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Influence of host country institutions on subsidiary performance

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CONTENT

SUMMARY

The importance of institutions and their influence on business activities have attracted the attention of both recent researchers and practitioners. In this study, we make further contribution to this field of research by capturing the effect of host country institutional characteristics on subsidiary performance. We use a sample of 804 German-owned subsidiaries operating in 52 developed and developing markets from 2011 to 2014 and examine the impact of regulatory institutions namely voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption in the host countries on their performance. Our empirical results indicate that political stability and control of corruption enhance subsidiary performance, while voice and accountability undermines it. These findings provide important insights and practical implications for managers and policymakers.

1. INTRODUCTION

Recent decades has witnessed a surge in the amount of foreign direct investment (FDI) flows. In particular, more and more multinational enterprises (MNEs) set up subsidiaries overseas, aiming to harness host countries' locational advantages in parallel to exploit their internal strengths. In other words, MNEs are subject to the interplay of firms' competitive advantages and host countries' comparative advantages, which explains why some MNEs are more successful in some specific markets and less successful in others. However, exposed to dissimilar business environments, MNEs may find themselves struggling to achieve their target growth and development. This can be attributed to location-bound advantages which are not transferable across borders because of contextual differences (Casson, Dark, and Gulamhussen 2009). Therefore, examining the influence of host country specific factors on the performance of MNEs' subsidiaries is of vital importance. In fact, according to Dunning (1988), the role of location or country-specific factors in determining MNEs' behavior and performance is an integral part of international business research.

Specifically, when operating in foreign markets, besides other contextual factors such as cultural impacts, MNEs are greatly influenced by the host country institutional factors. Foreign firms cannot escape the influence of host countries' institutional context to which they are bounded (Ghemawat 2001, Peng 2002). The role of institutions has received a great amount of attention in international business research (Greenwood et al. 2008). The term "institutions" refers to the rules of the game devised by humans to shape social interaction (North 1991). Therefore, host country institutions can be understood as formal and informal rules existent in countries where MNEs' subsidiaries are based. Each country has its own political, legal, economic and social framework that facilitates and monitors business activities. Understanding the influence of those factors is of strategic importance to MNEs because institutional contexts need to be managed in a way that can maximize returns and minimize risk of investments for MNEs. Thus, by the term "subsidiary performance", we aim at exploring the actual financial performance of subsidiaries given the impact of host country institutional environment.

The quality of institutions in the host country is impactful to the survival and growth of foreign subsidiaries. The inefficiency or lack of crucial institutions in the host country may have negative impacts on the operation of MNEs' subsidiaries in local markets (Pattnaik, Choe, and Singh 2015). For instance, in emerging markets, weak institutions for trade, contract enforcement, communication, and information disclosure may lead to high transaction costs, decreasing returns for MNEs and intensifying level of uncertainty surrounding subsidiaries' survival (Khanna and Palepu 1997). However, in advanced economies, highly developed institutions can help mitigate such costs, thus increasing MNEs' returns and chance of survival. Obviously, host country institutional context may provide both opportunities and challenges; hence, it has an impact on the performance of MNEs. On the basis of these arguments, we would like to expose them to empirical analysis. Thus, we propose the following research question that considers the relationship between host country institutional context and subsidiary performance.

Research question: Does the quality of host country institutions affect foreign subsidiary performance?

To examine the above research question, we organize our study as follows. First, we briefly summarize theories of institutions, including discussing various definitions and classifications, from which we develop hypotheses. We would then introduce our method and data, providing a discussion of different measures that have been used to quantify subsidiary performance, which there is little consensus about, before reasoning why we opt for return on assets (ROA) as an indicator for subsidiary performance. We focus on six different dimensions of institutional quality, which we operationalize based on institutional measures specifically developed as World Governance Indicators, and examine the extent to which they influence foreign subsidiary performance. By quantifying the impact of institutional quality on subsidiary performance, we aim to contribute to existing empirical literature on the effect of contextual factors on subsidiary performance as well as to develop implications for managers and public policymakers.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1. Overview of institutions

While early international business research was dominated by the use of transaction cost and neoclassical economics, recent international business and management researchers have increasingly applied institutional theory to study the behaviors of multinational enterprises (MNEs). Primarily concerned with the relationship between organizations and their environment, institutional theory dips into the impact of the institutional context on MNEs' business activities (Scott 1995). This perspective implies that firms are affected by the institutions in which they operate and many aspects of theirs are driven by the desire to achieve fit with the institutional environment (Chen et al. 2015, Volberda 2012). Thus, strategic choices by MNEs are considered the result of their dynamic interaction with the institutional context (Peng 2002).

Institutions, as defined by Davis, North, and Smorodin (1971, 6), are a "set of fundamental political, social and legal ground rules that establishes the basis for production, exchange and distribution". Institutions are conducive to the effective functioning of markets by reducing uncertainty and transaction costs (North 1990), thus reaping more benefits for firms engaging in business transactions (Mudambi and Navarra 2002). The economic, political, and legal institutions of a country have a great impact on the transaction costs and transformation or production costs (North 1990), which eventually determine firm performance. Since the level of institutional quality and institutional development vary significantly across countries (Ghemawat 2001, Kostova and Zaheer 1999, Miller and Eden 2006), MNEs operating in different locations are exposed to different challenges and costs. Meanwhile, national factor markets which are an integral part of economic institutions are essential for supplying quality inputs for firms' production (Chan, Isobe, and Makino 2008).

The institutional framework consists of both formal and informal constraints. The former refers to explicit rules in a society, usually created by government legislation, such as constitutions, regulations, laws, and contracts that give structure to the relations in a society (North 1991). The latter comprises unwritten taboos, customs,

and traditions that modify behavior and form norms of behavior, values, attitudes, and conventions (North 1991). According to Garrido et al. (2014), formal institutions, which are explicitly established by an authority, an organization, or an individual, are subject to change over time; however, informal constraints, which are handed down from one generation to the next by teaching and imitation, have their roots in social values and are hard to change. Whether formal or informal, institutions, which are the "humanly devised constraints", establish the rules of the game that structure the economic, political, and social relationships in a society or a country (North 1990, Scott 1995).

North (1990) and Scott (1995) also develop three pillars that characterize institutions, namely regulatory, normative, and cognitive dimensions. While the regulatory pillar constitutes formal institutions, the normative and cognitive components fall into the category of informal institutions (North 1990).

The regulatory component reflects existing rules and laws that prescribe or proscribe certain behaviors and consequently maintain the order in a society while minimizing uncertainty (Tihanyi, Devinney, and Pedersen 2012). Legal systems, which are one aspect of the regulatory institutions, differ across countries and may influence the performance of foreign subsidiaries both positively and negatively. La Porta et al. (1998)'s study find that host countries with common law-based legal systems generally provide foreign subsidiaries with higher degrees of protection and legal enforcement in comparison with host countries with civil law-based systems. Specifically, subsidiaries located in common-law host countries, which are characterized by strong rule-of-law orientation, are exposed to lower risk of expropriation and contract repudiation (La Porta et al. 1998). The regulatory pillar also encompasses policies in a variety of fields, ranging from investment regulations (Djankov et al. 2002), taxes and tariffs (Grubert and Mutti 1991), to controls on foreign ownership (Gomes-Casseres 1990). For example, while some countries increase entry barriers to hamper the profit opportunities of foreign operations (Bergara, Henisz, and Spiller 1998), others offer investment incentives to attract FDI inflows (Boddewyn and Brewer 1994). Regulatory institutions also play a crucial role in stipulating and enforcing the rule of law (Rodriguez, Uhlenbruck, and Eden 2005). In some countries, due to lack of intellectual property protection regulations, MNEs

are not able to protect their valuable firm-specific technologies from replication (Oxley 1999). Besides, the inadequacy of corporate governance regulations can make it difficult for MNEs to evaluate the creditworthiness of their potential business partners (Pattnaik, Choe, and Singh 2015).

The second pillar constituting country-level institutions is normative institutions which refer to normative rules, prescriptive, evaluative and obligatory dimensions embedded in social life (Scott 1995). Such rules, including routines, roles, procedures, conventions and codes, provide the framework for how things should be done (March and Olsen 1989). In this pillar, norms and values are key components: "Values are conceptions of the preferred or the desirable, together with the construction of standards to which existing structures or behaviors can be compared and assessed. Norms specify how things should be done; they define legitimate means to pursue valued ends." (Scott 2008, 55). In other words, the normative dimension helps to maintain stability by setting socially accepted expectations for behavior driven by morals and obligations. The rationale behind this pillar is that actors respond to situations not according to their best interests but to their beliefs and to what they think is the most appropriate way (Scott 2008). Thus, like the regulatory pillar, the normative pillar also creates constraints and empowers social behaviors. In the case of MNEs with different operating markets, they have to vary their strategies in dealing with different host-country values and norms which greatly impact work ethics, productive capacity, and management dynamics and eventually determine the cost of doing business in a specific country (Porter 2000, Franke, Hofstede, and Bond 1991). For example, subsidiaries located in highly corruptive countries are forced to make unofficial payments to receive fair treatment, which leads to their mounting transaction costs. Also, as illustrated by Fukuyama (1995) and Ghemawat (2001), in societies with high levels of mutual trust, economic performance is promoted while in societies where social conflict prevails, the efficiency of economic activities is significantly reduced.

The third key pillar of institutional theory emphasizes the importance of cognitive elements of institutions. Cognitive institutions can be defined as "the shared conceptions that constitute the nature of social reality and the frames through which meaning is made" (Scott 2008, 57). Those shared common ideas and meanings are

created through the interaction between objective occurrences and subjective understanding of actors. This involves a wide range of cognitive information processing activities. For example, cognitive schema may impact on knowledge creation and knowledge sharing and may vary significantly across nations (Alexander 2012). In the same sense, inherent common beliefs which surround individual understandings and responses to risks, uncertainty, and ambiguity constitute guiding principles and orientations towards changes, innovation, and partner cooperation (Franke, Hofstede, and Bond 1991, Jones and Davis 2000, Shane 1993, Ambos and Schlegelmilch 2008). Those cognitive institutions influence the attitudes of individuals in host countries, which eventually determine their level of openness and willingness to accept differences and newness. For example, subsidiaries operating in cultures with high uncertainty avoidance are bounded by standardized decision making rules and formal plans (Alexander 2012), thus having to allow for bureaucracy and complex administrative procedures. Furthermore, located in countries with moderate openness, subsidiaries are prevented from innovating and promoting knowledge transfer, whereas subsidiaries in societies tolerant of newness and differences are prone to overcoming organizational inertia and rigidity and violating organizational norms and procedures, resulting in better innovation (Shane, Venkataraman, and MacMillan 1995).

To sum up, efficient institutions can facilitate firms' operation and consequently result in their good performance; however, inefficient or inadequate institutions may impede their business activities, which eventually have negative impacts on their performance. As a result, MNEs operating in different locations commit to different challenges and costs. In other words, the performance of MNEs operating in the local market is adversely affected by the inefficiency or lack of developed institutions whereas well-developed institutions have a positive impact on the effective functioning of MNEs' foreign subsidiaries. Specifically, host country institutional systems comprising the type of government, political stability, government effectiveness, regulatory framework, rule of law, corruption control, and structure of policy making together with social norms and conduct provide the environment and serve as the foundation for MNEs' subsidiaries to carry out business transactions. In brief, regulatory, normative, and cognitive institutions play crucial roles in the

effective functioning of markets by determining uncertainty and transaction costs (North 1990) and consequently benefits for firms engaging in business transactions (Mudambi and Navarra 2002).

In this study, given the importance of regulatory institutions which are critical in extant research in terms of business investment decisions (Pandey, Coursey, and Moynihan 2007, Nyström 2008, Asiedu and Freeman 2009, Everhart, Vazquez, and McNab 2009), we subject our scope of research to the effect of regulatory institutions on subsidiary performance. In particular, six elements of regulatory institutions, which are voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption, are to be elaborated on in our paper.

2.2. Hypothesis development

Voice and accountability

Voice and accountability reflect citizens' ability to participate in selecting their government, freedom of expression, freedom of association, and free media (Kaufmann, Kraay, and Mastruzzi 2009). Voice and accountability is closely linked to the degree of democracy in a country. There does not seem to be a consensus among previous literature over whether voice and accountability, or democracy, strengthens or weakens firm performance. On the one hand, one stream of studies argues that higher voice and accountability leads to higher firm performance. In democratic countries where political rights and civil liberties are guaranteed, citizens are more motivated to work and invest because they get access to unrestricted information and feel free to determine how to allocate their resources (Doucouliagos and Ulubaşoğlu 2008). Totalitarian regimes characterized by poor voice and accountability, however, discourage firms from identifying opportunities proactively and engaging in international business activities (He and Cui 2012). North (1990) also argues that democracy enables individuals to analyze opportunity costs freely and take part in entrepreneurship due to clear and secure property rights. A highly developed democracy is also likely to guarantee transparency of policies and policy-making process (Quinn and Woolley 2001) and enhance property rights, which determine profitability from different types of investment (North 1990). Adequate

property rights protection is of great importance to firm performance, because it helps reduce transaction costs and risks and allows for efficiency-enhancing specialization of labor and subsequent trade (North 1990). Therefore, when property rights are better protected, private sector actors are more likely to make investments. On the contrary, if subsidiaries are located in a dictatorial host country, where more property rights violations are expected, they may be exposed to uncertainty in economic transactions and experience reduced expected gains from productive activities (North 1990). Scully (1997) and Lohmann (1999) also support the view by showing the connection between liberty and democracy to economic performance.

On the other hand, a strand of contemporary observers contends that voice and accountability undermines firm performance. Przeworski and Limongi (1993) argue that free election and freedom of organization harm property rights protection because it leads to redistribution of property from capitalists to the poor majority. Besides, in countries with a high level of voice and accountability, firms' activities are exposed to public scrutiny, which may hinder their motivation for rent-seeking engagement (Sedik and Seoudy 2012). Furthermore, in countries with entrenched autocracy, transition to democracy accompanied by increased voice and accountability may temporarily result in political instability, which disrupts production, discourages long-term planning, and consequently weakens subsidiary performance (Nur-Tegin 2014). However, all in all, it seems reasonable to expect that democracy has economic benefits over autocracy especially in the long run, when democracy is mature and stable (Nur-Tegin 2014). Therefore, we hypothesize that higher voice and accountability in the host country contributes to higher subsidiary performance.

Hypothesis 1: Voice and accountability in the host country has a positive impact on subsidiary performance.

Political stability

Fluctuations in political institutions have been mentioned frequently in the literature on international business. Political stability measures the perception of the likelihood of political instability and politically motivated violence, including terrorism (Kaufmann, Kraay, and Mastruzzi 2009). Political instability may take forms of riots,

protest demonstrations, and strikes, or involve more serious measures such as change of government through coups, assassinations, or civil war (Bollen and Jones 1982). Political instability is related to political risk, though some authors argue that the former is an objective measure while the latter has a subjective nature (Bollen and Jones 1982, Fitzpatrick 1983). Political instability may also refer to political events or constraints by government actions that lead to undesirable consequences for subsidiaries such as loss of control over ownership or loss of benefits (Fitzpatrick 1983). Such government interventions include expropriation, restrictions on remittance of profits, discriminatory taxation, and public sector competition (Fitzpatrick 1983, Azzimonti and Sarte 2007). In politically stable countries, certainty and continuity in government policies encourage firms to engage in risky activities such as overseas expansion (Ali et al. 2010, Vaaler and Schrage 2009). In contrast, volatile political environments with unforeseeable shifts in public policies can disrupt their investment initiatives (Acemoglu and Johnson 2005). Lack of political stability poses challenges to subsidiaries as it causes discontinuity in their operations during riots, strikes, demonstrations, etc., which are difficult to anticipate (Fitzpatrick 1983). Severe political events such as war and insurgency also have a negative impact on foreign subsidiary survival (Li, Lorraine, and Paul 2013). Shell, for instance, was forced to leave Nigeria due to violent conflict despite the abundant natural resources of the country (Feil et al. 2008). Unpredictable government action has an adverse impact on subsidiary performance by discouraging adequate investment. Business operations suffer from loss in productivity because managerial services are no longer available after expropriation happens (Azzimonti and Sarte 2007). If they expect that their capital might be expropriated ex post, foreign investors will hardly raise their investment to the level where expropriation becomes optimal (Azzimonti and Sarte 2007). As a result, even though there is no expropriation in equilibrium, FDI may be inefficiently low and the allocation of capital is likely to be distorted (Azzimonti and Sarte 2007).

Hypothesis 2: Political stability in the host country has a positive impact on subsidiary performance.

Government effectiveness

Government effectiveness refers to the extent of bureaucracy, the quality of public services, the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to its policies (Kaufmann, Kraay, and Mastruzzi 2009). It is an essential part of a strong institutional environment of a country (Williams and Martinez 2012).

Government effectiveness affects most, if not all, business activities, ranging from starting a business, accessing credit, paying taxes, to drafting contracts (Williams and Martinez 2012). When developing international business strategies, companies may have to take into consideration the quality of public goods (Cuervo-Cazurra and Genc 2008, Knill 1999). Lack of government effectiveness not only results in deficiencies in public goods but also leads to a high level of bureaucracy (Ghemawat and Khanna 1998). Heavy bureaucracy, measured by the number of permits required every year to operate, undermines firms' productivity (Augier, Dovis, and Gasiorek 2012). The incompetence of the government may represent a source of uncertainty and unpredictable institutional costs that impede firm growth (He and Cui 2012). Companies are likely to encounter some unknowns in government policies as well as arduous demands to comply with different regulations that require substantial time and efforts (Elango and Lahiri 2014). This may lead to unproductive investments, ambiguities during the decision making process, instability in their operations (Elango and Lahiri 2014).

Conversely, in countries characterized by good governmental capabilities, low institutional costs allow enterprises to pursue more profitable opportunities and invest resources in strategic activities for higher returns (He and Cui 2012). Besides, government effectiveness has proved to foster the development of firms' innovation in products, technology, process, and management (Jiao, Koo, and Cui 2015). Government effectiveness also makes it easier for firms to set up its operation, get access to credit, and engage in international business activities (Williams and Martinez 2012).

Hypothesis 3: Government effectiveness in the host country has a positive impact on subsidiary performance.

Regulatory quality

According to Kaufmann, Kraay, and Mastruzzi (2009, 6), regulatory quality "captures the perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development". This definition is restated as the presence of unfavorable market policies through burdensome regulations and the degree of regulatory uncertainty (Kaufmann, Kraay, and Mastruzzi 2004). In the same sense, many other scholars define regulatory quality as the extent to which firms are likely to encounter bureaucracy when handling legal procedures (Norton 1998) or as the degree where compliance with current laws and regulations may cause unnecessary hurdles which deter firms from achieving their optimal business outcomes (Fogel and Zapalska 2001, Geiger and Hoffman 1998). From those definitions, it is inferred that an ineffective and inefficient regulatory system with time-consuming legal procedures and non-transparent bureaucratic processes is conducive to increased transaction costs and significant riddles on firms' productive activities (Verheul et al. 2002).

In particular, in countries where poor regulatory quality is present, businesses face irregularities in policies or volatile regulations that demand extensive managerial efforts and time (Elango and Lahiri 2014). As a consequence, business activities in such countries are often confronted with inefficient investments, multiple ambiguities in decision making processes and instability in operations (Elango and Lahiri 2014). In such cases, the prioritized concern of MNEs is to minimize the exposure of their business to state interference instead of maximizing business efficiency and profitability, causing them to deviate from making optimal decisions, incurring more costs and delays to their business operations (Elango and Lahiri 2014). Indeed, Birnbaum (1984) finds that regulatory uncertainty leads (primarily smaller) firms to deviate from their optimal outcomes since they tend to select less risky strategies and decrease riskier new product invention. In contrast, firms located in countries with better regulatory quality are less burdened with such concerns and can therefore focus more on maximizing their returns and efficacy as well as optimizing their business decisions.

From the arguments above mentioned, we formulate our fourth hypothesis as follows:

Hypothesis 4: Regulatory quality in the host country has a positive impact on subsidiary performance.

Rule of law

Rule of law is an integral part of the country-level formal institutional environment (Roxas, Chadee, and Erwee 2012). Rule of law implies the existence of laws, regulations, government policies and programs, and basic infrastructure and services which enable a market-based economy to function properly (North 1992). In particular, as defined by Kaufmann, Kraay, and Mastruzzi (2009, 6), rule of law "captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence". Similarly, as Kaufmann, Kraay, and Mastruzzi (2004) put it, rule of law constitutes the cornerstone for nation-wide economic and social relationships, referring to the degree to which rules and regulations are predictable and fair and how those rules and regulations are enforced across the nation. Within the scope of business, rule of law determines the extent to which legal rights of business firms are protected and enforced (Ahn and York 2011, Fogel et al. 2006). Based on those definitions, it is understandable that a strong rule of law is crucial to business growth by providing the protection of property rights (Haggard, MacIntyre, and Tiede 2008), enhancing transactional trust (Fogel et al. 2006) and mitigating financial instability (Hausmann, Pritchett, and Rodrik 2005).

To be more specific, countries with well-established rule of law in which legal rules and regulations are unambiguous to business managers should provide more thriving conditions for firms to confidently conduct business activities (Elango and Lahiri 2014). A nation's strong rule of law is able to foster transactional trust by having an efficient court system (Fogel et al. 2006) where firms can safeguard justice in circumstances of disputes (Elango and Lahiri 2014). A well-functioning rule of law is capable of preventing individuals and firms from engaging in corrupt and opportunistic behaviors in the sense that they are aware of legal consequences from the enforcement of contract terms, rules and property rights (North 1991). In other words, firms can implicitly assume that law enforcement will force them to compensate for any damage done to other parties in the event of wrongdoings

(Khanna and Palepu 1997). In contrast, in nations where the rule of law is not strictly enforced, firms are deterred from investing at the optimal level because they cannot be assured of the full protection of their properties.

However, another strand of research proposes the negative effect of rule of law on firm performance. Elango and Lahiri (2014) find a negative influence of rule of law on firm performance in their empirical study, and propose that countries with strong rule of law have hardly any entry barriers and thus expose business activities to high level of competition. Also, Shi (2007) argues that nations characterized by inefficient rule of law may attract foreign investors because they can engage in rent-seeking opportunities. Therefore, strong rule of law which may result in higher competition and less rent-seeking engagement may impede subsidiary performance.

In summary, the rule of law of a nation greatly influences the performance of businesses, meaning that business activities by MNEs' subsidiaries are highly exposed to the well-being of rule of law. Thus, we form our fifth hypothesis as follows:

Hypothesis 5: Rule of law in the host country has a positive impact on subsidiary performance.

Control of corruption

The World Bank (1999) identifies corruption as one of the greatest obstacles to economic growth, social development, and reduction of poverty. In fact, corruption undermines the overall quality of governance within a country and has wide-ranging negative effects on investment decisions, firm productivity, and national economic growth (Jensen, Li, and Rahman 2010). Drury (2006, 122) defines corruption "as the abuse of public office for private gain", whether pecuniary or in terms of status. Similarly, according to Cuervo-Cazurra and Genc (2008), corruption is a lack of respect for the rule of law, where public power is used for personal enrichment. Corrupt practices include the abuse of government authority and power to extract private gains through bribery, contract kickbacks, and embezzlement of government property (Jensen, Li, and Rahman 2010). In that sense, control of corruption is defined as "perceptions of the extent to which public power is exercised for private

gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests" (Kaufmann, Kraay, and Mastruzzi 2009, 6).

Existing literature has largely argued that there is a negative influence of corruption on firm performance. First, it is suggested that corruption may distort resource allocation and dampen economic efficacy (Mauro 1995), because in a business environment where corruption is prevalent, business agents are tempted to deviate their talents and efforts from R&D activities to rent-seeking attempts (Murphy, Shleifer, and Vishny 1990), and powerful entry barriers prevent new firms from flourishing, leaving inefficient ones to survive (Djankov et al. 2002). Second, corruption usually implies insufficient protection of property rights, which discourages firms from making additional investments, thus resulting in suboptimal business outcomes (Claessens and Laeven 2003). Corruption is typically also associated with complicated and burdensome bureaucratic procedures that increase transaction costs and lead to productivity losses (Kaufmann and Wei 1999, De Rosa, Gooroochurn, and Görg 2010). In contrast, in societies where corrupt practices are hardly present, it is unnecessary for firms to make unofficial payments to receive fair or expedited treatment, nor do they run the risk of dealing with competitors who, due to corrupt practices, might have privileges of not obeying regulatory requirements because of official favoritism (Elango and Lahiri 2014). Since subsidiaries running business in host countries are subject to their system of corruption control, we propose our last hypothesis as follows:

Hypothesis 6: Control of corruption in the host country has a positive impact on subsidiary performance.

3. METHOD

3.1. Data and sample

We conduct a longitudinal study on a sample of foreign subsidiaries of 16 largest German-owned parent companies with a 4-year research period from 2011 to 2014 in Orbis database.

Our study focuses on two data levels, i.e. firm and macro levels. With regard to firm-level data, they are all retrieved from Orbis database. We try to restrict our research to only a few data sources in order to maintain as much uniformity in the data as possible. Due to limited temporal scope, we decide to restrict our research to one single home country where MNEs originate. In the end, we end up with Germany as our country of origin. The reason why we choose Germany is that Germany is an institutionally developed country and German MNEs operate in a great variety of host countries, which enables us to clearly examine the impact of institutional similarity or dissimilarity between Germany and other host countries on foreign subsidiary performance. Besides, with a huge number of German MNEs' foreign subsidiaries, we can create a sample large enough for our study.

Together with all the data collected from the above mentioned database, our dataset could have amounted to a very large number of observations. However, we use several criteria to filter our sample down to a smaller size.

First, only wholly-owned subsidiaries are selected because they are more vulnerable to host country environment than other entry modes (Beyer and Fening 2012), which is more likely to reveal the relationship between host country institutions and subsidiary performance.

Second, we limit our sample to subsidiaries which have been operating for at least 3 years until the time of data collection since financial data of newly established subsidiaries may not be accurate in reflecting their performance in a given institutional context. In fact, according to Woodcock, Paul, and Shige (1994), only after 2 years of inception can the initial performance of newly established subsidiaries is inclined towards stabilization. However, we choose the minimum thread of 3 years to ensure better stability in our data.

Concerning macro-level data which measure institutional quality, we obtain those data from World Governance Indicators. We choose World Governance Indicators in accordance with the work of Kaufmann and colleagues (2009) as our institutional proxies, since they are reflective of our theoretical assumptions made earlier. With regard to another category in macro-level data which are indicative of country characteristics, we derive those data from IMD World Competitiveness online database and Global Competitiveness Report because only from those two data sources could we find reliable and persistent data for country measures.

In the end, our study incorporates 16 parent companies classified as large and very large ones, with 804 subsidiaries operating in 52 developed and developing host countries.

3.2. Measures

3.2.1. Dependent variable

Different measures can be employed to evaluate subsidiary performance. Richard et al. (2009) distinguish three broad groups of firm performance measures: market, hybrid, and accounting.

Market-based measures include shareholder value measures such as earnings per share, stock price, market value, price-to-earning ratio, and competition-based measures such as sales per employee, labor productivity, and total shareholder return. Accounting measures include, principally, return on assets (ROA), return on investments (ROI), return on equity (ROE), return on sales (ROS), profit margin, sales, sales growth, and market share. Hybrid measures consist of such indexes as Tobin's Q and Altman's Z.

Tobin's Q is the ratio of the market value of firm assets to their replacement cost and is a theoretically based measure of economic return (Tobin 1969). However, Tobin's Q fails to account for intangible assets, leading to some accounting distortions (Richard et al. 2009). To combat this weakness, Altman's Z was developed. The Z-score specifically accounts for catastrophic financial events, predicting a firm's likelihood of bankruptcy, and shareholder outcome through the combination of various accounting and stock market measures including the ratios of working capital

to total assets, retained earnings to total assets, the market value of equity to the book value of liabilities, and sales to total assets (Altman 1968).

Hult et al. (2008) specifically summarize how subsidiary performance is measured in international business literature. They divide performance measures into three main dimensions: financial, operational, and overall effectiveness. The financial dimension which encompasses both accounting and market-based measures consists of such indicators as ROI, ROA, ROE, ROS, profit margin, sales growth, stock price, earnings per share, and Tobin's Q. The operational dimension which refers to non-financial factors comprise of both product-market outcomes (market share and efficiency) and internal process outcomes like productivity and employee satisfaction. Meanwhile, more comprehensive measures and indicators such as perceived overall performance, achievement of goals, and perceived overall performance relative to competitors constitute the overall effectiveness.

Based on the work of Hult et al. (2008), Ramsey and Bahia (2013) conduct a complementary literature review. Their findings show that financial measures are the most commonly used in the study of subsidiary performance, but they also emphasize that there should be combination between dimensions to generate the most accurate insight into subsidiary performance. Moreover, their study sheds light on the importance of the source of subsidiary performance: subjective (primary) and objective (secondary) data. Objective data are preferable when the data are available and reliable. However, due to cross-country differences in accounting standards, objective data may encounter reliability problems, which can be compensated for by subjective data. But such subjective data may be misleading because managerial perceptions may vary across regions. Therefore, they conclude that subjective measures are able to substitute for objective ones when the latter is not available or reliable.

Following the popularity of financial measures found in subsidiary performance literature, we decide to use ROA as the proxy for subsidiary performance. We do not use sales, sales growth, profit margin or other absolute measures since subsidiaries in our sample range from small to very large firms; rather we opt for a size adjusted measure for performance. Besides, of all the objective measures, only ROA is available at subsidiary level. A high ROA indicates that the firm is more profitable

with less investment. Also, we think that because our study sample consists of manufacturing companies where the efficient use of production facilities is an important factor, ROA is a suitable indicator for efficient resource usage.

However, as pointed out by Talpová and Scalera (2015), a common weakness of financial measures for subsidiary performance, in general, is that they can be distorted by managers who aim to lower profit figures to avoid paying high taxes or those who employ transfer pricing. Thus, they recommend that the use of financial measures should be accompanied by other dimensions of measures, e.g. operational or overall ones.

We admit that the inability to incorporate all dimensions of measures in our research is one of our study limitations due to limited time for data collection. Nevertheless, because institutional impact is the centre of our research with more transparent legislation on auditing and accounting standards implying higher institutional quality, we think that ROA will be less (more) likely to be distorted in institutionally better (worse) countries. In other words, ROA publicized by subsidiaries could co-vary with the level of institutional quality, which fits in well with our prior hypotheses. Finally, by the term "subsidiary performance", we mean actual performance of subsidiaries. In that sense, ROA which is a frequently used accounting-based measure for performance is preferred over a market-based measure as the latter reflects shareholder expectations about the future (Hutzschenreuter and Horstkotte 2013, Richard et al. 2009). ROA is computed as the net income of subsidiaries divided by their total assets. Both of these data are retrieved from Orbis database.

3.2.2. Independent variables

To evaluate host country institutional contexts, we employ the six composite measures namely voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law, and control of corruption from Worldwide Governance Indicators (WGI). The operationalization of these aggregate indicators is described below:

- Voice and accountability reflect "perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media".

- Political stability and absence of violence/terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism.
- Government effectiveness reflects "perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies".
- Regulatory quality captures "perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development".
- Rule of law reflects "perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence".
- Control of corruption measures "perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as capture of the state by elites and private interests".

(Kaufmann, Kraay, and Mastruzzi 2009, 6)

The six aggregate WGI indicators are scored from approximately -2.5 to 2.5, where a higher score indicates a better institutional context. The WGI report gives a broad comparison for 215 countries over a period of 1996 to 2014, which also covers our observation period of 2011 to 2014. The data are compiled and calculated based on more than 30 extant sources that report the perspectives of citizens, entrepreneurs, and experts in public, private, and non-governmental sectors on the quality of different aspects of institutions. These data sources are rescaled and combined to create six aggregate measures using the unobserved components model (Kaufmann, Kraay, and Mastruzzi 2009). Dikova (2009) considers these indicators as proper measures, because they cover a wide range of institutional aspects and are comparable across different countries, both developed and emerging ones.

3.2.3. Control variables

We take into consideration parent company-, subsidiary-, and country-level variables that possibly affect the level of subsidiary performance.

According to the resource-based view of the firm, sustainable and superior subsidiary performance derives from the ownership, transfer, and deployment of the parent firm's valuable and inimitable resources (Capron and Hulland 1999). The accumulation and leverage of these unique resources are firms' primary sources of competitive advantages (Barney 1991, Wernerfelt 1984). MNEs with rare resources are also likely to generate higher income from foreign business activities due to economies of scale and scope (Kotabe, Srinivasan, and Aulakh 2002, Morck and Yeung 1991). Therefore, we control for three types of parent firms' resources that are likely to influence foreign subsidiary performance: parent firm size, age, and host country experience. Parent firm size, which is measured by sales, demonstrates the size of resources that can be utilized when the firm enters a foreign market (Penrose 1959, Hymer 1960/1976). These resources and capabilities are age dependent, with younger firms having limited resources and fewer capabilities in comparison with established ones (Carr et al. 2010). Thus, we would also control for parent firm age.

Another aspect that we take into consideration is parent companies' international experience, which demonstrates their capacity to manage foreign subsidiaries (Chan, Isobe, and Makino 2008). Some extant studies have shown that international experience allows firms to reduce risks associated with uncertainty in oversea business activities and consequently has a positive impact on subsidiary performance (Delios and Beamish 2001, Makino and Delios 1996). In order to measure parent companies' international experience, previous studies have suggested several ways. Pattnaik, Choe, and Singh (2015) count the number of countries entered as of the year of dependent variable in order to capture parent companies' international experience. However, we do not think that this measure reflects parent companies' international experience in the host country because different countries have distinct contexts. MNEs that are used to developed markets with stable conditions may not be able to adapt to developing markets that are subject to more political hazards where the companies have little experience. Thus, we adopt the measure by Chan, Isobe, and Makino (2008), which calculates parent firm's host country experience by using a

dummy variable that is "1" if the parent company has established two or more subsidiaries in the same host country and "0" if otherwise.

On the subsidiary level, we control for subsidiary size, age, and industry. Subsidiary size, which is also measured by sales, determines the extent of economies of scale or scope and consequently influences performance. Subsidiary age, which is calculated as the number of years between the establishment of foreign subsidiaries and the observation period, controls for the possible impact of the liability of newness on subsidiary performance. Old organizations tend to have an advantage over younger ones because they have had time to build up the absorptive capacity to identify and assimilate new ideas and the ability to innovate (Cohen and Levinthal 1990). Established firms also exhibit higher levels of reliability and accountability in their performance, routines, and structure; therefore, their failure rates are likely to decline as they grow older (Hannan and Freeman 1984). The final aspect of foreign subsidiaries that we control for is their industry since manufacturing enterprises are likely to have lower return on assets due to higher investments in assets in comparison with non-manufacturing companies. We use a dummy variable that is "1" if the subsidiary is a manufacturing company and "0" if it is a non-manufacturing company. Data for the above-mentioned parent company-level and subsidiary-level control variables are collected from Orbis database.

On the country level, we control for host country's economic growth rate calculated as GDP growth rate. During periods of economic growth, companies are likely to have excess or slack resources, which enable them to develop capabilities without sacrificing day-to-day business (George 2005). Thus, economic growth tends to have a positive impact on firm performance. Besides the economic condition, access to resources in the host country also contributes to the success of foreign subsidiaries. In fact, the relative cost and availability of factors of production vary across different countries, and the dissimilarity in factor costs makes investment in some countries more favorable than in others (Dunning 1988). Thus, we also control for the cost of labor, which is a crucial factor of production. We obtain the data of labor cost and GDP growth rate from World Competitiveness Yearbook. Besides, assuming that countries with well-developed institutions attract more foreign subsidiaries and thus possibly have more intense competition, we also control for the level of competition

in host countries using the proxy of intensity of local competition in Global Competitiveness Report by World Economic Forum.

Finally, we also use year-dummy variables and parent-dummy variables to control for other unobserved effects in years and parent companies.

Table 1 summarizes all of our variables and their data sources.

Table 1: Data sources for all variables

Variable	Data source
ROA	Orbis database
Voice and accountability	World Governance Indicators
Political stability	World Governance Indicators
Government effectiveness	World Governance Indicators
Regulatory quality	World Governance Indicators
Rule of law	World Governance Indicators
Control of corruption	World Governance Indicators
Parent sales (Thousand USD)	Orbis database
Parent age	Orbis database
Host country experience	Calculated from Orbis database
Subsidiary sales (USD)	Orbis database
Subsidiary age	Orbis database
Industry dummy	Calculated from Orbis database
GDP growth rate	World Competitiveness Yearbook
Labor cost (USD/hour)	World Competitiveness Yearbook
Intensity of local competition	Global Competitiveness Report

In the end, our empirical model is specified as follows:

$$\begin{aligned} ROA = {} & \beta_0 + \beta_1 VoiceAccountability + \beta_2 PoliticalStability \\ & + \beta_3 GovernmentEffectiveness + \beta_4 RegulatoryQuality \\ & + \beta_5 RuleOfLaw + \beta_6 ControlOfCorruption + \beta_7 ParentSales \\ & + \beta_8 ParentAge + \beta_9 HostCountryExperience \\ & + \beta_{10} SubsidiarySales + \beta_{11} SubidiaryAge + \beta_{12} Industry \\ & + \beta_{13} GDPGrowth + \beta_{14} LaborCost \\ & + \beta_{15} IntensityOfCompetition + \sum_{i=1}^{4} \beta_{15+i} Year_i \\ & + \sum_{k=1}^{16} \beta_{19+k} Parent_k \end{aligned}$$

In which $Year_i$ and $Parent_k$are dummy variables that control for unobserved effects of years and parent companies respectively.

Given our longitudinal dataset, we perform panel-corrected regressions in which ROA is the dependent variable. The details of the model will be discussed in the following part.

4. EMPIRICAL ANALYSIS

4.1. Descriptive statistics

As shown in the table below (Table 2), our sample ranges from the low-performing subsidiaries to high-performing ones with their ROA registered between -94.49% and 81.41%. However, the mean of ROA indicates an overall modest profitability of the whole sample. Concerning independent variables, our sample consists of nations which score very high in those institutional indexes and those whose scores for the same indexes are low. Besides, the average scores for those measures suggest a balance among institutionally developed and underdeveloped countries. In terms of country-level control variables (i.e. intensity of competition; GDP growth rate, labor cost), there is a good spread of nations involved. While intensity of local competition is skewed to the right, which generally shows a high level of competition in our sampled nations, GDP growth rate and labor cost have a much more balanced distribution. Moreover, the remaining firm-level control variables reveal a good distribution of sampled firms including both old and young subsidiaries as well as small and large ones. Finally, it is inferred from the two last binary variables that most of our sampled subsidiaries have previous host country experience and their operation is nearly balanced between manufacturing and non-manufacturing sectors.

4.2. Correlation analysis

The correlation matrix (Table 3) reveals that most of our control variables are neither strongly correlated with each other nor with the independent variables, except for labor cost whose correlation with government effectiveness, regulatory quality, rule of law and control of corruption is above 0.7. However, the independent variables are correlated at a high level ranging from 0.71 to 0.96.

The correlation analysis is important to check for multicollinearity between the variables. Multicollinearity is present between the independent variables if they are related to each other or even dependent upon each other (Bowerman, Murphree, and O'Connell 2009). A rule of thumb states that a severe case of multicollinearity is present if one or more simple correlation coefficients between the predictor variables is at least 0.9 (Bowerman, Murphree, and O'Connell 2009).

Table 2. Summary of the study variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Dependent variable					
ROA	2491	5.8230	13.2238	-94.493	81.405
Independent Variables					
Voice and accountability	2491	0.7343	0.8785	-1.5859	1.7594
Political stability	2491	0.4007	0.6993	-1.9288	1.4931
Government effectiveness	2491	0.9717	0.7049	-0.8066	2.2582
Regulatory quality	2491	0.9447	0.6963	-1.292	2.2305
Rule of law	2491	0.9033	0.8382	-0.8282	2.1205
Control of corruption	2491	0.7744	0.9625	-1.0924	2.4526
Control variables					
Parent sales (Thousand USD)	2491	5.93e+07	4.91e+07	6174647	1.63e+08
Parent age	2491	110.2869	49.1747	3	167
Host country experience	2491	0.8819	0.3227	0	1
Subsidiary sales (USD)	2491	3.23e+08	9.19e+08	0	2.09e+10
Subsidiary age	2491	24.7859	20.8342	3	135
Industry dummy	2491	0.4349	0.4958	0	1
GDP growth rate	2491	1.7310	2.9063	-9.1325	9.4845
Laborcost (USD/hour)	2491	15.6048	10.8151	0.8427	49.6217
Intensity of competition	2491	5.4259	0.4643	3.9643	6.3710

In this sense, we consider the correlation between such variables as government effectiveness, regulatory quality, rule of law, and control of corruption to be serious. However, this should be expected, as the variables capture different, but related, dimensions of the institutional characteristics of the country. Besides, this is understandable and inevitable because those institutional indexes are obtained from the same data source, calculated and adjusted in the same manner.

To verify the presence of multicollinearity, we calculate variance inflation factors (VIFs), which are also shown in Table 3. This test demonstrates that the VIFs of government effectiveness, regulatory quality, rule of law, and control of corruption exceed 10, which indicates multicollinearity. To deal with this problem, many previous researchers have opted to run separate models, each of which contains one single institutional component, to test each of the hypotheses. However, as we are interested not only in the effect of each institutional measure on the financial performance of subsidiaries but also in its effect in conjunction with other institutional characteristics, we will run both a combined model with all the independent variables and separate models for every single variable to see if the results are consistent.

Table 3. Correlations of the study variables

	VIF	1.	2.	3.	4.	5.	6.	7.	8	9.	10.	11.	12.	13.	14.	15.
1. Voice & accountability	7.64	1.00														
2. Political stability	3.39	0.76	1.00													
3. Government effectiveness	21.01	0.76	0.73	1.00												
4. Regulatory quality	11.63	0.84	0.78	0.91	1.00											
5. Rule of law	40.47	0.85	0.77	0.96	0.95	1.00										
6. Control of corruption	22.91	0.78	0.71	0.96	0.92	0.96	1.00									
7. Parent sales	1.16	0.08	0.08	0.07	0.06	0.07	0.09	1.00								
8. Parent age	1.18	-0.11	-0.09	-0.05	-0.04	-0.06	-0.05	-0.17	1.00							
9. Host country experience	1.24	0.02	0.03	0.11	0.07	0.11	0.11	0.22	0.20	1.00						
10. Subsidiary sales	1.07	0.07	0.04	0.07	0.08	0.08	0.07	0.18	-0.06	0.07	1.00					
11. Subsidiary age	1.18	0.24	0.13	0.27	0.25	0.27	0.28	0.05	0.12	0.10	0.14	1.00				
12. Industry dummy	1.19	-0.24	-0.21	-0.18	-0.22	-0.20	-0.19	-0.06	0.21	0.20	0.05	0.05	1.00			
13. GDP growth rate	2.10	-0.58	-0.39	-0.27	-0.33	-0.32	-0.25	-0.02	0.09	0.07	-0.02	-0.14	0.21	1.00		
14. Labor cost	4.79	0.70	0.52	0.84	0.77	0.83	0.87	0.10	-0.05	0.12	0.10	0.25	-0.14	-0.29	1.00	
15. Intensity of local competition	2.41	0.42	0.38	0.65	0.59	0.63	0.60	0.04	-0.05	0.22	0.10	0.14	0.01	0.08	0.50	1.00

4.3. Findings and discussion

Given that our data are longitudinal, we consider random-effect and fixed-effect models. For random-effect model to be used, one ultimate condition is that there is no correlation between the error terms and predictors in the model, meaning that estimates are consistent, efficient and unbiased (Bell and Jones 2015). To check which model is appropriate, we employ Hausman's test where the null hypothesis is that the appropriate model is random effects – there is no correlation between the error term and independent variables in the panel data model. In contrast, the alternative hypothesis is that the appropriate model is fixed effects – the correlation between the error term and the independent variables is statistically significant. Hausman's test yields the result Prob > chi2 = 0.0000, suggesting that fixed-effect models are superior to random-effect models. Moreover, since we are interested in the effect of time variant institutional factors, fixed effects are preferred over random effects. Therefore, we adopt fixed-effect models to control for time-specific effects that are not controlled by other variables in the models. The results of the fixed-effect model, the random-effect model, and the Hausman's test are provided in Table 4, Appendix 1, and Appendix 2 respectively.

Estimations of our model give a low R-square of 0.017, i.e. a mere 1.67% explained variance. This can be attributed to the fact that several variables which are constant over time have been dropped out in the fixed-effect model. Besides, in social science research, low R-squares in regression are not unusual (Wooldridge 2013), because it is hard to include all relevant predictors in an equation to explain an outcome variable. Therefore, despite an unremarkable R-square, it is reasonable for us to take the model into consideration, especially when our results generate statistic significance of several variables in question.

Table 4 shows the results of the analysis of the relationship between the levels of voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption in the host country and subsidiary performance.

Table 4. Fixed-effect model results showing the relationship between host country institutional characteristics and subsidiary performance

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Voice & accountability	-12.597**	-13.8308***					
	(0.003)	(0.000)					
Political stability	7.2572***		8.9194***				
	(0.000)		(0.000)				
Government effectiveness	-3.9132			-3.1008			
	(0.161)			(0.262)			
Regulatory quality	4.7086				4.6368		
	(0.241)				(0.160)		
Rule of law	-10.5050*					-3.2464	
	(0.038)					(0.408)	
Control of corruption	9.806***						5.1245*
	(0.001)						(0.039)
Parent sales	1.62e-08	9.31e-10	2.13e-09	8.67e-10	3.32e-09	-1.80e-10	1.50e-08
	(0.772)	(0.987)	(0.970)	(0.988)	(0.953)	(0.997)	(0.791)
Parent age	omitted	omitted	omitted	omitted	omitted	omitted	omitted
Host country experience	omitted	omitted	omitted	omitted	omitted	omitted	omitted
Subsidiary sales	2.44e-09	2.99e-09*	3.06e-09*	3.27e-09*	3.29e-09*	3.26e-09*	3.20e-09*
	(0.101)	(0.0459)	(0.040)	(0.029)	(0.028)	(0.029)	(0.033)
Subsidiary age	0.303	-0.2003	-0.0011	-0.1363	-0.1474	-0.1097	-0.0972
	(0.225)	(0.363)	(0.996)	(0.539)	(0.505)	(0.635)	(0.663)
Industry dummy	omitted	omitted	omitted	omitted	omitted	omitted	omitted
GDP growth rate	0.572**	0.7535***	0.5117**	0.7107***	0.7894***	0.7069***	0.7969***
	(0.002)	(0.000)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)
Labor cost	-0.729*	-0.7478*	-0.7291*	-0.7107*	-0.7542*	-0.6593*	-0.6994*
	(0.022)	(0.017)	(0.020)	(0.024)	(0.017)	(0.038)	(0.026)
Intensity of local competition	-1.839	-0.5875	-0.1455	0.7072	0.5356	0.3418	-0.0873
	(0.307)	(0.735)	(0.932)	(0.684)	(0.755)	(0.843)	(0.960)
Intercept	25.7624*	34.6216**	12.4660	17.6646^{+}	11.549	18.2323^{+}	12.6385
	(0.045)	(0.003)	(0.231)	(0.093)	(0.293)	(0.089)	(0.233)

$^{+}$p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001

Hypothesis 1, which suggests the positive correlation between voice and accountability and subsidiary performance, is not supported. Instead, our results in both the separate model and the combined model predict that voice and accountability in the host country has a negative influence on subsidiary performance (β = -12.5968, p = 0.003 in Model 1; β = -13.8308, p = 0.000 in Model 2), i.e. higher voice and accountability leads to lower performance, which contradicts our hypothesis. This finding seems to be in line with the strand of literature that argues against the positive impact of voice and accountability on firm performance mentioned earlier in this paper. A possible explanation for our empirical result is that our observation period is relatively short, while the benefits of democracy are evident only in the long run (Nur-Tegin 2014). Besides, our sample includes a good number of developing host countries, which are either relatively authoritarian or in transition to democracy, such as Singapore, South Korea, China, Thailand, and Indonesia, etc. In these countries, any deviation towards unestablished democracy accompanied by higher voice and accountability is likely to result in political instability, which harms foreign subsidiaries' business activities (Nur-Tegin 2014). Furthermore, many investors are willing to invest in undemocratic markets as long as their business is profitable with high returns (Onyeiwu 2003).

Hypothesis 2, on the other hand, is supported. Political stability has a positive loading in Model 1 (β = 7.2572, p = 0.000) and Model 3 (β = 8.9194; p = 0.000), indicating that subsidiaries are likely to perform better in host countries that are characterized by political stability.

Hypothesis 3, which suggests that government effectiveness in the host country has a positive impact on foreign subsidiary performance, does not receive any support. This independent variable has a statistically insignificant negative loading, albeit with the lowest loading compared to the other five hypotheses of Model 1 (β = -3.9132, p = 0.161). Model 4 also concludes that government effectiveness has a statistically insignificant impact on subsidiary performance (β = -3.1008; p = 0.262).

Hypothesis 4 regarding the positive relationship between host country regulatory quality and subsidiary performance is not supported, either. This variable has a statistically insignificant positive loading (β = 4.7086, p = 0.241 in Model 1; β = 4.6369; p = 0.160 in Model 5).

In terms of the effect of rule of law on subsidiary performance, our result in Model 1 suggests that rule of law has a negative influence on the subsidiary performance (β = -10.5050, p = 0.038), which contradicts our hypothesis as proposed in Hypothesis 5. A likely explanation for the contrasting result from our hypothesis is that in countries with strong rule of law, entrance barriers are nearly lifted up and illegal actions are pushed down, which implies higher business competition and prevents rent-seeking activities of MNEs (Elango and Lahiri 2014, Shi 2007). However, this finding is not supported in Model 6 (β = -3.2464, p = 0.408).

Finally, Hypothesis 6 which states that better control of corruption is conducive to better subsidiary performance is also supported. We find that this variable has a statistically significant positive loading on subsidiary performance in both Model 1 (β = 9.8056, p = 0.001) and Model 7 (β = 5.1245, p = 0.0.039).

In summary, our results for the effect of four institutional measures are statistically significant, with political stability and control of corruption yielding expected signs whereas voice and accountability and rule of law are contrary to what we have already theorized.

With regard to the control variables, as we run the fixed-effect model, some of the control variables, namely host country experience, parent age, and other dummy variables, are omitted due to collinearity. This is because fixed-effect models exclude effects that are constant within units over time. Among other remaining firm-level control variables, only subsidiary sales are statistically significant. This variable has a positive loading in all models and the values of the coefficients of this variable are similar. Among our three country-level control variables, the intensity of local competition is statistically insignificant in all models. GDP growth rate and labor cost, on the other hand, yield statistically significant loadings. GDP growth rate has a positive loading in all models, indicating that economic growth in host country has a beneficial impact on subsidiary performance. Labor cost, on the other hand, has a consistently statistically significant negative loading, which suggests that higher labor cost in host country has an unfavorable influence on subsidiary performance. These results agree with our assumptions.

4.4. Robustness check

In order to check the robustness of our results, we include further regressions where we run ordinary least squares (OLS) (Model 8) for the entire sample and fixed-effect models for divided samples. We split our original samples into developed and developing countries (Model 9 and 10 respectively) as well as more and less institutionally developed nations compared to Germany (Model 11 and 12 respectively) to see whether the results are consistent across classifications. The results are summarized in Table 5. We also control for robust standard errors in these regression models.

As can be seen from Table 5, our results mostly hold when we run OLS regression. Specifically, subsidiary performance is negatively impacted by voice and accountability but positively influenced by political stability. The difference is that in our original model, government effectiveness does not have any significance and both rule of law and control of corruption are statistically significant with the former having negative effect and the latter having positive effect on ROA of subsidiaries.

However, in OLS model, government effectiveness becomes significantly positive, rule of law is insignificantly negative, and control of corruption remains significant but its sign changes to negative. This can be accounted for by the very high correlation among government effectiveness, rule of law, and control of corruption, which leads to the alternating sign and significance of those variables. Overall, our results stay nearly the same in the OLS model, highlighting the importance of voice and accountability as well as political stability whose sign and significance do not change.

Table 5. Robustness checks

	Model 8	Model 9	Model 10	Model 11	Model 12
Voice & accountability	-1.8199*	-3.8923	-20.5012 *	-21.9090	-11.9876*
	(0.029)	(0.496)	(0.022)	(0.112)	(0.012)
Political stability	5.0373***	-0.8637	8.8346**	8.0730	7.2976 ***
	(0.000)	(0.792)	(0.006)	(0.274)	(0.000)
Government effectiveness	4.1425*	-3.6427	-5.7958	-17.0662 *	-2.5814
	(0.016)	(0.283)	(0.442)	(0.043)	(0.417)
Regulatory quality	-0.1569	4.6876	12.6906	9.6954	3.4321
	(0.906)	(0.311)	(0.232)	(0.258)	(0.460)
Rule of law	-0.7320	-6.2193	-5.1574	-3.9613	-6.8490
	(0.719)	(0.186)	(0.732)	(0.705)	(0.186)
Control of corruption	-2.4898^{+}	3.8116	20.0211*	5.3546	9.0373**
	(0.060)	(0.301)	(0.026)	(0.552)	(0.005)
Parent age	-0.1151**	omitted	omitted	omitted	omitted
	(0.029)				
Parent sales	6.12e – 08	2.62e – 09	6.62e – 08	-8.17e – 08	9.33e – 10
	(0.392)	(0.962)	(0.690)	(0.416)	(0.988)
Host country experience	-1.2842	omitted	omitted	omitted	omitted
	(0.180)				
Subsidiary age	0.0185	-0.2170	-0.3947	-1.0481	0.2916
	(0.161)	(0.450)	(0.658)	(0.131)	(0.294)
Subsidiary sales	5.88e – 10*	3.59e – 09*	-5.65e – 09	6.76e – 09*	6.56e – 10
	(0.043)	(0.019)	(0.690)	(0.002)	(0.724)
Industry dummy	1.4917*	omitted	omitted	omitted	omitted
	(0.011)				
GDP growth rate	0.3531*	0.9326***	0.2516	0.2617	0.6579***
	(0.011)	(0.000)	(0.640)	(0.641)	(0.000)
Labor cost	-0.0373	-0.7959**	-0.0786	-0.2635	-1.051*
	(0.470)	(0.009)	(0.955)	(0.467)	(0.031)
Intensity of local competition	-2.1727**	-0.5083	-2.3903	-4.9597	-1.3304
	(0.010)	(0.836)	(0.492)	(0.310)	(0.503)
Intercept	22.7081***	34.213*	22.5654	115.3379**	24.0157^{+}
	(0.000)	(0.028)	(0.247)	(0.010)	(0.052)

$^{+}$p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001

In Model 9 and 10, our results only hold when we run the regression for the sub-sample of developing countries. Specifically, better political stability and control of corruption in developing host countries result in better subsidiary performance while voice and accountability has an inverse relationship with ROA of those subsidiaries. Rule of law loses the significance in both models. The fact that our results only sustain in one of our sub-samples may imply that institutional factors play an important role in the well-being of German subsidiaries if they are based in developing countries. Meanwhile, subsidiary performance is not influenced by institutions if subsidiaries operate in developed countries. Rather, other environmental factors such as GDP growth rate, labor cost, and the size of subsidiaries have an impact on how subsidiaries perform in those developed countries. We offer an explanation in relation to institutional distance which implies the extent of similarity or dissimilarity between institutions in the home and host countries (Kostova 1999). Institutional distance can interfere with the functioning of foreign subsidiaries of MNEs. This is because firms that operate in foreign markets are subject to the liability of foreignness. Differences between home country and host country institutional contexts may increase the liability of foreignness and create impediments for firms to familiarize themselves with host country institutions, exploit their internal specific capabilities, and transfer their strategic resources and competencies to countries where subsidiaries are based (Kostova 1999, Kostova and Zaheer 1999). Since Germany is a highly developed countries with strong institutions, their subsidiaries may experience hurdles in dealing with or gain great locational advantage from weak institutions in developing countries whereas such institutional difficulties or advantages are hardly existent in developed countries.

Interestingly, we notice the same pattern in our regressions when we divide our sample based on the quality of home country institutions as a benchmark (Model 11 and 12). In nations with higher institutional quality than Germany (Model 11), subsidiary performance is hardly exposed to any influence of institutional factors except for government effectiveness. In such highly institutionally developed countries, the size of the subsidiaries is the competitive advantage for better performance. By contrast, in countries that are less institutionally developed than Germany, such factors as voice and accountability, political stability, and control of corruption are able to either promote or weaken the performance of

subsidiaries. The effects of those variables in Model 12 are harmonious with our original results.

Finally, we cross-check our results by running regression models for panel data with corrections for autocorrelation and heteroskedasticity with robust standard errors. The result of the test is shown in Table 6. Once again, this robustness test confirms the statistically significant negative influence of voice and accountability and positive impacts of political stability as well as control of corruption on foreign subsidiary performance.

Table 6. Results of robustness check for autocorrelation and heteroskedasticity

Variables	Coefficients	P > |t|
Voice & accountability	-12.597	0.015*
Political stability	7.257	0.003**
Government effectiveness	-3.913	0.140
Regulatory quality	4.709	0.276
Rule of law	-10.505	0.084
Control of corruption	9.806	0.005**
Parentage	omitted	omitted
Parent sales	1.62e-08	0.774
Host country experience	omitted	omitted
Subsidiary age	0.303	0.324
Subsidiary sales	2.44e-09	0.124
Industry dummy	omitted	omitted
GDP growth rate	0.572	0.035*
Labor cost	-0.730	0.016*
Intensity of local competition	-1.839	0.350
Intercept	25.762	0.045*

*p < 0.05; **p < 0.01; ***p < 0.001

In summary, our original model (fixed effects for the full sample), which indicates the positive effect of political stability and control of corruption and the negative effect of voice and accountability on subsidiary performance, has strong validity. Especially, the effects of voice and accountability and political stability are stable in nearly all the regression models, implying the crucial impacts of these two variables.

5. IMPLICATIONS FOR THEORY BUILDING, BUSINESS PRACTICE, AND POLICYMAKING

5.1. Implications for theory building

Drawing insights from institutional theory, we investigate the connection between host country institutional environment and subsidiary performance. Our study has several implications for the development of an institution-based view in international business research.

First, the empirical findings of our research provide support for some institutional perspectives from existing literature. They show that host country institutions do have an influence on foreign subsidiaries' performance. Specifically, we point out that voice and accountability, political stability, and control of corruption are the three most influential elements among different aspects of the regulatory institutions.

Second, instead of studying institutions as a whole like in other studies, we divide the host country institutional environment into many different components and examine their individual impacts on subsidiary performance. This decomposition gives us an interesting insight into the impact of host country institutions on subsidiary performance. We find out that different elements of host country institutions may not carry the same weight in their relation to subsidiary performance. In fact, while government effectiveness, regulatory quality, and rule of law in local markets have little impact on subsidiary performance, voice and accountability, political stability, and control of corruption demonstrate significant influence. Furthermore, not all institutional elements exert their influence in the same direction. Specifically, while political stability and control of corruption are positively associated with subsidiary performance, voice and accountability has an adverse impact. These findings suggest further research on the relationship between different constituents of host country institutions and subsidiary performance.

Third, by categorizing host countries into separate groups on the basis of the levels of economic and institutional development, we contribute to the understanding of institutions by discovering that the institutional issue may matter more in some countries than in others. In fact, among our database of 52 host countries, subsidiaries located in developing economies and institutionally less

developed markets are more subject to host country institutional influence than those situated in developed nations and more institutionally developed countries. One possible explanation for this finding that we have mentioned earlier is that our chosen home country, Germany, is a developed country with a relatively high level of institutional development. Therefore, when operating in a developed host country that has a similar context as in the home country, German-owned subsidiaries are probably subject to less institutional distance. Future research may verify this empirical finding by choosing another home country, for example an emerging economy, and see whether the result would vary if the home country is a developing or less institutionally developed one.

5.2. Implications for business practice and policymaking

Our empirical evidence shows that some institutional elements in the host country are likely to have an impact on foreign subsidiary performance. These findings have several implications for companies and policymakers.

At the managerial level, it is advisable that firms recognize the important role of host country institutions on their performance. The regulatory framework of host countries may either strengthen or weaken foreign subsidiaries' performance. Therefore, in order to operate successfully in local markets, MNEs should also take into consideration country-level factors apart from firm-level factors when developing international strategies. Given the host country institutional contexts, companies can make realistic assumptions of their profit potential in the local markets. The findings in this study also benefit firms when they choose the location of their foreign direct investment. From our statistical regression results, it is evident that voice and accountability, political stability, and control of corruption are the three prominent institutional elements that affect foreign subsidiary performance. Thus, besides economic factors such as GDP growth and labor cost, multinational companies should take these institutional factors into account when considering entering a certain foreign market.

The importance of local institutions to foreign subsidiary performance may also have some essential implications for public policymakers. Due to the great impact of institutions on subsidiary performance, fostering the process of institutional development is a proactive measure to enhance business gains and attract inward foreign investment. Based on our empirical findings, we suggest that policymakers can create a favorable institutional environment for foreign

subsidiaries by ensuring political stability and improving control of corruption. Predictable government interventions, certainty and continuity in policies, and absence of violence are likely to reduce the perceived risk of investment and encourage foreign firms to make optimal investment. Better control of corruption may also decrease unnecessary costs for foreign subsidiaries. As for voice and accountability, even though our regression results show its negative impact on foreign subsidiary performance, it does not mean that host country governments should restrict democracy, including freedom of expression, freedom of association, and free media. In fact, democracy may have impacts on social aspects other than business gains as mentioned in this study. Dorn et al. (2007) show that democracy has a positive influence on happiness, especially in countries with an established democratic tradition, because it is likely to bring out political outcomes that are closer to the preferences of citizens. Consequently, it does not seem to be a good policy if local governments trade off social benefits for business gains by limiting voice and accountability. We therefore recommend that public policymakers focus on improving political stability and control of corruption in order to facilitate foreign subsidiary performance. By enhancing these two institutional elements, they can offset the negative impact of voice and accountability on foreign subsidiary performance without sacrificing other social benefits.

6. CONCLUSION

By examining a large sample of German-owned subsidiaries located in various host countries, this study has provided evidence that host country institutional context is an important determinant of subsidiary performance. Complex as it is, the institutional environment comprises various components, which exert influence on subsidiary performance with different magnitudes and in different directions. Based on a comprehensive framework of six dimensions for regulatory institutions, we discover that voice and accountability, political stability, and control of corruption are the three most prominent factors that determine subsidiary performance. Specifically, higher voice and accountability in host countries weakens subsidiary performance while more political stability and better control of corruption are positively associated with subsidiaries' success in local markets. Moreover, the impacts of these regulatory institutional elements are more evident in developing and less institutionally developed countries.

Although this study has achieved its key goal of detecting the relationship between host country institutional environment and subsidiary performance, there still exist some limitations that suggest intriguing avenues for future research. The first limitation lies in the generalizability of our results. Using a sample of German-owned oversea subsidiaries, we find that the influences of host country regulatory institutions on subsidiary performance are more significant and evident in developing markets and countries that are less institutionally developed than the home country. A possible reason that we propose is the institutional distance between the developed home country and the less developed host country. This result gives a chance for future researchers to study other samples of foreign subsidiaries and investigate whether the findings of this study can be generalized beyond the context of German-owned subsidiaries.

Another limitation of our study is related to the short observation period. As institutional change is incremental and path-dependent (North 1990), we may rarely witness significant changes in host country institutional environments during our observation period of four years. Therefore, future studies could extend the observation period to see how major institutional changes influence foreign subsidiaries' business activities and whether subsidiaries are able to adapt to these changes and thrive.

The final limitation of our research results from the scope of our study. Due to restricted time and resources, our study only focuses on the regulatory pillar of institutions. Hence, future researchers may explore the other two pillars of institutions, namely normative and cognitive institutions, examine their components, and investigate their influences on subsidiary performance. Besides, in this paper, we only look into the financial performance of subsidiaries. Future studies could therefore employ other financial and non-financial measures of subsidiary performance such as market share, survival, and employee satisfaction in order to develop a more comprehensive picture of the impact of host country institutions on different aspects of MNEs' success.

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APPENDIX

Appendix 1

Random-effect model results showing the relationship between host country institutional characteristics and subsidiary performance

Variables	Coefficients	P > |z|
Voice & accountability	-1.9776	0.052+
Political stability	6.1209	0.000***
Government effectiveness	1.3237	0.482
Regulatory quality	0.2218	0.899
Rule of law	-2.6375	0.290
Control of corruption	0.4879	0.761
Parent sales	3.81e-08	0.482
Parent age	-0.0322	0.618
Host country experience	-1.3562	0.337
Subsidiary sales	6.04e-10	0.109
Subsidiary age	0.0212	0.269
Industry dummy	1.2407	0.140
GDP growth rate	0.3654	0.006**
Labor cost	-0.0563	0.421
Intensity of local competition	-1.4532	0.145
Intercept	15.3250	0.047*

+p < 0.1; *p < 0.05; **p < 0.01; ***p < 0.001

Appendix 2

Results of Hausman's test

	Coefficients		(b-B)	Sqrt (diag (V_b-V_B))
	(b) Fixed	(B) Random	Difference	S.E.
Voice & accountability	-12.5968	-1.9776	-10.6192	4.0691
Political stability	7.2572	6.1209	1.1364	1.6712
Government effectiveness	-3.9132	1.3237	-5.2369	2.0613
Regulatory quality	4.7086	0.2218	4.4868	3.6185
Rule of law	-10.5050	-2.6375	-7.8675	4.3952
Control of corruption	9.8056	0.4879	9.3177	2.5712
Parent sales	1.62e-08	3.81e-08	-2.19e-08	1.35e-08
Subsidiary sales	2.44e-09	6.04e-10	1.83e-09	1.44e-09
Subsidiary age	0.3033	0.0212	0.2821	0.2490
GDP growth rate	0.5721	0.3654	0.2067	0.1244
Labor cost	-0.7296	-0.0563	-0.6733	0.3099
Intensity of local competition	-1.8391	-1.4532	-0.3859	1.4969

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(12) = (b-B)'[(V_b-V_B)^(-1)](b-B)

= 42.32

Prob>chi2 = 0.0000

(V_b-V_B is not positive definite)

Appendix 3

Preliminary thesis report

BI NORWEGIAN BUSINESS SCHOOL

Program: Master in International Business

-Preliminary thesis report -

Host country institutions and subsidiary performance

Hand-in date:
15.01.2016

Examination code:
GRA 1902 Preliminary thesis report

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1. INTRODUCTION TO RESEARCH TOPIC

Recent decades has witnessed a surge in the amount of FDI flow. In particular, more and more multinational enterprises (MNEs) set up subsidiaries overseas, aiming to harness host countries' locational advantages in parallel to exploit their internal strengths. In other words, MNEs are subject to the interplay of firms' competitive advantages and host countries' comparative advantages, which explains why some MNEs are more successful in some specific markets and less successful in others. However, exposed to dissimilar business environment, MNEs may find them struggling to achieve their target growth and development. This can be attributed to location bound advantages which are not transferable across borders because of contextual differences (Casson, Dark, and Gulamhussen 2009). Therefore, examining the influence of host country specific factors on MNEs' subsidiaries' performance is of vital importance. In fact, according to Dunning (1988), the role of location or country specific factors in determining MNEs' behavior and performance is an integral part of International Business Research.

Specifically, operating in foreign markets, besides other contextual factors such as cultural impacts, multinational enterprises (MNEs) are greatly influenced by the host country institutional factors. Foreign firms cannot escape the influence of host countries' institutional context to which they are bounded (Ghemawat 2001, Peng 2002). The role of institutions has received a great amount of attention in international business research (Greenwood et al. 2008). The term "institutions" refers to the rules of game devised by humans to shape social interaction (North 1991). Therefore, host country institutions can be understood as formal and informal rules existent in countries in which MNEs' subsidiaries are based. Each country has its own political, legal, economic and social framework that facilitates and monitors business activities. Understanding the influence of those factors is of strategic importance to MNEs because institutional contexts need to be managed in a way that can maximize returns and minimize risk of investments for MNEs.

The impact of host country institutional context on subsidiary performance of MNEs is twofold. In the first place, host country institutional quality affects the performance level of MNEs. The inefficiency or lack of crucial institutions in the host country may have negative impacts on the operation of MNEs' subsidiaries

in local markets (Pattnaik, Choe, and Singh 2015). For instance, in emerging markets, weak institutions for trade, contract enforcement, communication, and information disclosure may lead to high transaction costs, decreasing returns for MNEs and intensifying level of uncertainty surrounding subsidiaries' survival (Khanna and Palepu 1997). However, in advanced economies, highly developed institutions can help mitigate such costs, thus increasing MNEs' returns and chance of survival. Obviously, host country institutional context may provide both opportunities and challenges; hence, it has an impact on MNEs' performances. Secondly, institutional distance which implies the extent of similarity or dissimilarity between institutions in the home and host countries (Kostova 1999) can also interfere with the functioning of foreign subsidiaries of MNEs. This is because firms that operate in foreign markets are subject to the liability of foreignness. Differences between home country and host country institutional contexts may increase the liability of foreignness and create impediments for firms to familiarize themselves with host country institutions, exploit their internal specific capabilities and transfer their strategic resources and competencies to subsidiary based countries.

On the basis of these arguments, we would like to expose them to empirical analysis. Thus, we propose two research questions to investigate the relationship between host country institutional context and subsidiary performance.

Research question 1: Does the quality of host country institutions affect foreign subsidiary performance?

Research question 2: Do the discrepancies between the home and host country institutions impact foreign subsidiary performance?

Based on the two above research questions, we aim to achieve the following research objectives. Firstly, we would like to briefly summarize theory of institutions including definitions and classification into different dimensions, namely political, economic and social dimension. Secondly, we would like to provide a list of measures used to quantify subsidiary performance about which there is little consensus before deciding which measure to adopt. Thirdly, we want to examine institutional quality and institutional distance from different angles pointed out in the theory of institutions (political, social and economic) and the extent to which they influences foreign subsidiary performance. Finally, by

quantifying the impact of institutional quality and institutional distance on subsidiary performance, we aim to contribute to existing empirical literature on the effect of contextual factors on subsidiary performance as well as to develop managerial implications for MNEs and their subsidiaries.

2. THEORY AND HYPOTHESES

2.1. Overview of institutions

While early international business research was dominated by the use of transaction cost and neoclassical economics, recent international business and management researchers have increasingly applied institutional theory to study the behaviors of multinational enterprises (MNEs). Primarily concerned with the relationship between organizations and their environment, institutional theory dips into the impact of the institutional context on MNEs' business activities (Scott, 2001).This perspective implies that firms are affected by the institutions in which they operate and many aspects of theirs are driven by the desire to achieve fit with the institutional environment (Chen et al. 2015, Volberda 2012). Thus, strategic choices by MNEs are considered the result of their dynamic interaction with the institutional context (Peng 2002).

Institutions, as defined by Davis, North, and Smorodin (1971), are a "set of fundamental political, social and legal ground rules that establishes the basis for production, exchange and distribution". The institutional framework consists of both formal and informal constraints. The former refers to explicit rules in a society such as constitutions, laws, and property rights while the latter comprises unwritten taboos, customs, and traditions (North 1991). According to Garrido et al. (2014), formal institutions, which are explicitly established by an authority, an organization, or an individual, are subject to change over time; however, informal constraints, which are handed down from one generation to the next by teaching and imitation, have their roots in social values and are hard to change. North (1990) and Scott (1995) also develop three pillars that characterize institutions, namely regulatory, normative, and cognitive dimensions. The regulatory component reflects existing rules and laws that prescribe or proscribe certain behaviors and consequently represents the formal institutions. On the other hand, the normative component, which refers to social obligation and expectations of

appropriate behaviors, and the cognitive aspect, which relates to common understanding, together form the informal constraints (North 1990, Scott 1995). Whether formal or informal, institutions, which are the "humanly devised constraints", establish the rules of the game that structure the economic, political, and social relationships in a society or country (North 1990, Scott 1995). The economic, political, and legal institutions of a country have a great impact on the transaction costs and transformation costs or production (North 1990), which eventually determine firm performance.

Economic institutions normally involve market intermediaries, such as such as investment bankers, auditors, solicitors, consultants, brokers, traders, and dealers, who serve to resolve information problems and reduce transaction costs in the product, capital, and financial markets (Khanna and Rivkin 2001). Therefore, they can determine the incentives for and constraints on economic actions in terms of fund raising, necessary input acquisition, and intermediary services (North 1990). Economic institutions can also take the form of physical, human, and technological infrastructure that supports economic transactions (Porter 2000).

Political institutions have an inseparable interconnection with economic performance (Aron 1998). Previous literatures have discussed a variety of political aspects and their impacts on firm performance. When it comes to political regimes, North (1990) believes that democracy enables individuals to analyze opportunity costs freely and take part in entrepreneurship due to clear and secure property rights. Commander and Nikoloski (2010) support this perspective by arguing that the democratic process is conducive to economic prosperity because it encourages civil liberty and protect property as well as contract rights. Political institutions as mentioned in our research encompass legal institutions, because they can policies in a variety of fields, ranging from investment regulations (Djankov et al. 2002), taxes and tariffs (Grubert and Mutti 1991), to control on foreign ownership (Gomes-Casseres 1990). Host countries' policies may influence the performance of foreign subsidiaries both positively and negatively. For example, while some increase entry barriers to hamper the profit opportunities of foreign operations (Bergara, Henisz, and Spiller 1998), others offer investment incentives to attract FDI inflows (Boddewyn and Brewer 1994). Political institutions also play a crucial role in stipulating and enforcing the rule of law

(Rodriguez, Uhlenbruck, and Eden 2005). In some countries, due to lack of intellectual property protection regulations, MNEs are not able to protect their valuable firm-specific technologies from replication (Oxley 1999). Besides, the inadequacy of corporate governance regulations can make it difficult for MNE subsidiaries to evaluate the creditworthiness of their potential business partners (Pattnaik, Choe, and Singh 2015). To sum up, efficient institutions can facilitate firms' operation and consequently result in their good performance; however, inefficient or inadequate institutions may impede their business activities, which eventually have negative impacts on their performance.

Social institutions originate from the association and interaction between members of a population (Scott 1995). Previous literatures have classified social institutional measures into social capital measures, which refer to the extent of civic activity and organizations, and social characteristics measures, which focus on cultural, historical, ethnic, and religious diversities (Aron 1998). These measures capture a wide variety of aspects of social institutions, ranging from cultural values (thrift, determination, hard work, obedience, religious faith, and respect), ethnic tension, to civil liberties (censorship, guaranteed socioeconomic rights, freedom of religion, etc.). Such institutions vary across countries and have impact on work ethics, productive capacity, and management dynamics, which eventually affect the costs of doing business in a specific country (Porter 2000, Franke, Hofstede, and Bond 1991). This fact can be illustrated by Fukuyama (1995)'s and Ghemawat (2001)'s studies, which shows that trust among people in a society can promote economic performance while social conflict decreases the efficiency of economic activities.

In conclusion, economic, political, and social institutions, which shape the environment in which firms operate, have a far-reaching influence on firms' business activities and thus the returns from their investments. Efficient institutions can facilitate firms' operation and consequently result in their good performance; however, inefficient or inadequate institutions may impede their business activities, which eventually have negative impacts on their performance.

2.2. Institutional quality

Since institutional framework of a country consists of political, legal, social, and economic aspects, it determines firms' transaction cost, coordination cost of production and thus how profitable firms are when doing business activities in a country (North 1990). Hence, host country political and legal systems comprising the type of government, governmental capabilities, regulatory framework, corruption control and structure of policy making together with social norms and conduct provide the environment and serve as the foundation for MNEs' subsidiaries to carry out business transactions. Meanwhile, national factor markets which are integral part of economic institutions are essential for supplying quality inputs for firms' production. In brief, institutions are conducive to the effective functioning of markets by reducing uncertainty and transaction costs (North 1990), thus reaping more benefits for firms engaging in business transactions (Mudambi and Navarra 2002).

While institutions are essential for firms to engage in business, the fact that the level of institutional quality and institutional development vary significantly across countries (Ghemawat 2001, Kostova and Zaheer 1999, Miller and Eden 2006) means that MNEs operating in different locations commit to different challenges and costs. Specifically, the performance of MNEs operating in the local market is adversely affected by the inefficiency or lack of developed institutions whereas well developed institutions have a positive impact on the effective functioning of MNEs' foreign subsidiaries. A shortage of reliable market information, predictable government actions, transparent regulatory framework and an efficient bureaucracy creates what are known as "institutional voids" (Khanna and Palepu 1997). Such institutional voids increase transaction costs in which foreign firms are locked in greater costs to protect their proprietary assets (Delios and Beamish 2001) or engage in local corrupt transactions (Rodriguez, Uhlenbruck, and Eden 2005) and raise transformation costs in which they are forced to utilize inferior technology and thus perform below efficient levels due to fearing for unenforceable contracts or insecure property rights (North 1990). Meanwhile, MNEs doing business in institutionally better countries are enabled to reap the advantages in terms of less corruption, efficient government capabilities, and high regulatory quality. Better developed institutions play a role in reducing uncertainties, transaction and production costs (Khanna and Palepu 1997, Khanna

and Rivkin 2001, North 1990). Nations whose institutional context is well-developed constitute favorable environment for MNEs' subsidiaries to maximize their profitability and efficient operations.

In particular, in countries where poor governmental capabilities and regulatory quality are present, business faces irregularities in policies or volatile regulations that demand extensive managerial efforts and time. As a consequence, business activities in those countries are often confronted with inefficient investments, multiple ambiguities in decision making process and instability in operations. In such cases, the prioritized concern of MNEs is to minimize the exposure of their business to state interference instead of maximizing business efficiency and profitability, causing them to deviate from making optimal decisions, incur more costs and delays to their business operations (Elango and Lahiri 2014). In contrast, those firms located in countries with better governmental capabilities and regulatory quality are not burdened with such concern and can therefore focus more on maximizing their returns and efficacy. Similarly, firms running business in countries with well-established legal rules and regulations as well as the inexistence of corrupt practices outperform others whose business is carried out in nations characterized by weak rules of law and commonality of corruption. This is because well-developed legal rules and tightly controlled corruption restraint individuals and organizations from developing opportunistic behaviors as they can implicitly assume that law enforcement will force them to compensate for any damage done to other parties in the event of wrongdoings (Khanna and Palepu 1997). Also, firms can carry out their business with the strong confidence that legal processes can always safeguard their justice (North 1991). In contrast, in nations where the rule of law is not strictly enforced, firms are disabled from investing at the optimal level because they cannot be assured of the full protection of their properties. Worse performance of firms can also be partly attributed to the corrupt governing systems of host countries where they have to make unofficial payments to receive fair treatment, which in turn adds to their transaction costs (Elango and Lahiri 2014).

In terms of other institutions monitoring market efficiency, the host country's dire shortage for high-quality human resources or the unavailable information about them create obstacles for firms to hire skilled labor force (Khanna and Palepu

1997). On the contrary, firms may be prevented from curbing redundant employees due to rigid labor laws. In the capital markets, the inefficient enforcement of corporate governance rules can reinforce the problem of information asymmetry in which MNEs cannot be fully informed about business capabilities of their potential business partners (Pattnaik, Choe, and Singh 2015). However, in advanced economies, such credible information related to companies and products are strictly required to be publicized, reducing information uncertainties and further enabling firms to fairly compete in the markets.

Based on those above-mentioned arguments concerning the role of host country political, legal, social and economic institutional quality on the performance of foreign subsidiaries, we propose the first hypothesis that better host country institutional quality will favorably influence foreign subsidiary performance.

H1: The quality of institutions in the host country will positively impact the performance of foreign subsidiaries located in that country

2.3. Institutional distance between home and host countries

A number of previous studies of MNEs examine the institutional environments of the host countries in which foreign subsidiaries operate, focusing on the distance between the institutional environments of the home country and those of the host country. Institutional distance, as defined by Kostova (1999), is the extent of similarity or dissimilarity between the institutional profiles of a firm's home country and host country. This construct is based on country-level institutional profiles and comprises three dimensions: regulatory, normative, and cognitive dimensions.

Several studies have pointed out that institutional differences between home and host countries may create impediments for MNEs and thus hamper firms' exploitation of context-specific capabilities. Organizational learning process involves "encoding inferences from history into routines that guide behaviors" (March and Olsen 1989). The term "routines" encompasses forms, rules, procedures, and conventions. A knowledge deficit with regard to local institutions, including local regulations, norms, values, and business practices, may incur considerable costs that result from greater liabilities of foreignness (Mezias 2002). North (1990) also argues that with their experience, firms have a

tendency to develop capabilities that take advantage of their home country institutions. Kostova (1999) further suggests that a large institutional distance poses challenges for MNEs to establish legitimacy and transfer strategic routines to foreign subsidiaries in the host countries. Therefore, it is harder for MNEs to make use of their existing capabilities to build competitive advantages in a host country institutional environment that is different from that in the home country (Oliver 1997).

Dipping into the three pillars of institutions, some studies further specify the impacts of regulatory, normative, and cognitive institutional distances on MNEs' strategies and performances. According to Ramachadran et al. (2012), regulatory distance, which is the difference in the establishment and enforcement of rules between home and host countries, aggravates the high risk involved in exploratory and exploitative strategic alliance and leads to higher transaction costs. With regard to the other two pillars of institutions, Ionascu, Meyer, and Estrin (2004) claim that normative and cognitive differences can make it even more challenging for MNEs to adapt to local institutional pressures. Furthermore, a high normative and cognitive distance hampers the implementation of MNEs' practice and restricts the affiliate's capability to establish legitimacy (Ionascu, Meyer, and Estrin 2004).

On the basis of previous studies on institutional distance and MNEs' behaviors, we suggest that a great institutional distance between home and host markets will cause a decrease in subsidiary performance.

H2: Institutional distance between home and host countries will negatively influence subsidiary performance.

3. RESEARCH GAP

Previous studies on the association between host country institutions and subsidiary performance mostly focus on one or a few aspects of institutions only. Chan, Isobe, and Makino (2008) categorize institutions into three groups, namely political, economic, and social institutions, and studies their impact as a whole on the performance of 6,985 affiliates of 1,421 Japanese corporations in 38 countries and 169 industries. This study concentrates on the level and variation of affiliate performances due to institutional development, but does not mention the impact of

institutional distance on affiliate performances. Pattnaik, Choe, and Singh (2015) develop a more extensive measure of institutional quality by combining political as well as social systems with factor market institutions, including product, capital, and labor market institutions, and pointing out the association between institutional quality as well as institutional distance on the performances of 318 foreign subsidiaries of 146 Korean firms in 28 countries. Reviewing previous literatures on the relation between subsidiary performance and host country institutional context, we find that these studies often focus on formal institutions, i.e. rules, laws, and regulations, and pay less attention to informal institutions. Besides, both Chan, Isobe, and Makino (2008) and Pattnaik, Choe, and Singh (2015) use the sample of companies from Japan and Korea respectively, which do not have a great variety of host countries. Moreover, these nations have developed formal institutions to a level comparable with developed host markets while maintaining relatively low culture distance with other developing Asian host countries. Thus, the institutional distance between Japan or Korea with other host countries may not be high.

4. INTRODUCTION TO THE DATASET

4.1. Sample

Our study focuses on two data levels, i.e. macro and firm levels. Concerning macro data level which measures institutional quality, we obtain those data from IMD World Competitiveness online database. All of our chosen indicators are strongly related to the field of International Business. Thus we are highly confident that our study's construct validity is satisfied to a significant extent. To derive the measure for political and legal institutions, we adopt indexes in the section of State Efficiency. The reason for our adoption is that all of our chosen indexes wholly represent what we theorized above about components of political institutions, such as governmental effectiveness, corruption control, regulatory quality and rule of law. For economic institutions, in line with what we found in literature about the forms of economic institutions as market intermediaries and human, physical, & technological infrastructure, the foundation to assure the quality of input factors for the business operation as well as with the definition of institutions as "ground rules" (Davis, North, and Smorodin 1971), we decided to

integrate the whole section of Business Openness with some proxies indicating the effectiveness of Banking and Financial regulations which will be discussed in more details later. Regarding social institutions, we include the section of Attitudes and Values.

With regards to firm-level data, we choose ROA (Return on Assets) as our subsidiary performance measure; the reason for our choice will be provided in the "Dependent Variable" section. Due to limited temporal scope, we decided to restrict our research to one single home country where MNEs originate. With Germany as our chosen country of origin and 2014 as our year of observation, the output number of subsidiaries amount to 78982 observations. The reason why we chose Germany is that Germany is an institutionally developed country and German MNEs operate in a great variety of host countries, which enables us to clearly examine the impact of institutional similarity or dissimilarity between Germany and other subsidiary countries on foreign subsidiary performance. Besides, with a huge number of German MNEs' foreign subsidiaries, we can create a sample large enough for our study. The sources for subsidiaries' ROA will be obtained and calculated from available financial data from Orbis and Bureau van Dijk database. However, we use several criteria to filter our sample down to a smaller size. Firstly, we only include foreign manufacturing subsidiaries, which means that all observations related to subsidiaries located in Germany and categorized as service providers are excluded from our study. Secondly, only subsidiaries with more than 50% owned by parent companies are selected. Finally, we limit our sample to subsidiaries which have been operating for at least 2 years until the time of data collection since financial data of newly established subsidiaries may not be accurate in reflecting their performance in a given institutional context. In fact, according to Woodcock, Paul, and Shige (1994), only after 2 years of inception can the initial performance of newly established subsidiaries is inclined towards stabilization.

4.2. Dependent variables

Different measures can be employed to evaluate subsidiary performance. Some researchers have been able to classify performance measures. Richard et al. (2009) distinguish three broad groups of firm performance measures: market, hybrid and accounting. Market based measures include shareholder value measures such as

earnings per share, stock price, market value, price-to-earning ratio and competition based measures such as sales per employee, labor productivity, and total shareholder return. Accounting measures are composed of, among others, Return on Assets (ROA), return on investments (ROI), return on equity (ROE), return on sales (ROS), profit margin, sales, sales growth, market share. Hybrid measures consist of such indexes as Tobin's Q and Altman's Z. Also, Hult et al. (2008) specifically summarize how subsidiary performance is measured in international business literature. They divide performance measures into three main dimensions: financial, operational and overall effectiveness. The financial dimension which encompasses both accounting and market based measures consists of such indicators as: ROI, ROA, ROE, ROS, profit margin, sales growth, stock price, earnings per share, and Tobin's Q. The operational dimension which refers to non-financial factors comprise of both product-market outcomes (market share and efficiency) and internal process outcomes like productivity and employee satisfaction. Meanwhile, more comprehensive measures and indicators such as perceived overall performance, achievement of goals, and perceived overall performance relative to competitors constitute the overall effectiveness.

Based on the work of Hult et al. (2008), Ramsey and Bahia (2013) conducted a complementary literature review. Their findings show that financial measures are the most commonly used in the study of subsidiary performance but they also emphasize that there should be combination between dimensions to generate the most accurate insight into subsidiary performance. Moreover, their study sheds light on the importance of the source of subsidiary performance: subjective (primary) and objective (secondary) data. Objective data is preferable when the data are available and reliable. However, due to cross-country differences in accounting standards, objective data may encounter reliability problems, which can be compensated for by subjective data. But such subjective data may be misleading because managerial perceptions may vary across regions. Therefore, they conclude that subjective measures are able to substitute for objective ones when the latter is not available and reliable.

Following the popularity of financial measures found in subsidiary performance literature, we decided to use ROA as the proxy for subsidiary performance. We do not use sales, sales growth, profit margin or other absolute measures since

subsidiaries in our sample range from small to very large firms; rather we opt for a size adjusted measure for performance. Besides, of all the objective measures, only ROA is available at subsidiary level. A high ROA indicates that the firm is more profitable with less investment. Also, we think that because our study sample consists of manufacturing companies where the efficient use of production facilities is an important factor, ROA is a suitable indicator for efficient resource usage. However, as pointed out by Talpová and Scalera (2015), a common weakness of financial measures for subsidiary performance, in general, is that they can be distorted by managers who aim to lower profit figures to avoid paying high taxes or those who employ transfer pricing. Thus, he suggests the use of financial measures should also be accompanied by other dimensions of measures, i.e. operational or overall ones. We admit that the inability to incorporate all dimensions of measures in our research is one of our study limitations due to limited time for data collection. Nevertheless, because institutional impact is the centre of our research with more transparent legislation on auditing and accounting standards implying higher institutional quality, we think that ROA will be less (more) likely to be distorted in institutionally better (worse) countries. In other words, ROA publicized by subsidiaries covaries with the level of institutional quality, which fits in well with our prior hypothesis. Finally, by the term "subsidiary performance", we mean actual performance of subsidiaries. In that sense, ROA which is a frequently used accounting-based measure for performance is preferred over a market-based measure as the latter reflects shareholder expectations about the future (Hutzschenreuter and Horstkotte 2013, Richard et al. 2009).

ROA is computed as the net income of subsidiaries divided by their total assets. Both of the data for them are retrieved from Orbis database. Besides ROA, survival of subsidiaries is also a frequently used subsidiary performance measure (Nguyen 2011). Instead of being a continuous variable, survival is operationalized as a binary one with survival equal to 1 if the subsidiary in consideration is still active at our year of observation and equal to 0 if otherwise. However, operationalizing survival is problematic because the measure cannot distinguish that a subsidiary is inactive due to bankruptcy or mergers and acquisitions (Dhanaraj and Blemish 2009). Having the same argument, Nguyen (2011) stated that non-survival does not necessarily indicate business failure because smart

managers may pursue closure and exit for better performance and economic returns from having their companies acquired at a high price. A possible solution to this problem is to use subsidiary mortality rate, defined as the probability that a subsidiary will exit at a particular time. However, both data survival and mortality rate of subsidiaries can only be obtained with longitudinal research methodology (Dhanaraj and Blemish, 2009) whereas ours focuses on cross-sectional one. Therefore, we decided that ROA will be the most suitable dependent variable for our research.

4.3. Independent variables

Following previous studies on the relationship between host country institutions and foreign subsidiary performance, we develop our independent variables on the basis of the classification of institutions into three groups: political, economic, and social institutions. However, in order to capture a more comprehensive perspective of institutions, we include different proxies in each category.

The institutional proxies are collected from IMD World Competitiveness Yearbook. Published since 1989, this annual report contains over 300 criteria used to compute national competitiveness, which are categorized into four groups namely economic performance, government efficiency, business efficiency, and infrastructure. The database include 20-year time series across 61 countries. It includes both statistical data and survey data obtained through executive opinion survey, which employs a 1-6 scale. The data are then converted to a 1-10 scale, with a higher score representing a more desirable condition.

Reviewing over 300 criteria listed in this dataset, we have chosen 21 proxies that capture essential country institutional characteristics and grouped them into three types of institutions with detailed explanations as follows:

Variables	**Description**
<u>Political institutions</u>	
Legal and regulatory framework	The legal and regulatory framework encourages the competitiveness of enterprises.
Adaptability of	Adaptability of government policy to changes in the

government policy	economy is high.
Government decisions	Government decisions are effectively implemented.
Transparency	Transparency of government policy is satisfactory.
Bureaucracy	Bureaucracy does not hinder business activity.
Bribing and corruption	Bribing and corruption do not exist.
Risk of political instability	The risk of political instability is very low.
Economic institutions	
Customs' authorities	Customs' authorities do facilitate the efficient transit of goods.
Protectionism	Protectionism does not impair the conduct of your business.
Capital markets	Capital markets (foreign and domestic) are easily accessible.
Investment incentives	Investment incentives are attractive to foreign investors.
Subsidies	Subsidies do not distort fair competition and economic development.
Ease of doing business	Ease of doing business is supported by regulations.
Labor regulations	Labor regulations (hiring/firing practices, minimum wages, etc.) do not hinder business activities.
Finance and banking regulation	Finance and banking regulation is sufficiently effective.
Personal security and private property rights	Personal security and private property rights are adequately protected.

Social institutions	
Social cohesion	Social cohesion is high.
Attitudes toward globalization	Attitudes toward globalization are generally positive in the society.
National culture	The national culture is open to foreign ideas.
Value system	The value system in the society supports competitiveness.
Flexibility and adaptability	Flexibility and adaptability of people are high when faced with new challenges.

4.4. Control variables

We intend to control for country-level and firm-level variables that possibly impact foreign subsidiary performances.

On the country level, we control for country's economic growth rate calculated as the GDP growth rate. Besides, assuming that countries with well-developed institutions attract more foreign subsidiaries and thus possibly have more intense competition, we also control for the level of competition in host countries using the proxy of intensity of local competition in Global Competitiveness Report by World Economic Forum.

On the firm level, we control for both factors in parent companies and foreign subsidiaries that are likely to affect subsidiary performance. Firm size impacts the extent of economies of scale or scope and consequently influences performance. Therefore, we control for both parent company and foreign subsidiary sizes by using the data of firm sales. Another aspect that we take into consideration is parent companies' international experience, which demonstrates their capacity to manage foreign subsidiaries (Chan, Isobe, and Makino 2008). In order to measure parent international experience, previous studies have suggested several ways. Pattnaik, Choe, and Singh (2015) count the number of countries entered as of the year of dependent variable in order to capture parent international experience. However, we do not think that this measure reflects parent international

experience in the host country because different countries have distinct contexts. MNCs that are used to developed markets with stable conditions may not be able to adapt to developing markets that are subject to more political hazards where the companies have little experience. Thus, we adopt the measure by Chan, Isobe, and Makino (2008), which calculates parent international experience by using a dummy variable that is "1" if the parent company has established two or more subsidiaries in the same host country and "0" otherwise. We obtain these figures on Orbis database. On the subsidiary level, we control for subsidiary age which is computed as the number of years the subsidiary has been in operation in the host country until the end of the observation period. This variable controls for the effect of liability of newness on foreign subsidiary performance (Chan, Isobe, and Makino 2008). This variable can be obtained from Bureau van Dijk database.

5. RESEARCH METHODOLOGY AND PROPOSED MODELS

From the construction of our hypotheses, we will employ cross-sectional quantitative research design to empirically test our prior theories. While other previous studies used panel data with time scale of 5 years (Chan, Isobe, and Makino 2008, Pattnaik, Choe, and Singh 2015), we do not include time series in our research because of persistent effect and lagged effect of institutions for a short temporal scale (Bowles and Naidu 2006, Karaja 2013). This means that institutions may not vary significantly in a short temporal scale and that even if institutional change does occur, its effect on firms takes time to be realized. Therefore, only with long-time scale can institutional change be significantly noticed. However, due to the unavailability of data at subsidiary level dated back to quite a long time ago (8-10 years), we could not obtain valid data for the analysis of institutional evolution. Moreover, if we conducted panel data over 5 years of observations, our sample would amount to a huge figure which is infeasible given our limited time of research. Finally, since our study highlighted the impact of institutional quality and institutional distance across countries, a cross sectional design suffices to fulfill our research objectives.

Regarding the building of our empirical model, since we clearly distinguish between three dimensions of institutions, namely political, social and economic, we would like to test the impact of a single dimension of institutions on the performance of foreign subsidiaries. Specifically, based on the above development

of proxies for each segment of institutions, we are going to take the average of all the indexes in one dimension to generate the indicator for each dimensional institutional quality for different host countries. Concerning the institutional distance, we will subtract the home country's institutional quality indicator for each dimension for that of the host country and take the absolute value into account. After calculating the proxy figure for each variable, we will regress ROA with institutional quality and institutional distance of those dimensions in two separate models. In short, our first two proposed models will look like:

$$ROA_i = \beta_0 + \beta_1 \times Political\_institutional\_quality_i + \beta_2 \times Economic\_institutional\_quality_i + \beta_3 \times Social\_institutional\_quality_i + \varepsilon_i \quad (1)$$

$$ROA_i = \beta_0 + \beta_1 \times Political\_institutional\_distance_i + \beta_2 \times Economic\_institutional\_distance_i + \beta_3 \times Social\_institutional\_distance_i + \varepsilon_i \quad (2)$$

However, as pointed out in their research, Chan, Isobe, and Makino (2008) conclude that there is a high correlation between political, economic and social dimensions of institutions, leading them to carry out principal component analysis (PCA). Therefore, we followed the same methodology by running correlation matrix for those institutional dimensions before deciding whether to conduct PCA, which is loaded on one variable "Institutional quality" for the first equation. Nevertheless, if variables representing those institutional dimensions do not highly correlate (=<0.5) in our research, institutional quality will be calculated as the average of indexes for all three dimensions as formulated by Pattnaik, Choe and Singh (2014). Regarding institutional distance, we conform to the same approach by checking the correlation first to determine the likelihood of PCA. If PCA is not viable, the formula provided by Pattnaik, Choe and Singh (2014) where "Institutional distance" is computed as the average of all three variables in equation 2 will be employed. In sum, our contracted models either in the case of PCA or average calculation can be written as:

$$ROA_i = \beta_0 + \beta_1 \times Institutional\_quality_i + \varepsilon_i \quad (3)$$

$$ROA_i = \beta_0 + \beta_1 \times Institutional\_distance_i + \varepsilon_i \quad (4)$$

Those proposed models are simplified version of the ones employed in our final thesis as we will also control for external factors besides explanatory institutional variables. Although several control variables have been presented earlier in

control variables section, we may adapt some changes in the end, which explains why we do not specify those control variables in our aforementioned proposed models.

Because the first two models and the last two models are developed to test the same hypotheses, we will compare those two pairs on such statistic standards as their goodness of fit, explanatory power, test of normality, endogeneity, heterogeneity, and predictive capability, etc. before adopting one pair based on which to discuss and propose theoretical and managerial implications.

6. PLAN FOR THESIS PROGRESSION

Timeline

15th January – 29nd February: Further reading of articles & data collection

1st March – 30th April: More data collection & analysis

1st May – 31st May: Thesis draft 1 – Focus on literature review, methodology, & preliminary data analysis

1st June – 30th June: Thesis draft 2 – Focus on further analysis & results

1st July – 31st July: Thesis draft 3 – Focus on interpretation of results

1st August – 1st September: Further checking & adjusting and thesis submission

Progression

20%	40%	60%	70%	80%	90%	100%
Preliminary thesis report	Further reading & Data collection	More data collection & analysis	Thesis draft 1	Thesis draft 2	Thesis draft 3	Final thesis

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PLANNED OUTLINE

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