6%), is much higher than the other target countries.

Figure 3 shows an overview of the amount of mergers and acquisitions that have taken place within the period of time from 1999 through 2018, worldwide. Furthermore, it shows a more detailed overview of the M&A deals of the top 5 target nations. The countries outside the top 5 have been merged together as the 'Rest of the world'. The figure shows that the amount of M&A deals has significantly grown since 1999. This substantial growth can be seen for both the countries within the top 5 as the countries represented in the rest of the world group. Remarkable is that the amount of M&As grows sharply from 1999 through 2007, after which the number actually starts to decrease. This particular change from a growth to a decrease is most likely caused by the financial crisis that started near the end of 2007. The consequences of this global economic crisis are clearly visible in the figure. During the period from 2007 through 2009 the number of M&A deals, within the sample, significantly decreased from a total of 11.514 to only 7.031 deals. Something else that stands out in this figure is the substantial growth in cross-border M&As where Chinese firms have been targeted. Especially since the last decade, the growth in China as a target nation has grown substantially.

Derivation of the sample

The sample of mergers and acquisitions worldwide will be reduced throughout this research, due to the restrictions caused by other included variables. This derivation of the sample will be shown in *table 2.* The set of observations where M&A deals without an available acquiring and/or target nation are excluded, will be taken as the initial sample (156.835). As this research is focused on the mergers and acquisitions which have a cross-border nature, all the domestic deals are left out. This has a significant impact on the size of the sample, as domestic M&A deals have a substantial share in the total amount of M&A activity worldwide.

Figure 3 – overview M&As from 1999 - 2018



Subsequently, the financial performance of the firms are of importance as this is the dependent variable of this research. The financial data regarding the firms within the sample will be collected from the Bureau van Dijk's Orbis database. To match the financial data within the Orbis database with our sample, a unique BvD ID number is required for every firm. M&A deals with firms that do not have an available unique BvD ID number are therefore excluded from the sample. Furthermore, not all financial data of the firms within our sample is available through the Orbis database. Hence, M&A deals where financial data regarding the profitability of a firm is missing are also eliminated from the sample. First, deals without any financial data are removed. Thereafter, deals without financial data concerning the period 1 year after the M&A deal are removed. Finally, the deals where financial data regarding the period 3 years after the M&A deal has been confirmed, are removed as well. By doing this, all analyses in this paper will be executed using the same list of observations.

The sample in this research now consist of 2,980 cross-border mergers and acquisitions worldwide, due to the set restrictions. To get a more detailed view of the sample, a similar table as *table 1* is presented. In *table 3* an overview is shown of the top 30 target nations within the final sample. The top 30 target nations consist of a remarkable other selection than in the overview of all mergers and acquisitions worldwide. Even within the top 10 of target nations, a very different set of countries appears. This transformation can be explained by the fact that the top target nations within the initial sample did not have a high share of M&A deals that

Table 2 - Derivation of the sample

	Amount of observations
Bureau van Dijk's Zephyr Mergers and Acquisitions worldwide between 1999 and 2018	174,166
Mergers and Acquisition deals with an available acquiring and target country	156,835
Mergers and Acquisition deals with a cross-border nature	43,908
Mergers and Acquisition deals with available BvD ID numbers	26,385
Mergers and Acquisition deals with available financial data	5,824
Mergers and Acquisition deals with available financial data 1 year after the deal	4,551
Mergers and Acquisition deals with available financial data 3 years after the deal	2,980
Final Sample	**2,980**

consisted of a foreign acquirer. However, important to mention is that the lack of available financial data for firms from several countries also affects the final sample of this research.

Descriptive statistics

As mentioned prior, there are several other national characteristics that influence merger and acquisition activity. Most likely these characteristics will also be related to the variables of interest, which are the geographical and cultural distance between countries. Because of these possible correlations, various control variables will be implemented in the tests, so they will be controlled for.

Using data from the Centre D'Etudes Prospectives et D'Informations Internationales (CEPII) geographical database, several national characteristics are recorded. The recorded data consist of the area in squared kilometers, the internal distance based on area and a dummy variable for when a country is landlocked or not. Moreover, both a country's official and second language are collected from this database, as is data regarding the colonized history of a country. Prior research has shown that these national institutions can affect the outcome or decision-making of economic events. (Barro and McCleary 2003; Guiso et al. 2003).

Subsequently, also the legal origin of countries have been gathered, following the research from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). In their paper they examine legal rules regarding the protection of investors. Both the origin of these rules as the quality are taken into account in this research. Their results show that countries with an English Common Law have the strongest investor protection in general, while the French Civil Law have the weakest. Therefore, using their data, a country's legal origin will be recorded as French, German or Scandinavian Civil Law or as English Common Law.

Table 3 – Final sample overview cross-border M&As

Acquiring country	Target country																															
	GB	SE	FR	ES	IT	DE	BE	NO	FI	DK	PL	CZ	NL	IE	RO	MY	PT	RU	IN	HU	AU	KR	UA	CN	SG	LT	BG	US	CO	LV	SI	Total
USA (US)	224	49	55	21	31	31	26	15	6	10	12	3	7	11	5	1		3	5	4	5	5			1	1	3		4			538
UK (GB)		49	54	45	22	27	29	19	13	17	9	6	15	26	11	3	4	5	5	8	6	1	1		1		1	3	2	2	1	385
Sweden (SE)	36		7	11	4	1	8	29	43	25	3	6	2	2	2		2			1		2	2		1	5	2			4		198
France (FR)	41	11		20	13	7	9				8	2	7	2	4		2	5		1	1	2	2	2		1		2	2		1	145
Germany (DE)	41	10	13	11	5		9	1	3		3	3	7	2	2		3	3	1	1				2			1				1	122
Japan (JP)	23	4	6	5	7	5	4		1			1	3			12	1	1	10		4	6		2	6			2				103
Norway (NO)	20	53	2	1			2		5	10		1	2	1							1					1	1			1	1	102
Canada (CA)	36	6	3	5	6	5	6	3	4	1		1	1	6			2	2					2		1	1		3	2			96
Spain (ES)	19	2	9		8	7	5	1	1		6	4	4		2	1	18		2									1	1			91
Netherlands (NL)	23	5	9	3	7	7	7		1	1	2	5		2	3		1	3		1			3				2					85
Finland (FI)	10	35	3		2	8	1	5		2	4	3					1	3		2			1			1				1		82
Ireland (IE)	50	4	3	2	1	1	2		1	2		1	1		3			2					1									74
Belgium (BE)	19	1	19	5	4	5		1			4	1	4				1		1			2									2	69
Australia (AU)	41	3	1		1	3	3	1		1			1	1		2						1			3						1	63
Poland (PL)	3	2	1	4		5				1		7			4			3		5						7	3			1	1	47
Italy (IT)	10	3	8	4		3			1	1	3	1	1		3			1	1				1	1							1	43
Singapore (SG)	9		1	1		1	1	1	1	1						14		1	4		2	2		1						1		41
Denmark (DK)	6	10	2	2	1		1	6	1		1	1			1															2	1	35
India (IN)	12	1	3	5	5	1	1		2			1	1			1						1										34
Luxembourg (LU)	5	2	1	1	3	2	1			1	1	3	1		1	1	1	2					4				1		1			32
Switzerland (CH)	4	6	7		2	2	1	2	3	1		2				1					1											32
China (CN)	6	1	5	1	7	3						1								1	3				1			2				31
Bermuda (BM)	11		1	1	2			1				1		1		2	2				3	2			1		1	1				30
Republic of Korea (KR)	3		2	3		4	2	1			1	1			1	1	1		2	1				1				1				25
Austria (AT)	1	2	1		1	3	2	2		1	3	3	1		1					1							1				1	24
Cayman Islands (KY)	4	1	1		1	1						1				1								8	1			1	1			21
Portugal (PT)	2		1	17	1																											21
Israel (IL)	7	1	1			2				2	1				1									1	1						1	18
South Africa (ZA)	11								1				1		2			1														16
Russia (RU)	2	2	1		2	1			1	1		1			3								1									15
Total	679	263	220	168	136	135	120	88	88	78	61	60	59	54	49	40	39	35	31	26	26	24	18	18	17	17	16	16	13	12	12	2618

From the Penn World Tables data, each country's gross domestic product (GDP) has been recorded to control for the countries their size and their individual wealth. The country's population is also collected from this database to compose the country's gross domestic product per capita. Both of these, the GDP and the populations, are recorded for every unique year within the set timeframe of the research. In addition, this database also provides data relating to which currency unit specific countries use. Lastly, the Economic Freedom Index database is used to collect data concerning each country's corporate tax rate. There is again a unique corporate tax rate recorded for each year and each country within the sample.

Barro and McCleary (2003) and Guiso, Sapienza, and Zingales (2003) also state that the country's religion can affect the economic outcomes. Therefore, these have also been recorded using the Central Intelligence Agency (CIA) World Factbook 2008. In this database the percentages are recorded for the stake of the population share a particular religion. Meaning that is does not only tell us a country's main religion, but also their second most popular religion and so forth.

Besides, also certain deal-level characteristics have been recorded, to control for the effect that they can have on the outcome of economic events. These include the value of the M&A deal and the stake that is acquired during the deal. Furthermore, information has been recorded to control for time fixed effects, such as a dummy variable for a worldwide financial crisis.

Moreover, certain characteristics of country-pairs have been proven to affect the outcome of economic decisions. Using another database from the Centre D'Etudes Prospectives et D'Informations Internationales (CEPII), which is the distance database, various characteristics are recorded for. One of them being one of the variables of interest of this research, namely the geographical distance between two countries. The geographical distance is recorder for in two specific ways. The first being referred to as the popular distance, which entails the distance in kilometers between the two most popular cities of each country. The second being the distance in kilometers between the two capital cities of each country, referred to as the capital distance. In addition, also other information is recorded through this database, such as a dummy for two countries that share a border (contiguity), a dummy for countries that are or were the same country and lastly information relating to the colonial past between the two countries, if there was any.

Lastly, numerous variables have been created through the collected country-level data to control for other country-pair characteristics. These include whether two countries share a legal origin, use the same currency unit and share the same religion, among other things.

Summary of the statistics

A summary of the statistics of the variables used in the analysis of the sample is presented in table 4. The statistics are divided into different groups of variables.

Panel A shows a summary of the country-level variables for the acquiring countries. For instance, the statistics show that the average level of trust within the sample of 2,980 observations is 0.3841 with a standard deviation of 0.1504. The value of Trust can fluctuate on a scale from 0 to 1. On this scale a value of 1 reflects a situation where most people can be

trusted and 0 stands for a situation where people need to be more careful with trusting each other. Switching to the average level of individualism in the sample of acquiring firms, a mean of 0.5115 with a standard deviation of 0.0726 can be found. Here the maximum score of 1 reflects a situation where people should always follow instructions, while a lower score indicates that people need to be convinced first before following instructions. Lastly, the average score of the level of hierarchy is 0.5846 with a standard deviation of 0.1459. Here a higher score would impose that people think they need larger income differences as incentives for individual efforts and a lower score reflects a situation where people think incomes should be made more equal. Furthermore, the statistics of this panel show that 3.9% of the acquiring countries are landlocked, meaning that they are entirely surrounded by land. It also shows us that more than half of the acquiring countries have a English legal origin (50.99%) and that the average corporate tax rate is approximately 24%. Focusing on the statistics concerning the religions of the acquiring countries, it is shown that a majority of the people within the sample are Christians (50.33%). The second most popular religion is the Islam (4.71%), while this percentage is actually lower than the amount of people that are unaffiliated when it comes to a religion (17.67%).

The second panel, being panel B, shows us an overview of the statistics of the country-level variables for the target countries. The average levels of trust, individualism and hierarchy (the determinants of a cultural value) within our sample of target countries are respectively 0.3443, 0.5041 and 0.4787 with their standard deviations being equal to 0.1705, 0.0748 and 0.0758. Moreover, it is shown that most target countries have either a English legal origin (37.28%) or a French legal origin (34.27%). A large majority of the inhabitants of the target countries are Christians (66.63%), while the second biggest group of people regarding religions are actually unaffiliated (20.06%).

Comparing the statistics of the acquiring and target countries, some interesting things come to the attention. For instance, the average levels of all three cultural values (Trust, Individualism and Hierarchy) of the target countries are higher than the of the acquiring countries. Looking at the geographical statistics, the area and internal distance, shows that the acquiring countries are in general larger countries. The acquiring countries are on average over three times the size of the target countries, measured in squared kilometers of area. Also the gross domestic product as the gross domestic product per capita are higher for the acquiring countries. Remarkable as well, is that the percentage of acquiring countries with a English legal origin is significantly higher than the percentage of target countries. On the other hand, the target countries show a higher percentage of countries with a French legal origin. Lastly, it shows that the percentage of people who are Christian, is considerably higher in the target countries.

Panel C is an overview of the statistics of variables that are related to country-pair characteristics. One of them being the variable of interest in this research, namely the geographical distance between two countries. It shows two forms of distance measuring variables, which are the distance between the most popular cities of the concerning countries and the distance between the two capital cities. The average distances within the sample are respectively 3.5826 and 3.6392 kilometers. The first of the two being the variables used in this research as the geographical distance between two countries. Subsequently it also shows several dummy variables to record for two countries having similar characteristics, as this would most likely influence the M&A activity between two countries. One of these variables is contiguity,

Table 4 – Descriptive statistics

	Observations	Mean	Median	Standard deviation
Panel A: Acquiring Country-level variables				
Trust	2,545	0.3841	0.3762	0.1504
Individualism	2,545	0.5115	0.5295	0.0726
Hierarchy	1,295	0.5846	0.6271	0.1459
Area	2,976	2825608	357325	4210298
Internal distance	2,976	450.1270	224.8358	444.0651
Landlocked	2,976	0.0390	0	0.1936
Disclosure requirements	2,665	0.7386	0.75	0.2027
English legal origin	2,665	0.5099	1	0.5000
French legal origin	2,665	0.1981	0	0.3987
German legal origin	2,665	0.1313	0	0.3378
Scandinavian legal origin	2,665	0.1606	0	0.3672
Corporate Tax Rate	2,297	0.2420	0.2450	0.0606
GDP	2,971	4407190	1850765	6186992
Population	2,971	122.0190	58.9509	213.5223
Empowered	2,938	59.1677	26.3160	108.7047
Christian	2,980	0.5033	0.6720	0.3442
Muslim	2,980	0.0471	0.0370	0.1091
Unaffiliated	2,980	0.1767	0.1900	0.1502
Hindu	2,980	0.0145	0.0010	0.0846
Buddhist	2,980	0.0307	0.0030	0.0998
Folk religions	2,366	0.0106	0.0020	0.0438
Jewish	2,980	0.0070	0.0010	0.0601
Other	2,980	0.0071	0.0020	0.0184
Panel B: Target Country-level variables				
Trust	2,434	0.3443	0.2988	0.1705
Individualism	2,434	0.5041	0.5295	0.0748
Hierarchy	643	0.4787	0.4925	0.0758
Area	2,968	809658.4	301323	2444725
Internal distance	2,968	242.4200	206.4667	236.2088
Landlocked	2,968	0.0465	0	0.2106
Disclosure requirements	2,492	0.6616	0.67	0.1684
English legal origin	2,492	0.3728	0	0.4836
French legal origin	2,492	0.3427	0	0.4747
German legal origin	2,492	0.0730	0	0.2602
Scandinavian legal origin	2,492	0.2115	0	0.4084
Corporate Tax Rate	2,874	0.2472	0.2450	0.0567
GDP	2,910	1537681	1479035	2005606

Table 4 – Descriptive statistics (continued)

	Observations	Mean	Median	Standard deviation
Population	2,910	64.7960	46.7886	165.9109
Persons engaged	2,905	29.9406	20.5065	80.2816
Christian	2,980	0.6663	0.7110	0.2358
Muslim	2,980	0.0602	0.0440	0.1255
Unaffiliated	2,980	0.2006	0.2130	0.1336
Hindu	2,980	0.0149	0.0010	0.0845
Buddhist	2,980	0.0151	0.0040	0.0741
Folk religions	2,980	0.0053	0.0020	0.0280
Jewish	2,980	0.0025	0.0010	0.0019
Other	2,980	0.0044	0.0020	0.0107
Panel C: Country-pair variables				
Distance between most pop cities	2,964	3.5826	1.4814	3.8456
Distance between capital cities	2,964	3.6392	1.5458	3.8524
Difference in Trust	2,072	0.1580	0.1112	0.1181
Difference in Individualism	2,072	0.0817	0.0580	0.0643
Difference in Hierarchy	213	0.1584	0.1754	0.0912
Contiguity	2,964	0.1869	0	0.3899
Same official language	2,964	0.2510	0	0.4337
Same language	2,964	0.2406	0	0.4275
Colonial relationship ever	2,964	0.2264	0	0.4186
Common colonizer post 1945	2,964	0.0189	0	0.1362
Colonial relationship currently	2,964	0.0064	0	0.0798
Colonial relationship post 1945	2,964	0.0277	0	0.1640
Same country	2,964	0.0189	0	0.1362
Same legal origin	2,980	0.3336	0	0.4716
Same religion	2,980	0.7527	1	0.4315
Both primarily Christian	2,980	0.6856	1	0.4644
Both primarily Muslim	2,980	0.0248	0	0.1556
Both primarily Unaffiliated	2,980	0.0299	0	0.1702
Both primarily Hindu	2,980	0.0087	0	0.0930
Both primarily Buddhist	2,980	0.0037	0	0.0607
Both primarily Folk religions	2,980	0	0	0
Both primarily Jewish	2,980	0	0	0
Same currency unit	2,980	0.1245	0	0.3302
Panel D: Deal-level variables				
Deal value	2,980	293042.6	35335.76	1193098
Stake acquired	2,980	0.9087	1	0.1664

Table 4 – Descriptive statistics (continued)				
	Observations	**Mean**	**Median**	**Standard deviation**
Same sector	2,980	0.4225	0	0.4940
Big 4 auditor	2,980	0.0289	0	0.1674
Financial crisis	2,980	0.1564	0	0.3633
Panel E: Dependent variables				
Geographical distance:				
ΔProfitability (1 year)	2,980	0.8318	-0.0207	-22.7757
ΔProfitability (3 years)	2,980	0.7344	-0.0889	-28.1339
Cultural difference:				
ΔProfitability (1 year)	2,072	0.5240	-0.0180	19.7284
ΔProfitability (3 years)	2,072	0.2609	-0.0705	26.5270

which describes whether countries share a border, so if they are adjacent or not. The average of the sample that share a border is 18.69%. Moreover, panel C shows us that 25.10% of the country-pairs that engaged in a M&A deal, share the same official language. Besides, 22.64% of the country-pairs have ever been in a colonial relationship. Besides, 1.89% of the country-pairs are or were the same country. It also shows us some interesting facts regarding the main religious beliefs of countries. First of all, more than 75% of the country-pairs within the sample have the same primary religion. Thereafter, it shows us that this is mainly caused due to countries having Christianity as their main religion. Of this 75.36% of country-pairs having the same religion, 68.56% of it are country-pairs which share the Christian belief.

The fourth panel, being panel D, summarizes the statistics regarding deal-level variables. It shows that the average deal value and the corresponding stake that is acquired during the transaction in the sample of M&A deals, are respectively 293042.60 US dollar and 90.87%. The median of 1 of the stake acquired during the M&A deal actually shows that in more than half of the deals, 100% of the target company's stake is acquired. Besides, 42.25% of the firms that have engaged in a merger or acquisition within the sample, are within the same sector. Furthermore, figure 3 of this paper shows that the worldwide financial crisis had a major influence on the international M&A market. The statistics under Panel D show that 15,64 % of the M&A deals included in the sample, have been performed during this period of time. Lastly, panel D shows that 2.89% of the target firms within the sample has one of the big 4 companies as their auditor.

Lastly, under Panel E, statistics regarding the dependent variable of change in profitability are summarized. Both types of change in profitability are included in the summary, the two being the change in profitability the year after the M&A transaction and the change in profitability 3 years after the M&A deal has taken place. In the geographical distance sample an average growth in profitability of 83,18% is shown with a standard deviation of -22.7757. After a longer period of time, 3 years, the change in profitability has still grown since the year of the M&A deal, but the growth is less than one year after the deal. The change is now equal to 73.44 %. The sample of the cultural differences between countries also shows a positive

change in profitability in the years after the M&A deal. The change in profitability after 1 year and after 3 years are respectively 52.40 % and 26.09 %.

Remarkable in this panel as well is the difference in observations between the two samples. The smaller sample in the cultural differences setting is caused by the lack of matches between the data which can be gathered concerning the cultural differences between countries through the World Values Survey and the countries within the original sample. The sample of the geographical distance covers 76 unique acquiring countries and 77 unique target countries. The World Values survey does not cover all the countries which are included in this sample. Due to this lack of data, the cultural sample has a smaller group of countries that it is able to cover. As a result, this sample ends up with 43 unique acquiring countries and 49 unique target countries. Especially, cross-border M&A transactions concerning smaller countries have been dropped due to the missing of cultural values data. Furthermore, the World Values Survey provides even less data for the average level of Hierarchy within countries. This is due to the fact that the question regarding the level of hierarchy was taken out of the World Values Survey during the later waves of questionnaires. In the questionnaire where the question relating to the level of Hierarchy was asked, only 41 countries have participated. Therefore, models where the level of Hierarchy is included as a variable, have the least amount of observations.

5. Results

Regression results

The results of the regression estimates are presented in tables 5 through 10. The first 3 tables will cover the regression results of the samples where the dependent variable is the change in profitability one year after the M&A deal. The models, which results are presented in the tables, will become more elaborate each time. This will be achieved by gradually adding more control variables to the models. The same applies to the 3 tables after that. These include the regression results of a sample where changes in profitability are measured over a longer period of time. This entails a period of 3 years after the cross-border M&A transaction has taken place. It is more realistic for synergies, caused by a merger or acquisition, to be realized after a couple of years. Therefore, these last models will be used to draw conclusions on regarding the hypotheses set in this paper.

1 year after the M&A deal

Only 1 year after the cross-border merger or acquisition has taken place may seem like a short period of time to make any comments on the effect that the M&A deal has had on the concerning firms. However, the results of the concerned tests help us to make some interesting findings.

The first table with regression estimates, which is table 5, shows the results of the effect that geographical distance and cultural differences have on the change in profitability of firms after they either merge or an acquisition has taken place. The results are based on the sample of 2,980 observations. In the first column the effect of the geographical distance in kilometers between the two most popular cities of the countries, in terms of population, of the M&A deal is shown. Columns 2,3 and 4 show the effects of the absolute difference in cultural values separately, while column 5 shows the effect of the cultural values combined. In each of the regression tables there has also been an addition of a 6th column, where all cultural values have been combined except the difference in the level of hierarchy. This is due to the low amount of observations, which occasionally leads to the omission of variables because of collinearity.

Table 5 is an overview of merely the effect that the variables of interest have on the change in profitability, 1 year after the M&A deal. In other words, there has been no addition of any kind of control variables in these models.

Focusing on the geographic distance as the variable of interest, a negative coefficient is presented in the table. Geographic distance is measured in thousands of kilometers, meaning that the profitability of a M&A deal will decline by 8.9% for every thousand kilometers the distance between countries increases. However, the p-value of 0.416 shows us that this coefficient is insignificant.

Shifting to the cultural values, both negative as positive coefficients are shown for the variables of interest. The absolute difference in Trust between countries has a negative effect on the change in profitability, 1 year after the deal had taken place. This shows that a greater difference in cultural value between countries is equal to a less profitable merger or acquisition. This would be in line with the prediction of this paper that an increase in cultural differences

Table 5 - Regression results

	ΔProfitability (1 year)					
	Geographic distance	Cultural values				
	1	2	3	4	5	6
Geographic distance	-0.089					
	(0.416)					
Trust		-1.491			2.877	-1.615
		(0.685)			(0.151)	(0.661)
Individualism			4.163		2.493	4.319
			(0.537)		(0.393)	(0.522)
Hierarchy				0.656	0.652	
				(0.785)	(0.787)	
Constant	1.159*	0.760	0.184	-0.184	-1.037	0.426
	(0.043)	(0.294)	(0.793)	(0.676)	(0.118)	(0.633)
R-squared	0	0	0	0	0.016	0
Observations	2962	2070	2070	211	209	2069

** p<0.05, ** p<0.01, *** p<0.001*

has a lower profitability of the M&A deal as a result. However, the absolute differences in Trust and Individualism show a positive effect on the dependent variable. Hence, this would be in contrast to the effect that Trust has on the profitability, against the set prediction. To further test this prediction, explanatory variables will be added gradually to the models. In this manner, it will be tested what the actual effect of the variables of interest are on the dependent variable, after controlling for several other explanatory variables.

When focusing on the 5th model in this table, all cultural values have been implemented into the same model. In this model the effect of Trust has changed into one of a positive nature, instead of the previous negative one.

Table 6 is an overview of the same regression models. However, country-pair control variables have been included. These have been added to the model to control for effects on the profitability of a cross-border M&A deal which are caused by two countries having something in common, such as the same language or religion. All country-pair explanatory variables which have been added, are presented in table 6.

The coefficient of the geographic distance shows a similar direction to the effect it has without the inclusion of the country-pair variables, shown in table 5. An increase in geographic distance shows to be negatively related to the profitability of a M&A deal. On the other hand, all three cultural values show to be positively related to the change in profitability. This is a change of direction for the effect that the absolute difference in Trust has on the dependent variable. It has changed from a negative effect of -149.1% to a positive effect of 164.9% due to the control variables. For all cultural values, the addition of the explanatory variables have increased the positive effect that they have on the change in profitability.

Table 6 - Regression results

	ΔProfitability (1 year)					
	Geographic distance	**Cultural values**				
	1	**2**	**3**	**4**	**5**	**6**
Geographic distance	-0.073					
	(0.572)					
Trust		1.649			2.000	1.498
		(0.680)			(0.406)	(0.708)
Individualism			5.298		3.069	5.150
			(0.470)		(0.422)	(0.483)
Hierarchy				0.980	1.548	
				(0.740)	(0.614)	
Contiguity	-0.873	0.811	0.474	-0.556	0.135	0.570
	(0.539)	(0.618)	(0.773)	(0.749)	(0.942)	(0.732)
Same official language	5.979*	4.966	4.73	0.254	-0.211	4.771
	(0.016)	(0.056)	(0.070)	(0.885)	(0.907)	(0.068)
Same language	-6.165**	-5.374*	-5.214*	-0.334	0.077	-5.207*
	(0.005)	(0.012)	(0.015)	(0.675)	(0.929)	(0.015)
Colonial relationship ever	1.391	1.978	2.154	0.057	0.142	2.150
	(0.392)	(0.268)	(0.232)	(0.951)	(0.882)	(0.233)
Common colonizer post 1945	2.722	0.128	0.077	0.056	-0.291	-0.009
	(0.406)	(0.980)	(0.988)	(0.974)	(0.874)	(0.999)
Colonial relationship currently	-0.352	0	0	0	0	0
	(0.954)	(.)	(.)	(.)	(.)	(.)
Colonial relationship post 1945	-2.081	-2.75	-3.446	-2.09	-2.009	-3.344
	(0.498)	(0.366)	(0.274)	(0.377)	(0.397)	(0.290)
Same country	-2.403	-2.473	-2.003	0.102	-1.002	-2.122
	(0.466)	(0.708)	(0.762)	(0.978)	(0.793)	(0.749)
Same legal origin	-0.348	0.504	0.597	0.110	0.381	0.648
	(0.794)	(0.758)	(0.716)	(0.950)	(0.832)	(0.694)
Same religion	0.561	0.700	0.843	0.495	0.683	0.792
	(0.617)	(0.550)	(0.471)	(0.384)	(0.270)	(0.502)
Same currency unit	0.291	0.702	0.823	0	0	0.788
	(0.839)	(0.685)	(0.635)	(.)	(.)	(0.650)
Financial crisis	-1.001	-0.549	-0.560	1.743*	1.644*	-0.571
	(0.388)	(0.644)	(0.637)	(0.026)	(0.036)	(0.631)

Table 6 - Regression results (continued)

	ΔProfitability (1 year)					
	Geographic distance	**Cultural values**				
	1	**2**	**3**	**4**	**5**	**6**
Constant	0.802	-0.914	-1.192	-0.472	-1.532	-1.418
	(0.508)	(0.477)	(0.375)	(0.508)	(0.177)	(0.335)
R-squared	0.005	0.009	0.01	0.046	0.054	0.01
Observations	2950	2051	2051	200	198	2050

* p<0.05, ** p<0.01, *** p<0.001

Subsequently, some interesting findings can be made when shifting the focus on the country-pair control variables which have been included in the models. In general, two countries sharing the same official language, has a positive effect on the profitability. Especially the impact of having the same official language in the geographical distance sample is of interest to this research as this relationship is significant on a 5% level. On the other hand, same language has in 5 of the 6 models a negative effect on the profitability. This implies that a situation where the language is spoken by at least 20% of the inhabitants of a country. Moreover, this negative effect is significant in the geographic distance sample, the Trust sample and the Individualism sample. These are significantly positively related to the change in profitability on a 1% and 5% level. It is also positively related in the 6th model, where both Trust and Individualism have been added to the model as the variables of interest to reflect cultural difference. Furthermore, for two countries that have ever been in a colonial relationship, only positive coefficients are found in this table. This tells that this is positively related to the dependent variable. However, if the two countries have had a colonial relationship past the year 1945, this negatively affects the profitability of the M&A deal. Furthermore, when two countries share the same main religion, the change in profitability after a M&A deal is higher. The same applies for two countries using the same currency unit This can be explained by not having to work with exchange rates, which could complicate the deal. Lastly, a cross-border M&A which has taken place during the financial crisis is generally causing the change in profitability to be more negative than in other years. The financial crisis is significantly negatively related on a 5% level in models 4 and 5.

The last table of the models with a dependent variable of change in profitability after 1 year, which is table 7, uses the most extensive models. It presents the regression results of the models where all control variables have been included. All 6 models in this table include all explanatory variables which have been grouped into different sets of control variables. These groups consist of country-pair effects, acquiring country fixed effects, target country fixed effects, year fixed effects, time varying acquiring country-level effects and time varying target country-level effects. Only the effects that the country-pair controls have on the profitability are shown in this table.

Table 7 - Regression results

	ΔProfitability (1 year)					
	Geographic distance	**Cultural values**				
	1	**2**	**3**	**4**	**5**	**6**
Geographic distance	-0.241					
	(0.410)					
Trust		0.984			-23.321	0.984
		(0.910)			(0.345)	(0.910)
Individualism			-0.958		11.647	-0.960
			(0.957)		(0.622)	(0.957)
Hierarchy				5.841	59.985	
				(0.849)	(0.285)	
Contiguity	-2.146	-1.254	-1.421	-15.744	-61.716	-1.261
	(0.312)	(0.709)	(0.642)	(0.549)	(0.199)	(0.708)
Same official language	7.389	7.794	7.948	-7.537	-18.856	7.896
	(0.162)	(0.299)	(0.303)	(0.576)	(0.269)	(0.307)
Same language	-10.819*	-7.887	-7.838	-0.872	18.467	-7.971
	(0.022)	(0.185)	(0.194)	(0.934)	(0.352)	(0.195)
Colonial relationship ever	5.087	1.583	1.450	6.186	-7.776	1.537
	(0.238)	(0.801)	(0.818)	(0.522)	(0.616)	(0.809)
Common colonizer post 1945	0.233	-1.36	-1.319	5.769	11.250	-1.355
	(0.975)	(0.886)	(0.890)	(0.479)	(0.250)	(0.887)
Colonial relationship post 1945	-3.940	-4.248	-4.186	0	0	-4.178
	(0.459)	(0.490)	(0.506)	(.)	(.)	(0.507)
Same country	-0.584	0.594	0.576	0	0	0.516
	(0.928)	(0.958)	(0.959)	(.)	(.)	(0.964)
Same legal origin	0.223	1.596	1.464	-0.896	-8.192	1.583
	(0.918)	(0.597)	(0.606)	(0.921)	(0.470)	(0.601)
Same religion	4.009	4.493	4.59	-153.888*	-151.052*	4.484
	(0.847)	(0.842)	(0.839)	(0.033)	(0.048)	(0.843)
Same currency unit	4.520	2.501	2.686	0	0	2.529
	(0.083)	(0.496)	(0.434)	(.)	(.)	(0.495)
Financial crisis	-0.708	-0.688	-0.684	8.197**	8.420**	-0.684
	(0.656)	(0.718)	(0.720)	(0.003)	(0.002)	(0.720)
Constant	829.305	494.841	549.078	234.84	429.726	526.178
	(0.374)	(0.695)	(0.689)	(0.132)	(0.065)	(0.705)

Table 7 - Regression results (continued)

	ΔProfitability (1 year)					
	Geographic distance	**Cultural values**				
	1	**2**	**3**	**4**	**5**	**6**
Acquiring country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Target country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time varying acquiring country-level effects	Yes	Yes	Yes	Yes	Yes	Yes
Time varying target country-level effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.019	0.022	0.022	0.378	0.394	0.022
Observations	1697	1255	1255	53	51	1254

* p<0.05, ** p<0.01, *** p<0.001

The geographic distance between countries is still negatively related to the change in profitability after a M&A deal. The profitability will decline by 24.1% for every thousand kilometers the distance between countries increases. However, the p-value of 0.410 shows that this coefficient is insignificant. Moreover, this relationship would be in line with the set prediction in this paper that an increase in the geographic distance would have a decline in profitability of a M&A deal as the result.

Shifting the focus on to the cultural values, there are both positive and negative relationships between the separate cultural values shown. The results in table 7 show that an increase in the absolute difference in Trust has a positive effect on the profitability one year after a M&A deal has been confirmed. The same applies to the relationship between the difference in Hierarchy and profitability. On the other hand, Individualism shows to have a negative effect on the dependent variable. This would imply that a greater difference in cultural value between countries is equal to a less profitable merger or acquisition. This is in line with the prediction of this paper that an increase in cultural differences has a lower profitability of the M&A deal as a result. This coefficient implies that the profitability of a M&A decreases by 95.8% for every unit the absolute difference in Individualism between the concerning countries enhances. This percentage may seem high, but this growth is relative to an increase of the absolute difference in trust by 1. As the level of trust within a country is measured on a scale of 0 to 1, this is not even possible. The decrease of the change in profitability is better explained as a 0.96% decline for every 0.01 the difference in Individualism between countries enhances. This negative relationship holds when including the other cultural value (individuality) in the same model, which is shown in the 6th column. None of the variables of interest show that they are significantly related to the profitability of a M&A transaction. Conclusions made based on these results is therefore not supported by great evidence.

For the effects that country-pair explanatory variables have on the change in profitability, which have been shown in table 7 as well, some interesting differences are shown in comparison to the previous results (table 6). Contiguity is in all models negatively related to the profitability of a M&A deal. Without the inclusion of all control variables, the effect that contiguity had on the dependent variable was mixed. Having the same official language is still significantly negatively related in the geographical distance sample. This relationship is negative in most of the other models, yet these are not of a significant nature. Two countries having the same legal system, leads generally to a more profitable M&A deal. However, a negative coefficient is shown in the models where Hierarchy is added as a variable of interest. Moreover, when countries have the same primary religion, this has a positive impact on the change of profitability. Again, this relationship becomes negative when Hierarchy is included. For this relationship, the negative effect is even significant on a 5% level. In this sample, this mainly reflects the situation of two countries that share the Christian religion. Using the same currency unit also has a positive relation with the dependent variable. Lastly, a cross-border M&A which has executed during the financial crisis still shows to be negatively related to the change in profitability in all models without Hierarchy as a variable of interest.

Furthermore, the r-squared of the models have been added in table 7. The r-squared is also known as the coefficient of determination or in this case the coefficient of multiple determination as this regards a multiple regression. Models 1, 2, 3 and 6 have a relatively low r-squared value. Where the r-squared of the first model is equal to 1.9%, the r-squared value for the models 2, 3 and 6 is all equal to 2.2%. Models 4 and 5, where Hierarchy has been added as a variable of interest, show a much higher r-squared. In general, a higher r- squared tells us that the models have a better fit.

3 years after the M&A deal

For the upcoming 3 tables with regression results, the dependent variables has been replaced. The effects of a M&A transaction on the change in profitability tend to take longer than a year after a M&A transaction has been confirmed to take place. It is not realistic that synergies of a cross-border merger or acquisition will be realized after 1 year. Therefore, the dependent variable in these models is the change in profitability after a cross-border M&A, 3 years after the deal has been confirmed. As these models will reflect a more realistic view of how profitability is affected by the variables of interest in this research, these results will be used to draw conclusions. The set hypotheses will either be confirmed or rejected based on these results.

Table 8 presents the regression results of the effect that the variables of interest have on their own. There has been no inclusion of any kind of explanatory variables yet in these models. The geographic distance variable shows to be negatively related to the profitability. Meaning that an increase in the distance between two countries engaging in a cross-border M&A would have a negative change in profitability as a result after 3 years. The same direction of the relationship are also shown for both Trust and Individualism. Both of the absolute differences in these

Table 8 - Regression results

	ΔProfitability (3 years)					
	Geographic distance	Cultural values				
	1	2	3	4	5	6
Geographic distance	-0.077					
	(0.567)					
Trust		-6.820			-9.819	-6.474
		(0.167)			(0.337)	(0.190)
Individualism			-12.66		-0.063	-12.033
			(0.162)		(0.997)	(0.185)
Hierarchy				4.751	5.435	
				(0.698)	(0.660)	
Constant	1.003	1.339	1.295	-2.287	-0.610	2.267
	(0.157)	(0.169)	(0.169)	(0.307)	(0.857)	(0.059)
R-squared	0	0.001	0.001	0.001	0.005	0.002
Observations	2962	2070	2070	211	209	2069

* p<0.05, ** p<0.01, *** p<0.001

cultural values have a negative impact on the profitability. However, the absolute difference in Hierarchy shows to be positively related to the change in profitability after a M&A deal. The direction of the effects of the separate cultural values all remain the same after combining them into the same model, shown in the 5th column. The 6th model, where Hierarchy is eliminated from the cultural differences between countries as a whole, this negative relationships of Trust and Individualism do also remain similar.

For the upcoming results, the country-pair control variables have been added to the models. This is shown in table 9. As a result, the negative effect that both the geographical distance and Trust had on the profitability have weakened. The coefficients shown are still negative, but have become lower. The inclusion of the country-pair control variables have a different effect on the relationships between Individualism and Hierarchy, and the dependent variable. The negative effect of Individualism has become higher due to the addition of the country-pair controls. The effect of Hierarchy has changed from a positive one into a negative effect. Now all three separate cultural values have a negative effect on the profitability, 3 years after the M&A deal. Models 5 and 6 show as well negative coefficients for all cultural values, when they are implemented together in the same model. These results would be in line with the prediction that an increase in the cultural difference between countries would have a negative effect on the profitability. Yet, none of the effects that the variables of interest have on the dependent variable are of a significant nature.

Moreover, contiguity shows to be positively related to the profitability after a M&A deal has taken place, except for models 4 and 5 where Hierarchy has been addles as a variable of interest. Having the same official language does have a positive effect on the dependent variable

Table 9 - Regression results

	ΔProfitability (3 years)					
	Geographic distance	**Cultural values**				
	1	**2**	**3**	**4**	**5**	**6**
Geographic distance	-0.053					
	(0.741)					
Trust		-5.185			-4.890	-4.767
		(0.335)			(0.687)	(0.376)
Individualism			-14.711		-7.841	-14.240
			(0.136)		(0.684)	(0.150)
Hierarchy				-3.578	-5.036	
				(0.810)	(0.745)	
Contiguity	0.290	1.346	2.316	-3.137	-4.883	2.013
	(0.869)	(0.539)	(0.295)	(0.719)	(0.601)	(0.369)
Same official language	2.829	2.262	2.931	2.163	3.316	2.801
	(0.354)	(0.517)	(0.404)	(0.807)	(0.717)	(0.425)
Same language	-3.315	-2.519	-2.959	-2.029	-3.055	-2.980
	(0.217)	(0.379)	(0.304)	(0.613)	(0.484)	(0.301)
Colonial relationship ever	0.889	2.227	1.740	2.601	2.379	1.752
	(0.658)	(0.354)	(0.473)	(0.579)	(0.621)	(0.470)
Common colonizer post 1945	-0.435	0.339	0.446	6.865	7.766	0.718
	(0.914)	(0.961)	(0.948)	(0.428)	(0.401)	(0.917)
Colonial relationship currently	-0.602	0	0	0	0	0
	(0.937)	(.)	(.)	(.)	(.)	(.)
Colonial relationship post 1945	-1.425	-2.206	-0.237	-3.328	-3.536	-0.562
	(0.707)	(0.591)	(0.955)	(0.780)	(0.768)	(0.895)
Same country	-3.439	-5.193	-6.544	6.423	9.229	-6.163
	(0.398)	(0.559)	(0.462)	(0.723)	(0.631)	(0.489)
Same legal origin	-0.036	-0.565	-0.799	-0.482	-1.141	-0.962
	(0.983)	(0.798)	(0.718)	(0.956)	(0.900)	(0.665)
Same religion	1.605	1.681	1.262	-4.156	-4.638	1.426
	(0.247)	(0.287)	(0.423)	(0.147)	(0.138)	(0.369)
Same currency unit	-1.576	0.099	-0.251	0	0	-0.139
	(0.374)	(0.966)	(0.914)	(.)	(.)	(0.952)
Financial crisis	-3.854**	-4.224**	-4.197**	-14.072***	-13.826***	-4.163**
	(0.007)	(0.008)	(0.009)	(0.000)	(0.001)	(0.009)
Constant	0.468	0.076	0.747	2.019	4.681	1.469
	(0.754)	(0.965)	(0.679)	(0.573)	(0.413)	(0.459)

Table 9 - Regression results (continued)

	ΔProfitability (3 years)					
	Geographic distance	Cultural values				
	1	2	3	4	5	6
R-squared	0.004	0.007	0.007	0.068	0.07	0.008
Observations	2950	2051	2051	200	198	2050

* p<0.05, ** p<0.01, *** p<0.001

in all 6 models. Interesting to see is that the exact opposite applies to two countries that share the same (non-official). This entails a situation where at least 20% of the inhabitants of a certain country are able to speak the same language as at least 20% of the inhabitants of the other country speak. Two countries ever been in in a colonial relationship has a positive relationship with the profitability in all 6 models. In all models, this relationship shows to be of a positive nature. Then again, if two countries have had a colonial relationship post 1945, this actually negatively influences the dependent variable. Furthermore, firms from two countries which have the same legal origin also negatively influences it. Lastly, M&A deals that were completed during the financial crisis, have a significant negative impact on the profitability. These relationships are significant on both a 1% as a 0.1% level.

Table 10 presents the most complete models, where again all control variables have been added to the models. Moreover, the dependent variable in these models will reflect the reality better than the earlier extensive models, shown in table 7, where the change in profitability after 1 year was the dependent variable. Therefore, the regression results of these models will be used for the confirmation or rejection of the set hypotheses in this paper.

The effect that the change in geographic distance has on the profitability is still negative. The coefficient shows that for every thousand kilometers the distance between firms of two counties engaging in a cross-border M&A deal enhances, the profitability of the M&A deal does decline with 11.4% after 3 years. This is in line with hypothesis 1a, which states that the profitability of a merger or acquisition between cross-border firms would decrease as the geographical distance increases. Based on the results, this hypothesis cannot be seen as false. However, the evidence is not very strong as the p-value of the relationship is much higher than the conventional significance level of maximum 0.05. Erel, Liao, and Weisbach (2012) suggested that an increase in the geographic distance between countries leads to a decrease in the volume of mergers. This paper builds further on their research by finding that an increase in the distance, has a negative effect on the profitability.

Shifting the focus to the models with cultural values as the variables of interest, merely negative coefficients are shown in this table. The separate effect of the absolute difference in Trust is equal to -5.185. This implies that the profitability changes with 5.19% for every 0.01 increase in the absolute difference in Trust between countries. The separate effects of both Individualism and Hierarchy are also negative. Their coefficients show a decrease in profitability of respectively -14.71% and -3.58% for every increase in the absolute difference of 0.01. These negative coefficients remain negative and relatively the same in models 5 and 6,

Table 10 - Regression results

	ΔProfitability (3 years)					
	Geographic distance	Cultural values				
	1	2	3	4	5	6
Geographic distance	-0.114					
	(0.743)					
Trust		-9.680			159.654	-9.665
		(0.395)			(0.222)	(0.396)
Individualism			-29.974		-21.117	-29.954
			(0.200)		(0.866)	(0.201)
Hierarchy				-81.980	-382.237	
				(0.613)	(0.198)	
Contiguity	0.369	2.039	3.377	39.930	301.125	1.809
	(0.884)	(0.644)	(0.399)	(0.774)	(0.235)	(0.682)
Same official language	2.049	-1.080	1.575	55.641	120.261	2.089
	(0.744)	(0.913)	(0.876)	(0.436)	(0.183)	(0.837)
Same language	-2.798	-0.713	-4.625	-5.307	-111.034	-3.326
	(0.619)	(0.927)	(0.559)	(0.924)	(0.289)	(0.680)
Colonial relationship ever	3.123	5.740	5.148	0.915	81.656	4.296
	(0.542)	(0.487)	(0.534)	(0.986)	(0.320)	(0.606)
Common colonizer post 1945	-0.985	0.994	0.809	-5.209	-40.537	1.163
	(0.910)	(0.937)	(0.948)	(0.904)	(0.431)	(0.926)
Colonial relationship post 1945	-3.392	-6.177	-3.882	0	0	-3.964
	(0.591)	(0.444)	(0.638)	(.)	(.)	(0.631)
Same country	-3.346	-7.367	-10.418	0	0	-9.821
	(0.663)	(0.618)	(0.483)	(.)	(.)	(0.509)
Same legal origin	0.602	-1.358	-0.614	-31.201	6.982	-1.779
	(0.815)	(0.732)	(0.869)	(0.517)	(0.907)	(0.654)
Same religion	11.342	7.982	6.655	509.864	460.523	7.697
	(0.647)	(0.788)	(0.822)	(0.175)	(0.246)	(0.795)
Same currency unit	-2.078	-0.999	-1.684	0	0	-0.136
	(0.502)	(0.836)	(0.709)	(.)	(.)	(0.978)
Financial crisis	-4.479*	-5.855*	-5.734*	-68.122***	-69.875***	-5.733*
	(0.018)	(0.019)	(0.022)	(0.000)	(0.000)	(0.022)
Constant	-1259.860	-925.530	-172.329	-313.451	-1449.887	52.533
	(0.255)	(0.576)	(0.924)	(0.701)	(0.234)	(0.977)

Table 10 - Regression results (continued)

	ΔProfitability (3 years)					
	Geographic distance	Cultural values				
	1	2	3	4	5	6
Acquiring country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Target country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time varying acquiring country-level effects	Yes	Yes	Yes	Yes	Yes	Yes
Time varying target country-level effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.017	0.021	0.022	0.442	0.46	0.022
Observations	1697	1255	1255	53	51	1254

* p<0.05, ** p<0.01, *** p<0.001

where the cultural values have been implemented in the same model. These findings are in line with the prediction which has been set in this paper. Hypothesis 1b states that the profitability of a merger or acquisition between cross-border firms would decrease as the cultural difference between countries increases. The results shown in this table show evidence that this set prediction is right. Then again, this conclusion is not supported by great evidence as these results are not significantly related to the change in the profitability.

Looking at the regression results of the country-pair control variables, it is presented that contiguity is positively related to the profitability in all 6 models. This implies that engaging in a cross-border merger or acquisition with a firm form a neighbor country, would benefit the profitability of the deal. Moreover, two countries who speak the same official language, will have a positive effect on the profitability as well. This could be the result of the process of the merger or acquisition going more smoothly due to the fact that there will be no communication barriers in terms of language. This is true for all models, except for model 2 where Trust is the variable of interest.

Countries which have ever been in a colonial relationship will also positively influence the profitability of the M&A deal. On the other hand, countries that have had a colonial relationship past the year 1945, does not have a positive effect on the profitability. This even leads to a negative impact on the dependent variable. The same applies to a deal between two countries which have ever been the same country in the past. This also does not benefit the profitability of the deal.

When firms of countries which share the same main religion engage in a cross-border M&A deal, this does positively influence the profitability. Contradictory, using the same currency unit does not. Lastly, this table shows again a significant negative relationship between the financial crisis and the profitability of a cross-border M&A deal. Meaning that there is great

evidence found that merging or taking over a firm from a country abroad during the financial crisis, negatively affected the profitability of the deal.

The r-squared values of the table are similar to the earlier table with the complete models, shown in table 7. Again, the r-squared of models 1, 2, 3 and 6 are relatively low. While the r-squared of models 4 and 5 show a much higher value for the r-squared. This would imply that the fit for these models is better than the fit of the other 4.

Moderation analysis

The subsequent hypothesis that has been formulated in this paper is regarding the possible moderating effect that information quality has on the relationships between geographical distance and cultural differences, and the profitability of cross-border mergers and acquisitions. The prediction is that information quality serves as a moderating variable in these relationships. Moreover, information of higher quality is predicted to affect the relationship positively. This would be the result of higher quality information leading to better informed M&A transactions, which ultimately leads to a positive effect on the profitability of a M&A deal.

To test this prediction a measure for information quality has to be selected. In this research, the auditor of the target firm has been specified as the measure of information quality. To be more precise, a dummy variable has been included in the research, named Big4. This variable is given a value of 1 when the target company has been audited by a Big 4 auditor and a value of 0 when their auditor is not a Big 4 company. As shown in table 4, 2.89% of the target firms in the final sample have been audited by one of the Big 4 accounting companies, which are Deloitte, Ernst & Young, KPMG and PricewaterhouseCoopers.

1 year after the M&A deal

Table 11 present an overview of the regression estimates including the selected moderation variable. The first section shows the effects the variables of interest have separately on the dependent variable, which is the profitability 1 year after the M&A deal. The coefficients shown here are in the situation that the target firm is audited by a non-Big 4 accounting company, in other words the dummy moderation variable is equal to 0. Moreover, the columns 1 through 4 represent the same models as in table 7 with the original regression results. The coefficients in this section have scarcely changed in comparison to the coefficients in table 7, due to a small difference in observations. Similar to the models in table 7, all control variables have been included as well in these tables.

Turning the focus to the second section of the table, the coefficients of the interaction terms are shown. The interaction term tells the difference in the effect. The effect that geographic distance has on profitability changes due to the inclusion of information quality as a moderation variable. The change of effect is equal to positive 6.1%. This implies that the effect of geographic distance on the profitability is now equal to approximately -18.2%, instead of the -24.3% effect without the moderating variable.

Table 11 - Moderation analysis

	ΔProfitability (1 year)			
	Geographic distance	Cultural values		
	1	2	3	4
Geographic distance	-0.243			
	(0.407)			
Trust		0.999		
		(0.909)		
Individualism			-0.810	
			(0.964)	
Hierarchy				6.184
				(0.841)
Big4	-0.705	-0.941	-0.159	-1.063
	(0.869)	(0.905)	(0.981)	(0.835)
Geographic distance X Big4	0.061			
	(0.941)			
Trust X Big4		0.497		
		(0.988)		
Individualism X Big4			-8.760	
			(0.897)	
Hierarchy X Big4				0
				(.)
Constant	835.094	499.042	558.797	235.718
	(0.371)	(0.692)	(0.685)	(0.825)
Acquiring country fixed effects	Yes	Yes	Yes	Yes
Target country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Time varying acquiring country-level effects	Yes	Yes	Yes	Yes
Time varying target country-level effects	Yes	Yes	Yes	Yes
R-squared	0.019	0.022	0.022	0.378
Observations	1695	1253	1253	52

* p<0.05, ** p<0.01, *** p<0.001

In the case of the absolute difference in Trust as the variable of interest, we also see a positive change in effect. The original effect it has on profitability, without the inclusion of the moderation variable, is 99.9%. The inclusion of the information quality measure changes this effect to circa 149.6%%. The moderating variable has increased the positive effect Trust has on profitability. The opposite has happened for the effect that the absolute difference in Individualism has on profitability. Without the addition of the moderating variable, Individualism has a negative relationship with the profitability, 1 year after the M&A deal. The

addition of the moderating variable has a negative influence on the effect. Hence, in this case, it has actually strengthen the negative relationship between Individualism and profitability. There is a shortage of data, regarding the relationship between the absolute difference in hierarchy and profitability, to show results on the effect. important to notice here is that none of the interaction terms show to be significantly related to the profitability of M&A deals

Models 1 and 2, which contain data regarding geographic distance and Trust, support the set prediction in this paper. Both models show that the moderating variable has a positive effect on the relationship between the dependent and independent variable. This would mean that having a Big 4 company as the auditor of a target firm, would result in a higher profitability than having a non-Big 4 company as the target's auditor. Contradictory, the third model with Individualism as the measure of cultural value, shows the opposite. In this case, having a Big 4 auditor as the target firm actually leads to having a less profitable M&A deal. To further test the set prediction in this paper, a subsequent moderation analysis will be performed with a different dependent variable. Again, the dependent variable has been replace by the change in profitability 3 years after the M&A deal has been confirmed. These models will most likely provide a more realistic analysis on the profitability, as the effects of a cross-border M&A deal most probably will not be realized 1 year after the deal has been confirmed.

3 years after the M&A deal

The following results, shown in table 12, are the results of the models where the change in profitability after 3 years is the dependent variable. The hypothesis regarding the moderation analysis will be either confirmed or rejected based on the following results.

The first section of the table shows the results of the effect that the variables of interest have separately on the profitability. These are similar to the results shown in table 10, as these tables comprehend the same models. Meaning that the 4 models shown in table 12, include all control variables. Yet, their effects are not shown in the table.

The second section shows the interaction terms of the different models. Again, these coefficients will tell the difference in effect. The interaction term between geographic distance and Big4 shows a positive coefficient. The coefficient is equal to 10.6%. hence, due to the inclusion of Big4 as a moderating variable, the effect of the geographical distance on the profitability after 3 years is now equal to approximately -0.4%. This implies that the inclusion of the moderating variable has weakened the negative effect that geographic distance has on the dependent variable. This would not be in line with hypothesis 2_0, which states that the level of information quality has no effect on the relationship between geographical distance and the profitability. However, the results are not significant on any level. Therefore, based on these results there is not enough evidence to reject the null hypothesis.

The coefficient of the interaction term between Trust and Big4 is also of a positive nature. However, the positive difference in effect is so high that the original negative relationship between Trust and profitability becomes a positive relationship. Due to the moderating variable, the effect changes from a negative -1027.1% to a positive 762.1%. This would impose that having a Big4 auditor as the target firm would have such a positive impact on the profitability of a deal, that it would cover the negative impact originated by having a difference in the level of Trust.

Table 12 - Moderation analysis

	ΔProfitability (3 years)			
	Geographic distance	Cultural values		
	1	2	3	4
Geographic distance	-0.110			
	(0.752)			
Trust		-10.271		
		(0.371)		
Individualism			-30.634	
			(0.193)	
Hierarchy				-80.729
				(0.622)
Big4	0.677	-3.298	-1.951	-3.874
	(0.894)	(0.749)	(0.823)	(0.886)
Geographic distance X Big4	0.106			
	(0.914)			
Trust X Big4		17.892		
		(0.683)		
Individualism X Big4			26.238	
			(0.767)	
Hierarchy X Big4				0
				(.)
Constant	-1264.482	-937.147	-179.238	-2314.159
	(0.254)	(0.571)	(0.921)	(0.683)
Acquiring country fixed effects	Yes	Yes	Yes	Yes
Target country fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Time varying acquiring country-level effects	Yes	Yes	Yes	Yes
Time varying target country-level effects	Yes	Yes	Yes	Yes
R-squared	0.017	0.021	0.022	0.443
Observations	1695	1253	1253	52

* p<0.05, ** p<0.01, *** p<0.001

The interaction term between Individualism and Big4 is a positive one as well. However, in this case the relationship between Individualism and profitability would still be negative, despite the fact that a target firm is audited by one of the Big 4 accounting firms. The negative effect decreases from -3063.4% to -439.6%. This would imply that due to the target firm being audited by a Big 4 accountant firm, the profitability would only decline with 4.40% for every 0.01 the absolute difference in Individualism increases.

Again, there is not enough data to draw any conclusion on what the difference in effect is on the relationship between Hierarchy and profitability. This is once again caused by the lack of observations with matching data regarding the level of Hierarchy.

These results show that the inclusion of the Big4 variable to the models does have an effect on the relationships between the variables of interest and the change in profitability. Moreover, the results show that this effect is positive. However, these results are not significant and therefore do not provide enough evidence to be able to reject the null hypothesis. Based on the results in table 12, there is not enough evidence to conclude that having a Big 4 accounting company as the auditor of the target firm has an effect on the relationship between geographical distance and cultural differences, and the profitability of cross-border mergers and acquisitions

6. Conclusion

This paper has examined the effect of two determinants of cross-border mergers and acquisitions on the profitability of the M&A deal. The two determinants which have been examined are geographical distance and cultural differences. The geographical distance has been measured as the distance in kilometers between the most populated cities of each country. The cultural difference between countries has been measured using 3 unique cultural values, which are Trust, Individualism and Hierarchy. To test the relationships a sample of 2,980 observations has been used, which covers 76 unique acquiring countries and 77 unique target countries from all over the world. The recorded M&A deals have been completed within the period of time between the years 1999 through 2018.

The prediction set in this paper is that an increase in geographic distance/cultural difference has a negative effect on the profitability of a merger or acquisition between cross-border firms. The paper does find results that the geographic distance is negatively related to the profitability of a M&A deal. However, the results are not significant. Nonetheless, the insignificant results relating to geographic distance sample match the predicted direction. It shows that an increase in distance leads to a lower profitability. Furthermore, the results show that the effect of cultural difference on the profitability of a M&A deal is also negative. The results show that each of the separate cultural values, Trust, Individualism and Hierarchy, are negatively related to the profitability. Hence, there are results supporting that an increase in the cultural differences between countries leads to a decrease in profitability. Then again, the models are not able to provide significant results for the concerning relationships. Therefore, the evidence supporting these findings is again not strong.

Subsequently, this paper has examined the effect of including a measure for information quality on the relationships between geographical distance/cultural differences and the profitability of cross-border M&A deals. The prediction of this paper is that having information of higher quality ultimately leads to more profitable M&A deals, through better informed decision-making. But initially, this paper will try to find evidence that the quality of information affects the relationship between geographical distance/cultural differences and profitability in any way or that is has no effect on it. The measure for information quality is based on whether the target firm of the cross-border M&A transaction is audited by one of the Big 4 companies. The results of this paper suggest that the measure of information quality, has a moderating effect on the previously mentioned relationships. Furthermore, the effect that the moderating variable has on the relationships is identical. The effect of the moderating variable is in line with the predicted one of this paper. In all models, the effect of the moderating variable is positive. Meaning that due to the inclusion of the moderating variable, a negative relationship has become less negative, a positive relationship has become more positive and in the case of Trust as the variable of interest, the direction of the effect has even changed from negative to positive. These results show that when a target firm has a Big 4 company as their auditor, this is in favor of the profitability of the M&A deal. Yet, these findings are not supported by results of significant nature.

This paper builds further on prior research on cross-border merger and acquisitions determinants by Ahern, Daminelli and Fracassi (2015) and Erel, Liao and Weisbach (2012), among other papers. The period of time of the sample used in this paper is more recent, which

means that it gives a better representation of the modern financial world. In addition, it adds to the existing literature due to the examination of the level of information quality as a moderating variable. The field of cross-border M&A is currently still growing and there are a lot of possibilities for further research concerning this topic.

7. Appendix

Figure 3.1

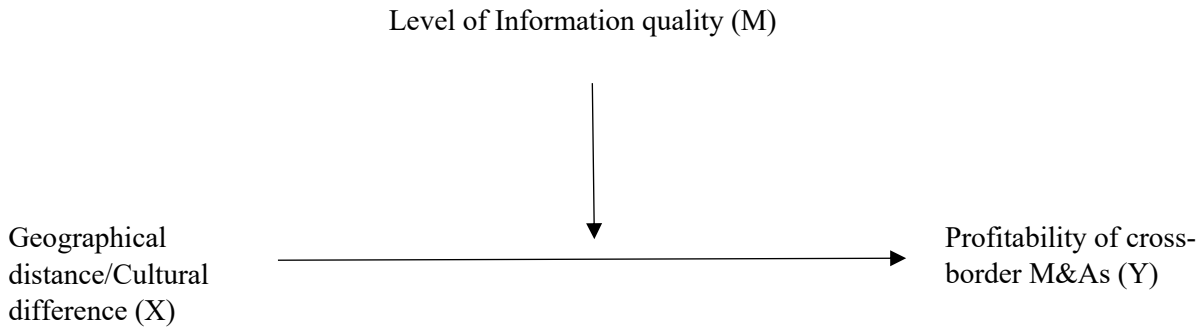
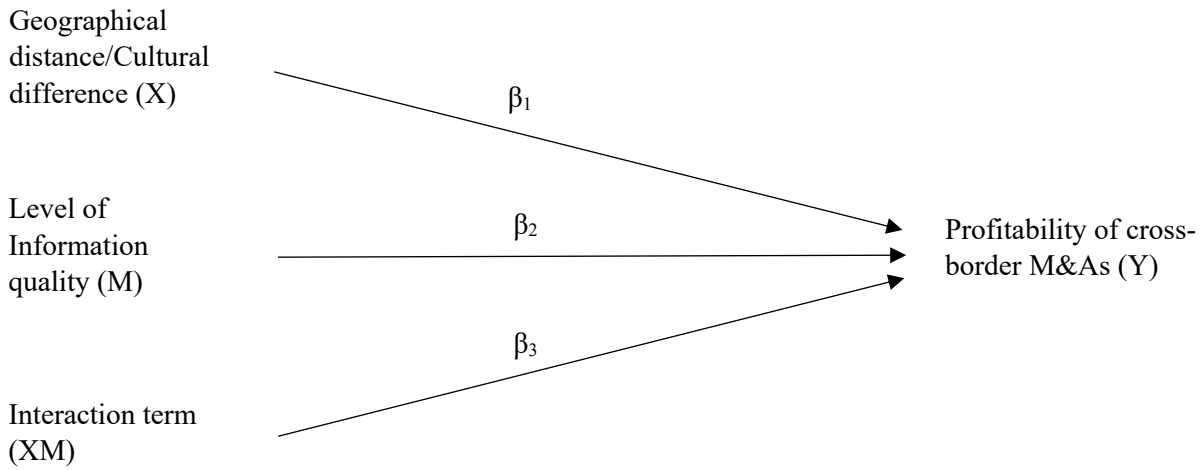


Figure 3.2



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