

The Role of Culture on Firm Performance in Emerging Market Economies

Zukarnain Zakaria , Laleh Ardalan

Abstract— *The aim of this study is to empirically reconcile the impact Culture on Firm Performance in Emerging Market Economies.*

Index Terms— *Host's Institutional Environment, Firm Performance, Formal Institutional Risks, Private property rights protection and contract enforcement, Corruption, Quality of public administration or bureaucracy.*

I. INTRODUCTION

In international business (IB), one of the risks that firms face is institutional risks, a risk that embeds in the host/destination countries. Since firms' strategic decisions and management are undertaken in such institutional environments, the quality of that environment could influence firms' performance. Therefore, understanding the host-countries' underlying institutional environment becomes an important ingredient for successful market entry and performance. Consequently, the importance of underlying institutions in influencing firm performance has been one of the main focuses and significance in IB research (Peng et al., 2008; Henisz and Swaminathan, 2008; Griffith, Cavusgil and Xu, 2008). The following discussion in the Research Background clarifies the research problems, the conceptual definitions of culture as well as how these institutions play a role in influencing firm performance. Then the outline on research issues and problems, objectives, contribution of the study, and the scope as well as limitation would be discussed in the subsequent sub-Sections. In the final part of this Chapter, the research hypotheses are built in the light of their likely effects of culture as well as the effects of their interaction on firm performance.

A. Research Issues and Problem

Recent literature points to the important role of recipient countries' political risk in effecting multinational firms only focus on one aspect of institutional risks (i.e. political risks or cultural diversities) fall short of providing a comparative analysis (Kobrin, 1979; Miller, 1992; López-Duarte and Vidal-Suárez, 2010) on culture of host-country's institutional risks. Culture of countries' risks have increasingly emerged as one of the recent international business research agenda (Henisz and Swaminathan, 2008; Griffith et al., 2008; Peng et al., 2008; and Wu, 2013).

Though political risk is important, it is just one aspect of formal institutions. Existing studies that exclusively focus on political risk may overlook on more crucial aspects such as the degree of legal protection and enforcement of property rights, corruption, bureaucratic competencies, and overall economic freedom. These aspects of formal institution risks

are critical not only to firms' modes of entry but most importantly to the firm's performance. Theoretically, these institutional risks represent transaction costs to firms, which make them highly important determinants in any attempt to study firm performance in foreign environment. In contrast to most existing studies focusing political risks, this study is an attempt to fill this gap. Lacking research on these determinants of firm performance deprive us from important insight that could help firms' managers and policy makers to improve their firm profitability and host country investment climate, and these can drive forward the wheel of long-run economic development.

Furthermore, the role of cultural diversities (i.e. informal institutional environment) is also highly important for business performance, but overwhelming recent research focuses only on its impacts on firm strategic decision on the mode of entry into host country markets. A recent study found that these cultural diversities (i.e. informal institutions) determine bank-earning performance in the pre- and post-financial crisis (Kanagaretnam et al., 2011). The impact of cultural diversities on foreign firm performance is found to be much lacking in recent studies. This research aims at filling these gaps in both focusing on aggregate and disaggregate cultural diversity and how interact in influencing firm performance in emerging countries.

B. Research Questions

The general question is: Can culture factor affect firm performance? Firm performance can be measured in many ways. Firms' profitability is reflected through the returns on its assets (ROA) and/or the returns on equity (ROE). Firms' productive performance is reflected through the amount of output that each of its labour/employee produces on average (i.e. output per labour), and firms' accounting performance is conveyed by the firms' gross profits (i.e. equal to total revenues minus cost of the goods sold), or generally the pooled return on the investment.

C. Research Objective

The general objective of this study is to investigate the link between institutions risks and firm performance. This study specifically aims to:

1. Analyse the effects of culture on firm performance.

D. Hypothesis and Graphical Illustration

Based on evidences in the literature, the relationship between culture and firm's performance is hypothesized as follow:

H1: Better culture positively influences the performance of the domestic and foreign firms.

Source: Factors are extracted using Principle Component Analysis method, and rotation is performed using Varimax with Kaiser Normalization. Number of observation = 14071.

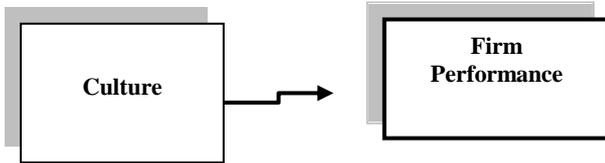


Fig 1. Study Framework

II. THEORETICAL REVIEW

In the resource-based view resources are generally referred to “all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm” (Barney, 1991: 101). These resources are internal to firms that define its sustained competitive advantage because these resources and capabilities are valuable, rare, imperfectly imitable, and not substitutable. These resources and capabilities form a bundle of tangible and intangible assets which include the firm’s management skills, organizational process and routines, and information and knowledge that it controls (Barney, 1991; Barney, Wright, and Ketchen, 2001). These internal intrinsic resources determine how well firm performs. One of the intrinsic characteristics of this resource is imitative, rare and valuable, which create and sustain relative competitive advantage of firm. This firm’s inimitative nature of internal resources comes from the fact that such resource is created under unique historical conditions, social complexity, and ambiguous causal relationship between the resources and the competitive advantages (Dierickx and Cool, 1989). Some scholar theoretically posit that these intrinsic resources and capability are dynamic in the sense that they are continually adapted, integrated, and/or reconfigured into other resources and capabilities (Helfat and Peteraf, 2003). Furthermore, others conjecture that the ability of a firm to sustain the competitive advantage over time is a function of its ability to strategically implement and utilize these valuable resources (Newbert, 2007).

Beside this resource-based view, a more traditional industrial-based view argued that firm strategy and performance are determined by environment or condition specific to that industry such as choices of its goal, products, markets, marketing, manufacturing, among others. A firm’s goals comprise of both economic and noneconomic considerations, such as social obligations, treatment of employees, and organizational climate (Porter, 1981). According to this view, to be successful, a firm needs to position itself in the industry by matching its internal capabilities and external/industrial environment through strategic choices. This traditional view can be expressed in sequencing from industry structure through conduct (strategy) to performance. Industry structure is defined as the relatively stable economic and technical dimensions of an industry that provide the context in which competition occurs (Bain, 1972).

Within this environment, a firm’s behaviour or conduct are defined and their collective function determines the industry collective performance within the market. The firm’s choice on key decisions such as pricing, advertising, capacity, and quality (Porter, 1981) are define as conduct. Finally, performance is broadly understood in economic sense of allocative efficiency (profitability), technical efficiency (cost minimization) and innovativeness (Porter, 1981). Thus, this view, unlike resource-based view suggests that industrial structure (or environment) determines how a firm would react (strategically) given its ability; resource and capability determine the final outcome (i.e. performance).

Empirical Review

In this sub-section, a review on the importance of institutional environment in determining firm entry is first made before reviewing the relevant empirical evidences on the culture have on firm performance. This is to provide evidences on importance of institutions setting of the recipient countries in influencing the mode of entry of foreign firms (i.e. of MNCs’ investment).

Neoclassical economic theories suggest, when there are no barriers to the free movement of foreign investments, foreign capitals and firms from high-capital intensive countries would go and invest in countries with scare capitals (low-capital intensive or labour-intensive) countries, hence high returns.

III. DATA, MEASUREMENT AND METHODOLOGY

Data

This section describes the variables and their measurement as well as the sources of the data. The firm’s data is collected from World Bank’s Enterprise Survey (WBES). Since 2002, World Bank has been conducting firm-level surveys through a face-to-face interviews with top general managers, manging directors, accounting managers, human resource managers, and business owners for over 130,000 companies in 135 countries across the globe. Each country was surveyed every three to four years with arund 1,200 to 1,800 interviews were conducted for large economies (e.g. China), 360 interviews for medium size economies (e.g. Bangladesh, Sri Lanka), and 150 interviews for small economies (e.g. Latvia, Estonia). There are two part in WBES process. The first part is answered by top general managers, manging directors and business owners focused on issues of business environment, investment climates, and business strategy. The second part, to be answered by accounting managers or personal managers, focuses on invetsment flows, products cost, firm performance and workforce statistics of the company.

Table 1 List of countries and total number of firms

Country	Number of Firms	Year	Country	Number of Firms	Year
Bangladesh	1001	2002	Slovenia	223	2005
Brazil	1642	2003	Poland	975	2005
China	2400	2003	Ukraine	594	2005
Indonesia	713	2003	Hungary	610	2005

Pakistan	965	2002	Czech Republic	343	2005
Philippines	716	2003	Romania	600	2005
Sri Lanka	452	2004	Bulgaria	300	2005
South Africa	603	2003	Latvia	205	2005
Egypt	977	2004	Lithuania	205	2005
Senegal	262	2003	Estonia	219	2005
Morocco	850	2004	Russia	601	2005
Malaysia	902	2002	Turkey	1323	2005
Thailand	1385	2004	South Korea	598	2005
Vietnam	1150	2005	India	2286	2006
Mongolia	195	2004			
Argentina	1063	2006			
Colombia	1000	2006			
Chile	1017	2006			
Ecuador	658	2006			
Mexico	1480	2006			
Panama	604	2006			
Peru	632	2006			
Uruguay	621	2006			
Venezuela	500	2006			
Jordan	503	2006			

Notes: Year indicates the year that World Bank Enterprise Survey was conducted which correspond with available firm level data. When country was surveyed more than once, we take the latest year.

This study selects 39 emerging economies comprising of the big emerging economies such as Brazil, Russia, India, and China (the so-called BRIC countries), Mexico, Indonesia, South Korea and Turkey, as well as other leading emerging economies as classified by International Monetary Fund (IMF), Standard and Poor (S&P), Dow Jones, and the Economist. The firm level data are currently available from 2002 to 2006. Ideally, recent information, for example 2011 or 2012, are preferred. But such information is not readily available as the World Bank Enterprise Survey project on thousands of firms across countries around the world start with different years since 2002 and take years before the current existing data were extracted. Researchers in this area use these data (see for example Wu, 2013; Yasar et al., 2011; among others). Table 3.1 provides a list of countries, the number of firms in each country and the year the survey were last conducted. In some countries, where WBES were conducted more than once, the latest year were chosen. In total, there are 31373 firms from service and manufacturing sectors, comprising industries such as food and beverages, garments and textile, electronics, Information Technology (IT), auto and auto components, metals and machinery, non-metallic and plastic materials, transport equipments, chemicals and pharmaceuticals, accounting and finance, advertising and marketing, paper, wood and furnitures, agroindustry, and others. However, since there are missing observations on the variables (e.g. firm performance measures) the final total observations are reduced to about 12888 firms.

Measurement

Performance measure

There is no definitive measure of firm performance. In this study, we adopt labour productivity as our performance measure which is measured as output per labor. This measure reflects productivities performance of the firm (i.e. the amount of output that each employee produces on average). Study on the impact of institutions on firm's performance employ this measure among other alternatives and shows that it captures well the influence of institutions (see for example, Yaser et al., 2011). This is particularly relevant as these scholars pointed out that better quality institutions reduce two types of production costs faced by firms, namely transformation costs (the cost of production and processing) and transaction costs (e.g. costs of establish contracts and relations with other agents, of searching for appropriate trading partners and products, of negotiation, of monitoring and enforcing contracts) (Yaser et al., 2011, p.649).

This productivity performance measurement is preferred, because alternative measures such as accounting returns and stocks prices of the firms (capture the degree of firm's profitability) suffer from expropriation problem (Coff, 1999; Coff and Lee, 2003). This is because accounting returns and stocks prices are set after stakeholders have had an opportunity to try to extract above-market prices for their contributions, hence may not reveal the true value generated by the firm's resources and capabilities (Wu, 2013, p.3). Nevertheless, accounting performance measure, i.e. firms' gross profits (equal to total revenues minus cost of the goods sold), is also employed for robust checks whether the finding on the links between institutions and firm performance change due to changes in performance measures. Although, firm profit is not a perfect measure it does capture degree of efficient performance of firms. Maximization of profit depend on least-cost and efficient methods in running the firms (e.g. operating and production). Thus, measuring firm performance through their profit allows one to assess how institutional risks, which is not the direct part of production process but the environment/setting within which such process takes place, shrink or increase the firm profitability. To construct our performance measures, the sales and cost variables were adjusted as follow before converting to natural logarithmic value. For countries whose values were in thousands domestic currency unit (e.g. Phillipines, Peru, Bangladesh, South Africa, Sri Lanka) we multiply them by 1,000 and then convert them into U.S. dollars (USD) using appropriate exchange rate (e.g. if the value is in 2006, the 2006 exchange rate is used). For some other countries, the values were in thousand of Euros (e.g. Vietnam), we also multiply them by 1,000 and convert them into USDs using appropriate exchange rate. Finally, when countries having values on the variables in thousand USDs (e.g. Romania, Slovenia, Turkey), we just multiply them by 1,000.

Firm's productivity and profitability are determined by both internal and external factors. As mentioned in the

preceeding section, the independent variables are focal and controlled variables, which compose of both internal and external factors. Each of these determinant included in this study is discussed in detail below.

Measures of culture

The informal institutions in this study are measured by cultural diversity (*CULT*). These culture variable will be obtained from Hofstede (see for example, Venaik and Brewer, 2010; Kirkman *et al.*, 2006). According to Hofstede and Bond (1988: 6) culture is defined as “the collective programming of the mind that distinguishes the members of one category of people from those of another. Culture is composed of certain values, which shape behavior as well as one’s perception of the world.” Hofstede’ (2001) measures of culture compose of five components. As mentioned above, *CULT* compose of PD, UA, IND, MAS, and LTO. PD is defined as “the extent to which a society accepts the fact that power in institutions and organizations is distributed unequally” (Hofstede, 1980, 45). Furthermore, UA is defined as “the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid these situations by providing greater career stability, establishing more formal rules, not tolerating deviant ideas and behaviours, and believing in absolute truths and the attainment of expertise” (Hofstede, 1980, 45). On top of that, IND, i.e. individualism, is defined as “a loosely knit social framework in which people are supposed to take care of themselves and of their immediate families only” (Hofstede, 1980, 45). López-Duarte and Vidal-Suárez (2010) also adopted this strategy of measuring culture from Hofstede in their study on the impact of informal institutions on firm entry. In a further attempt below, we also explore whether each Hofstede cultural dimensnions does really measure distinct cultural dimension for these emerging markets using correlation matrix and principle component factor analysis.

Table 2A Correlation Matrix

	PD	UA	IND	MAS	LTO
Power distance (PD)	1				
Uncertainty avoidance (UA)	-0.6442	1			
Individualism (IND)	-0.2322	0.3777	1		
Masculinity (MAS)	0.1520	-0.0710	0.5433	1	
Long-term orientation (LTO)	0.3433	-0.5919	-0.2621	0.1146	1

Table.2B Principle Component Factor Analysis

2 Hofstede Cultural Dimensions				
Eigenvalue	Difference	Proportion	Cumulative	
			e	

Factor 1	2.26865	0.77901	0.4537	0.4537
Factor 2	1.48964	0.83204	0.2979	0.7517
Factor 3	0.65760	0.34302	0.1315	0.8832
Factor 4	0.31457	0.04503	0.0629	0.9461
Factor 5	0.26955	-	0.0539	1.0000

Source: Own calculation. Number of observation = 14071.

Table 2C Factor analysis

	Factor loading after Rotation	
	Factor 1	Factor 2
Power distance (PD)	0.7984	0.0502
Uncertainty avoidance (UA)	-0.9048	0.1012
Individualism (IND)	-0.3734	0.8372
Masculinity (MAS)	0.2026	0.9096
Long-term orientation (LTO)	0.7618	-0.0186

Source: Factors are extracted using Principle Component Analysis method, and rotation is performed using Varimax with Kaiser Normalization. Number of observation = 14071.

As Table .2A shows *UA*, *PD* and *LOT* are highly correlated (i.e. average of about 0.60) indicate that these dimension of *CULT* measure similar aspects of culture. Similarly, *MAS* and *IND* is also highly correlated (0.54) suggest that they are not completely distinct in measuring these dimensions of culture. Since, these five dimesnion of culture are highly correlated we sort them out into their unique distinct aspects using principle component analysis, PCA. Briefly, this procedure takes a linear combination of these five correlated cultural components and extract uncorrelated factors that takes successive levels of their unique variances. First factor will take the largest proportion of the variance follow by the subsequent factors taking the remaining variance.

As expected, Table 2B shows that the eigenvalue for the first two factors are above 1, therefore, the five Hofstede cultural dimensions can be sort out into two unique and distinct dimensions with the first dimension capture about 45.37% while the second takes 29.79% of the total variance respectively. Both dimensions account for more than 75% of the total variance. Interestingly, Table 3.2C shows that the first dimension load heavily on *PA*, *UA*, and *LTO* while the second dimension capture on *MAS* and *IND* both of which are exactly suggested in the correlation matrix shown in Table 2A. *PA-UA-LTO* (first principle component culture) measures the extend that power is unequally distributed (center in the institutions/organization) in society, and the society tries to avoid uncertainty through formal rules and expertise over the long-time horizon. The *IND-MAS* (second principle component culture) measures the extend of individualistic and materialistic (self-centered) values. This study argues that through proper accounting for the correlated structure in the measures of Hofstede cultural measures which previous research ignore can provide better insight into how informal institutions (risks) along national culture affect firm performance.

As an alternative to culture we also employ new measure of social capital devised by Lee et al. (2011). Unlike existing data on social capital which centre only on trust and is available mainly for developed countries, this newly index captures social trust, norms, social network and social structure which are very relevant (beside culture) in capturing the impact of informal institutions on firm performance. In employing this newly developed data the present study contributes to the literature in further augmenting insight on the impact of cross-countries social-capital-based informal institutions on firm performance in emerging markets and developing economies. Social capital is commonly defined as shared norms function to foster cooperation and trust between two or more individuals (Lee et al., 2011). High degree of social capital reflects high corporation and trust society and good “social networks and the norms of reciprocity and trustworthiness” (Putnam, 2000) that function to reduces people’s incentive to cheat in their daily activities. These aspects of informal institutions are importance for firm performance. Lee et al. (2011) employing principle component analysis on 44 variables for 72 countries starting from the year 2000, the authors successfully sort out those variables into a unique index capturing a comprehensive multi-dimension measure of social capital that goes beyond social trust to also include norms or attitudes of cooperation, social networks (i.e. membership in two types of voluntary associations, *Putnam* group: religious organization including education, arts, music, or cultural activity and sport and recreation clubs; and *Olson* group: interest group including union, professional association) and social structure (social conflicts and culture). This index ranges between 0 and 10 higher score mean higher level of social capital. However, it is only available for 32 countries in our sample. Countries in our sample that this data is not available are Pakistan, Sri Lanka, Senegal, Mongolia, Ecuador, Panama, and Uruguay.

For Eq. (2), however, since the measure of *IFINS* is culture which is highly exogenous for the simple reason that cultural change is a very slow process spanning generations. It is hard to suggest that firm can influence the cultural change in a country. Therefore, Eq. (2) would be estimated using usual OLS to get the estimated δ_1 .

For Eq. (3), *FINS* is regressed on its instruments in the first stage to get the predicted value of *FINS* to be used in Eq. (3). Then this predicted value is used to construct the interaction term by multiply it with *IFINS*. Finally, the usual OLS is applied on Eq. (3) to get the marginal effects of *FINS* and *IFINS*. The marginal effect of *FINS* is simple partial derivation of Eq. (3) with respect to *FINS*:

$$\frac{\partial P_{ij}}{\partial FINS_{ij}} = \gamma_1 + \gamma_3 IFINS_j$$

while the marginal effect of *IFINS* is given by $\frac{\partial P_{ij}}{\partial IFINS_{ij}} = \gamma_2 + \gamma_3 FINS_j$. Here, the marginal effect of *FINS* on firm performance depends on level of *IFINS* while the marginal effect of *IFINS* depends on the level of *FINS*.

In this section, the empirical specification on the role formal and informal institutions play in influencing firm performance as well as the likely impact of their interaction were specified and methods 2SLS/IV estimators were discussed. Furthermore, a wide range of controlled variables, both internal and external to firm, were also discussed. Importantly, the measures of institutions, both formal and informal, in both firm level and country (or macro) level were distinguished in the attempt to assess their impacts on firm performance.

IV. EMPIRICAL RESULTS AND DISCUSSION

A. Introduction

This section presents empirical findings and discussions on the effects of formal and informal institutions as well as their interaction effects on the performance of more than 12,000 firms in 39 emerging market economies. Relying on methodology and empirical strategies outlined in Chapter 3, this study finds in general that different dimensions of formal and informal institutional risks have differential impacts on firm performance in these emerging market economies. Furthermore, formal and informal institutions both at the aggregate and disaggregate level have both complementary and substitutory effects on firm performance.

Specifically, findings with respect to objective one reveal that improvements in aggregate institutional qualities (i.e. lowering formal institutional risks), especially at the very low quality level, do not improve on firm performance. Further assessments show consistent evidences that positive effects on firm performance of the improvement in aggregate institutional quality kick in only after a sufficient level of institutional quality are achieved. When specific disaggregate components of institutions were assessed, this study finds that lower legal institutional risks, lower corruption, and stable government (or lower risk from instable government) are crucial in improving firm performance. Further assessment using exclusively firm level data on formal institutional risks (business constraints) also confirm that lower corruption that firms face in their daily operation and more broadly lower risks coming from economic regulation, regulation uncertainty, custom and trade regulation, licensing and operating permits, tax administration, legal system, informal practices (i.e. anti-competitions), macroeconomic instability, crimes (theft and disorder) exert a first order positive influence on firm performance.

On the objective two, the results with respect to informal institutions, i.e. cultural dimensions, shows that countries possess low uncertainty avoidance (i.e. feel less threatened by uncertainty), low individualism, and low masculinity (i.e. caring and modesty cultural values) tend to improve firm performance. Firm performance is also enhanced in countries with long-term orientation cultural value. Furthermore, when correlated structure among these five Hofstede cultural values is accounted for, the results reveal that these five cultural values can be uniquely factored into two components with one reflecting the combination of power distance, uncertainty

avoidance and long-term orientation while the other component depicts individualism, and masculinity. Emerging market economies possessing cultural environment of a mix of high power distance, low uncertainty avoidance and high long-term orientation promote firm performance. Similarly, countries having cultural values oriented towards the combination of individualistic-masculinity tend to also have enhancing effect on their firm performance. Further assessment on an alternative measure of informal institutional risks in term of social capital reveals that improvement in social capital helps boost firm performance.

Finally, findings for the third objective reveal that there are significant interaction effects between formal institutional risks and informal institutional risks (i.e. national cultural diversity as well as social capital) on firm performance. Overall results indicate that there are differences in the interaction effects between aggregate formal institutional risks and different national cultural dimensions on firm performance in emerging market economies. It shows that the negative effects of aggregate formal institutions on firm performance turn positive in emerging market countries possessing high uncertainty avoidance, high individualism, and high masculinity cultural values. These results are confirmed with alternative measure of informal institutions namely social capital. However, the negative influence of very high aggregate formal institutional risks (very low aggregate formal institutional qualities) on firm performance is enhanced in emerging market economies with cultural values oriented towards high power distance, and long-term orientation.

In the following sub-sections, the discussion on the empirical finding with respect to each objective is presented in greater detail.

B. Formal Institutional Risks and Firm Performance
Main Results and Discussion

Table 3A Formal institutions and firm performance in emerging market economies

	Dependent Variable: Log of Labor Productivity		
	Model (1.1A)	Model (1.2A)	Model (1.3A)
Age of the firm	-0.0138 (0.0012)***	-0.0086 (0.0012)***	-0.0084 (0.0012)***
Exporting dummy	0.1158 (0.0555)**	0.1775 (0.0569)***	0.2060 (0.0564)***
Foreign direct investment dummy	0.0383 (0.0838)	0.2557 (0.0883)***	0.0106 (0.0897)
Import share	0.0077 (0.0008)***	0.0074 (0.0008)***	0.0037 (0.0008)***

Capacity utilization	0.0025 (0.0010)**	0.0055 (0.0010)***	0.0051 (0.0010)***
Skill labor share	0.0003 (0.0009)	0.0004 (0.0010)	0.0005 (0.0010)
Natural log of 1 + R&D	0.0401 (0.0116)***	0.0364 (0.0117)***	0.0592 (0.0114)***
Inflation	-0.2660 (0.0063)***	-0.3141 (0.0074)***	-0.3318 (0.0089)***
Formal institutional risk			
International country risk guide (ICRG)	-0.3670 (0.0060)***		
Economic freedom index (EF)		-0.2757 (0.0056)***	
World Bank World Governance Indicator			-3.6062 (0.0789)***
R ²	45.19%	41.50%	41.18%
F-statistics (p-value)	0	0	0
Observation	13509	13509	13509

Note: Robust standard errors are in parenthesis. Each multiple OLS regressions includes constant and controls for dummy variables that capture firm size, year and industry characteristics. ***, ** and * indicate significance level at 1%, 5% and 10% respectively.

Table 3A reports the empirical results with respect to the direct effects of aggregate formal institutions on firm performance. First and foremost, it can be noted from the Table that about 45% of the variation in the firm performance (Model 1.1A) as measured by labor productivity are explained by the included variables. Also, the joint significant F-test on all variables is in favour of the alternative hypothesis that all the variables included are jointly important in explaining the firm performance. On top of this, it can be observed that most of the core variables are highly significant at 1% level. Specifically, as expected, firms that export, intensively using their resources (e.g. fixed inputs), import needed technology and other intermediate inputs, and spend more on innovative related activities such as research and development tend to enhance their performance. These findings are in line with recent studies on firm performance (Yaser et al., 2011; Wu, 2013; Nguyen et al., 2012, among others). It should also be noted that these results are quite robust to the alternative models (Model 1.2A, and Model

1.3A) using alternative measures of aggregate formal institutions. However, the share of foreign ownership (i.e. more than 10%) and skill labor do not have significant effects on firm performance. This in fact reflects the mix macroeconomic evidences on the role of foreign direct investment plays on economic performance of the host countries (see for example Gorg and Greenaway, 2004; Herzer et al., 2008). Furthermore, the firm age (duration since it was established) has a significant and negative effect on firm performance.¹ The results also confirm our expectation that high inflation environment harms firm productivity.

Turning to the focal variable, the formal institutional risks, the results show that formal institutions as measured by our preferred international country risk guide (ICRG) indicator (Model 1.1A) has an unexpected negative and highly significant effect on firm performance. This result remains robust even when the aggregate formal institutions are measured alternatively by Economic Freedom index (EF) of Heritage Foundation/Wall Street Journal (Model 1.2A) and World Bank's World Governance Indicator (Model 1.3A). This is an unexpected and surprising finding given the hypothesis that improvement in quality of formal institutions (i.e. lowering formal institutional risks) would positively contribute to better firm performance. The straightforward interpretation from these results is that lowering overall/aggregate formal institutional risks do instead harm firm performance in these emerging market economies. However, one possible answer to this finding is that there might be a possibility of nonlinear effect of formal institutions on firm performance. Specifically, there may exist a level of institutional quality beyond which the influence of aggregate formal institutions on firm turns positive. Drawing on many recent country level studies which have shown that formal institutions can have a nonlinear effect on country output growth (Owen et al., 2009; Miner, 2007; Bose et al., 2012)², we further probe into this nonlinear possibility by adding the quadratic term of formal institutions into the model. If it is statistically significant different from zero and has positive sign then it confirms the nonlinear effect, otherwise it does not. Table 4.2.1B summarizes the finding.

Table 3B Formal institutions and firm performance in emerging market economies

	Dependent Variable: Log of Labor Productivity
--	---

¹ When the square term of the age of firm was added into the model, it has positive sign and highly significant at the 1% level. This is why recent study like Yaser et al. (2011) for example also includes the square term of this variable in their model. Thus our result partially confirm that being young in the business may be a disadvantage for firms but once they age sufficiently (i.e. more experience and strategic insights and other related enhancing factors) their productivity improve.

² Such evidence, in fact, confirms North's (1990, p. 64-65) observation that countries having weak institutions tend to have different organization of production process than the one possessing strong formal institutions. Furthermore, recent related evidences on the macro level also confirm the nonlinear effects of institutions on the finance-growth nexus (Law et al., 2013) and FDI-growth nexus (Azman-Saini et al., 2010).

	Model (1.1B)	Model (1.2B)	Model (1.3B)
Age of the firm	-0.0147 (0.0012)***	-0.0027 (0.0011)**	-0.0073 (0.0012)***
Exporting dummy	0.1076 (0.0554)*	0.1751 (0.0507)***	0.2387 (0.0549)***
Foreign direct investment dummy	0.0327 (0.0837)	0.2765 (0.0786)***	- 0.0384 (0.0890)
Import share	0.0077 (0.0008)***	0.0070 (0.0007)***	0.0036 (0.0008)***
Capacity utilization	0.0020 (0.0010)**	0.0073 (0.0009)***	0.0049 (0.0010)***
Skill labor share	0.0004 (0.0009)	0.0004 (0.0007)	0.0005 (0.0010)
Natural log of 1 + R&D	0.0399 (0.0117)***	0.0281 (0.0099)***	0.0549 (0.0112)***
Inflation	-0.2465 (0.0064)***	-0.3469 (0.0072)***	-0.2927 (0.0096)***
Formal institutional risk			
International country risk guide (ICRG)	-0.8681 (0.0705)***		
ICRG ²	0.0036 (0.0005)***		
Economic freedom index (EF)		-3.6561 (0.0629)***	
EF ²		0.0285 (0.0005)***	
World Bank World Governance Indicator (WGI)			-4.0771 (0.0908)***
WGI ²			2.5142 (0.1259)***
R ²	45.39%	53.56%	42.85%
F-statistics (p-value)	0	0	0
Observation	13509	13509	13509

Note: Robust standard errors are in parenthesis. Each multiple OLS regressions includes constant and controls for dummy

variables that capture firm size, year and industry characteristics. ***, ** and * indicate significance level at 1%, 5% and 10% respectively.

Besides noting that results, particularly with respect to the core variables, conform to the ones reported in Table 4.2.1A, it is interestingly to note as expected that the squared term of aggregate formal institutions (i.e. ICRG²) is positive and highly significant (Model 1.1B). It is also the case when the aggregate formal institutions are measured by alternative indicators namely EF² (Model 1.2B) and WGI² (Model 1.3B). Thus, these suggest that such nonlinear effect is quite robust to alternative measures. The existence of nonlinear effects of aggregate formal institutions suggest that improvement of firms productivities only in emerging market economies with sufficiently high quality of aggregate formal institutions. Thus, emerging market with weak quality institutions can facilitate the improvement in their firms' performance by upgrading their quality of aggregate formal institutions (i.e. lowering institutional risks) sufficiently beyond a particular level (beyond a threshold level). These finding square well with country level study (Owen et al., 2009; Miner, 2007; Law et al., 2013) which document the nonlinear effects of institutions on aggregate output growth. Furthermore, such finding highlights an interesting insight that recent firm level studies on mix sample of firms from industrialized countries and emerging market and developing countries (e.g. Yaser et al., 2011; Wu, 2013; Nguyen et al., 2012, among others) may fail to capture this. Two implications can be drawn. First, improvement in quality of the embedded aggregate formal institutions may not be the same in translating its beneficial effects on firm performance between developed and developing economies. Second, reform efforts by emerging markets towards lowering institutional risks should be done sufficiently so as to set an overall environment that firms can increase their productive performance.

Table 3C Components of formal institutions risks and firm performance in emerging market economies

	Dependent Variable: Log of Labor Productivity		
	Model (2.1)	Model (2.2)	Model (2.3)
Age of the firm	-0.0159*** -0.0014	-0.0164*** -0.0016	-0.0093*** -0.0013
Exporting dummy	0.2100*** -0.0695	0.0274 -0.0774	0.0391 -0.0634
Foreign direct investment dummy	0.0508*** -0.1095	0.0448 -0.1132	0.2365** -0.0981
Import share	0.0109*** -0.0011	0.0067*** -0.0011	0.0012 -0.0009
Capacity	0.0022*	-0.0002	0.0050***

utilization	-0.0013	-0.0013	-0.0011
Skill labor share	0.0015	0.0013**	0.0017***
	-0.001	-0.0006	-0.0003
Natural log of 1 + R&D	-0.0011	0.0238	0.0382***
	-0.0149	-0.0183	-0.0128
Inflation	-0.1454***	-0.1100***	-0.2642***
	-0.0069	-0.0066	-0.0079
Formal institutional risks			
<i>Legal dimension</i>			
WBES Legal property	0.0178***		
rights protection (Legal)	-0.0016		
<i>Economic dimension</i>			
WBES Bribe		-0.0061**	
		-0.0027	
<i>Political dimension</i>			
ICRG Government			0.7197***
Stability (GOVSTAB)			-0.0252
R ²	26.54%	25.53%	25.68%
F-statistics (p-value)	0	0	0
Observation	11877	9289	13509

Note: Robust standard errors are in parenthesis. Each multiple OLS regressions includes constant and controls for dummy variables that capture firm size, year and industry characteristics. ***, ** and * indicate significance level at 1%, 5% and 10% respectively.

Another possible explanation about the negative effect of aggregate formal institutions on firm performance reported in Table 3A is that, in aggregate, formal institutions may fail to depict specific dimensions of formal institutions that are

crucial for firm and business. This is because different dimensions of formal institutions may have different influence on firm performance. Along this line and as explained in Chapter 1 and 3, we further investigate along three specific crucial formal institutional dimensions that matter the most for firms namely legal, economic and political institutions. The legal institution is measured by (firm level) WBES legal property right protection (Legal); economic institution is particularly captured by (firm level) WBES bribe; and political institution is captured by (country level) government stability (GOVSTAB). Table 4.2.1C reports the results.

It can be noted that the sign and significances of controlled variables are generally in line with the ones reported in Table 3 A and 3B. Interestingly, the results on these specific dimensions of formal institutional matrix are in line with our hypothesis that lowering formal institutional risks (increase in formal institutional qualities) improve firm performance. First, Model 2.1 shows the coefficient on legal property right protection is positive and significant at 1% level. This suggests that countries with perceived better good quality of legal institutions that protect private property rights and enforce contract (high degree of confidence among firm operating in the countries that judicial system will enforce their contractual and property rights in business disputes) promote better firm performance. Second, Model 2.2 shows that the coefficient on bribe variable is negative and significant at 5% level.³ This means that the higher the fraction of firm revenue are required to bribe the corrupt public officials to get thing done (e.g. matters related to customs, taxes, licenses, regulation,...) the lower the firm performance (i.e. the less the productive firms would becomes). This result confirms recent evidences in the literature (e.g. Yasar et al., 2011). Finally, Model 2.3 shows that coefficient on government stability is positive and statistically significant at 1% level.⁴ This indicates that countries having stable political and government institutions (score higher on this index) improve firm performance. Stable political environment means that political risks or risks from changes in government policy and the surrounding uncertainty about that policy and its possible reversal as the results of government changes are low and hence firm perform better in such predictable political environment.

In general, aggregate institutional risks have a nonlinear effect on firm performance while legal institutions, corruption (i.e. economic institutions) and political institutions (stability of government institutions) have enhancing effects on firm productivity in the emerging market economies. These results clearly indicate that level of overall institutional risks should be low enough (i.e. below the threshold) before it can translate into improvement in firm performance, while lowering

specific dimensions of institution risks that are matter most directly to firm productivities improve firm performance even when those specific risks are at time high. In the following sub-Section we check the robustness of these main finding along a number of strategies.

Robust Checks

To ascertain whether the main findings are robust, we check the results along three lines. First, as mentioned in Chapter 3, we use log of firm profit as an alternative measure of firm performance and rerun the main results. Second, as also explained in Chapter 3, we examine the main results for endogeneity problem as better firm performance may instead lead to (increase the demand for) lowering institutional risks. Third, we complement the results on the specific dimension of institutions through the analysis of the effect of WBES business constraints on firm productivity.

³ Bribe is measure as the fraction of revenue firm has to spend in bribing public official to get things done. See Chapter 3 for detail.

⁴ Government stability is measured with score range from zero (extremely unstable government) to 10 (extremely stable government). In other words, higher the score the more stable the political environment would be.

Table 4.A Formal institutions and firm performance in emerging market economies

	Dependent Variable: Log of Firm Profit					
	Model 1A	Model 1B	Model 2A	Model 2B	Model 3A	Model 3B
Age of the firm	-0.0049*** (0.0012)	-0.0058*** (0.0012)	0.0002 (0.0013)	0.0055*** (0.0012)	0.0003 (0.0012)	0.0014 (0.0012)
Exporting dummy	0.3539*** (0.0552)	0.3415*** (0.0551)	0.4574*** (0.0571)	0.4473*** (0.0506)	0.4629*** (0.0561)	0.4859*** (0.0549)
Foreign direct investment dummy	0.2917*** (0.0870)	0.2852*** (0.0870)	0.5045*** (0.0915)	0.5187*** (0.0819)	0.2846*** (0.0920)	0.2476*** (0.0916)
Import share	0.0109*** (0.0008)	0.0108*** (0.0008)	0.0108*** (0.0008)	0.0103*** (0.0008)	0.0071*** (0.0008)	0.0069*** (0.0008)
Capacity utilization	0.0039*** (0.0010)	0.0034*** (0.0010)	0.0071*** (0.0010)	0.0087*** (0.0009)	0.0072*** (0.0010)	0.0071*** (0.0010)
Skill labor share	0.0013*** (0.0008)	0.0014*** (0.0008)	0.0015*** (0.0009)	0.0015*** (0.0005)	0.0015* (0.0009)	0.0016* (0.0009)
Natural log of 1 + R&D	0.0820*** (0.0108)	0.0816*** (0.0108)	0.0800*** (0.0108)	0.0724*** (0.0091)	0.1026*** (0.0106)	0.0984*** (0.0104)
Inflation	-0.2357*** (0.0063)	-0.2148*** (0.0064)	-0.2910*** (0.0073)	-0.3202*** (0.0071)	-0.3123*** (0.0088)	-0.2761*** (0.0094)
Formal institutional risk						
International country risk guide (ICRG)	-0.3760*** (0.0061)	-0.9145*** (0.0733)				
ICRG ²		0.0038*** (0.0005)				
Economic freedom index (EF)			-0.2857*** (0.0059)	-3.7413*** (0.0644)		
EF ²				0.0291*** (0.0005)		
World Bank World Govern. (WBG)					-3.7501*** (0.0793)	-4.2225*** (0.0920)
WBG ²						2.4752*** (0.1344)
R ²	62.60%	62.75%	59.90%	68.45%	60.04%	61.09%
F-statistics (p-value)	0	0	0	0	0	0
Observation	12888	12888	12888	12888	12888	12888

Note: Robust standard errors are in parenthesis. Each IV regressions includes constant and controls for dummy variables that capture firm size, year and industry characteristics. The instruments used are legal origin (dummy variables for British, French, and German origin), latitude,

and ethnic, religious, and language fractions. ***, ** and * indicate significance level at 1%, 5% and 10% respectively.

Table 4.B Endogeneity check

	Dependent Variable: Log of Labor Productivity					
	Model 1A	Model 1B	Model 2A	Model 2B	Model 3A	Model 3B
Age of the firm	-0.0138*** (0.0012)	-0.0166*** (0.0013)	-0.0088*** (0.0012)	-0.0367 (0.0617)	-0.0062*** (0.0013)	-0.0026* (0.0013)
Exporting dummy	0.1152** (0.0553)	0.0896 (0.0557)	0.1756*** (0.0569)	0.1520** (0.0660)	0.2372*** (0.0558)	0.3278*** (0.0551)
Foreign direct investment dummy	0.0324 (0.0835)	0.0165 (0.0845)	0.2510*** (0.0883)	0.2632** (0.1159)	-0.0303 (0.0907)	-0.1635 (0.1201)
Import share	0.0078*** (0.0007)	0.0079*** (0.0008)	0.0074*** (0.0008)	0.0058*** (0.0010)	0.0029*** (0.0008)	0.0021** (0.0008)
Capacity utilization	0.0026** (0.0010)	0.0010 (0.0010)	0.0053*** (0.0010)	0.0091*** (0.0011)	0.0065*** (0.0010)	0.0069*** (0.0011)
Skill labor share	0.0003 (0.0009)	0.0004 (0.0008)	0.0005 (0.0010)	0.0008*** (0.0001)	0.0001 (0.0011)	0.00003 (0.0012)
Natural log of 1 + R&D	0.0411*** (0.0115)	0.0403*** (0.0118)	0.0360*** (0.0117)	0.0108 (0.0105)	0.0714*** (0.0110)	0.0685*** (0.0110)
Inflation	-0.2741*** (0.0061)	-0.2106*** (0.0070)	-0.3084*** (0.0070)	-0.3449*** (0.0079)	-0.3990*** (0.0106)	-0.3486*** (0.0118)
Formal institutional risk						
International country risk guide (ICRG)	-0.3934*** (0.0059)	-1.9607*** (0.1111)				
ICRG ²		0.0114*** (0.0007)				
Economic freedom index (EF)			-0.2660*** (0.0052)	-9.1947*** (0.2212)		
EF ²				0.0760*** (0.0019)		
World Bank World Govern. (WBG1)					-4.9642*** (0.1055)	-6.7750*** (0.1185)

WBG1 ²						5.6417*** (0.2439)
F-statistics (p-value)	0	0	0	0	0	0
Hansen J-test (p-value)	0.398	0.371	0.31	0.689	0.326	0.427
Observation	13509	13509	13509	13509	13509	13509

Note: Robust standard errors are in parenthesis. Each IV regressions includes constant and controls for dummy variables that capture firm size, year and industry characteristics. The instruments used are legal origin (dummy variables for British, French, and German origin), latitude, and ethnic, religious, and language fractions. ***, ** and * indicate significance level at 1%, 5% and 10% respectively.

Table 4C Endogeneity check on components of formal institutions risks

	Dependent Variable: Log of Labor Productivity		
	Model (2.1)	Model (2.2)	Model (2.3)
Age of the firm	-0.0107	-0.0169***	-0.0119***
	-0.0082	-0.0017	-0.0013
Exporting dummy	1.4909***	0.0098	0.0837
	-0.3385	-0.078	-0.0642
Foreign direct investment dummy	-1.5087	0.0483	0.1745*
	-1.4791	-0.1133	-0.0997
Import share	0.0106**	0.0065***	0.0037***
	-0.0049	-0.0011	-0.001
Capacity utilization	-0.0124	-0.0009	0.0031***
	-0.0607	-0.0015	-0.0011
Skill labor share	0.0355***	0.0012*	0.0016***
	-0.0029	-0.0007	-0.0005
Natural log of 1 + R&D	-0.0246	0.0253	0.0321**
	-0.0589	-0.0182	-0.0135
Inflation	-0.0590*	-0.1052***	-0.2054***
	-0.0347	-0.007	-0.0092
Formal institutional risks			
<i>Legal dimension</i>			
WBES Legal property	0.9819***		
rights protection (Legal)	-0.0658		

<i>Economic dimension</i>			
WBES Bribe		-0.0611***	
		-0.0058	
<i>Political dimension</i>			
ICRG Government			0.3376***
	Stability (GOVSTAB)		
F-statistics (p-value)	0	0	0
Hansen J-test (p-value)	0.104	0.457	0.531
Observation	11877	9289	13509

Note: Robust standard errors are in parenthesis. Each IV regressions includes constant and controls for dummy variables that capture firm size, year and industry characteristics. The instruments used are legal origin (dummy variables for British, French, and German origin), latitude, and ethnic, religious, and language fractions. ***, ** and * indicate significance level at 1%, 5% and 10% respectively.

V. SUMMARY AND CONCLUDING REMARKS

This section concludes the entire thesis especially the findings and implications drawn from Chapter 4 on the effects of formal and informal institutions as well as their interaction on firm performance in 39 emerging markets. This chapter begins with brief summary of the major finding associated with three objectives explained in Chapter 1. The summary discussion centres on the important finding on the roles played by formal institutional risks along with its legal, economic and political institutional risk dimensions, informal institutional risks (culture as well as its components) and the interaction between formal and informal institutional risks on firm performance. Policy implication and lessons for managers, business owners, stakeholders and governments will also be discussed with respect to the major finding on each objective. Finally, at the end of this section, some

limitations of this study are highlighted and possible future research avenue is suggested.

REFERENCES

- [1] Brouthers, K., & Brouthers, L.E. (2001). Explaining the national distance culture paradox. *Journal of International Business Studies*, 32(1), 177–189.
- [2] Bose, N., Murshid, A. P. & Wurn, M. A. (2012). 'The Growth Effect of Property Rights: The Role of Finance', *World Development*, Vol. 40, No. 9, pp. 1784–1797.
- [3] Byrne, G. J., & Bradley, F. (2007). Culture's influence on leadership efficiency: How personal and national cultures affect leadership style. *Journal of Business Research*, 60(2), 168-175.
- [4] Griffin, D.W., Guedhami, O., Kwok, C.C.Y., Li, K. & Shao, L. (2015). National Culture, Corporate Governance Practices, and Firm Performance. Available at SSRN: <http://ssrn.com/abstract=2400078> or <http://dx.doi.org/10.2139/ssrn.2400078>.
- [5] Gujarati, D. N. (2003). *Basic Econometrics*. 4th Ed. McGraw-Hill.
- [6] Gorodnichenko, Y., & Roland, G. (2011). Which dimensions of culture matter for long-run growth?. *The American Economic Review*, 101(3), 492-498.
- [7] Habib, M., & Zurawicki, L. (2002) Corruption and foreign direct investment. *Journal of International Business Studies*, (33)2, 291-307.
- [8] Hofstede, G. (2001) *Culture's Consequences: Comparing Values, Behaviours, Institutions, and Organizations Across Nations*, London: Sage.
- [9] Hofstede, G. (1980b) 'Motivation, Leadership, and Organization: do American theories apply abroad?' *Organizational Dynamics* 9(1): 42–63.
- [10] Hofstede, G., & Bond, M. 1988. The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4): 4–21.
- [11] House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W., & Gupta, V. (2004) *Culture, Leadership, and Organizations, The Globe Study of 62 Societies*, Thousand Oaks: Sage.
- [12] Ingram, P., & Silverman, B. (2002). Introduction. In P. Ingram and B. Silverman (Eds), *The new institutionalism in strategic management*: 1–30. Amsterdam: Elsevier.
- [13] Jiménez, A. (2010). Does political risk affect the scope of the expansion abroad? Evidence from Spanish MNEs. *International Business Review*, 19(6), 619-633.
- [14] Kanagaretnam, K., Lim, C. Y., & Lobo, G. J. (2011). Effects of national culture on earnings quality of banks. *Journal of International Business Studies*, 42(6), 853-874.
- [15] Keillor, B. D., Wilkinson, T. J., & Owens, D. (2005). Threats to international operations: dealing with political risk at the firm level. *Journal of Business Research*, 58(5), 629-635.
- [16] Kirkman, B. L., Lowe, K. B., & Gibson, C. B. (2006). A quarter century of culture's consequences: A review of empirical research incorporating Hofstede's cultural values framework. *Journal of International Business Studies*, 37(3), 285-320.
- [17] Leung, K., Bhagat, R. S., Buchan, N. R., Erez, M., and Gibson, C. B. (2005). Culture and international business: recent advances and their implications for future research. *Journal of International Business Studies*, 36(4), 357-378.
- [18] Rothaermel, F. T., Kotha, S., & Steensma, H. K. (2006). International market entry by US internet firms: An empirical analysis of country risk, national culture, and market size. *Journal of Management*, 32(1), 56-82.
- [19] Rodrik, D., Subramanian, A., & Trebbi, F. (2004). Institutional rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*, 9, 131-165.